



SHRI SHIVAJI EDUCATION SOCIETY, AMRAVATI'S
SHRI SHIVAJI SCIENCE COLLEGE, AMRAVATI



NAAC Accredited by Grade A with CGPA 3.13 (3rd Cycle)
UGC awarded status of College with Potential for Excellence (2nd Phase)
ISO 9000:2015 Certified College

Identified by DST , Govt. Of India for FIST & Sant Gadge Baba Amravati University as Lead College



4TH Cycle
Assessment & Accreditation by NAAC

Criterion-I
CURRICULAR ASPECTS

Curricular Enrichment

QnM – 1.3.3

**Percentage of students undertaking project
work/field work/ internships
(Data for the academic year 2019-20)**

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Accredited by NAAC with 'A' grade with a CGPA of 3.13
UGC Awarded College with Potential for Excellence ISO 9000:2015 certified College
Identified by DST for FIST and SGB Amravati University as Lead College

Shri Shivaji Science College

Shivaji Nagar, Morshi Road, Amravati - 444 603 M.S.

❖ *Founder* : Dr. Panjabrao Alias Bhausahab Deshmukh
❖ *President* : Hon. Shri Harshwardhan P. Deshmukh
❖ *Principal* : Dr. G. V. Korpe

E-mail : shivajiscamt.office@gmail.com
Web Site : www.shivajiscamt.org
(O) 2660855; (Fax) 2665485; (R) 2551400

Ref. No.: SSSC/6471/IQAC/2021

Date: Nov. 22nd, 2021

Declaration

The information, reports, true copies of the supporting documents, numerical data, etc. furnished in this file is verified by IQAC and found correct.

Hence this certificate.

H. S. Lunge
IQAC Coordinator
Shri Shivaji Science College
Amravati



G. V. Korpe
Chairman IQAC and Principal
Shri Shivaji Science College,
Amravati

Year 2019-20

Department of Bioinformatics

List of the Students under taking Field Projects

Shri Shivaji Science College, Amravati P. G. Dept of Bioinformatics Practical Exam Summer -2020 M.Sc. II Sem. - IV (24-25.09.2020)			
SN.	Student Name	Working Contact No	Project Title
1	Swapnil Himmatrao Jondhale	8208330165	In silico Bioinformatics pipeline for Genome wide mutation detection using disease panel of Amyotrophic Lateral Sclerosis
2	Pratima Tulshiram Potdukhe	9172954191	Finding binding pattern across the molecule acting on the various targets of influenza virus (Hemagglutinin)
3	Rutuja Rajendrarao Ingale	9322650894	New Arzoxifene-Drug analogue Design for breast cancer using drug designing approach through binding free energy calculations
4	Pooja Ganeshrao Zagade	7769070359.883-0557678	Finding binding pattern across the molecule acting on the various targets of influenza virus (Neura amidinase)
5	Shivani Chandrashekhar Giri	7083803878	Blood Cancer Leukaemia, New Pentostatin analog design through binding affinity calculation
6	komal prakashrao kulkarni	7709618689	ligand based drug discovery and design for Parkinson's disease
7	Gauri sewakram korde	7219642248	Finding binding pattern across the molecule acting on the various targets of influenza virus (pa endonuclease)
8	Mayuri Balasaheb Hole	8605564268	Blood Cancer(Leukaemia)New Pentostatin Analogs (BR,CH2OH,CH2CH3) Design through Binding Affinity Calculations
9	Samiksha vasudeo jawre	9922599706	In silico bioinformatics pipeline development for chip-sequence NGS data Analysis
10	Priyanka Subhashrao Saw	7887437312	"miRNA expression using NGS in Breast tumour biopsies prior to treatment with "letrozole" or letrozole with bevacizumab"
11	Sayali Suresh Jamodkar	8830042156	"Comparative metagenomic analysis of freshwater microbiome using bioinformatics qime pipeline"
12	Priya Premdas Mohod	8459366952	Transcriptome profiling using Next generation sequencing data in "Drosophila" Immune response.
13	Nikita Arunrao Neware	7057835095	Ligand based drug discovery and designing for Parkinson's disease
14	Aniket Ganesh Nage	9604908525	Targeted exom sequencing panel as a powerful tool to identify the causitive mutation in patient suspected to Amyotrophic Lateral Sclerosis(ALS).
15	kasturi sakharam mavaskar	7588253935	identification and functional analysing miRNA-NGS data in Breast tumor treatment with letrozole and letrozole with bevacizumab.
16	Samidha Vilasrao Bonde	9175804102	In-silico bioinformatic pipeline development for RNA Seq.NGS Data
17	Piyush Shaligram Dhandar	9766757139	In silico bioinformatics pipeline using development for whole genomewide detection of methylation context in Gasterosteus aculeatus adult fin
18	Rajni Ishwar Nanhe	7769020230	"NEW DRUG DESIGN FOR BREAST CANCER THROUGH BINDING FREE ENERGY CALCULATIONS"
19	Gayatri Sureshrao Bhidkar	8999374933	Untapping diversity through metagenomics using public NGS data
20	Namrata Prabhakar Gawande	7264941857	Analysis of protein DNA interaction using model based peak calling tool MACS2
21	Pranali Kale	7028427163	Targeted exom sequencing panel as a powerful tool to identify the causitive mutation in patient suspected to Amyotrophic Lateral Sclerosis(ALS).
22	Ankita Deshmukh	7020399609	Transcriptome Profiling and Differentially Gene Expression of B-cell in disease sample using Microarray Technique

External Examiner

Internal Examiner

Title and Place of Work

DISSERTATION

On

“In silico Bioinformatics pipeline for Genome wide mutation detection using disease panel of Amyotrophic Lateral Sclerosis.”

Worked done by**Mr. Swapnil Himmatrao Jondhale**

P.G. Department of Bioinformatics,

Shri. Shivaji Science College, Amravati-444603

Maharashtra, India.

A thesis submitted in partial fulfillment of the requirement for the degree of

MASTER OF SCIENCE IN BIOINFORMATICS**Submitted to**

Shri Shivaji Science college, Amravati

Sant Gadge Baba Amravati University, Amravati (M.S.)-India

Under the guidance of**Mr. Rajesh Kumar Mahato**

ArrayGen Technologies Pvt. Ltd

Raj Tower 3rd Floor, Shivaji Chowk,

near Shivaji statue,

Kothrud, Pune, Maharashtra 411038

Email:info@arraygen.com**Mobile: +91 2025395446****Website: www.arraygen.com**

Project Work Completion



Shri Shivaji Science College, Amravati

P. G. DEPARTMENT OF BIOINFORMATICS

CERTIFICATE

This is to certify that Mr. Swapnil Himmatrao Jondhale of M. Sc. IInd year (Semester-IV) BIOINFORMATICS has completed the project work as per the Sant Gadge Baba Amravati University, Amravati syllabus for the academic session 2019-20.

External Examiner

Teacher In-charge

P. G. Department of Bioinformatics

Coordinator

P. G. Department of Bioinformatics

**ArrayGen Technologies Pvt. Ltd.**

Godrej Tower, 19, Shivaji Chowk, Mukate Chawl, Kothrud, Coimbatore, Near Shivaji Statue, Kothrud, Pune – 411038 Maharashtra (India)

Email: info@arraygen.com

Phone: +91 20 65228007

Mobile: +91 9873625446

Website: www.arraygen.com

CIN No.: U74900PH2015PTC157410

Certificate

This is to certify that **Mr. Swapnil Himmatrao Jondhale** has completed the project – “**In silico Bioinformatics pipeline for Genome wide mutation detection using disease panel of Amyotrophic Lateral Sclerosis.**” Under my guidance and submitted the project report. Laid down by **Shri Shivaji Science College, Amravati**. The material that has been obtained from other source is duly, acknowledged in the dissertation. It is further certified that the work or its part has not been, submitted to any other university for examination under my supervision. I consider this work worthy for the award of degree of **M.Sc. Bioinformatics**.



Place: Pune, India

Date: 16th January, 2020

Mr. Rajesh Kumar Mahato

(Founder & CEO)

ArrayGen Technologies Pvt. Ltd.

5.3 CONCLUSION

These 83 SNPs were responsible for Amyotrophic Lateral Sclerosis (ALS) disorder. This disease panel will help us to know on what position a Single Nucleotide has got altered and turned the normal genome into abnormal genome.

DISSERTATION ON**Finding binding patterns across molecule acting on the various targets of Influenza Virus**

Submitted to

**Sant Gadge Baba Amravati University ,Amravati -444602****Maharashtra – India**

A thesis Submitted in Partial Fulfilment of the requirement for the degree of

MASTER OF SCIENCE**IN****BIOINFORMATICS****Worked done by**

Miss. Pratima Tulshiram Potdukhe

P.G Department of Bioinformatics,

Shri .Shivaji Science College, Amravati -444602

Maharashtra –India

Under the Guidance of

Dr. Kundan Ingale

Novalead Pharma Pvt.Ltd

Pune – Maharashtra

P.G Department of Bioinformatics,**Shri. Shivaji Science College, Amravati –Maharashtra -India**



Shri. Shivaji Science College, Amravati

P.G Department of Bioinformatics

CERTIFICATE

This is to certify that Miss. Pratima Tulshiram Potdukhe of M.Sc II year
(semester -IV) BIOINFORMATICS has completed the project work as per the
Sant Gadge Baba Amravati University Syllabus for the academic session 2019-2020.

External Examiner

Teacher In-charge

P.G. Department of Bioinformatics

Coordinator

P.G. Department of Bioinformatics



Date: 17th January 2020

CERTIFICATE

TO WHOMSOEVER IT MAY CONCERN

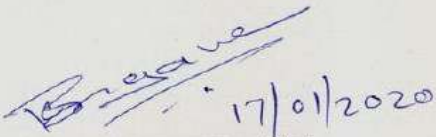
This is to certify that **Ms. Pratima Potdukhe**, had joined us for her internship and successfully completed her project from 16th December 2019 to 17th January 2020 and successfully presented the same.

The project was undertaken by her in Drug Designing titled **“Finding binding patterns across molecule acting on the various targets of Influenza virus”** under the abled guidance of Dr Kundan Ingale. The project on evaluation fulfills all the stated criteria and the findings are her original work.

During her training duration we found **Ms. Pratima Potdukhe** as a good team player, open to accept challenges and hardworking towards meeting timelines.

Pratima:

We thank you for your valuable contribution to the Company and wish you all success in your future endeavors.


17/01/2020
NovaLead Pharma Pvt Ltd.



NovaLead Pharma Pvt. Ltd.

2nd/3rd Floor, Plot No-05, Ram Indu Park, Survey No-131/1b/2/11, Baner Road, Pune - 411 045, India (Maharashtra)
Tel. : + 91 20 6410 0335 E-mail : info@vlifesciences.com Web : www.vlifesciences.com

P.G. Department of Bioinformatics

Conclusion and Future aspect

The project is aimed towards identifying the binding patterns for the given target Hemagglutinin Influenza (HA) molecule through docking. This is done by comparing the ligand and the protein structure in order to find out how close they are in orientation. Molecule with the best score and the binding interaction from the result were selected for docking to the target protein.

DISSERTATION**On****“NEW DRUG ANALOGUE DESIGN FOR BREST CANCER USING DRUG DESIGNING
APPROACH THROUGH BINDING FREE ENERGY CALCULATIONS”****Worked done by****Miss. Rutuja Rajendrarao Ingale****P.G. Department of Bioinformatics,****Shri. Shivaji Science College, Amravati-444603****Maharashtra, India.****A thesis submitted in partial fulfillment of the requirement for the degree of****MASTER OF SCIENCE IN BIOINFORMATICS****Submitted to****Shri Shivaji Science College, Amravati****Sant Gadge Baba Amravati University, Amravati (M.S.)-India****Under the Guidance of****Mr. Manoj Kumar Reddy****Aravinda Biosolutions****#311, Windsor plaza, Nallakunta****Hyderabad-500044****Email: bioprojects_hyd@yahoo.com****Mobile: 9391187818****Website: www.arvindabio.com**



Shri Shivaji Science College, Amravati

P. G. DEPARTMENT OF BIOINFORMATICS

CERTIFICATE

*This is to certify that Mis .Rutuja Rajendrarao Ingale _____ of
M. Sc. IInd year (Semester-IV) BIOINFORMATICS has completed the project
work as per the Sant Gadge Baba Amravati University syllabus for the
academic session 2019-20.*

External Examiner

Teacher In-charge

Coordinator


P. G. Department of Bioinformatics

P.G.Department of Bioinformatics

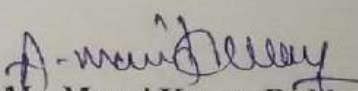
**ARAVINDA BIOSOLUTIONS PVT., LTD****CERTIFICATE**

2019-2020

This is to certify that Miss. **Rutuja Rajendrarao Ingale** has completed the project “**NEW DRUG DESIGN FOR BREST CANCER THROUGH BINDING FREE ENERGY CALCULATIONS**” for a duration of **one month (14th December-2019 to 14th January-2020)** Under my guidance and submitted the project report, laid down by **Sant Gadge Baba Amravati University**. The material that has been obtained from other source is duly, acknowledged in the dissertation. It is further certified that the work or its part has not been, submitted to any other university for examination under my supervision. I consider this work worthy for the award of degree of **Master of Science in Bioinformatics**.



Mr. Raghu Raj
(Director)



Mr. Manoj Kumar Reddy
(Project Supervisor)

Aravinda Biosolutions Pvt., Ltd#304,305, Windsor Plaza, Nallakunta,
Hyderabad 500 044.URL: <http://www.aravindabio.com>, enquiry@aravindabio.com
email: aravindabio@yahoo.com, bioprojects_hyd@yahoo.com

7] CONCLUSION

Comparisons of the calculated binding affinities for structurally similar Inhibitors to **ARZOXIFENE** indicate that the molecular mechanics methods gave suitable analogues. These results clearly indicate that before synthesis and biochemical testing of new analogs, one can use molecular mechanics based methods for qualitative assessment of relative binding affinities for speeding up drug discovery process by eliminating less potent compounds from synthesis.

The inhibitors **5** with the Substituent **CH₂OH** identified as the most suitable analogue in the present study that needs to be further evaluated in laboratory.

DISSERTATION**On****“Finding binding patterns across molecule acting on various targets of influenza virus”****Worked done by****Miss. Pooja G. Zagade****P.G. Department of Bioinformatics,****Shri. Shivaji Science College, Amravati-444603****Maharashtra, India.****A thesis submitted in partial fulfillment of the requirement for the degree of****MASTER OF SCIENCE IN BIOINFORMATICS****Submitted to****Shri shivaji science college, Amravati****Sant Gadge Baba Amravati University, Amravati (M.S.)-India****Under the guidance of****Dr. Kundan Ingale****2nd Floor, Plot No-05, Ram Indu Park, Survey No-131/1b/2/11, Baner Road,,
Survey No-131/1b/2/11, Baner Road, Pune, Maharashtra 411045****Email: kundani@vlifesciences.com**

Shri. Shivaji Science College, Amravati**[NAAC Re-accredited with A-(Very good)]****P. G. DEPARTMENT OF BIOINFORMATICS****CERTIFICATE**

This is to certify that the Project /Dissertation entitled “**Finding binding patterns across molecule acting on the various targets of Influenza Virus**” is bonafide work done by **Miss Pooja G. Zagade**(P.G Department of Bioinformatics ,Shri. Shivaji Science College, Amravati) in partial fulfillment of Masters of Science Degree In Bioinformatics and has been carried out under the supervision and guidance of **Dr. Kundan Ingale Novalead Pharma Pvt.Ltd.Pune**. This report or a similar report on the topic has not been submitted for any other examination and does not form a part of any other course undergone by the candidate.

External Examiner**Teacher In-charge****Coordinator**

P. G. Department of Bioinformatics

P.G. Department of Bioinformatics

P.G. Department of Bioinformatics

CONCLUSION:

Molecular docking helps in studying drug/ ligand or receptor/ protein interactions by identifying the suitable active sites in protein, obtaining the best geometry of ligand - receptor complex and calculating the energy of interaction for different ligands to design more effective ligands by using GRIP method.

Docking can be done on the basis of ligand flexibility and Receptor flexibility, especially backbone flexibility and movement of several key secondary elements of the receptor involving ligand binding and the catalyst, is still a major hurdle in docking studies. Some methods to deal with side chain flexibility have been proven effective and adequate in certain cases.

DISSERTATION

On

**“BLOOD CANCER (LEUKEMIA) NEW PENTOSTATIN ANALOGS DESIGN THROUGH
BINDING AFFINITY CALCULATIONS”****Worked done by****Miss. Shivani Chandrashekhkar Giri**

P.G. Department of Bioinformatics,

Shri. Shivaji science college, Amravati-444603

Maharashtra, India.

A thesis submitted in partial fulfillment of the requirement for the degree of

MASTER OF SCIENCE IN BIOINFORMATICS**Submitted to**

Shri Shivaji Science College, Amravati

Sant Gadge Baba Amravati University, Amravati (M.S.)-India

Under the guidance of

Mr. Manoj Kumar Reddy

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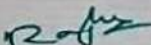


ARAVINDA BIOSOLUTIONS PVT., LTD

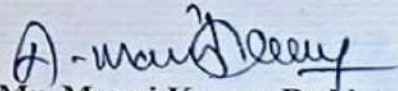
CERTIFICATE

2019-2020

This is to certify that **Miss. Shivani Chandrashekhar Giri** has completed the project “**BLOOD CANCER (LEUKEMIA) NEW PENTOSTATIN ANALOGS DESIGN THROUGH BINDING AFFINITY CALCULATIONS**” Under my guidance and submitted the project report, laid down by **Sant Gadge Baba Amravati University**. The material that has been obtained from other source is duly, acknowledged in the dissertation. During **December-2019 to January-2020**, completed their project. It is further certified that the work or its part has not been, submitted to any other university for examination under my supervision. I consider this work worthy for the award of degree of **Master of Science in Bioinformatics**.


Mr. Raghu Raj
(Director)




Mr. Manoj Kumar Reddy
(Project Supervisor)

Aravinda Biosolutions Pvt., Ltd

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14. Conclusion:

Comparisons of the calculated binding affinities for structurally similar Inhibitors to PENTOSTATIN indicate that the molecular mechanics methods were used before synthesis and biochemical testing of new analogs, one can use molecular mechanics based methods for qualitative assessment of relative binding affinities for speeding up drug discovery process by eliminating less potent compounds from synthesis. One of the most common disease among the world is the **BLOOD CANCER**. Molecular modelling has been used to design a drug for the **BLOOD CANCER** using **PENTOSTATIN** –an existing drug.

Pentostatin drug by using Hyperchem varying the R groups – OH. The binding energies for these compounds have been calculated. The compound having the least binding free energy is considered to be more stable and has maximum binding affinity. Docking of this molecule has been done using the protein **ADENOSINE DEAMINASE** by the use of GOLD software. This yielded the value **-123.223** for **CL, CCL3, CF3**, which is least among the other R group values. Thus, the molecule having group- OH, CL, CH₂CH₃ is more suitable for treating the disease.

DISSERATION

On

“LIGAND BASED DRUG DISCOVERY AND DESIGN FOR PARKINSONS DISEASE”**Worked done by****Miss. Komal P. kulkarni****P.G. Department of Bioinformatics,****Shri. Shivaji science college, Amravati-444603****Maharashtra, India.****A thesis submitted in partial fulfillment of the requirement for the degree of****MASTER OF SCIENCE IN BIOINFORMATICS****Submitted to****Shri shivaji science college, Amravati****Sant Gadge Baba Amravati University, Amravati (M.S.)-India****Under the guidance of****Mr. Manoj Kumar Reddy****Aravinda Biosolutions****#311, Windsor plaza, Nallakunta****Hyderabad-500044****Email: bioprojects_hyd@yahoo.com****Mobile: 9391187818****Website: www.arvindabio.com**

Shri Shivaji Science College, Amravati

P. G. DEPARTMENT OF BIOINFORMATICS

CERTIFICATE

This is to certify that Mr. /Miss. Komal P. Kulkarni of M. Sc. IInd year (Semester-IV) BIOINFORMATICS has completed the project work as per the Sant Gadge Baba Amravati University syllabus for the academic session 2019-20.

External Examiner

Teacher In-charge

P. G. Department of Bioinformatics

Coordinator

P. G. Department of Bioinformatics


**ARAVINDA BIOSOLUTIONS PVT., LTD****CERTIFICATE**

2019-2020

This is to certify that **Miss. Komal Prakashrao Kulkarni** has completed the project “**LIGAND BASED DRUG DISCOVERY AND DESIGN FOR PARKINSONS DISEASE.**” For a duration of one month (**14th December to 14th January 2019**) under my guidance and submitted the project report, laid down by **Sant Gadge Baba Amravati University**. The material that has been obtained from other source is duly, acknowledged in the dissertation. It is further certified that the work or its part has not been, submitted to any other university for examination under my supervision. I consider this work worthy for the award of degree of **Master of Science in Bioinformatics**.


Mr. Raghu Raj
(Director)




Mr. Manoj Kumar Reddy
(Project Supervisor)

Aravinda Biosolutions Pvt., Ltd#304,305, Windsor Plaza, Nallakunta,
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Phone: 091-40-66628773, 66628774

P.G. Department of Bioinformatics

CONCLUSION

In this work, the binding modes of the putative/proposed inhibitors were obtained by carefully aligning them with the known crystal structures of inhibitors in the active site of the **3UON**. These inhibitors, which are shown in the above Figures, were then evaluated by performing minimization calculations both in solvent and in complex using the AMBER (Weiner SJ et al, 1984) force field. The technical details used for estimating relative binding affinities using energy components obtained from minimizations of each inhibitor, both in solvent as well as in complex phases, were explained by four stage protocol as described in the methodology section. A comparison of the **relative binding affinities** for structurally similar Inhibitors to **METIXENE** indicates that the molecular mechanics methods gave suitable analogues. These results clearly indicate that before synthesis and biochemical testing of new analogs, one can use molecular mechanics based methods for qualitative assessment of relative binding affinities for speeding up drug discovery process by eliminating less potent compounds from synthesis. The inhibitors **Molecule 1** with the substituent **R=CF₂OH** are identified as the most suitable analogues in the present study need to be further evaluated in the laboratory.

DISSERTATION

On

**"Finding Binding Pattern across The Molecule Acting On The
Various Target of Influenza Virus"**

Work done by

Ms. Gauri Sewakram Korde

A thesis submitted in partial fulfillment of the requirement for degree of

MASTER OF SCIENCE

IN

BIOINFORMATICS

2019-2020

Submitted to



Shri. Shivaji Science college, Amravati,

Sant Gadge Baba Amravati university, Amravati Maharashtra.

Under the guidance of

Dr. Kundan Ingle

Novalead Pharma Pvt. Ltd.

Baner, Pune, India

Shri Shivaji Science College, Amravati

P. G. DEPARTMENT OF BIOINFORMATICS



CERTIFICATE

*This is to certify that Miss. Gauri Sewakram Korde_of M. Sc. IInd year
(Semester-IV) BIOINFORMATICS has completed the project work as per the
Sant Gadge Baba Amravati University syllabus for the academic session
2019-20.*

External Examiner

Teacher In-charge

P. G. Department of Bioinformatics

Coordinator

P. G. Department of Bioinformatics



Date: 17th January 2020

CERTIFICATE

TO WHOMSOEVER IT MAY CONCERN

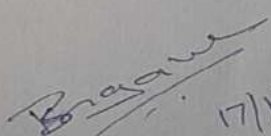
This is to certify that **Ms. Gauri Korade**, had joined us for her internship and successfully completed her project from 16th December 2019 to 17th January 2020 and successfully presented the same.

The project was undertaken by her in Drug Designing titled "**Finding binding patterns across molecule acting on the various targets of Influenza virus**" under the abled guidance of Dr Kundan Ingale. The project on evaluation fulfills all the stated criteria and the findings are her original work.

During her training duration we found **Ms. Gauri Korade** as a good team player, open to accept challenges and hardworking towards meeting timelines.

Gauri:

We thank you for your valuable contribution to the Company and wish you all success in your future endeavors.


17/1/2020
NovaLead Pharma Pvt Ltd.



VLife Sciences Technologies Pvt Ltd

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Tel. : +91-20-27291590 Fax : +91-20-27291591 E-mail : info@vlifesciences.com Web : www.vlifesciences.com

P.G Department of Bioinformatics

Conclusion

- Molecular docking give the promising effect on identification and optimization in modern drug discovery
- The combination of the chemical information of natural products with docking-based virtual screening will play an important role in drug discovery in the post-genomic era as more and more new potential targets are emerging from the functional genomic studies.
- Docking-based virtual screening lead to much higher hit rate than traditional screening methods (e.g., HTS)
- Docking method provides an opportunity for the designing of active compounds.
- However, it has to be emphasized that docking-based virtual screening is not the replacement of the actual experimental screening. As a matter of fact, these two methods are highly complementary.

DISSERTATION

On

“BLOOD CANCER (LEUKEMIA) NEW PENTOSTATIN ANALOGS
(BR, CH₂OH, CH₂CH₃) DESIGN THROUGH BINDING AFFINITY CALCULATION”

Worked done by

Miss. Mayuri Balasaheb Hole

P.G. Department of Bioinformatics,

Shri Shivaji science college, Amravati-444603

Maharashtra, India.

A thesis submitted in partial fulfillment of the requirement for the degree of

MASTER OF SCIENCE IN BIOINFORMATICS

Submitted to



Shri shivaji science college, Amravati

Sant Gadge Baba Amravati University, Amravati (M.S.)-India

Under the guidance of

Mr. Manoj Kumar Reddy

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Shri Shivaji Science College, Amravati

P. G. DEPARTMENT OF BIOINFORMATICS

CERTIFICATE

This is to certify that Mr. /Miss. Mayuri Balasaheb Hole of M. Sc. IInd year (Semester-IV) BIOINFORMATICS has completed the project work as per the Sant Gadge Baba Amravati University syllabus for the academic session 2019-20.

External Examiner

Teacher In-charge

P. G. Department of Bioinformatics

Coordinator

P. G. Department of Bioinformatics

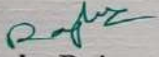


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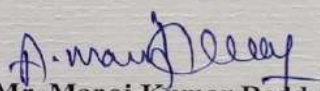
CERTIFICATE

2019-2020

This is to certify that **Miss. Mayuri Balasaheb Hole** has completed the project “**BLOOD CANCER (LEUKEMIA) NEW PENTOSTATIN ANALOGS DESIGN THROUGH BINDING AFFINITY CALCULATIONS**” Under my guidance and submitted the project report, laid down by **Sant Gadge Baba Amravati University**. The material that has been obtained from other source is duly, acknowledged in the dissertation. During **December-2019 to January-2020**, completed their project. It is further certified that the work or its part has not been, submitted to any other university for examination under my supervision. I consider this work worthy for the award of degree of **Master of Science in Bioinformatics**.


Mr. Raghu Raj
(Director)




Mr. Manoj Kumar Reddy
(Project Supervisor)

Aravinda Biosolutions Pvt., Ltd

#304,305, Windsor Plaza, Nallakunta,
Hyderabad 500 044.

URL: <http://www.aravindabio.com>, enquiry@aravindabio.com
email: aravindabio@yahoo.com, bioprojects_hyd@yahoo.com
Phone: 091-40-66628773, 66628774

13. Conclusion:

- Comparisons of the calculated binding affinities for structurally similar Inhibitors to **PENTOSTATIN** indicate that the molecular mechanics methods can be used before synthesis and biochemical testing of new analogs, one can use molecular mechanics based methods for qualitative assessment of relative binding affinities for speeding up drug discovery process by eliminating less potent compounds from synthesis
- One of the most common disease among the world is the **BLOOD CANCER**. Molecular modelling has been used to design a drug for the **BLOOD CANCER** using **PENTOSTATIN** –an existing drug
-
- This drug has been used by using hyperchem varying the R groups – OH. The binding energies for these compounds have been calculated. The compound having the least binding free energy is considered to be more stable and has maximum binding affinity.
- Docking of this molecule has been done using the protein **ADENOSINE DEAMINASE** by the use of GOLD software. This yielded the value **-152.010** for **OH, BR, CH₂OH, CH₂CH₃** which is least among the other R group values. Thus the molecule having R group-**CH₂CH₃** is more suitable for treating the

Dissertation on

**“miRNA expression using NGS in Breast tumour biopsies prior to treatment with
“letrozole” or letrozole with bevacizumab”**

Work done by

Ms. PRIYANKA SUBHASHRAO SAW

A thesis submitted in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

IN

BIOINFORMATICS

Submitted to

Sant Gadge Baba Amravati University, Amravati (M.S) - India



2019-2020

Guided by

Mr. Rajesh Kumar Mahato,

(Founder & CEO),

ArrayGen Technology Pvt. Ltd.,

Pune-Maharashtra

P.G. Department of Bioinformatics,

Shri Shivaji Science College, Amravati (M.S) – India

[NAAC Re-accredited with A-Grade (Very Good)]

2019-2020



Shri Shivaji Science College, Amravati

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This is to certify that Miss. Priyanka Subhashrao Saw of M. Sc. IInd year (Semester-IV) BIOINFORMATICS has completed the project work as per the Sant Gadge Baba Amravati University syllabus for the academic session 2019-20.

Sign of Internal Examiner

Sign of External Examiner

Sign of Coordinator

P. G. Department of Bioinformatics

Shri Shivaji Science College, Amravati-444602

Date:

Place: Amravati.

**ArrayGen Technologies Pvt. Ltd.**

Godai Niawas 19, Shivaji Chowk,
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E-mail : info@arraygen.com
Phone : 020 - 25395446
Mobile : 9673625446
Website : www.arraygen.com

CIN No. : U74900PN2015PTC157410
PAN No. : AANCA9623K

Date: 16th January, 2020

To Whom So Ever It May Concern

This is to certify that **Miss Priyanka Subhashrao Saw** from **Shri Shivaji Science College, Amravati**, has successfully completed his **one-month internship**. During his tenure of one month dated from **16th December 2019 to 16th January 2020** she has worked on project titled **miRNA expression using Next Generation in Breast tumor biopsies treatment with "Letrozole with bevacizumab"** and has submitted a report to our organization. During the internship program with us she was found Punctual, Hardworking and Inquisitive.

We wish her all the best in her future endeavors.

Yours sincerely,
ArrayGen Technologies Pvt. Ltd.,

Rajesh



Rajesh Kumar Mahato
(Founder & CEO)
ArrayGen Technologies Pvt. Ltd.
Phone: +91-020-65228007
Mobile: +91-9673625446

Conclusion

This work provides clinical evidence for the importance of antagonism between Runx2 and E2 signaling in breast cancer. Likely sensing the tension between them, letrozole responsiveness of a genomic node, positively regulated by estradiol and negatively regulated by Runx2 in vitro, best correlated with the clinical efficacy of letrozole treatment. This study highlights that acquisition of specific deregulated miRNAs is a newly discovered alternative mechanism developed by AI-resistant breast cancer cells to achieve constitutive activation of the AKT/mTOR pathway and to develop AI resistance. Analysed Gene Ontology enrichment analysis for Biological Process (BP), Cellular Component (CC), Molecular Function (MF) and pathway analysis using KEGG Pathway from which get the conclusion about in which process the Upregulated and Downregulated genes involved. In the analysis of Gene Ontology terms i.e. Biological Process, Cellular Component, Molecular Function, it concluded that the genes which were found highly expressed in bovine hypothalamus have also shown the upregulation and downregulation gene expression in oxidation-reduction process - electron transfer processes. Cell surface receptor signalling pathway- specialized integral membrane proteins that allow communication between the cell and the extracellular space. Extracellular space may be hormones, neurotransmitters, cytokines, growth factors, cell adhesion molecules, or nutrients. Integral Membrane Protein-a significant fraction of the proteins encoded in an organisms genome. GTP binding- Protein which binds guanosine 5'-triphosphate (GTP), a ribonucleotide guanosine (a purine base guanine linked to the sugar D-ribofuranose) that carries three phosphate groups esterified to the sugar moiety. Upregulated and Downregulated genes are also involved in pathway analysis which are as follows: allograft rejection- the immunological destruction of transplanted organs or tissues. Metabolic pathways- metabolic pathway is a linked series of chemical reactions occurring within a cell. Neuroactive ligand-receptor interaction- interaction between a molecule (usually of an extracellular origin) and a protein on or within a target cell. One type of ligand-receptor interaction can be between steroid hormones and their cytoplasmic or nuclear receptors. Another can be between secreted polypeptide ligands and transmembrane receptors.

P.G. DEPARTMENT OF BIOINFORMATICS

DISSERTATION

On

**“COMPARATIVE METAGENOMIC ANALYSIS OF FRESHWATER MICROBIOME
USING BIOINFORMATICS QIIME PIPELINE”**

Submitted to



Shri. Shivaji Science College, Amravati

Sant Gadge Baba Amravati University, Amravati

in partial fulfilment of the requirement for the degree of

MASTER OF SCIENCE IN BIOINFORMATICS

Work done and submitted by

Miss. Sayali S. Jamodkar

P.G. Department of Bioinformatics,

Shri. Shivaji science college, Amravati

Amravati.

Under the guidance of

Mr. Rajesh Kumar Mahato,

Founder and CEO

ArrayGen Pvt. Ltd.

Pune, Maharashtra.

P.G.DEPARTMENT OF BIOINFORMATICS



Shri Shivaji Science College, Amravati

P. G. DEPARTMENT OF BIOINFORMATICS

CERTIFICATE

This is to certify that Miss. Sayali S. Jamodkar of M. Sc. IInd year (Semester IV) BIOINFORMATICS has completed the project work on “Comparative metagenomic analysis of freshwater microbiome using bioinformatics QIIME pipeline” as per the university syllabus for the academic session 2019-20.

External Examiner**Teacher In-charge**

P. G. Department of Bioinformatics

Coordinator

P. G. Department of Bioinformatics

Shri Shivaji Science College, Amravati.

2

P.G.DEPARTMENT OF BIOINFORMATICS

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Website: www.arraygen.com

CIN No.: U74900PN2015PTC157410

Certificate

This is to certify that Ms. Sayali Suresh Jamodkar of Shri Shivaji Science College, Amravati has successfully completed a One month (4 weeks) internship on “Comparative metagenomic analysis of freshwater microbiome using bioinformatics QIIME pipeline” at ArrayGen Technologies Pvt. Ltd. from 16th December 2019 to 16th January, 2020.



Place: Pune, India

Date: 16th January, 2020

Mr. Rajesh Kumar Mahato

(Founder & CEO)

ArrayGen Technologies Pvt Ltd

Shri Shivaji Science College, Amravati.

3

Conclusion:

This is the metagenomic report, which documents the phage profile from the sediment of the Ganges River. This study shows the microbial community analysis and profiling is also performed. Taxonomic analysis disclosed prevalence of distinct phyla i.e. *Proteobacteria*, *Verrucomicrobia*, *Actinobacteria*, *Cyanobacteria*, *Bacteroidetes* and *Firmicutes*. This also specifies the need for effective management and treatment of waste (i.e. fecal, sewage, industrial, hospital etc.).

This type of surveillance studies is imperative for sustainable improvement and efficiently developing control measures. Moreover, such types of studies will assist in the exploration of a highly diverse kingdom of viruses on earth, to monitor the environmental quality and to expand the size of viral sequence resources for further functional characterizations. There are also immense opportunities in the field of phage-based therapeutics and solutions to fight against disease conditions caused due to bacterial pathogens.

Nonetheless, it is also necessary to explore specific viral or phage communities that are uncovered from metagenomic studies through advancing the isolation methods, functional characterization and interpreting their role in distinctive situations.

Dissertation on
Transcriptome profiling using Next generation sequencing data in
“Drosophila” Immune Response.

Work done by

Miss. Priya Premdas Mohod

A thesis submitted in partial fulfilment of the requirements for the degree of

MASTER OF SCIENCE

IN

BIOINFORMATICS

Submitted to

Sant Gadge Baba Amravati University, Amravati (M.S.) – India



2019-2020

Guided by

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(Founder and CEO)

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Pune – Maharashtra

P. G. Department of Bioinformatics,

Shri Shivaji Science College, Amravati (M.S.) – India

[NAAC Re-accredited with A- Grade (Very Good)]

2019-2020



CERTIFICATE

This is to certify that the Project / Dissertation entitled “Transcriptome profiling using Next generation sequencing data in “Drosophila” Immune Response.” is a bonafide work done by Miss. Priya Premdas Mohod (P.G. Department of Bio-informatics, Shri Shivaji Science College, Amravati) in partial fulfilment of Master of Science Degree in Bio-informatics and has been carried out under the supervision and guidance of Mr. Rajesh Kumar Mahato (Founder and CEO) ArrayGen Technologies Pvt. Ltd. Pune – Maharashtra. This report or a similar report on the topic has not been submitted for any other examination and does not form a part of any other course undergone by the candidate.

Sign of Internal Examiner

Sign of External

Sign of Coordinator

P.G Department of Bio-informatics

Shri Shivaji Science College, Amravati-444602

Date:

Place: Amravati

P.G.Department of Bioinformatics**5. Conclusion**

D Melanogaster is an important model organism and has contributed significantly to our understanding of gene expression and development highly accurate digital measurement of gene expression by RNA Seq can be obtained by counting the number of sequencing reads which map to annotated transcripts from appropriately prepared libraries.

High-throughput sequencing of CDNA libraries (RNA Seq) is an accurate and effective method for Transcriptome profiling.

Cancer is a multistep disease driven by the activation of specific oncogenic pathways concomitantly with the loss of function of tumor suppressor genes that act as sentinels to control physiological growth. The conservation of most of these signaling pathway in Drosophila manipulate them genetically.

DISSERTATION

On

“LIGAND BASED DRUG DISCOVERY AND DESIGN FOR PARKINSONS DISEASE”

Worked done by

Miss. Nikita Arunrao Neware

P.G. Department of Bioinformatics,

Shri. Shivaji science college, Amravati-444603

Maharashtra, India.

A thesis submitted in partial fulfillment of the requirement for the degree of

MASTER OF SCIENCE IN BIOINFORMATICS

Submitted to



Shri shivaji science college, Amravati

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Under the guidance of

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P. G. DEPARTMENT OF BIOINFORMATICS

CERTIFICATE

This is to certify that Mr. /Miss. NIKITA ARUNRAO NEWARE of M. Sc. IInd year (Semester-IV) BIOINFORMATICS has completed the project work as per the Sant Gadge Baba Amravati University syllabus for the academic session 2019-20.

External Examiner

Teacher In-charge

Coordinator

P. G. Department of Bioinformatics

P. G. Department of Bioinformatics

CONCLUSION

In this work, the binding modes of the putative/proposed inhibitors were obtained by carefully aligning them with the known crystal structures of inhibitors in the active site of the **6OL9**. These inhibitors, which are shown in the above Figures, were then evaluated by performing minimization calculations both in solvent and in complex using the AMBER (Weiner SJ et al, 1984) force field. The technical details used for estimating relative binding affinities using energy components obtained from minimizations of each inhibitor, both in solvent as well as in complex phases, were explained by four stage protocol as described in the methodology section. A comparison of the **relative binding affinities** for structurally similar Inhibitors to **METIXENE** indicates that the molecular mechanics methods gave suitable analogues. These results clearly indicate that before synthesis and biochemical testing of new analogs, one can use molecular mechanics based methods for qualitative assessment of relative binding affinities for speeding up drug discovery process by eliminating less potent compounds from synthesis. The inhibitors **Molecule 3** with the substituent **R=OCH₃** are identified as the most suitable analogues in the present study need to be further evaluated in the laboratory.

Dissertation on**Differential Gene Expression Analysis (miRNA seq-Reference Based) using NGS Data**

Work done by

Miss. kasturi sakharam mavaskar

A thesis submitted in partial fulfilment of the requirements for the degree of

MASTER OF SCIENCE

IN

BIOINFORMATICS

Submitted to

SantGadge Baba Amravati University, Amravati (M.S.) – India

2019-2020

Guided by

Mr. Rajesh Kumar Mahato

(Founder and CEO)

ArrayGen Technologies Pvt. Ltd.

Pune – Maharashtra

P. G. Department of Bioinformatics,

Shri Shivaji Science College, Amravati (M.S.) – India

[NAAC Re-accredited with A- Grade (Very Good)]

2019-2020

CERTIFICATE

This is to certify that the Project/ Dissertation entitled “Differential Gene Expression Analysis (miRNA seq- reference based) using NGS Data” is a bonafide work done by Miss. kasturi sakharam mavaskar (P.G. Department of Bio-informatics, Shri Shivaji Science College, Amravati) in partial fulfilment of Master of Science Degree in Bio-informatics and has been carried out under the supervision and guidance of Mr. Rajesh Kumar Mahato (Founder and CEO) ArrayGen Technologies Pvt. Ltd. Pune – Maharashtra. This report or a similar report on the topichas not been submitted for any other examination and does not from a part of any other course undergone by the candidate.

Sign of Internal Examiner

Sign of External

Sign of Coordinator

8. Conclusion

- ✓ MiRNA are produced by both viruses and their hosts.
- ✓ Can either benefit the virus or the host

- **Viral miRNAs can**
 - ✓ Regulation viral gene repression and replication.
 - ✓ Affect cellular gene expression.
 - ✓ Brief history of RNAi (miRNA and siRNA), biological application.
 - ✓ Replication of translation by Let-7 miRNA.
 - ✓ Key methods used to achieve repression of miRNA translation by the miRNA Let-7.
 - ✓ Requirement of translation repression and the Eif4A2 for miRNA- mediated gene control.

Dissertation on
IN-silico bioinformatics pipeline development for RNA seq. NGS
Data.

Work done by

Miss. Samidha Vilasrao Bonde

P.G. Department of Bioinformatics,

Shri Shivaji science college, Amravati-444603

Maharashtra, India.

A thesis submitted in partial fulfilment of the requirements for the degree of

MASTER OF SCIENCE

IN

BIOINFORMATICS

Submitted to

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This is to certify that **Miss. Samidha Vilasrao Bonde** of M.Sc. IInd year (Semester-IV) BIOINFORMATICS has completed the project work as per the Sant Gadage Baba Amravati University syllabus for the academic session 2019-20

Exeternal Examiner

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P.G Department of Bio-informatics

Shri Shivaji Science College, Amravati-444602

Date:

Place: Amravati

5. Conclusion

Drosophila melanogaster is an important model organism and has contributed significantly to our understanding of gene expression and development. Highly accurate digital measurement of gene expression by RNA Seq can be obtained by counting the number of sequencing reads which map to annotated transcripts from appropriately prepared libraries.

High-throughput sequencing of cDNA libraries (RNA Seq) is an accurate and effective method for transcriptome profiling.

Cancer is a multistep disease driven by the activation of specific oncogenic pathways concomitantly with the loss of function of tumor suppressor genes that act as sentinels to control physiological growth. The conservation of most of these signaling pathways in Drosophila allows them to be manipulated genetically.

DISSERTATION

On

“In silico bioinformatics pipeline using development for whole genomewide detection of methylation context in *Gasterosteus aculeatus* adult fin”

Worked done by

Mr. Piyush Shalikram Dhandar

P.G. Department of Bioinformatics,

Shri. Shivaji science college, Amravati-444603

Maharashtra, India.

A thesis submitted in partial fulfillment of the requirement for the degree of

MASTER OF SCIENCE IN BIOINFORMATICS

Submitted to



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Under the guidance of

Mr. Rajesh Kumar Mahato

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Certificate

This is to certify that **Mr. Piyush Shalikram Dhandar** has completed the project – “**In silico bioinformatics pipeline using development for whole genomewide detection of methylation context in Gasterosteus aculeatus adult fin**”. Under my guidance and submitted the project report. Laid down by **Shri Shivaji Science College, Amravati**. The material that has been obtained from other source is duly, acknowledged in the dissertation. It is further certified that the work or its part has not been, submitted to any other university for examination under my supervision. I consider this work worthy for the award of degree of **M.Sc. Bioinformatics**.



Place: Pune, India

Date: 16th January, 2020

Mr. Rajesh Kumar Mahato

(Founder & CEO)

ArrayGen Technologies Pvt.Ltd.

P.G DEPARTMENT OF BIOINFORMATICS

Conclusion

There is maximum number of % methylation of **CpG methylation** found in sample species also found that as compared to human genome there is large number of methylation occurs within intergenic regions except promoters, exon and intron, etc.

P.G.Department Of Bioinformatics

2019-2020

DISSERATION

On

“NEW DRUG DESIGN FOR BREAST CANCER THROUGH BINDING FREE ENERGY CALCULATIONS”

Worked done by

Miss. Rajni Ishwar Nanhe

P.G. Department of Bioinformatics,

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Maharashtra, India.

A thesis submitted in partial fulfillment of the requirement for the degree of

MASTER OF SCIENCE IN BIOINFORMATICS

Submitted to



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Shri Shivaji Science College,Amravati

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P.G.Department Of Bioinformatics**2019-2020**



Shri Shivaji Science College, Amravati

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CERTIFICATE

This is to certify that Mr. /Miss. Rajni Ishwar Nanhe of M. Sc. IInd year (Semester-IV) BIOINFORMATICS has completed the project work as per the Sant Gadge Baba Amravati University syllabus for the academic session 2019-20.

External Examiner

Teacher In-charge

Coordinator

P. G. Department of Bioinformatics

P. G. Department of Bioinformatics

Shri Shivaji Science College, Amravati

Page 1

P.G.Department Of Bioinformatics**2019-2020****Shri Shivaji Science College, Amravati****Page 1**

CONCLUSION

Comparisons of the calculated binding affinities for structurally similar Inhibitors to **ARZOXIFENE** indicate that the molecular mechanics methods gave suitable analogues. These results clearly indicate that before synthesis and biochemical testing of new analogs, one can use molecular mechanics based methods for qualitative assessment of relative binding affinities for speeding up drug discovery process by eliminating less potent compounds from synthesis.

The inhibitors **4** with the Substituent **CL** identified as the most suitable analogue in the present study that needs to be further evaluated in laboratory.

P. G. DEPARTMENT OF BIOINFORMATICS

DISSERTATION**On****“Untapping Diversity through Metagenomics Using Public NGS Data”****Work done by****Miss. Gayatri Suresh Rao Bhidkar****P.G. Department of Bioinformatics,****Shri Shivaji Science College, Amravati-444603****Maharashtra, India.****A thesis submitted in partial fulfillment of the requirement for the degree of****MASTER OF SCIENCE IN BIOINFORMATICS****Submitted to****Shri Shivaji Science College, Amravati****Sant Gadge Baba Amravati University, Amravati (M.S.) India****Under the guidance of****Mr. Rajesh Kumar Mahato****(Founder & CEO)****ArrayGen Technologies Pvt Ltd****Godai Niwas 19, Shivaji Chowk,****Mokate Chawl, Kothrud,****Near Shivaji Statue, Pune – 411 038****Email: info@arraygen.com****Website: www.arraygen.com**

Shri Shivaji Science College, Amravati

P. G. DEPARTMENT OF BIOINFORMATICS

CERTIFICATE

This is to certify that Miss. Gayatri Sureshrao Bhidkar of M. Sc. IInd year (Semester-IV) BIOINFORMATICS has completed the project work as per the Sant Gadge Baba Amravati University syllabus for the academic session 2019-20.

External Examiner

Teacher In-charge

P. G. Department of Bioinformatics

Coordinator

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Certificate

*This is to certify that Miss. Gayatri Suresh Rao Bhidkar from Shri. Shivaji Science College, Amravati has successfully completed **one month (4 weeks)** internship on **“Untapping Diversity through Metagenomics Using Public NGS Data”** at ArrayGen Technologies Pvt. Ltd. from **16th December 2019 to 16th January 2020.***



Place: Pune, India

Mr. Rajesh Kumar Mahato

Date: 16th January, 2020

(Founder & CEO)

ArrayGen Technologies Pvt Ltd

CONCLUSION

Metagenomics offers the information about population rather than individuals, which is more representative of natural world. It has changed the way microbiologists approach many problems, redefined the concept of a genome, and accelerated the rate of gene discovery. The potential for application of metagenomics to biotechnology seems endless. Functional screens have identified new enzymes and antibiotics and other reagents in libraries from diverse environments. A number of barriers have limited the discovery of new genes that provide insight into microbial community structure and function or that can be used to solve medical, agricultural, or industrial problems.

The application of metagenomics sequence information will facilitate the design of better culturing strategies to link genomic analysis with pure culture studies in the sample.

From the above study it is observed that all the samples have some kind of diversity in its own. More than two to three species of organisms are observed in a sample.

Different colour in a sample indicates the diversity in it. Mainly three colours are observed in the tree diagram from which red colour is for sample SRR10447745, blue colour is for sample SRR10447749 and green colour is for the sample SRR10447755.

P.G.DEPARTMENT OF BIOINFORMATICS

DISSERTATION

On

“Analysis of protein-DNA interaction using model based peak calling tool MACS2”

Work done by

Namrata Prabhakar Gawande

P.G. Department of Bioinformatics,

Shri Shivaji science college, Amravati-444603

Maharashtra, India.

A thesis submitted in partial fulfilment of the requirement for the degree of

MASTER OF SCIENCE IN BIOINFORMATICS

Submitted to



Shri Shivaji Science College, Amravati

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Under the guidance of

Mr. Rajesh Kumar Mahato

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Shri Shivaji Science College, Amravati

P. G. DEPARTMENT OF BIOINFORMATICS

CERTIFICATE

This is to certify that Mr. /Miss. Namrata Prabhakar Gawande of M. Sc. IInd year (Semester-IV) BIOINFORMATICS has completed the project work on “Analysis of protein-DNA interaction using model based peak calling tool MACS2” per the Sant Gadge Baba Amravati University syllabus for the academic session 2019-20.

External Examiner

Teacher In-charge

Coordinator

P. G. Department of Bioinformatics

P. G. Department of Bioinformatics

Shri Shivaji Science College Amravati

Page 2

1.

P.G.DEPARTMENT OF BIOINFORMATICS

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Mobile: +91 9673625446

Website: www.arraygen.com

CIN No.: U74900PN2015PTC157410

Certificate

This is to certify that Ms. Namrata Prabhakar Gawande of Shri Shivaji Science College Amravati has successfully completed one month internship on “Analysis of protein-DNA interaction using model based peak calling tool MACS2” at ArrayGen Technologies Pvt. Ltd. from 16th December, 2019 to 16th January, 2020.



Date-22/9/2020
Place: Pune, India

Mr. Rajesh Kumar Mahato
(Founder & CEO)
ArrayGen Technologies Pvt Ltd

Conclusion:

To annotate the location of a given peak in terms of genomic features, `annotatePeak` assigns peaks to genomic annotation in “annotation” column of the output, which includes whether a peak is in the TSS, Exon, 5’ UTR, 3’ UTR, Intronic or Intergenic. Many researchers are very interesting in these annotations. TSS region can be defined by user and `annotatePeak` output in details of which exon/intron of which genes as illustrated in previous section.

Pie and Bar plot are supported to visualize the genomic annotation.

DISSERTATION

On

“Targeted exom sequencing panel as a powerful tool to identify the causative mutation in patient suspected of Amyotrophic Lateral Sclerosis (ALS).”

Worked done by

Mr. Aniket Ganesh Nage & Miss. Pranali Nandkishor Kale

P.G. Department of Bioinformatics,

Shri. Shivaji Science College, Amravati-444603

Maharashtra, India.

A thesis submitted in partial fulfillment of the requirement for the degree of

MASTER OF SCIENCE IN BIOINFORMATICS

Submitted to



Shri Shivaji Science college, Amravati

Sant Gadge Baba Amravati University, Amravati (M.S.)-India

Under the guidance of

Mr. Rajesh Kumar Mahato

ArrayGen Technologies Pvt. Ltd

Raj Tower 3rd Floor, Shivaji Chowk,

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Shri Shivaji Science College, Amravati

P. G. DEPARTMENT OF BIOINFORMATICS

CERTIFICATE

This is to certify that Mr. Aniket Ganesh Nage & Miss Pranali Nandkishor Kale of M. Sc. IInd year (Semester-IV) BIOINFORMATICS has completed the project work as per the Sant Gadge Baba Amravati University, Amravati syllabus for the academic session 2019-20.

External Examiner

Teacher In-charge

P. G. Department of Bioinformatics

Coordinator

P. G. Department of Bioinformatics

**ArrayGen Technologies Pvt. Ltd.**

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CIN No.: U74900PN2015PTC157410

Certificate

This is to certify that **Mr. Aniket Ganesh Nage & Miss. Pranali Nandkishor Kale** has completed the project – “**Targeted exom sequencing panel as a powerful tool to identify the causative mutation in patient suspected of Amyotrophic Lateral Sclerosis (ALS).**”. Under my guidance and submitted the project report. Laid down by **Shri Shivaji Science College, Amravati**. The material that has been obtained from other source is duly, acknowledged in the dissertation. It is further certified that the work or its part has not been, submitted to any other university for examination under my supervision. I consider this work worthy for the award of degree of **M.Sc. Bioinformatics**.



Place: Pune, India

Date: 16th January, 2020

Mr. Rajesh Kumar Mahato

(Founder & CEO)

ArrayGen Technologies Pvt. Ltd.

5.3 CONCLUSION

These 82 SNPs were responsible for Amyotrophic Lateral Sclerosis (ALS) disorder. This disease panel will help us to know on what position a Single Nucleotide has got altered and turned the normal genome into abnormal genome.

DISSERTATION**On****“Transcriptome Profiling and Differentially Gene Expression of B-cell in disease sample using Microarray Technique”****Worked done by****Miss. Ankita Deshmukh****P.G. Department of Bioinformatics,****Shri. Shivaji Science College, Amravati-444603****Maharashtra, India.****A thesis submitted in partial fulfillment of the requirement for the degree of****MASTER OF SCIENCE IN BIOINFORMATICS****Submitted to****Shri Shivaji Science college, Amravati****Sant Gadge Baba Amravati University, Amravati (M.S.)-India****Under the guidance of****Mr. Rajesh Kumar Mahato****ArrayGen Technologies Pvt. Ltd****Raj Tower 3rd Floor, Shivaji Chowk,****near Shivaji statue,****Kothrud, Pune, Maharashtra 411038****Email: info@arraygen.com****Mobile: +91 2025395446****Website: www.arraygen.com**



Shri Shivaji Science College, Amravati
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CERTIFICATE

This is to certify that Miss. Ankita Deshmukh of M. Sc. IInd year (Semester-IV) BIOINFORMATICS has completed the project work as per the Sant Gadge Baba Amravati University, Amravati syllabus for the academic session 2019-20.

External Examiner

Teacher In-charge

P. G. Department of Bioinformatics
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Coordinator

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Certificate

This is to certify that **Miss. Ankita Deshmukh** has completed the project – “**Transcriptome Profiling and Differentially Gene Expression of B-cell in disease sample using Microarray Technique.**” Under my guidance and submitted the project report. Laid down by **Shri Shivaji Science College, Amravati**. The material that has been obtained from other source is duly, acknowledged in the dissertation. It is further certified that the work or its part has not been, submitted to any other university for examination under my supervision. I consider this work worthy for the award of degree of **M.Sc. Bioinformatics**.



Place: Pune, India

Mr. Rajesh Kumar Mahato

Date: 9th March, 2020

(Founder & CEO)

ArrayGen Technologies Pvt.Ltd.

Conclusion

Global gene expression profiling examines led throughout the most recent few years have demonstrated that atomic profiling of breast cancers can be utilized to distinguish clinically and genetically significant subtypes of breast carcinomas and subgroups of patients with various visualization or infection result, and to foresee therapeutic reaction to both endocrine and chemotherapeutic medications. We contemplated one especially forceful type of privately progressed breast cancer, specifically inflammatory breast cancer (IBC) using cDNA micro arrays. We showed that IBC is described by an alternate gene expression profile, not identified with any of the recently recognized breast cancer subtypes. This gene expression profile uncovered possible therapeutic targets, for example, the record factor NF-kappaB. Gene expression examination using cDNA microarrays is a procedure to all the while break down the expression of thousands of genes. Using cDNA microarrays, complex examples of gene expression can be decoded. Taken together, the aftereffects of our complete bioinformatics examination indicated that the DEGs distinguished between arranged from 17 patients with Microarray based gene expression profiling arranged from 9 controls could assume a significant role in the growth, progression, and development of CEL-Records. This investigation recognized 6 upregulated and 58 downregulated genes, including fundamental genes from the pathway advancement examination. The broad understanding of CEL-FILES pathophysiology from this study will allow us to identify and develop therapies targeting CEL FILES and contribute to personalized treatment strategies. Collectively, the study findings could aid in enhancing our understanding of the fundamental molecular processes of Microarray based gene expression profiling and provide possible strategies for early diagnosis in Microarray based gene expression profiling. Microarray based gene expression profiling has been emerged as an efficient technique for diagnosis, prognosis, and treatment purposes. Gene Expression Profiling is performed on Data of Inflammatory breast cancer using microarray data analysis. R is the most popular platform used for microarray data analysis. The microarray data is normalized using Robust Multiarray Average method. Gene Ontology and pathway analysis are performed to find out the pathways associated with these differentially expressed genes. It is observed that the genes with the gene symbols- FBXO32, SERPINB4, GBP1, NPY1R, MMP7 were found to be highly expressed genes. In future work for the highly expressed genes, their gene products will be identified which will be further help in the drug discovery.


Dr. H. S. LUNGE
IQAC Coordinator
Shri Shivaji Science College
Amravati.




Principal
Shri Shivaji Science College
AMRAVATI.

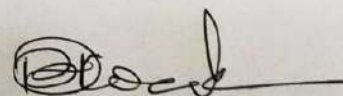
Department of Botany

List of the Students under taking Field Projects

SHRI SHIVAJI SCIENCE COLLEGE, AMRAVATI DEPARTMENT OF BOTANY M.Sc. II Sem. IV Summer -2020 Project -2019-20			
Sr. No.	Name of Students	Name of Project Title	Supervisor
1	Akshay Vijay Chavhan	Phytochemical and antibacterial study of canavalia gladiata	Dr. T.B.W.
2	Ku. Aboli Digambar Raut	Study of Trichomes in some plants of Amravati Region	Dr. S.V. P.
3	Ku. Ankita Dipakrao Sande	Mycoflora associated with jaggery.	Dr. G.B.H.
4	Ku. Ankita Milind Tayade	Occurance and diversity of AM fungi associated with cinnamomum tamala. from Shri Shivaji Science College, Amravati	Dr. R.C.M.
5	Ku. Diksha Bhojraj Khadse	Phytochemical And Antibacterial Study Of Phyllanthus amarus	Dr. T.B.W.
6	Ku. Mansi Rajkumar Mudliar	Occurance and diversity of AM fungi associated with Elettaria cardamomum M. from Shri Shivaji Science College, Amravati.	Dr. R.C.M.
7	Ku. Namrata Gajanan Likhe	Mycopathological investigation on cotton from yavatmal district	Dr. D.V.H.
8	Ku. Nikita Rajendra Satpute	The effect of different colours gelatin film's on plant growth, yield and plant pigment of Fenugreek	Dr. D.D. K.
9	Ku. Nileema Ramesh Rao Lambe	Mycoflora associated with the sooty Mould	Dr. G.B.H.
10	Ku. Nisha Dayashankar Mahule	Mycopathological investigation of soyabean from Yavatmal District	Dr. D.V.H.
11	Ku. Pranali Dilip Karale	Compilation of plants used for weight gain in ethnobotanical aspects	Prof. B.K.D.
12	Ku. Pranjali Khandeshwar Wajge	Morphological Studies and Medicinal uses of Herbs and Shrubs of Shri Shivaji Science College, Amravati Campus	Mr. A.N.D.
13	Ku. Pranjali Rajkumar Bhoge	Mycoflora associated with Chilli , Turmeric & Ginger	Dr. G.B.H

14	Ku. Priyanka Tulsiram Kakad	Compilation of medicinal plants used for skin care in ethnobotanical aspects	Prof. B.K.D.
15	Ku. Rasika Rajesh Kakde	Phytochemical and Antibacterial Study of <i>Coccinia indica</i>	Dr. T.B.W.
16	Ku. Renuka Sunilrao Wankhade	Anatomical Study of some Plants in Family Fabaceae	Dr. S.V.P.
17	Ku. Sadiya Sadaf Zulfuddin	Phytochemical and antibacterial study of <i>Ruta graveolens</i>	Dr. T.B.W.
18	Ku. Sneha Hariram Yadan	Effect of different color shade net on fenugreek plant growth.	Dr. D.D. K.
19	Ku. Vaishavi Vilasrao Gawande	Diversity And Occurance Of Fungi Of Cattle Feed From Anjangaon District Amravati	Dr. D.V.H.
20	LKV Pawar	Compilation of plants used for weight loss in ethnobotanical aspects	Prof. B.K.D.
21	Ku. Sakshi Vinodrao Wankhade	Can food By-products be used as a natural supplement	Dr. D.D. K.
23	Vaibhav Prakash Wadode	Study of Morphology and Medicinal uses of Trees and Climbers of Shri Shivaji Science College, Amravati Campus	Mr. A.N.D.

Date - 30-3-2020



Prof. B. K. Dorkar
Associate Professor & Head
Department of Botany
Shri Shivaji Science College, Amravati

Title and Place of Work

**SHRI SHIVAJI SCIENCE COLLEGE
AMRAVATI MAHARASHTRA – 444603**

**A UGC Awarded College With Potential For Excellence
NAAC Reaccredited “A” “Very Good” Grade**



PROJECT REPORT

**PHYTOCHEMICAL AND ANTIBACTERIAL STUDY OF CANAVALLIA
GLADIATA**

Submitted to Sant Gadge Baba Amravati University, Amravati

as a partial fulfillment for the Degree of

MASTER OF SCIENCE IN BOTANY

In the faculty of Science

By

Mr. Akshay V .Chavhan

M.Sc. II (Botany)

Supervisor

Dr. Tushar B. Wankhede

Associate Professor

Department Of Botany Shri. Shivaji

Science College, Amravati

Place of work

DEPARTMENT OF BOTANY

SHRI SHIVAJI SCIENCE COLLEGE, AMRAVATI

2019-2020

Project Work Completion

**CERTIFICATE**

This is to certify that **Mr. Akshay V. Chavhan** Department of Botany, Shri Shivaji Science College, Amravati has completed her project report entitled **“PHYTOCHEMICAL AND ANTIBACTERIAL STUDY OF CANAVALLIA GLADIATA”** submitted for award of the degree of Master of Botany during the year **2019-2020** under my guidance and this work has not formed on the basis for award of any degree, diploma, associated fellowship, or other title in the this University or Institute of higher learning.

Place: Amravati

Date:

Roll No:

Dr. Tushar B.Wankhede

Associate Professor

Dept. of Botany

Shri Shivaji Science College, Amravati

Forwarded By

Prof. B. K. Dorkar

Head, Dept. of Botany

Shri Shivaji Science College Amravati.

Acetone showed less activity against species *E.coli*, *S.aureus*, *P. aeruginosa*, *K. pneumonia*, methanol showed less activity against *Enterococcus*. Considering antimicrobial potential of the solvents, methanol and ethanol were found most reactive against all organisms. Hence it is concluded that all the *Canavalia gladiata* extract reacted to the most of the gram negative bacteria as compared to gram positive bacterial strain.

The antimicrobial property of *Canavalia gladiata* is well known to the present world due to presence of their medicinally and pharmacologically interesting substances. The presence of alkaloids, flavonoids, tannins, saponins and glycosides confirms the medicinal importance among the higher angiosperms.

Hence, it is concluded that all the *Canavalia gladiata* extracts reacted to most of the gramnegative bacteria than gram-positive bacteria. It is observed that all the conventional drugs available today reacts more with gram-positive bacterial strains than gram-negative bacteria. These findings will open new avenues and provide insight to the prospects of medicinal world.

From the analysis of phytochemical first we can study that the compound like Alkaloid are present in both leaf and stem, Flavonoids are present in stem than that of leaf, Saponins are mostly present in the stem only. Like that the phenol are also only present in the stem. The tannins are found in both leaf and stem and terpenoids are also find in leaf and stem. The plant shows the presence of many phytochemicals which are responsible for various pharmacological medicinal properties. The pharmacological studies show that different parts of plant posses anti-inflammatory, anti-oxidant, anti-microbial, anti- HIV, cytotoxic and antiJapanses encephalitis activities.

Based on the result of this study it can be said that *Canavalia gladiata* has a leading capacity for the development of new good efficacy drugs in a future and can be effective source to treat and control many diseases.

With the advancement of various techniques and moderns instrument like [GC]- Gas Chromatography[MS]- Mass spectroscopy,[NMR]-spectroscopy isolation as well as structure elucidation of novel compound can be determine. The present status of knowledge in this matter reveals that medicinal plants in a future may prove to be rich store house of hit hero unknown drugs.

Conclusion

The leaves of *Canavalia gladiata* are the good source of bioactive compounds with antimicrobial potential against different pathogenic bacteria. This primary data of evaluation of antimicrobials will be helpful for future researchers for further exploration of diverse potential of the plants in the field of pharmacology and herbal medicine.

**SHRI SHIVAJI SCIENCE COLLEGE
AMRAVATI MAHARASHTRA – 444603**

**A UGC Awarded College With Potential For Excellence
NAAC Reaccredited “A” “Very Good” Grade**



Project Report

**STUDY OF TRICHOMES IN SOME PLANTS OF AMRAVATI
REGION**

Submitted to Sant Gadge Baba Amravati University, Amravati

as a partial fulfillment for the Degree of

MASTER OF SCIENCE IN BOTANY

In the faculty of Science

By

Miss. ABOLI DIGAMBAR RAUT

M.Sc. II (Botany)

Supervisor

Dr. Swati V. Pundkar

Assistant Professor

Department Of Botany

Shri. Shivaji Science College, Amravati

Place of work

DEPARTMENT OF BOTANY

SHRI SHIVAJI SCIENCE COLLEGE, AMRAVATI

2019-2020



CERTIFICATE

This is to certify that **MISS. ABOLI DIGAMBAR RAUT** Department of Botany, Shri Shivaji Science College, Amravati has completed her project report entitled **“STUDY OF TRICHOMES IN SOME PLANTS OF AMRAVATI REGION”** submitted for award of the degree of Master of Botany during the year **2019-2020** under my guidance and this work has not formed on the basis for award of any degree, diploma, associated fellowship, or other title in this University or Institute of higher learning.

Place: Amravati

Date: 23/09/2020

Roll No:

Dr. Swati V. Pundkar
Assistant Professor
Dept. of Botany
Shri Shivaji Science College,
Amravati

Forwarded By
Prof. B. K. Dorkar
Head, Dept. of Botany
Shri Shivaji Science College Amravati.

DISCUSSION AND CONCLUSION

The trichomes of 12 genus belonging to 8 family is studied. Glandular and Non-glandular trichomes are of various types. In most of the genus Non-glandular trichomes appeared. Non-glandular trichomes are very particular i.e. they are unicellular and multicellular apart from this any another types has not been observed.

Trichomes may be found singly or less frequently in groups. They may be unicellular or multicellular and occur in various forms. They vary from small protuberances of the epidermal cells to complex branched or stellate multicellular structures. The cells of the hairs may be dead or living. Trichomes (/ˈtraɪkəʊmz/ or /ˈtrɪkəʊmz/), from the Greek τρίχωμα (trichōma) meaning "hair", are fine outgrowths or appendages on plants, algae, lichens, and certain protists.

Trichomes are usually flexuous, solitary or entangled in clusters, or forming thin, membranaceous thalli without sheaths (exceptionally with very fine mucilaginous layers around the trichomes); they are always nonmotile. Trichomes are up to 3 μm wide; they are usually not constricted at the cross walls, sometimes slightly attenuated at the ends, and not capitate.

Trichomes are epidermal protuberances located on aerial parts of plant such as stem, leaf, branch and petiole or it may present on whole plant body. Trichomes are found in various family such as asteraceae, malvaceae, lamiaceae, verbiniaceae, fabaceae, acanthaceae, solanaceae, etc. The trichome types have been successfully used in the classification of genera and even of species in certain families and in the recognition of interspecific hybrids

In *Osimum sanctum*, *Tridax procumbens*, *Helianthus annuus*, *Centratherum punctatum*, *Datura metal* non-glandular with multicellular type of trichomes are observed.

In *Gossypium hirsutum*, *Brassica nigra*, *Glycine max*, *Lantana camera*, *Ageratum conyzoides*, *Trichodesma indicum* non-glandular with unicellular type of trichomes are observed.

In *Cicer arietinum* both glandular and non-glandular with unicellular type of trichome are observed.

SHRI SHIVAJI SCIENCE COLLEGE
AMRAVATI MAHARASHTRA – 444603

**A UGC Awarded College With Potential For Excellence NAAC
Reaccredited “A” “Very Good” Grade**



Project Report

**Mycoflora Associated With Jaggery From Amravati
Region**

Submitted to Sant Gadge Baba Amravati University,
Amravati as a partial fulfillment for the Degree of

MASTER OF SCIENCE IN BOTANY

In the faculty of Science

By

Miss. Ankita Dipakrao Sande
M.Sc. II (Botany)

Supervisor

Dr. Ganesh B. Hedawoo
Assistant Professor
Department Of
Botany

Shri Shivaji Science College, Amravati

Place of work

PG DEPARTMENT OF BOTANY

SHRI SHIVAJI SCIENCE COLLEGE, AMRAVATI

2019-2020

CERTIFICATE

This to certify that I have been supervise the project work of **Miss. Ankita Dipakrao Sande** entitled “**MYCOFLORA ASSOCIATED WITH JAGGERY FROM AMRAVATI REGION**” for the partial fulfillments of Master of Science in Botany in the faculty of Science, Sant Gadge Baba Amravati University, Amravati.

Place: Amravati

Date: 23/ 09/ 2020

Supervisor: -

Dr. Ganesh B. Hedawoo
Assistant Professor, Department Of Botany,
Shri Shivaji Science College, Amravati.

Forwarded by: -

Prof. B.K. Dorkar
Asso. Professor and
Head Of Department Of Botany,
Shri Shivaji Science College, Amravati.

CHAPTER-V

CONCLUSIONS

- Total 6 sample were observed mycoflora were reported on jaggery. The highest number of air borne fungal spores like *Aspergillus flavus*, *Aspergillus niger*, *Aspergillus glaucus*, *Cladosporium herbarum*, *Fusarium moniliforme*, *Colletotrichum falcatum.*, *Rhizopus nigricans*, *Colletotrichum gloeosporioides* were reported during investigation period in study area and these fungal spores causes various diseases to human being.
- Dominant fungal species isolated by which causes fungal infection on jaggery was recorded as *Aspergillus*.
- Fungi were isolated on agar plate method and serial dilution method.
- Isolated fungal pathogens were *Aspergillus flavus*, *Aspergillus niger*, *Aspergillus glaucus*, *Cladosporium herbarum*, *Fusarium moniliforme*, *Colletotrichum falcatum*, *Rhizopus nigricans*, *Colletotrichum gloeosporioides*.
- Precautionary measures are to be taken prevent to prevent the outcome of fungal infections contracted in Amravati region in this effected environment. There is a greater need to develop the Amravati environment through the new innovative technological tools and diagnostic preventive steps. There is also a greater need to study the air polluted fungal infections and to make the environment congenial for study.
- The given study has shown that jaggery can grow toxic microfolora in this study have observed *Aspergillus flavus*, *Aspergillus niger*, *Aspergillus glaucus*, *Cladosporium herbarum*, *Fusarium moniliforme*, *Colletotrichum falcatum.*, *Rhizopus nigricans*, *Colletotrichum gloeosporioides* which are very harmful to human body.

SHRI SHIVAJI SCIENCE COLLEGE
AMRAVATI MAHARASHTRA – 444603

A UGC Awarded College With Potential For Excellence
NAAC Reaccredited “A” “Very Good” Grade



PROJECT REPORT

***Occurance and diversity of AM fungi associated with CINNAMOMUM
TAMALA”***

Submitted to Sant Gadge Baba Amravati University, Amravati

as a partial fulfillment for the Degree of

MASTER OF SCIENCE IN BOTANY
In the faculty of Science

By

Miss. Ankita M Tayade
M.Sc. II (Botany)

Supervisor

Dr. Rekha C, Maggirwar
Associate Professor
Department Of Botany
Shri. Shivaji Science College, Amravati

Place of work

DEPARTMENT OF BOTANY
SHRI SHIVAJI SCIENCE COLLEGE, AMRAVATI
2019-2020

CERTIFICATE

This is to certify that **Miss. Ankita M.Tayade** Department of Botany, Shri Shivaji Science College, Amravati has completed her project report entitled “**Occurance and diversity of AM fungi associated with CINNAMOMUM TAMALA**” submitted for award of the degree of Master of Botany during the year 2019-2020 under my guidance and this work has not formed on the basis for award of any degree, diploma, associated fellowship, or other title in the this University or Institute of higher learning.

Place: Amravati

Date:

Roll No:

Dr. Rekha C. Maggirwar
Associate Professor
Dept. of Botany
Shri Shivaji Science College,
Amravati

Forwarded By
Prof. B. K. Dorkar
Head, Dept. of Botany
Shri Shivaji Science College Amravati.

CHAPTER V

CONCLUSION

- Mycorrhizae are major components of soil ecosystems and thus are essential for the survival of plant species.
- The Mycorrhizal association is one of nature's boons for sustainable agriculture.
- The AMF is associated with *Cinnamomum tamala* (Buch.-Ham.) T. Nees & C.H. Eberm.
- All the slides showing characteristics features of AMF were recorded.
- Soil trap culture to mass multiply the native AMF species associated with *Cinnamomum tamala* was established.
- There is a need to spread awareness in order to save Mycorrhizal fungi from extinction.

**PHYTOCHEMICAL AND ANTIBACTERIAL STUDY OF
PHYLLANTHUS AMARUS**

PROJECT REPORT

Submitted To Sant Gadge Baba Amravati University, Amravati

As a partial fulfillment for the Degree of

MASTER OF SCIENCE IN BOTANY

In the faculty of Science

By

Miss. Diksha B. Khadse

M.Sc. II (Botany)

Supervisor

Dr. Tushar B. Wankhede

Associate Professor

Department Of Botany

Shri Shivaji Science College, Amravati

Place of work



DEPARTMENT OF BOTANY

SHRI SHIVAJI SCIENCE COLLEGE, AMRAVATI

NAAC Re-accredited with “A” Grade

2019-2020



CERTIFICATE

This is to certify that i **Miss. Diksha B. Khadse** Department of Botany, Shri Shivaji Science College, Amravati has completed her project report entitled **“PHYTOCHEMICAL AND ANTIBACTERIAL STUDY OF PHYLLANTHUS AMARUS ”** submitted for award of the degree of Master of Botany during the year **2019-2020** under my guidance and this work has not formed on the basis for award of any degree, diploma, associated fellowship, or other title in the this University or Institute of higher learning.

Place: Amravati

Date:

Roll No:

Dr. Tushar B.Wankhede
Associate Professor
Dept. of Botany
Shri Shivaji Science College,
Amravati

Forwarded By
Prof. B. K. Dorkar
Head, Dept. of Botany
Shri Shivaji Science College Amravati.

**“OCCURANCE AND DIVERSITY OF AM FUNGI
ASSOCIATED WITH ELETTARIA CARDAMOMUM
L. FROM SHRI SHIVAJI SCIENCE COLLEGE,
AMRAVATI”**

-: PROJECT REPORT :-

**Submitted to Sant Gadge Baba Amravati University,
Amravati as a partial fulfillment for the Degree of**

**MASTER OF SCIENCE IN BOTANY
in the faculty of Science.**

-: By :-

Miss. Mansi Rajkumar Mudliar

M.Sc. II (Botany)

-: SUPERVISOR:-

Dr. Rekha C. Maggirwar

Asst. Professor
Department of Botany,
Shri Shivaji Science college, Amravati.

-: PLACE OF WORK :-



DEPARTMENT OF BOTANY

SHRI SHIVAJI SCIENCE COLLEGE, AMRAVATI.

**NAAC Reaccredited "A Grade" College with CGPA 3.13 in Third Cycle
2019-2020**

CERTIFICATE

This is to certify that work incorporated in the project entitled

**“ Occurrence and diversity of AM fungi associated with Elettaria cardamomum L. from
shri Shivaji science college, Amravati”**

*Submitted by Mansi R. Mudliar was carried out by candidate herself under my
supervision for the degree of Master of Science in botany.*

Place : Amravati

Date :

Remaggirwar

Supervisor :-

Dr. Rekha C. Maggirwar

Asst. Professor

Department of Botany,

Shri Shivaji Science college, Amravati.

Forwarded by :-

Prof. B. K. Dorkar

Head, P.G. Department of Botany,

Shri Shivaji science college,

Amravati.

CHAPTER V CONCLUSION

- *Elettaria cardamomum* is found to be associated with AM fungi.
- Proper selection of efficient AM fungi is an important step for developing any mycorrhizal inoculation program.
- Spore numbers tend to increase with age of the crop. Chaurasia and Khare have worked for mass production of AM fungi with four different host plants and reported a gradual increase in root colonization and spore number with period of growth and increase in size of the plants.
- The pot culture was maintained to develop culture of variable spores. For sustainable development of agriculture the native most dominant and some more species of AMF can be taken into account in near future as biofertilizer after its mass multiplication.
- The attempt has been made for the trap culture of the most dominant AMF species. These results could be of potential interest to growers who wish to cultivate Cardamom species.
- As there is a need to take efforts for making cardamom a supplementary business for agriculture along with its conservation and nurturing. The native most dominant and some more species of AMF can be taken into account in near future as biofertilizer after its mass multiplication.
- The enhancement of growth and vigour and increase in production of *Elettaria cardamomum* plant may be achieved by inoculation of the roots with arbuscular mycorrhizal *fungi* species. These approaches will increase our scope to manipulate the symbiosis in conversion schemes.

**Mycopathological investigation of cotton
From Yavatmal District**

SHRI SHIVAJI SCIENCE COLLAGE

AMRAVATI MAHARASHTRA – 444603

A UGC Awarded Collage with Potential for Excellence

NAAC Reaccredited “A” “Very Good” Grade



PROJECT REPORT

Submitted to Sant Gadge Baba Amravati University, Amravati

As a partial fulfilment for the Degree of

MASTER OF SCIENCE IN BOTANY

In the faculty of Science and Technology

BY

Miss. Namrata Gajanan Likhe

M.Sc. II (Botany)

Supervisor

Dr. D. V. Hande

Associate Professor

Department of Botany

Shri. Shivaji Science Collage, Amravati

PLACE OF WORK

SHRI SHIVAJI SCIENCE COLLAGE, AMRAVATI

2019-2020

CERTIFICATE

This is to certify that **Miss. Namrata Gajanan Likhe** Department of botany shri. Shivaji science collage, Amravati has completed her project report entitled "**mycopathological investigation of cotton from Yavatmal District**" submitted for award of the Degree of Master of botany during the year **2019-2020** under my guidance and this work has not formed on the basis for award of any Degree Diploma associated fellowship, or other title in the this university or institute of higher learning.

Place: Amravati

Date:

Roll No:

Dr. D. V. Hande

Associate Professor

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FORWARDED BY

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CHAPTER-V

DISCUSSION AND CONCLUSION

In present study of mycopathological investigation on cotton crop, shows different diseases on crop like angular leaf spot, grey mildew of cotton, root rot disease, etc many diseases like this shows different causal organisms and shows Leaf spots and powdery mildew were observed in dominant forms. Dominant fungal pathogen which caused leaf spots was recorded as *Xanthomonas axonopodis* and *Ramularia Gossypii*.

Xanthomonas axonopodis* pv. *Malvacearum was found on cotton infected leaf angular leaf spot. There is considerable genetic variability for resistance to bacterial blight within the genus *Gossypium*. The full range of disease expression, from fully susceptible to highly resistant, is found in the Upland cottons (*G. hirsutum*). One crop season without cotton is usually sufficient to virtually eliminate crop residues as a source of primary inoculum. If this is combined with seed certification to ensure that crops used for seed production are free of bacterial blight, the disease can be controlled even where susceptible varieties are grown (Schnathorst, 1966). Cotton seed can also be treated with bactericides to reduce the risk of seed transmission (see Seed Treatment under Seedborne Aspects of Disease). Although bacterial blight is found in all the major cotton-producing areas of the world, it has declined in importance in the 1990s due to the wide availability of resistant varieties. However, it remains a potentially important disease because of the variability of the pathogen and the appearance of new races.

Ramularia Gossypii pathogen was found in infected cotton grey mildew leaf. The intensity of ramulosis was higher in the first experiment when plants were inoculated. Younger plants are more susceptible to ramulosis, since the pathogen is primarily associated with meristems and young tissues (Araújo et al., 2003). CG strains induced late foliar symptoms on inoculated plants that did not spread to other plant organs until the end of the experiments. These results agree with the generally accepted hypothesis that ramulosis and foliar anthracnose of cotton are distinct diseases, caused by two different, but closely related pathogens. Symptoms of ramulosis and anthracnose observed on cotton plants during the pathogen

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Project Report

The effect of different colours gelatin films on plant growth, yield and plant pigment of Fenugreek (*Trigonella foenum-graecum* L.)

Submitted to Sant Gadge Baba Amravati University, Amravati

as a partial fulfillment for the Degree of

MASTER OF SCIENCE IN BOTANY
In the faculty of Science

By

Miss. Nikita R. Satpute
M.Sc. II (Botany)

Supervisor

Dr. Dinesh D. Khedkar
Associate Professor
Department Of Botany
Shri. Shivaji Science College, Amravati

Place of work

DEPARTMENT OF BOTANY
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2019-2020



CERTIFICATE

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Prof. B. K. Dorkar
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Shri Shivaji Science College Amravati.

CONCLUSIONS

1. Pigments used in Gelatin films in these experiments were not stable enough for Practical application.
2. Coloured Gelatin films have different total light transmittance and ratio between transmitted light spectrums. Both parameters have changed during exploitation these experiments.
3. A trend toward fenugreek stem elongation increase was found as a result of blue gelatin film use and decrease in the control.
4. Enhanced concentration of chlorophyll a and b in the leaves of the Fenugreek was found under red and blue films.
5. According to the results of the experiments red film is not recommended for fenugreek production. Green film is optimal for fenugreek production.

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PROJECT REPORT

“SURVEY ON SOOTY MOLD DISEASES FROM AMRAVATI REGION”

**SUBMITTED TO SANT GADGE BABA AMRAVATI UNIVERSITY,
AMRAVATI AS A PARTIAL FULFILLMENT FOR THE DEGREE OF**

MASTER OF SCIENCE IN BOTANY

IN THE FACULTY OF SCIENCE

SUBMITTED BY

MISS. NILEEMA RAMESHRAO LAMBE

M.SC. II (BOTANY)

SUPERVISOR

DR. GANESH B. HEDAWOO

ASSISTANT PROFESSOR

P.G DEPARTMENT OF BOTANY

SHRI SHIVAJI SCIENCE COLLEGE, AMRAVATI

PLACE OF WORK

P.G DEPARTMENT OF BOTANY

SHRI SHIVAJI SCIENCE COLLEGE, AMRAVATI

2019-2020

CERTIFICATE

This to certify that I have been supervise the project work of **Miss. Nileema R. Lambe.** entitled “**SURVEY ON SOOTY MOLD DISEASES FROM AMRAVATI REGION**” for the partial fulfillments of Master of Science in Botany in the faculty of Science, Sant Gadge Baba Amravati University, Amravati.

Place : Amravati

Date : 23 / 09 /2020

Supervisor:-

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Asst. Professor,
Department of Botany,
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Forwarded by:-

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Asso. Professor and
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Amravati.

CONCLUSION.

Total 8 number of plant were taken for pathological observations having different families like Anacardiaceae, Rutaceae, Annonaceae, Magnoliaceae, Rhamnaceae, Fabaceae, Malvaceae, etc

- Sooty mold type of disease were observed, the fungi isolated from different plant suffering from sooty mold, samples were collected from different places.
- Sooty mold were total 8 plants *Mangifera indica*, *Citrus limon*, *Citrus sinensis*, *Annona squamosa*, *Michelia champaca*, *Ziziphus jujuba*, *Pongamia pinnata*, *Gossypium herbaceum*, etc.
- Fungi were isolated by Agar plate method.
- The sooty mold may occur as the result of an insect infection.
- The most common and destructive disease on these plants are caused by many pathogens.
- Isolated fungi pathogens are *Capnodium ramosum*, *Capnodium citri*, *Alternaria alternata*, *Cladosporium spp* etc.

We believe that this work will be useful to researchers, teachers, and students. The isolated and identified plants are maintained in the form of Agar plate method in P.G. Department of Botany, which will be useful for further research work.

**Mycopathological investigation of Soyabean from
Yavatmal District**

SHRI SHIVAJI SCIENCE COLLAGE

AMRAVATI MAHARASHTRA – 444603

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NAAC Reaccredited “A” “Very Good” Grade



PROJECT REPORT

Submitted to Sant Gadge Baba Amravati University, Amravati

As a partial fulfilment for the Degree of

MASTER OF SCIENCE IN BOTANY

In the faculty of Science and Technology

BY

Miss. Nisha Dayashankar Mahule

M.Sc. II (Botany)

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SHRI SHIVAJI SCIENCE COLLAGE, AMRAVATI

2019-2020

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This is to certify that **Miss. Nisha Dayashankar Mahule** Department of botany shri. Shivaji science collage, Amravati has completed her project report entitled **“Mycopathological investigation of soyabean from yavatmal district”** submitted for award of the Degree of Master of botany during the year **2019-2020** under my guidance and this work has not formed on the basis for award of any Degree Diploma associated fellowship, or other title in the this university or institute of higher learning.

Place: Amravati

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FORWARDED BY

B. K. Dorkar

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conclusion

At the last whole study as well as investigation concludes that there are 2 different species occurred on 1 plants causing infection to them disease fungi take their energy from the plant on which they live. They are responsible for a great deal of damage and are characterized by soyabean rust, seedling disease of soyabean etc.

Fungal diseases occur primarily on leaves , but some may also occur on stems and fruit and seed. Leaf disease are the most common disease of most plant. They are usually controlled with fungicides or resistant varieties.

Fungal disease that causes disease in plant and animal are closely related and therefore have evolved similar pathogenic strategies. We propose that all Fungal pathogens can be collectively divided into killer and non-killer , a categorization that ultimately determines their infection strategy-Immediate Killing or Prevention of date of host cells. Most fungi are Saprophytic and not pathogenic to plant. However, a relative few Fungal Species are Phytopathogenic, causes Disease (eg. Rust etc) Among such Fungi are members of the phakospora and fusarium genera. Comprising the emerging pathogen group in plant as well as in humans. These Fungi present a common threat to both agriculture Production and the health of healthy and immune compromised individuals. Taken together, these relative few fungi can cause huge economic losses to agriculture, loss of food for consumption , and serious, often fetal diseases in humans and animals. Plants may be a source of antifungal compound since they have has to develop compound to resist infection by fungi present in their environment . the aim of the study or the or the investigation is to get information about plant wise mode of infection of various fungi in various climate. With the help of this work and results we can avoid or minimize that plant infection cause by fungi to the plant. We provide the information to farmer and people to save the soyabean plant and other plants from such type of infected disease. It is not only helpful to agriculture department but also human society in many ways.

Shri Shivaji Science College, Amravati. (MH)



PROJECT REPORT

“Compilation of Plants Used for Weight Gain in the Ethnomedicinal Aspects”

Submitted to Sant Gadge Baba Amravati University, Amravati. (MH)

As a partial fulfilment for The Degree of

Master of Science in Botany

In the faculty of

Science

By

Miss. Pranal Dilip Karale

M. Sc. II (Botany)

Under the Supervision of

Mr. Bhupendra K. Dorkar

Associate Professor & Head

Department of Botany

Shri Shivaji Science College, Amravati. (MH)

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Shri Shivaji Science College Amravati MH2019 - 2020

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This is to certify that the work incorporated in the project entitled '**Compilation of Plants Used for Weight Gain in the Ethnomedicinal Aspects**' submitted by Miss. Pranal Dilip Karale was carried out by the candidate herself under my supervision for the partial fulfilment of degree of Master of Science in Botany during academic year 2019 – 2020.

Place: - Amravati

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Supervisor: - **Mr. Bhupendra K. Dorkar**

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CONCLUSION

The plants are now in wide use under the name herbal. It is now fashion or trend to use herbal products but most of the herbal product producers makes adulteration that caused harmful effects rather than the useful effect. So protect us from these harmful effects the given measures can used for weight gain naturally.

The biomolecules present in the plants used for weight gain produces thermic effects. Most of the plants content the metal ions or essential oil that are work as the cofactor or promotor of the enzymes involved in the catabolism o fat. These plants contain the fibers regulating the digestive functioning on body helping in the proper metabolism of body.

These are medicinal plants, so care must be taken. Use the home remedies directed in the project work just like medicine not in much more quantities. I hope this work will be useful for the persons searching for natural methods for weight gain.

**STUDY OF FLORA OF SHRI SHIVAJI SCIENCE COLLEGE AMRAVATI BY
USING DESCRIBE MORPHOLOGY AND MEDICINAL USES.**

PROJECT REPORT

Submitted To Sant Gadge Baba Amravati University, Amravati

As a partial fulfillment for the Degree of

MASTER OF SCIENCE IN BOTANY

In the faculty of Science

By

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DEPARTMENT OF BOTANY

SHRI SHIVAJI SCIENCE COLLEGE, AMRAVATI

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2019-2020



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Conclusion:

Morphology is the study of the form and structure of organisms and their specific structural features. Description of the diverse forms of life was made by observation through naked eyes and later on with the help of microscope. Study of external appearance of higher plants is necessary in order to describe the plants in an accurate fashion. This study enable to distinguish between similar looking plants. Plants are easily identified by their morphological characters.

Flowering plants exhibit enormous variation in shape, size, structure, mode of nutrition, life span, habit and habitat. They have well developed root and shoot systems. Root system is either tap root or fibrous. Generally, dicotyledonous plants have tap roots while monocotyledonous plants have fibrous roots. The roots in some plants get modified for storage of food, mechanical support and respiration. The shoot system is differentiated into stem, leaves, flowers and fruits. The morphological features of stems like the presence of nodes and internodes, multicellular hair and positively phototropic nature help to differentiate the stems from roots. Stems also get modified to perform diverse functions such as storage of food, vegetative propagation and protection under different conditions. Leaf is a lateral outgrowth of stem developed exogeneously at the node. These are green in colour to perform the function of photosynthesis. Leaves exhibit marked variations in their shape, size, margin, apex and extent of incisions of leaf blade (lamina). Like other parts of plants, the leaves also get modified into other structures such as tendrils, spines for climbing and protection respectively. The flower is a modified shoot, meant for sexual reproduction. The flowers are arranged in different types of inflorescences. They exhibit enormous variation in structure, symmetry, position of ovary in relation to other parts, arrangement of petals, sepals, ovules etc. After fertilisation, the ovary is converted into fruits and ovules into seeds. Seeds either may be monocotyledonous or dicotyledonous. They vary in shape, size and period of viability. The floral characteristics form the basis of classification and identification of flowering plants. This can be illustrated through semitechnical descriptions of families. Hence, a flowering plant is described in a definite sequence by using scientific terms. The floral features are represented in the summarised form as floral diagrams and floral formula.

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Project Report

"MYCOFLORA ASSOCIATED WITH CHILLI , TURMERIC , GINGER"

Submitted to Sant Gadge Baba Amravati University, Amravati
as a partial fulfillment for the Degree of

MASTER OF SCIENCE IN BOTANY
In the faculty of Science

By

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Place of work

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SHRI SHIVAJI SCIENCE COLLEGE , AMRAVATI.
2019-2020**

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Place: Amravati

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CHAPTER - V

CONCLUSIONS

Total 8 sample were observed mycoflora were reported on ginger (*zingiber officinale*),Turmeric (*curcuma longa*),chilli(*capsicum annum*).

ginger rhizomes (*Zingiber officinale*)Rhizomes with symptoms of rotting

Several species of fusarium were found to be associated with ginger rhizome fungi were isolated on agar plate method.

Turmeric (*Curcuma longa L.*) is a *zingiberacean* plant turmeric is used for cooking, natural food dyes, and as a remedy for various diseases. Turmeric as a medicinal plant.

Ginger is reported to have antibacterial. Several species of *Pythium* have been reported to cause soft rot disease.).

Fusarium oxysporum and fusarium sp. had the highest occurrence and were able to cause rot.

Chili (*Capsicum annum L.*), member of *Solanaceae* family is a spice and vegetable crop of substantial economic importance .

disease samples of chilli fruits collected from different locations revealed that three isolates of *F. oxysporum*, *Alternaria alternata* and *Aspergillus flavus* were associated with the diseases for present study of mycoflora associated with chilli (*capsicum annum L*) turmeric (*curcuma longa L*) ginger (*zingiber officinale*).

Fungal species were namely *alternaria alternata*, *Aspergillus niger*, *Aspergillus Flavus* *Aspergillus fumigatus*, . *Fusarium oxysporum*, *Aspergillus niger*, etc.

Shri Shivaji Science College, Amravati. (MH)



PROJECT REPORT

“Compilation of Plants Used for Skin Care in the Ethnomedicinal Aspects”

Submitted to Sant Gadge Baba Amravati University, Amravati. (MH)

As a partial fulfilment for The Degree of

Master of Science in Botany

In the faculty of Science

By

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CONCLUSION

Women use makeup/cosmetics to alter their physical appearance and to enhance it. Makeup can be easy to apply, sometimes it even helps boost a girl's confidence, applying different cosmetics. There are a wide variety of cosmetics that people use including eyeliner, lipstick, foundation, eyeshadow, etc. But not everything in makeup is good for you or your face.

Chemicals and its compounds can irritate the skin and cause allergic reactions. Certain chemicals, preservatives can even be toxic, and overtime, become harmful. Teenage girls use makeup to cover up blemishes, but it can actually irritate the pimples making it worse. However, some cosmetics like lotions, sunscreens, and moisturizers can help benefit you.

With lotions helping to increase moisture in your skin and sunscreen protecting it from the harmful ultraviolet rays of the sun. Makeup can highlight different features of the face that might not have been as defined without the use of it. Rather than using a large amount of makeup, it should be worn lightly, to lessen the harmful effects. It isn't a bad thing to use makeup, but you can check ingredients on products to make sure that what you are putting on your face is safe and okay enough to use.

So by avoiding the harsh chemicals use the above mentioned home remedies

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PROJECT REPORT

ANATOMICAL STUDY OF SOME PLANTS IN FAMILY FABACEAE

Submitted to Sant Gadge Baba Amravati University, Amravati

as a partial fulfillment for the Degree of

MASTER OF SCIENCE IN BOTANY

In the faculty of Science

By

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2019-2020



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Discussion And Conclusion-

The Fabaceae family represent a widely diverse group of annual and perennial herbaceous plant. The fabaceae is comprised of one of the most genetically diverse group of plants. In the plant kingdom in the form of most traditional , cultiverse wild edible from and related non — edible wise and weedy species in many developing contries.

A majority of the population of the still produces fabaceae for own food and depend on their small — scale farming for daily income and their developing livelihoods.

The plant fabaceae family are rich and source they produce a vast array novel bioactive molecule many of which probably server as a chemical defence against infection or predation. Among the available species only 5% have thus for been screen for the presence of any bioactive molecule of potential therapeutic use.

Mostly fabaceae plants are there is a medicinal uses. Mostly plants the trichoms are present in fabaceae plants.

The anatomical study of fabaceae family . I have been 9 plants of fabaceae family and the anatomy of transverse section of Stem and the transverse section of leaf.

The family Fabaceae commonly known as pea family .The belongs to order Rosales.The family is the economically most important in the angiosperm texanomy.

In selected plants *Cicer arientinum* , *Delbergia sisoo*, *Pongamia pinnata* ,*Butea monosperma*, *Cajanas cajan* are Shrub, *Arachis hypogea*,*Glycine max*,*Trigonlla foenum graecum* are are and *Clitoria ternata* in climber.

In Stem Most of the plant epidermis cover plant is thick cuticle and the trichomes are observed in most of the genus. The cortex are multilayered with parenchymatous patch are observed in innermost layer. Collenchyma cells are observed in *Cicer arientinum* ,*Butea monosperma* .Vascular bundles are present in ring each vascular bundles are conjoint ,collateral, and open with endarge, xylem and phloem in cicer arientinum.The

vascular bundles are arranged in ring in *Cicer arietinum*. The parenchyma observed in vascular bundle in *Arachis hypogea* and *Butea monosperma*. Vascular bundles are capped by sclerenchyma of xylem, phloem and the cambium.

Cortex are generally most of the genus are 2-3 layers made up of parenchymatous cell. The innermost cortex are the endodermis is generally divided into two region and outer zone is parenchyma cells. Large number are chloroplasts are present in cortex. There are 10-14 layers of cortex cells present in *Cicer arietinum*, *Cajanas cajan*, *Butea monosperma*, *Glycine max*, *Clitoria ternate*, *Trigonella foenum graecum*. Vascular bundles are arranged in ring. There are 2 types of vascular bundles is large and small. In *Cicer arietinum* and *Butea monosperma* vascular bundles contain xylem and phloem. They are oval in shape, in *Glycine max*, *Clitoria ternate*, *Trigonella foenum graecum*. Periderm present in *Cajanas cajan* it is well developed it has been found cork cell. The morphology of different components of periderm. Pericycle present in *Delbergia sisoo*. Pith is composed of small and large parenchymatous cell. The pith cells are round, oval and pentagonal shape. Pith present in *Cajanas cajan*, *Arachis hypogea*.

In leaf anatomy the epidermis are present in both layers upper and lower epidermis in *Cicer arietinum*, *glycine max*, *Cajanas cajan*, *Delbergia sisoo*. And the single layer in *Butea monosperma*. Epidermal layer in a single row in *Pongamia pinnata*. Mesophyll tissues are oval collenchyma, Mostly present in *Cicer arietinum* and the medullary rays strips to parenchyma in *Pongamia pinnata*. Cortex are generally most of the genus are 2-3 layers made up of parenchymatous cell. The innermost cortex are the endodermis is generally divided into two region and outer zone is parenchyma cells. Large number are chloroplasts are present in cortex. There are 10-14 layers of cortex cells present in *Cicer arietinum*, *Butea monosperma*, *Delbergia sisoo*, *Pongamia pinnata*. Vascular bundles are arranged in ring. There are 2 types of vascular bundles is large and small. In *Cicer arietinum* and *Delbergia sisoo*, vascular bundles contain xylem and phloem. They are oval in shape, in *Cicer arietinum*, *Delbergia sisoo*, *Pongamia pinnata*, *Clitoria ternate*. Periderm present in *Cajanas cajan* it is well developed it has been found cork cell. The morphology of different components of periderm. Pericycle present in *Delbergia sisoo*. Pith is composed of small and large parenchymatous cell. The pith cells are round, oval and pentagonal shape. Pith present in *Cajanas cajan*, *Delbergia sisoo*.

Cuticle present in leaf and the sclerenchymatous and parenchymatous cells are present in cuticle in plant *Cicer arietinum*. Cork is the rectangular shape and arranged in radial rows present in *Pongamia pinnata*, *Trigonella foenum —graecum*.

Spongy tissues found in plants it is the part of mesophyll. It consists of parenchymatous. They are of two types.

Palisade tissue and the Spongy tissue in anatomy of leaf *Trigonella foenum - graecum*.

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PROJECT REPORT

PHYTOCHEMICAL AND ANTIBACTERIAL STUDY OF *RUTA GRAVEOLENS*

Submitted to Sant Gadge Baba Amravati University, Amravati

as a partial fulfillment for the Degree of

MASTER OF SCIENCE IN BOTANY

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2019-2020



CERTIFICATE

This is to certify that **Miss. Sadiya sadaf Zulfuddin** Department of Botany, Shri Shivaji Science College, Amravati has completed her project report entitled “**PHYTOCHEMICAL AND ANTIBACTERIAL STUDY OF RUTA GRAVEOLENS**” submitted for award of the degree of Master of Botany during the year **2019-2020** under my guidance and this work has not formed on the basis for award of any degree, diploma, associated fellowship, or other title in the this University or Institute of higher learning.

Place: Amravati

Roll No:

Date:

Dr. Tushar B.Wankhede

Associate Professor

Dept. of Botany

Shri Shivaji Science College, Amravati

Forwarded By

Prof. B. K. Dorkar

Head, Dept. of Botany

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CHAPTER-V

RESULT AND DISCUSSION

Discussion and Conclusion

Plant is an important source of medicine and plays a key role in world health . Medicinal herbs or plants have been known to be an important potential source of therapeutics or curative aids. The use of medicinal plants has attained a commanding role in health system all over the world. This involves the use of medicinal plants not only for the treatment of diseases but also as potential material for maintaining good health and conditions. The *ruta graveolens* preliminary screening reveals the presence of various bioactive phytoconstituents like alkaloids, carbohydrate, protein, amino acids, glycoside, tannins, saponin, flavonoids, steroids, and phenolic compounds. The presence of different phytoconstituent in *ruta graveolens* have wide range of significance and used in variety of applications. The secondary metabolites have pivotal role against different stresses faced by the plants. Plant derived antimicrobial compounds have significant therapeutic potential as they can be used to heal many diseases without any side effects. The leaves and stem extracts of *ruta graveolens* against human pathogen like *Escherichia coli*, *Staphylococcus aureus*, *Pseudomonas aeruginosa* were tested by using disc diffusion method. In the present investigation the plant species *Ruta graveolens*(L.) shows the fascinating results of antimicrobial activity. Here about four bacterial strains showed the phenomenon of antibiosis.

The species *E. coli*, and *K. pneumoniae* and *S. aureus* showed the higher antimicrobial activity by *Enterococcus* and *P. aeruginosa* The leaves extract also showed highest antimicrobial activity of methanol and ethanol against *P. aeruginosa* ,*S. aureus* and *E. coli*. However the acetone and methanol showed less activity against bacteria *enterococcus* and *K. pneumoniae*. Considering antimicrobial potential of the solvents, methanol and ethanol were found most reactive against all organisms. Hence it is concluded that all the *Ruta graveolens* extract reacted to the most of the gram negative bacteria as compared to gram positive bacterial strain. The leaves and seeds of *ruta graveolens* are the good source of bioactive compounds with antimicrobial potential against different pathogenic bacteria. This primary data of evaluation of antimicrobials will be helpful for future researchers for further exploration of diverse potential of the plants in the field of pharmacology and herbal medicine. The leaves extract also showed highest antimicrobial activity of methanol and ethanol against *S. aureus* and *E. coli* and also *k. pneumoniae*

The antimicrobial property of *Ruta graveolens* (L.) is well known to the present world due to presence of their medicinally and pharmacologically interesting substances. The presence of alkaloids, flavonoids, tannins, saponins and glycosides confirms the medicinal importance among the higher angiosperms. Hence, it is concluded that all the *Ruta graveolens* extracts reacted to most of the gram-negative bacteria than gram-positive bacteria. These findings will open new avenues and provide insight to the prospects of medicinal world. From the analysis of phytochemical first we can study that the compound like Alkaloid are present in both leaf and stem, Flavonoids are present in stem than that of leaf, Saponins are mostly present in the stem only. Like that the phenol are also only present in the stem. The tannins are found in both leaf and stem and terpenoids are also find in leaf and stem. The plant shows the presence of many phytochemicals which are responsible for various pharmacological medicinal properties. The pharmacological studies show that different parts of plant posses anti-inflammatory, anti-oxidant, antimicrobial, anti-HIV, cytotoxic and anti-Japanses encephalitis activities.

Based on the result of this study it can be said that *Ruta graveolens* (L.) has a leading capacity for the development of new good efficacy drugs in a future and can be effective source to treat and control many diseases. With the advancement of various techniques and modeens instrument like [GC]- Gas - Chromatography[MS]- Mass spectroscopy,[NMR]-spectroscopy isolation as well as structure elucidation of novel compound can be determine. The present status of knowledge in this matter reveals that medicinal plants in a future may prove to be rich store house of hit hero unknown drugs.

**EFFECT OF DIFFERENT COLOR SHADE NETS ON FENUGREEK PLANT
GROWTH**

**SHRI SHIVAJI SCIENCE COLLEGE
AMRAVATI MAHARASHTRA – 444603
A UGC Awarded College with Potential for Excellence
NAAC Reaccredited “A” “Very Good” Grade**



PROJECT REPORT

Submitted to Sant Gadge Baba Amravati University, Amravati
As a Partial fulfillment for the Degree of

MASTER OF SCIENCE IN BOTANY
In the faculty of Science and Technology

By

Miss. Sneha Hariram Yadav
M.Sc.II (Botany)

Supervisor
Dr. Dinesh D. Khedkar
Associate Professor
Department of Botany
Shri Shivaji Science College, Amravati

Place of Work
SHRI SHIVAJI SCIENCE COLLEGE, AMRAVATI
2019-2020

CERTIFICATE

This is to certify that **Miss. Sneha Hariram Yadav** Department of Botany, Shri Shivaji Science College, Amravati has completed his project report entitled “**Effect of different color shade nets on fenugreek plant growth**” submitted for award of the degree of Master of Botany during the year 2019-2020 under my guidance and this work has not formed on the basis for award of any degree, diploma, associated fellowship, or other title in this University or Institute of higher learning.

Place : Amravati

Date :

Roll No :

Dr. D. D. Khedkar

Associate Professor

Dept. of Botany

Shri Shivaji Science College,
Amravati.

FORWARDED BY

B. K. DORKAR

Head, Dept. of Botany

Shri Shivaji Science College, Amravati.

DISCUSSION AND CONCLUSION

In the present work, the fenugreek crop seed were grown in three different shade net against the control. By evaluating all the result, it concluded that plants grown in shade net are more healthy, strong and posses more yield as compared to open field. Also vase life of the foliage was higher under coloured shade nets when compared to open field condition(control). This is because the temperature of outside condition was more than shade net house. Due to trapping of short wave radiation in shade net house under partially closed condition the temperature in shade net house is less than outside (control). Other factor, humidity, lower light intensity favors plant growth which is high in shade net and that's the reason control show minimum yield as compared to shade nets.

Among the three different color shade net violet, white and green all this three influence plant growth parameters differently. In violet color shade net, the vegetative growth of plant is very fast, that it germinate earlier, bloom flower and bear legumes earlier as compared to other (green and white color shade net). In short it completes its lifecycle in a very short period. Also at last stage when it becomes fully matured the plant shows constant increment in die stage, it might be due to the shortest wavelength of violet color(380nm) in the visible spectrum. Shorter the wavelength higher the energy and hence the violet color shade net is more powerful in contributing to hot microenvironment within. High temperature have more adverse influence on net photosynthesis leading to decreased production photosynthesis above a certain temperature. And hence the plant of violet color shade net easily dried after maturation due to heat stress.

White color shade net shows the highest height of plant, where all seeds germinated fully compare to other. White colored shade net reduces light intensity but can not alter light quality. This favors the process of vernalization (as it occurs during low temperature) and hence it shows very successful rate of germination. Because it decreases light intensity, it helps in increasing relative humidity, this favors the plant growth.

But at the same time, the result of chlorophyll test shows that presence of chlorophyll mg per tissue in leaf of green shade net plant is higher than that of white color shade net. More absorbance rate of chlorophyll fulfills the photosynthesis requirement for forming food (starch). Also the green shade net plant stem registered more thickness and remarkable strength as compare to white shade net plant.

Hence, overall it concluded that the microenvironment was changed using different colored shade nets. The air temperature, soil temperature at different depth, light intensity, radiation were found to be lower under different shade net as compared to the corresponding value in control and hence the yield of control is less compared to shade net. And among the shade net(Violet, White, Green) green net show higher absorption rate of chlorophyll so it favors photosynthetic requirement easily as compared to other two. Hence, using shade nets are preferable further the green shade net is more condusive for the development of plant.

Diversity And Occurance Of Fungi of Cattle Feed Anjangaon District Amravati

PROJECT REPORT

**Submitted to Sant Gadge Baba Amravati University,
Amravati**

As a partial fulfillment for the Degree of

MASTER OF SCIENCE IN BOTANY

In the faculty of Science and Technology

BY

Miss. Vaishnavi Vilasrao Gawande

M.Sc. II (Botany)

Supervisor

Dr. D. V. Hande

Associate Professor

Department of Botany

Shri. Shivaji Science Collage, Amravati

PLACE OF WORK



DEPARTMENT OF BOTANY

SHRI SHIVAJI SCIENCE COLLAGE, AMRAVATI

2019-2020

CERTIFICATE

This is to certify that **Miss. Vaishnavi Vilasrao Gawande** Department of botany Shri. Shivaji science collage, Amravati has completed her project report entitled **“Diversity And OccuranceOf Fungi Of Cattle Feed From AnjangaonDistrictAmravati”** submitted for award of the Degree of Master of botany during the year **2019-2020** under my guidance and this work has not formed on the basis for award of any Degree Diploma associated fellowship, or other title in the this university or institute of higher learning.

Place: Amravati

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FORWARDED BY

B. K. Dorkar

Head, Dept. of Botany

Shri Shivaji Science Collage, Amravati.

Conclusion

The library of Shri Shivaji Science Collage Amravati was selected. The highest number of air borne fungal spores like *Aspergillus niger*, *Aspergillus flavus*, *Fusarium wilt*, *Fusarium sp*, *Cladosporium cladosporoides*, *Alternaria alternate*, *Alternaria Solani*, *Penicillium sp*, *Mucor*, *Rhizopus sp*, were reported during investigation period in study area and these fungal spore cause various diseases to human being.

Conclusively Cattle feed can be said that the library is known to be significant in respect of allergic as well as air borne diseases and also involve in deterioration of cellulosic and non – cellulosic materials.

Precautionary measure are to be taken prevent the outcome of fungal infection contracted in the library to readers and staff working in this affected environment. There is a greater need to develop the library environment through the new innovative technological tools and diagnostic preventive steps. There is also a greater need to study the air polluted fungal infections and to make the environment congenial for study.

Cattle feed may be a source of antifungal compounds since they have had to develop compounds to resist infections by fungi present in their environment. The aim of this study or the investigation is to get information about cattle feed wise mode of infection of various fungi in various climates.

The present study suggested that the library of Shri Shivaji Science Collage, Amravati, owing to it's high contamination which harbors the various species of cattle feed. So the negligence of proper cleaning and maintenance of these site become a good source of the deteriorative effect of mould which may cause deterioration of book and potential health hazards.

The study of cattle feed library and fungi associated with biodeterioration of books is important not only for conservation of books but also to prevent diseases that they cause in persons working or coming in daily contact with that environment.

Excessive usage of pesticides and fungicides available in market in the libraries to overcome the pre-and post -deterioration problem has resulted in many toxic epidemics. Generally, toxic synthetic fungicides are not exploited to prevent bio-deterioration of book in the library. There is regular use of some chemicals such are Sulfur, Mancozeb, Zineb, Captan, Bordeaux mixture, isopropyl alcohol,

dicloran, Anilazine, Benomyl, Hexaconazole, Metalaxyl, Tricyclazole etc. in the libraries for the control of such mycoflora which deteriorate the books, papers and other things in the library. Among these chemicals Mancozeb, Hexaconazole, Metalaxyl, Valicyn and copper oxychlorides are cheaply available in the market.

Spreading of such chemicals may minimize the population of harmful microflora but this may affect the health of students, readers, visitors and working staff in the library. Use of herbal products as antimicrobial agents may provide the best alternative to the wide and injudicious use of synthetic antibiotics. So that by spreading extracts prepared from the medicinal plants and minimize the growth of fungal strains in the library. Precautionary measure are to be taken to prevent the outcome of fungal infection contracted in the library to the readers and the staff working in this affected environment through the new innovative technological tools and diagnostic preventive steps.

There is also a greater need to study the air polluted fungal infections and to make the environment congenial for study.

Shri Shivaji Science College, Amravati. (MH)



PROJECT REPORT

“Compilation of Plants Used for Weight Loss in the Ethnomedicinal Aspects”

Submitted to Sant Gadge Baba Amravati University, Amravati. (MH)

As a partial fulfilment for The Degree of

Master of Science in Botany

In the faculty of Science

By

Mr. LKV Pawar
M. Sc. II (Botany)

Under the Supervision of

Mr. Bhupendra K. Dorkar
Associate Professor & Head
Department of Botany
Shri Shivaji Science College, Amravati. (MH)

Place of Work

Department of Botany
Shri Shivaji Science College Amravati MH
2019 - 2020

-: CERTIFICATE :-

This is to certify that the work incorporated in the project entitled '**Compilation of Plants Used for Weight Loss in the Ethnomedicinal Aspects**' submitted by **Mr. LKV Pawar** was carried out by the candidate himself under my supervision for the partial fulfilment of degree of Master of Science in Botany during academic year 2019 – 2020.

Place: - Amravati

Date: -

Supervisor: -

Mr. Bhupendra K. Dorkar

Associate Professor & Head
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Forwarded by: -

Mr. Bhupendra K. Dorkar

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CONCLUSION

The plants are now in wide use under the name herbal. It is now fashion or trend to use herbal products but most of the herbal product producers makes adulteration that caused harmful effects rather than the useful effect. So protect us from these harmful effects the given measures can used for weight loss naturally.

The biomolecules present in the plants used for weight loss produces thermic effect that helps to catabolize the deposited fat stored. Most of the plants content the metal ions or essential oil that are work as the cofactor or promotor of the enzymes involved in the catabolism o fat. These plants contain the fibers regulating the digestive functioning on body helping in the proper metabolism of body.

These are medicinal plants, so care must be taken. Use the home remedies directed in the project work just like medicine not in much more quantities. I hope this work will be useful for the persons searching for natural methods for weight loss.



A UGC Awarded College With Potntial For Excellence

NAAC Reaccredited “A” “Very Good ” Grade

Shri Shivaji Science College

Amravati Maharashtra -444603

PROJECT REPORT

“Can food by – Products Be Used As a Natural Supplement”

Submitted to Sant Gadge Baba Amravati University , Amravati

as a partial fulfillment for the Degree of

MASTER OF SCIENCE IN BOTANY

In the faculty of science

BY

Miss. Sakshi V. Wankhade

M.sc II (Botany)

Supervisor

Dr.D.D.Khedkar

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Department of Botany

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Place of Work

DEPARTMENT OF BOTANY

SHRI SHIVAJI SCIENCE COLLEGE , AMRAVATI

2019 - 2020

Shri Shivaji Science College , Amravati



This is to **Miss. Sakshi V.Wankhde** Department of Botany , Shri Shivaji Science College , Amravati has completed her project report entitled “**Can Food By – Products Be used As a Natural Supplement**” submitted for award of the degree of Master Of Botany during the year 2019-2020 under my guidance and this work not formed on the basic for award of any Degree , diploma , assoicated fellowship , or other title in the this university or Institute of higher learning.

Place : Amravati

Date :

Roll NO. :

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Associate professor

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Forwarded By

Prof.B.K.Dorkar

Head Dept.of Botany

*Can Food By – Products Be Used As a Natural Supplement***CHAPTER – VI****CONCLUSION**

The present work has shown that the food by product which are used as a supplement are the cheap source of nutrient to increase the production and nutritional value of fenugreek.

The food by product which are Eggshell , Oil cake , Rice water provided nutrients to the seed which result are the growth , leaves count , height of plant & chlorophyll presence in leaves is different according to food by product . The whole study clearly shown that Mustard Oil cake is more effective than other by product ,Those study will be applicable for the medicinal agricultural , industrial science . This is the most effective , cheap & organic way to increase production .

**STUDY OF MORPHOLOGY AND MEDICINAL
USES OF TREES AND CLIMBERS OF SHRI
SHIVAJI SCIENCE COLLEGE, AMRAVATI
CAMPUS.**

PROJECT REPORT

Submitted To Sant Gadge Baba Amravati University, Amravati As a
partial fulfillment for the Degree of

MASTER OF SCIENCE IN BOTANY

In the faculty of Science

By

Mr. Vaibhav P. Wadode

M.Sc. II (Botany)

Supervisor

Mr. Avinash N. Darsimbe

Assistant Professor

Department Of Botany

Shri Shivaji Science College, Amravati

Place of work



**DEPARTMENT OF BOTANY
SHRI SHIVAJI SCIENCE COLLEGE, AMRAVATI
NAAC Re-accredited with "A" Grade
2019-2020**



CERTIFICATE

This is to certify that **Mr. Vaibhav P. Wadode** Department of Botany, Shri Shivaji Science College, Amravati has completed his project report entitled **“Study of Morphology and Medicinal uses of Trees and Climbers of Shri Shivaji Science College, Amravati Campus”** submitted for award of the degree of Master of Botany during the year **2019-2020** under my guidance and this work has not formed on the basis for award of any degree, diploma, associated fellowship, or other title in the this University or Institute of higher learning.

Place: Amravati

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Prof. B.K. Dorkar
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CHAPTER V

CONCLUSION

Taxonomy is one of the oldest disciplines of life science. It enables us to deal with enormous diversity of life. By studying one or few representative form of each major group (division/class) one may have an insight into the plant kingdom. It has provided useful information about the diversity of plants. It enables us to identify the plants of special interest so that these may be propagated on commercial basis or eliminated.

Morphological characters have been extensively used in taxonomic studies of plants. These characters are still indispensable and will continue to play a significant role in plant taxonomy. Clear conception of different morphological features i.e., adequate knowledge of morphology is prerequisite for proper taxonomic studies of plants. Plants are described in semi-technical language (Botanical terms).

An angiospermic plant comprises root system and shoot system. This former incorporates root main and its branches while the latter stem, leaves, flowers and fruits. Root system fixes the plant in soil as well as absorbs minerals and water. Stem bears leaves, flowers, and fruits. Stem leaves and their appendages are called vegetative parts as they have got nutritive and growth function (not sexual reproduction) while flowers and fruits are called reproductive parts as they take part in reproduction of plants by sexual means.

The objective of taxonomy/systematic botany is to know the various kinds of plants on the surface of the earth with their names, affinities, geographical distribution, habitat characteristics and their economic importance. The student of taxonomy should be familiar with the floras covering his own region and some rare important floras covering other regions. In the regional floras, the student finds the available details of the plant life of his immediate environment.


Dr. H. S. LUNGE
IQAC Coordinator
Shri Shivaji Science College
Amravati.




Principal
Shri Shivaji Science College
AMRAVATI.

Department of Chemistry

List of the Students under taking Field Projects

Post Graduate Dissertation Project Details 2019-20			
Sr No.	Name Of The Student	Title Of Topic	Name Of Guide
1	Miss Shivani Mondhe	Physio-Chemical And Nutrients Analysis By Various Method Of Black Cotton Soil Collected From Amravati Tehsil Amravati District Maharashtra	Dr. B.N.Berad
2	Ms. Pradnya R.Mehare	Quality Of Soil In Selected Areas Of Morshi Tahsil (Block) Under Amravati District, Maharashtra	Dr. G. N. Chaudhari
3	Miss Nikita Abhimanyu Tekade	Analysis Of Physiochemical Properties From Soil Sample Selected From Regions Of Morshi Tahasil (Block) Under Amravati District, Maharashtra	Dr. G. N. Chaudhari
4	Miss Sneha Raut	Quality Analysis Of Soil Collected From Amravati Tehsil, Amravati District, Maharashtra	Dr. S. K. Rithe
5	Mr. Aditya Kishor Bramhankar	Soil Analysis By Different Technique Of Analytical Chemistry In Daryapur Region District Amravati.	Dr. Archana S. Burghate
6	Miss. Nivedita Shankarrao Marape	Soil Analysis By Different Techniques Of Analytical Chemistry, In Anjangaonsurji Region, District Amravati	Dr. Archana S. Burghate
7	Miss Krunal Raosaheb Chunade	Analysis Of Soil Sample For Its Physico-Chemical Parameters From Selected Place In Taluka Chandur Bazar Dist. Amravati, State Maharashtra	Dr. Prashant R. Mandlik
8	Mariya Sadaf	Nutrient Analysis Of Soil Collected From Chandurbazar (Block) Under Amravati District Maharashtra.	Dr. Prashant R. Mandlik
9	Ms. Manisha S. Bhatkar	Soil Quality Analysis In Selected Regions Of Bhatkuli Area Under Amravati District, Maharashtra □	Dr. Pramod R. Padole

10	Maseera Anam H.R.Naqvi	Soil Analysis Of Amravati District Specially Bhatkhuli Area	Dr. Pramod R. Padole
11	Aniruddha S. Hande	Soil Quality Analysis In Selected Regions Of Dhamangaon Rly.Tahasil (Block) Under Amravati District, Maharashtra	Prof. Dr. Y.S. Thakare
12	Miss Vaishnavi Rase	Physico-Chemical Analysis Of Soil Achalpur Taluka	Dr.N.H.Bansod
13	Miss Raksha Mishra	Studies Of Physico Chemical Parameters Of Soli Achalpur Tahsil Amravati	Dr.N.H.Bansod
14	Mr. Yogesh Dilip Ghatole	Physio-Chemical Study Of Macronutrient And Micronutrients Present In Soil From Selected Village Wadegaon Taluka Warud District Amravati, Maharashtra	Dr. Nilesh R. Thakare
15	Mr.Ajinkya Sanjay Sonune	Physio-Chemical Study Of Macronutrient And Micronutrient Present In Soil From Selected Village Razura Bazar Taluka Warud District-Amravati- Maharashtra	Dr. Nilesh R. Thakare
16	Samiksha Y. Armal.	Quality Of Soil In Selected Areas Of Nandgaon Khandeshwer Taluka In Amravati District, Maharashtra	Dr. Anjali B. Bodhade
17	Swati Radhesham Jaiswal	Quality Of Soil In Selected Areas Of Nandgaon Khandeshwer Taluka In Amravati District, Maharashtra	Dr. Anjali B. Bodhade
18	Miss Snehal Gajananrao Watane	Soil Analysed By Different Analytical And Chemical Techniques In Daryapur Region Amravati.	Dr. Shrikant A. Wadhal

19	Ms. Shivani Satishrao Deshmukh	Analysis Of Soil In Selected Villages Of Anjangaon Surji Taluka Of Amravati District, Maharashtra State	Mr. G.M. Dongare
20	Miss Pragati Ganeshrao Isod	Soil Quality Analysis In Selected Regions Of Chandur Railway Tahasil (Block) In Amravati District, Maharashtra	Dr. K. N. Puri
21	Miss Komal Prabhulaji Joshi	Study Of Soil Fertility And Correlation Of Soil Properties Of Selected Villages Under Tiosa Block In Amravati District.	Dr. S. P. Ingole
22	Miss Bhagyashri Rajiv Mankar	Soil Quality Analysis In Selected Areas Of Tivsa Tahasil (Block) Under Amravati District, Maharashtra	Dr. N. A. Kalambe
23	Ms. Pallavi S. Lingot	Soil Quality In Selected Areas Of Chandur Rly.Tahasil (Block) Under Amravati District, Maharashtra	Dr. H.G.Wankhade
24	Mr. Shashikant A. Patil	Soil Quality Analysis In Selected Regions Of Dhamangaon Rly.Tahasil (Block) Under Amravati District, Maharashtra	Dr. Vrushali R. Kinhikar

Title and Place of Work

A Research Project is submitted to the
**SANT GADGE BABA AMRAVATI UNIVERCITY,
AMRAVATI.**

Submitted by partial fulfillment of
Degree of Master of Science In Chemistry.

**ResearchTopic**

Quality of soil in selected areas of Morshi taluka in Amravati district,
Maharashtra.

Submitted by

Miss. Pradnya Rajendra Mehare

M.Sc – II (sem IV)

Under Guidance of

Dr. Gajanan N. Chaudhari

M.Sc. Ph. D

P.G. Department of Chemistry

Shri Shivaji Science College, Amravati

2019-2020.

Project Work Completion

Certificate

Certified that the work incorporated in this thesis entitled "Soil Analysis " by Miss. Pradnya Rajendra Mehare was carried out by the candidate under my supervision. The work incorporated in this dissertation has not been submitted to this or any other university or any other degree of academic award.

Place: Amravati

Dr. G. N. Chaudhari
Head of Department of Chemistry
Shri Shivaji Science College,
Amravati

Date: / / 2020

❖ CONCLUSION :

This project would help a regular user to maintain his farm better by providing fertilizers in the right amount. It can also help the user by suggesting a schedule. The predictions and suggestions are made based on past records and present input. It also makes use of feedback from the user to improve the prediction. The network of moisture sensors provides real time irrigation and minimizes the load of watering. This helps save water and also prevents over saturation of soil.

FARM-IT is therefore an efficient and important tool for a regular farmer that can help him in his day-to-day agricultural activities and also help improve his farming habits.

❖ FUTURE WORK :

Due to lack of real-time sensors for analyzing soil content, such as, N P and K suggestions cannot be provided immediately. Real time sensors for detection of soil components, can be used to receive NPK values real time, like the moisture sensor. This would greatly help the user as, Regular visits to the lab for soil testing can be avoided. Since these sensors are currently unavailable, future scope of this project could include, making use of these sensors as and when they are available. Besides, more factors such as detection of carbon content (organic

matter), accurate weather forecast can be used, depending upon the location.

Therefore, the project can be improved by using in-situ sensors and considering more elements for measuring soil content in real time.

A Research Project is submitted to the
SANT GADGE BABA AMRAVATI UNIVERSITY,
AMRAVATI.

Submitted by partial fulfillment of
Degree of Master of Science In Chemistry.



Research Topic

**"Analysis of Physiochemical properties from soil sample selected
from region of Morshi tahasil(Block) under Amravati district,
Maharashtra".**

Submitted by

Miss. Nikita Abhimanyu Tekade

M.Sc - (sem V)

Under Guidance of:

Dr. Gajanan N. Chaudhari

M.Sc. Ph. D

P. G. Department of Chemistry

Shri Shivaji Science College, Amravati

2019-2020.

Certificate

Certified that the work incorporated in this thesis entitled "**Soil Analysis**" by Miss Nikita Abhimanyu Tekade was carried out by the candidate under my supervision. The work incorporated in this dissertation has not been submitted to this or any other university or any other degree of academic award.

Place: Amravati

Dr. G. N. Chaudhari

Head of Department of Chemistry

Date: /08/2020

Shri Shivaji Science College,

Amravati.

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Therefore, the project can be improved by using in-situ sensors and considering more elements for measuring soil content in real time.

“Soil Analysis”

Submitted by partial fulfillment of
Degree of
Master of Science
In
Chemistry
Sant Gadge Baba Amravati University,
Amravati

By

Miss Sneha N. Raut

Under Guidance of

Dr. S. K. Rithe

M.Sc. Ph.D

P. G. Department of Chemistry
Shri Shivaji Science College, Amravati

2019-2020

Certificate

Certified that the work incorporated in this thesis entitled “Soil Analysis” by Miss Sneha Navneet Raut was carried out by the candidate under my supervision. The work incorporated in this dissertation has not been submitted to this or any other university or any other degree or academic award.

Place: Amravati

Dr. S. K. Rithe

Date: / 08 / 2020

Department of Chemistry,

Shri Shivaji Science College, Amravati

CONCLUSION AND FUTURE WORK

CONCLUSION

Systems research compares whole systems, often using several approaches, so the effect of unanticipated or poorly understood interactions can be observed. This is in contrast to reductionistic research which aims to minimize the effect of all but one or a very few variables to determine cause and effect.

With tightly controlled plot or laboratory experiments, the effects of single changes in management practices can be observed.

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Specific management practices are rarely adopted alone, so highly controlled experiments are most useful if the results are interpreted alongside systems research which may show whether the results are meaningful in real farm situations.

Systems research is often done as “across-the-fence” studies. Soil characteristics and soil function are compared on neighboring farms that share the same landscape but use different management systems.

If only one pair of farms is used, this is not true replication, regardless of the number of samples taken on each farm. Comparative research such as this is valuable in identifying significant indicators, but it is of limited use in identifying the processes and components of the system that are causing the difference in soil characteristic. For this reason, systems research is best interpreted alongside reductionistic research.

The National Research Council committee (1993, p. 110) describes how a systems approach

- has the flexibility to address varied enterprises and changing resource or market conditions,

• makes it possible to coordinate multiple government programs that have sometimes conflicting objectives.

One component of systems thinking is to study soils at the landscape scale. Point measurements can then be placed into a context of where soil types change, how water moves, or where management practices change. It is necessary to view soil processes at this broader scale to analyze and understand how to use off-field techniques such as buffer strips.

Policy aimed at improving soil quality should not only focus on setting soil quality standards. Improving soil quality is a site-specific process.

Land management will be most improved if it is guided by farmers working with local advisors that are trusted and knowledgeable about the character of the local area.

The site-specific nature of soil quality is troubling to agricultural support institutions that are designed to handle generalizable recommendations. Managing the state's soil resources requires tools and institutions that help farmers interpret the signals on their land, and apply general conclusions

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to specific situations. This means involving more farmers with research, so they can learn to interpret research, design informal studies for their own purposes, and help direct the goals of formal researchers. There may need to be less emphasis on writing formulas for soil management, and more emphasis on giving farmers the information they need to make judgment calls when applying formulas.

Managing for soil quality means constantly changing, adapting, and responding to conditions. Process and monitoring are as important as specific practices and standards.

PROJECT REPORT**ON****"Soil analysis by different techniques of analytical chemistry in
Anjangaon surji region district Amravati"****Submitted for partial fulfilment of****Degree of****MASTER OF SCIENCE****In****CHEMISTRY****Sant Gadge Baba Amravati University,****Amravati****Submitted By****Miss Nivedita S. Marape****M.Sc.II****Project Guide****Dr. Archana S. Burghate****M.Sc., M.Phil., Ph.D****P.G. Department of Chemistry****Shri Shivaji Science College, Amravati****2019-2020**

1



Edit with WPS Office

CERTIFICATE

This is to certify that this dissertation entitled Soil Analysis by different techniques of analytical chemistry in Anjangaon surji region district Amravati is a bonafide project work carried out by Miss. N. S. Marape student of M.Sc. (Chemistry) under my supervision in Post Graduate Department of Chemistry, Shri Shivaji Science College, Amravati. During the academic year 2019-2020 for partial fulfillment of the requirement for the award of degree of M.Sc. and this dissertation has not form the basis for the award of any diploma, associate ship, fellowship or other similar title.

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3



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Conclusion and future scope of working

Soils are our one of the most precious natural resource. Maintaining soils in a state of high productivity on sustainable basis is important for meeting the basic needs of the people. In the region of anjangaon surji the available water capacity of the soil is dependent upon the intensity and distribution of rainfall infiltration and permeability of the soils and type and amount of clay minerals, depth and volume of the soil but in the dry tract the quantum and the regular soil moisture supply act as determinants for growing crops, because of this the soil in this area is suitable for the irrigation. The educability can be used for the estimation of water requirements, development cost and benefits from irrigation. In the area of anjangaon surji the soil vary in nature from Sandy loam to clay. the soils are more loamy and clayey the proportion of sand and clay size particle that make up the mineral fraction of the soil. Also the thickness of the soil is 0.20 m and the structure of soil is clayey. The soil is slightly dark brown which have the blocky consistency and texture is slightly compact. The depth of soil is upper dry and then little most vertical cracks and roots appearing. The standard PH value of soil in the region of anjangaon surji is 8.6 and it consists 0.50 7% organic matter and available nitrogen is 0.06 MGM, phosphorus is 21 MGM percent and potassium is 32m GM percent.

Agriculture is the most important source of our national income it is the main occupation of India's population. The agriculture sector also provides fodder for livestock and food to feed our country. Fruits and crops play an important role in the human right. Because of their ingredients fruits are very healthy and protective against number of diseases. They are known to contain several health promoting components such as vitamin, essential minerals, antioxidants and prebiotics. Crops are also very important as their nutritional status is high. In all this farmer is the main social aspect who is person engaged in agriculture, raising living organisms for food or raw material like crops or livestock to stop a farmer was a person who promote or improve the growth of plant crops and fruits etc. they are an important part of the survival of our

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various societies because they provide food and fibre that nourishes and cloth. For the farming soil must have soil organic matter use for greater soil structure, and improvement of the chemical and biological soil involvement for crops with more soil organic matter water infiltration and retention improves, providing increased drought tolerance and decreased erosion. soil organic matter is a mix of decaying material from biomass with active microorganisms. In the case of soil organic carbon it is the main constituent in the soil organic matter. Carbon along with hydrogen and oxygen is a micronutrients for plants. In the process of nodule Asian rhizobia bacteria used nutrients and water provided by the plant to convert atmospheric nitrogen into ammonia which is then converted into organic compound that the plant used as its nitrogen source.

In Amravati district, in the area of anjangaon surji various types of crops and fruits are grown, some of them are wheat, cotton, onions, papaya, banana and grams. For all these crops and fruits they have to maintain the soil as per the soil and climate requirements according to their crops and fruits. In the region of anjangaon surji wheat is the most widely grown crop. For the cultivation of wheat crop soil should be optimal for wheat growth which is loamy soil is the best for wheat cultivation . Fertile soil with good structure and porous subsoil for deep roots.the optimal soil retention is slightly acid to neutral all through it can be grown successfully in alkaline calcareous soil under irrigation. Lots of sunshine is needed for the wheat cultivation the soil pH should be ranges from 6 to 8.4. wheat contain 70% starts and 12 to 18% protein. The standard value of requirements of micronutrients in wheat nitrogen is 200 ppm, Phosphorus and potassium are 55 to 250 to ppm, calcium is 27 ppm, magnesium is 19 ppm, sulphur is 22 ppm, iron is 1.8 ppm, zinc is 0.5ppm, copper is 0.15ppm. in case of cotton crop it needs long Frost free period a lot of heat and plenty Sunshine climate. The pH of soil ranges from 5.8 to 8.6 with the sandy loam soil. it provides the basic raw material to cotton textile.The standard value of micro and macro nutrients present in the cotton crop are nitrogen is 52 -156 ppm, Phosphorus is 36 ppm, potassium is 151 ppm,

magnesium is 40 ppm, calcium is 16 ppm, sulphur is 10 ppm, iron is 2.9ppm, zinc is 1.1ppm, magnesium is 25ppm, copper is 12 ppm, boron is 10ppm. For the cultivation of onion crop Sandy loam to heavy clay, soil should be firmed. Its PH should be ranges from 5.5 -8.5. weather should be cool in the early part of their growth grown as a fall or winter crop. The standard value of the standard value of Available nitrogen is 118 ppm, Phosphorus is 23. 43 ppm , potassium is 110ppm, calcium is 77 ppm, iron is 30 ppm, copper is 15 ppm, zinc is 10ppm. Sandy loam soil most suitable soil for gram. Cultivation of gram crop is taken in the winter the pH ranges from 5.5 to 8.5. the available NPK for gram crop are 91ppm,40ppm,80ppm. Calcium is 13ppm, sulphur is 9 ppm, iron is 10 ppm, zinc is 7ppm, magnesium is 10 ppm . For the fruit cultivation of banana,bananas are grown in tropical environment because it takes hot humid weather to sustain banana throughout the growth cycle. pH of soil should be 6.5 to 8.5 in the soil must be deep rich loamy soil in nature. The available standard value of micro and macronutrients requirements should be e nitrogen is 100ppm, Phosphorus is 50 - 300ppm, potassium is 225 to 125ppm, magnesium is 25 ppm,calcium is 50 ppm,sulphur is 10 ppm,boron is 20 ppm,iron is15ppm. Papaya fruit can be grown in deep well drained sandy loam soil. The best soil is Deep, rich, alluvial soil. Soil pH should be ranges from 6.5 to 8. It is cultivated in high temperature and plenty of sunshine. The Standard value of Available standard NPK are 182ppm,41 ppm,285ppm. Boron is 0.12ppm, magnesium is 32ppm,zinc is 8.14ppm, sulphur is 25 ppm,iron is 0.15ppm.

Soil is important everyone either directly or indirectly.it is natural body on which agriculture product grow and it has fragile ecosystem. Soil are medium in which crop grow to food and cloth the world. Soil fertility vital to a productive soil. certain extremal factors control plant growth, air, temperature, light mechanical support, nutrients and water. Plants had elements for their growth and completion of life cycle. They are are carbon, hydrogen, oxygen ,nitrogen ,Phosphorus ,potassium, etc.

soil test based nutrient management has emerged as a key issue in efforts to increase agricultural productivity and production since optimal use of nutrients based on soil analysis can improve crop produced and minimise wastage of these nutrients does

minimising impact on environmental leading to bias through optimal production. And deficiencies of primary, secondary and micronutrients have been observed in intensive cultivated area.

An increase awareness of soil as a critical component of the earth's bio/geo-sphere stimulated interest in the concept of assessment of soil quality. The demand for information on soil and land resources for enhancing food security, improving water quality, disposing wastes and mitigating climate changes is recognised for increase food productivity via vice versa population growth. This increased demand has intensified anthropogenic activities and soil degradation. all the threads of land degradation are widespread, it is more extensive and intensive in the poorer regions, where the land uses entirely depend on the inherent capacity of the land for their basic needs.

the predominant reason of poor soil quality due to land degradation relates to the washing away of top soil and organic matter, intensive deep tillage which breaks stable soil aggregates and disturbing the the habitat of soil microflora and funna. exclusive removal of plant available nutrients, near absence for low use of organic manure nutrient loses due to leaching and volatilization, with gaseous emissions occurring due to faulty method of fertilizer application, excessive use of agriculture inputs such as fertilizers, herbicides and water logging, salinity and alkalinity due to continuous use of poor quality of irrigation water. Generally, soil quality changes in response to soil use and management.

the psycho chemical properties such as moisture content specific gravity pH measurement and estimations of Mg^{2+} , Na^+ , K^+ and Fe , K^+ and Cl^- , HCO_3^- , PO_4^{3-} , NO_3^- % of soil were well studied. The fertility of the soil depends on the concentration of N, P, K organic and inorganic materials and water. Nitrogen is required for growth of plant and is a constituent of Chlorophyll, plant protein and nuclei acid. Phosphorous is most often limiting nutrients remains present in plant nuclei and act as energy storage. It helps in transfer of energy. Potassium is found in its mineral form and affect plants all division, carbohydrate formation, translocation of Sugar, various enzyme action and resistance to certain plant disease, over 60 enzymes are known to require potassium for activation. Amount of nutrients to be added to soil for crop production depend on their present amount in that soil. Fertilizer addition is recommended, now a day an STR (Soil Test Recommendation) basis in which contents of major nutrients (N, P, K) are determined following standard methods before sowing. Their values suggest quality of soil in terms of its nutrients contents i.e. high, medium, or low nutrients. These nutrients



content are thandeduced from required amount of nutrients for following crop and this much amount of nutrients is now recommended for addition to soil .

Nutrient analysis is the measurement of nutrients present in the soil which is removed from the soil using and extracting solution. The nutrient analysis of soil will provide the necessary information to set the target of nutrient applications.it is then used to setup the target of nutrient applications which is then used to calculate the rate of manure and fertilizer application.the result of test from regular field sampling will or load the detection and monitoring of the changes in soil parameters (pH, nutrients, salinity) with the time.

it is must for the soil analysis result to be interpreted within the context of the expected yield response for the crop which is to be growth under the specific management and environmental conditions.the results depend on the quality of soil samples collected and also the strategy of sampling that is used. NIFT sample are poor it will lead to inaccurate nutrient recommendations.

The result obtained may be used as a reference data for further judgement of soil texture. It may be treated as a pathway for soil analysis.

PROJECT REPORT**ON**

“Analysis Of Soil Sample for its physico-chemical parameters from selected place in taluka Chandur Bazar, Dist Amravati, State Maharashtra”

Submitted for partial fulfillment of

Degree of

Master of Science

In

CHEMISTRY

Sant Gadge Baba Amravati University, Amravati

Submitted By

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Guided by

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2019-2020



Certificate

This is certify that this dissertation “Analysis of soil sample for its physico-chemical parameters from selected place in taluka chandur bazar Dist. Amravati, Maharashtra,” is a bonafide project work carried out by Miss. KRUNAL R. CHUNADE student of M.Sc (Chemistry) under my supervision in Post Graduate Department of chemistry, Shri Shivaji Science College, Amravati during the academic year 2019-2020 in partial fulfillment of the requirement for the award of degree of M.Sc. and that dissertation has not form the basis for the award of any diploma, associate ship, fellowship or other similar title.

Date:

Place: Amravati

(Dr. P.R. Mandlik)

Associate Professor

Department of Chemistry

Shri Shivaji Science College

Amravati

Conclusion :-

From “Atomic Absorption Spectroscopy” technique it is conclude that Zn is very less than Boron than Cu than Fe than Mn.

From “PUSA STFR METRY” technique it is conclude that phosphorous present in sample number 5 i.e. (34.0 Kg/Ha) is more than in sample number 1 i.e. (8.7 Kg/Ha).

Potassium present in sample 3 i.e. (64.63 Kg/Ha) is more and less in sample 5 i.e. (39.02 Kg/Ha).

Sulfur present in sample 2 i.e. (14.38 Kg/Ha) is more and less in sample 5 i.e. (3.27 Kg/Ha).

Iron is found in sample 3 i.e. (44.3 mg/Ha) is more and less in sample 5 i.e. (24.23 Kg/Ha).

Copper is found in sample 4 i.e. (54.15 mg/Ha) is more and less in sample 3 i.e. (0.6 mg/Ha).

Zinc is found in sample 4 i.e. (5.0 mg/Ha) is more and less in sample 5 i.e. (1.1mg/Ha.)

Boron is found in sample 5 i.e. (6.48 mg/Ha) is more and less in sample 3 i.e. (2.59 mg/Ha).

Manganese is found in sample 4 i.e. (6.8 mg/Ha) is more and less in sample 5 i.e. (2.07 mg/Ha).

From “pH METRY” technique it is conclude that all soil samples are basic in nature.

From “Conductometry technique” it is conclude that conductivity of soil sample number 4 i.e. (0.055Ω) is more as compare to the other sample.

From “Complexometry Titration Method” it is conclude that the amount of Zn^{II} is more in sample number 5 and sample number 2 i.e. (0.54mg/1Kg) as compare to other soil sample.

From “Kjeldhal Digestion Method” it is conclude that the amount of Organic carbon % i.e. (4.71%), Actual organic carbon % i.e. (6.1%), Organic matter % i.e. (10.55%) is found in sample number 1 is more as compaire to other soil sample.

From “Kjeldhal Distillation Method” it is conclude that the percentage of available Nitrogen is found in sample number 4 in more amount i.e. (94.08 Kg/Ha) as compaire to the other soil samples.

Future scope of work :-

Soil analysis is the most important process in research work. Without testing of soil we can not performing the further research or any other work. Due to the soil analysis we know the different parameters of soil on which soil is based. Nutrients, pH and physical properties like temperature, EC are important for soil analysis. Due to analysis we know the quality of soil and hence we improve the quality of soil this is very important for future for better crop yielding.

In soil analysis process physical, chemical, biological and fertility, properties of soils; and these properties in relation to the use and management of the soils. Soil plays an important role in the life of a humanbeing. It is not only the resource for food production, but it also helps us an waste disposal, to maintain playgrounds, to distribute and store water and nutrients and support our environment.

Soil analysis provides you the background knowledge on soil available nutrient status along with some physical, chemical and biological properties; that we need in order to take specific decisions on balanced and integrated nutrient management for healthy soils and crops.

Soil analysis provides accurate and timely diagnosis of soil fertility related problems. It provides the background to build an efficient and cost- effective nutrient management plans.

Project Report On

“Soil Quality Analysis in Selected region Of Bhatkuli Area Under Amravati District, Maharashtra”

Submitted by partial fulfillment of
Degree of
Master of Science
In
Chemistry
Sant Gadge Baba Amravati University,
Amravati.

By

Miss. Manisha S. Bhatkar

Under Guidance of

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M.Sc. Ph.D., B.Ed.

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Shri Shivaji Science College, Amravati
2019-2020

Certificate

Certified that the work incorporated in this thesis entitled “Soil Quality Analysis in Selected region Of Bhatkuli Area Under Amravati District, Maharashtra” by Ms.Manisha Shailendra Bhatkar was carried out by the candidate under my supervision. The work incorporated in this dissertation has not been submitted to this or any other university or any other degree of academic award.

**Place: Amravati
Date: 23/09/2020**

**Dr. P.R.Padole sir
Department of Chemistry
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Amravati**

Chapter V :-

CONCLUSION AND FUTURE WORK

CONCLUSION

In the soil analysis there are the Six processes. which are soil sampling technique, determination of texture soil, determination of water content, determination of organic matter, determination of air content and soil pH. Three types of soil samples are used in soil analysis, which are housing are, pond and farm. The soil are extracted successfully.

In the determination of texture of soil, it can be concluded that soil sample from housing area has the highest percentage of stone component whereas soil sample from farm has the highest percentage of slit and clay.

Meanwhile, in the experiment of determination of water content. soil sample in pond has the highest water content with 22.88% of water in the soil sample, followed by housing area soil sample (14.77%) and lastly, farm with 14.67% of water content which is very close to the housing area soil sample.

In the determination of organic matter. housing area soil has the highest percentage of organic matter (8.90%) . followed by pond soil sample with 7.12% of organic matter and finally, farm with 4.02% of organic matter in soil.

Besides that, in the determination of air content, farm soil sample has the highest air content which is 48.98% In the soil sample. The second place is housing area soil sample with 39.13% air content. Lastly, pond soil sample has the least air content which is 2.71%.

In the determination of pH level of soil sample, soil sample of farm and pond acidic, which is pH 5 and 6 respectively. However, housing are soil is slightly alkaline which is pH B.

“Soil Analysis”

Submitted to partial fulfillment of

Degree of

Master of Science

In

Chemistry

Sant Gadge Baba Amravati University,

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Certified that the work incorporated in this thesis entitled “**Soil Analysis**” by **Miss. Maseera Anam Hifzur Rahman Naqvi** was carried out by the candidate under my supervision. The work incorporated in this dissertation has not been submitted to this or any other university or any other degree of academic award.

Place:Amravati

Dr.P.R.Padole

Date: / 08 / 2020

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Chemistry

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Amravati

☒ Future work.

While doing this work I got to know that it take too much time to know one parameter in a soil.

As well as there are lots of chemical wastage occure

And these information can only collected by a educated person as they can go to lab and they can know about there soil by 2 to 3 month

So if we can make a sensor that can detect percentage of nitrogen potassium and phosphorous within a minutes

It will help them to maintain soil quality for always.

It may help farmers but it also help to us as it will reduce the use of chemicals in a huge amount.

Less use of chemicals are helpful to environment

As Indians farmers are not educated so it woul be easy to use.

“Physio-Chemical Study Of Micro Nutrient & Macro Nutrient Present In Soil”

Submitted by partial fulfillment of
Degree of

Master of Science

In

Chemistry

Sant Gadge Baba Amravati University,
Amravati.

By

Mr. Yogesh Dilip Ghatole

Under Guidance of

Dr. N. R. Thakare

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2019-2020

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Certified that the work incorporated in this thesis entitled "**Physio-Chemical Study Of Micro Nutrient & Macro Nutrient Present In Soil**"

by Mr. Yogesh Dilip Ghatole was carried out by the candidate under my supervision. The work incorporated in this dissertation has not been submitted to this or any other university or any other degree of academic award.

Place: Amravati

Date: / 09 / 2020

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**Department of Chemistry
Shri Shivaji Science College,
Amravati**

CHAPTER 5

CONCLUSION AND FUTURE WORK

CONCLUSION

This project would help a regular user to maintain his farm better by providing fertilizers in the right amount. It can also help the user by suggesting a schedule. The predictions and suggestions are made based on past records and present input. It also makes use of feedback from the user to improve the prediction. The network of moisture sensors provides real time irrigation and minimizes the load of watering. This helps save water and also prevents over saturation of soil.

FARM-IT is therefore an efficient and important tool for a regular farmer that can help him in his day-to-day agricultural activities and also help improve his farming habits.

FUTURE WORK

Due to lack of real-time sensors for analyzing soil content, such as, N P and K suggestions cannot be provided immediately. Real time sensors for detection of soil components, can be used to receive NPK values real time, like the moisture sensor. This would greatly help the user as, Regular visits to the lab for soil testing can be avoided. Since these sensors are currently unavailable, future scope of this project could include, making use of these sensors as and when they are available. Besides, more factors such as detection of carbon content (organic matter), accurate weather forecast can be used, depending upon the location.

Therefore, the project can be improved by using in-situ sensors and considering more elements for measuring soil content in real time.

“Physio-Chemical Study Of Micro Nutrient & Macro Nutrient Present In Soil”

Submitted by partial fulfillment of
Degree of

Master of Science
In
Chemistry
Sant Gadge Baba Amravati University,
Amravati.

By

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2019-2020

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Certified that the work incorporated in this thesis entitled “**Physio-Chemical Study Of Micro Nutrient & Macro Nutrient Present In Soil**”

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Place: Amravati

Date: / 09 / 2020

Dr. N. R. Thakare

Department of Chemistry

Shri Shivaji Science College,

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A Research Project is submitted to the
**SANT GADGE BABA AMRAVATI UNIVERCITY,
AMRAVATI.**

Submitted by partial fulfillment of
Degree of Master of Science In Chemistry.



Research Topic

**Quality of soil in selected areas of Nandgaon Khandeshwer taluka in
Amravati district, Maharashtra.**

Submitted by

Miss. Samiksha Yuvarajji Armal.

M.Sc – II (sem IV)

Under Guidance of

Dr. Anjali B. Bodade

M.Sc. B.Ed. M.Phill. Ph.D.

P. G. Department of Chemistry

Shri Shivaji Science College, Amravati

2019-2020.

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Certified that the work incorporated in this thesis entitled “**Soil Analysis** ” by Miss. Samiksha Y. Armal was carried out by the candidate under my supervision. The work incorporated in this dissertation has not been submitted to this or any other university or any other degree of academic award.

Place: Amravati

Date: / 08 / 2020

Dr. A. B. Bodade

Department of Chemistry

Shri Shivaji Science College,

Amravati

❖ CONCLUSION :

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Project Report on
**“Soil selected in selected areas of Nandgaon
khandeshwer taluka (block) in Amravati district,
Maharashtra”**

Submitted by partial fulfillment of
Degree of
Master of Science
In
Chemistry
Sant Gadge Baba Amravati University,
Amravati.

By

Miss. Swati R. Jaiswal

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Place: Amravati

Dr.A.B.Bodade

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Amravti

Date 09/ 2020

Chapter V Conclusion and future work

CONCLUSION :

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Therefore, the project can be improved by using in-situ sensors and considering more elements for measuring soil content in real time.

PROJECT REPORT**ON****"Soil Analysed by Different Analytical & Chemical Technique in Daryapur
Region Amravati"**

Submitted for partial fulfillment of

Degree of**MASTER OF SCIENCE****IN****CHEMISTRY**

Sant Gadge Baba Amravati University,

Amravati

Submitted by

Miss Snehal G. Watane**M.Sc.II**

Project Guide

Dr. Shrikant A. Wadhal**P.G. Department of Chemistry****Shri Shivaji Science College, Amravati****2019-2020**

CERTIFICATE

This is to certify that this dissertation entitled Soil Analysis by different techniques of analytical chemistry in Anjangaon surji region district Amravati is a bonafide project work carried out by Miss. N. S. Marape student of M.Sc. (Chemistry) under my supervision in Post Graduate Department of Chemistry, Shri Shivaji Science College, Amravati. During the academic year 2019-2020 for partial fulfillment of the requirement for the award of degree of M.Sc. and this dissertation has not form the basis for the award of any diploma, associate ship, fellowship or other similar title.

Dr. S. A. Wadhal
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Amravati

Conclusion and Future Scope :-

Soil testing thus is an essential part of the Environment Impact Assessment (EIA) Studies. The interpretation of soil test values obtained on soil analysis is an important part of the fertilizer recommendations to agricultural crops. The normal annual rainfall over the district where is from 700 mm to about 1700 mm. It is the minimum in the south western part of the district around daryapur 709 (mm.)

The soil test based fertilizer recommendations have been found more appropriate to achieve sustainable crop production as well as to improve soil health. Investigation of micronutrients in soils mostly carried out to explain crop failures and to determine the effect on plant growth of elements, other than those already recognized as essential. Micronutrients are sometimes called minor or trace elements which required in fewer amounts. Soil testing is essential component of soil resource management, each sample collected must be true representative of the area being sampled for soil survey work, sample area corrected from a soil profile representative to the soil of the surrounding area. In this area Black cotton soil (regur soil) is highly argillaceous i.e. clayey. It is deep and impermeable and thus has high water retention capacity. Soil Colour: These soils are black in colour due to the presence of iron, aluminium compounds and humus. soil thickness ranges between 30 cm and 100 cm.

A soil test will tell you what nutrient your plant or lawn need and will recommended the amount of fertilizers (N-P-K) to add to your soil. A soil test will also tell the current pH of your soil. Soil pH is a measure of soil acidity nutrient availability is influenced by the pH of the soil. The standard PH value of soil in the region of daryapur 8.5 and ID organic matter consists 0.91 to 1.05 % , available nitrogen 0.04 MGM, potassium 22 MGM %, potassium 30 to 50 ppm, iron not more than 0.3 mg /hectar

According to state agriculture department soyabean and moong has been sown, moong crop 138.39 hectares as on July 29, 2017 against the 625 hectares target set by government.

PROJECT REPORT

On

**“SUDY OF SOIL FERTILITY AND CORRELATION OF SOIL
PROPERTIES OF SELECTED VILLAGES UNDER TIOSA BLOCK IN
AMRAVATI DISTRICT”**

Submitted for the partial fulfillment of

Degree of

MASTER OF SCIENCE**IN****CHEMISTRY**

Sant Gadge Baba Amravati University,

Amravati.

Submitted by,

MS. KOMAL PRABHULALJI JOSHI

Project Guide

DR. S. P. INGOLE

Submitted to,

P. G. Department of Chemistry**Shri Shivaji Science College, Amravati****2019-2020**



DEPARTMENT OF CHEMISTRY
Shri. Shivaji Science College, Amravati.

CERTIFICATE

This is to certify that, the research work performed by **Miss. Komal Prabhulalji Joshi** under the supervision of **Dr. Shruti P. Ingole (Assistant Professor)** in the Department of chemistry, Shri. Shivaji Science College, Amravati and the same has not been submitted elsewhere for a degree.

Co-ordinator

Head

Date:-

Place: Amravati

CONCLUSION

In soil analysis, there are six processes which are soil sampling technique, determination of texture of soil, determination of water content, determination of organic matter, determination of air content and soil pH. Three type of soil samples are used in soil analysis, which are housing area, pond and farm. The soil are extracted successfully. In the determination of texture of soil, it can be concluded that soil sample from housing area has the highest percentage of stone component whereas soil sample from farm has the highest percentage of sand component. Soil sample from pond has the highest percentage of slit and clay. Meanwhile, in the experiment of determination of water content, soil sample in pond has the highest water content with 22.88 % of water in the soil sample, followed by housing area soil sample (14.77%) and lastly, farm with 14.67% of water content which is very close to the reading of housing area soil sample. In the determination of organic matter, housing area soil has the highest percentage of organic matter(8.90%), followed by pond soil sample with 7.12% of organic matter and finally, farm with 4.02% of organic matter in soil. Besides that, in the determination of air content, farm soil sample has the highest air content which is 48.98% in the soil sample. The second place is housing area soil sample with 39.13% air content. Lastly, pond soil sample has the least air content which is s 2.71%, In the determination of pH level of soil sample, soil sample of farm and pond is acidic, which is pH 5 and In Amravati district, in the area of Tiosa various types of crops and fruits are grown, some of them are cotton, soyabean, tur, wheat and orange. For all these crops and fruits they have to maintain the soil as per the soil and climate requirements according to their crops and fruits. In the region of Tiosa cotton is the most widely grown crop. For the cultivation of cotton soil should be optimal for cotton growth which is the deep well drained sandy loam soils, with enough clay, organic matter and a moderate concentration of nitrogen and phosphorous. The best yield are often achieved in loamy soils that are rich in calcium carbonate. A gentle slope generally helps the water drainage and is sometimes desired for cotton cultivation. Cotton is a plant that needs a long frost-free period, a lot of heat and plenty of sunshine. It prefers warm and humid climate. Cotton seeds will have a small germination rate, if the soil temperature is below 60°F (15°C). During active growth, the ideal air temperature is 70 to 100°F (21-37°C). Temperatures well above 100°F are not desirable. However, the average cotton plant can survive in temperatures up to 110°F (43°C) for short periods without great damage, but this also depends on the humidity levels. In order to

cultivate cotton plants successfully, we shall not have frequent rainfalls during the maturing (summer) and during the days of harvest (during autumn). Cotton can grow in almost all well drained soils. In case of cotton crop it needs long frost free period a lot of heat and plenty sunshine climate. The pH of soil ranges from 5.8 to 8.6 with the sandy loam soil. However, suitable soils for achieving high. The standard value of requirements of micronutrients in cotton nitrogen is 52- 156 ppm, phosphorous and potassium are 36 to 151 ppm, copper is 12 ppm, magnesium is 40 ppm, calcium is 16 ppm, sulphur is 10 ppm, iron is 2.9 ppm, zinc is 1.1 ppm, magnesium is 25 ppm, copper is 12 ppm, boron is 10 ppm. For the cultivation of soyabean crop The best **soil** type is sandy loam having good organic matter content. **Soybeans** grow best in well-drained **soils** with a pH of 6 to 7

It was observed that different pedogenic processes and related physiography of the tiosa region had influences on the physicochemical characteristics of the soil (texture, nutrients, availability, cation exchange capacity and organic carbon content of the soil). Therefore this would help taking, up appropriate measures on the problem of the tiosa region. However, application of more labile organic inputs, liming materials and suitable macro nutrients (P,K) would be effective for sustainable management and improving fertility status of the soils under tiosa region. And also analyzed the micro ntrients in soil (Cu, Fe, Mn, Zn).

6 respectively. However, housing area soil is slightly alkaline which is pH 8.

• **Future work**

After this thesis and the experimental work performed in this backfill some important uncertainties remain mainly related to pore fluid chemistry and their interaction with the macroscopic behavior of active soils. Future work directly related to the Project it is also detailed. Backfill hydraulic behaviour was always assumed isotropic. Backfill anisotropic hydraulic behaviour might introduce non-desirable preferential flow paths, decreasing the effectiveness of the barrier. Capacity of a compacted active soil to swell and to erase the previous orientation introduced by the compaction effort must be investigated in order to assure the low hydraulic conductivity and diffusivity of the backfill material. However, for backfill high dry specific weights ($> 17 \text{ kN/m}^3$), swelling seems to erase the anisotropic effects induced by compaction.

Hydraulic fracture could occur if water pressure is suddenly increased in the backfill. There are not many works dealing with this subject in the literature. Because of its influence on

“Soil Analysis”

Submitted by partial fulfillment of
Degree of
Master of Science
In
Chemistry
Sant Gadge Baba Amravati University,
Amravati.

By

Miss. Bhagyashri Rajiv Mankar

Under Guidance of

Dr. N.A Kalambe

M.Sc., B.Ed., M. Phill., Ph.D.

P. G. Department of Chemistry

Shri Shivaji Science College, Amravati

2019-2020

Certificate

Certified that the work incorporated in this thesis entitled “**Soil Analysis** ” by Miss. Bhagyashri Rajiv Mankar was carried out by the candidate under my supervision. The work incorporated in this dissertation has not been submitted to this or any other university or any other degree of academic award.

Place: Amravati

Date: / 08 / 2020

Dr. N. A. Kalambe

Department of Chemistry

Shri Shivaji Science College,

Amravati

CHAPTER V:-

Conclusion and future scope of Work:-

Conclusion:

This project would help a regular user to maintain his farm better by providing fertilizers in the right amount. It can also help the user by suggesting a schedule. The predictions and suggestions are made based on past records and present input. It also makes use of feedback from the user to improve the prediction. The network of moisture sensors provides real time irrigation and minimizes the load of watering. This helps save water and also prevents over saturation of soil.

FARM-IT is therefore an efficient and important tool for a regular farmer that can help him in his day-to-day agricultural activities and also help improve his farming habits.

Future scope of Work:

Due to lack of real-time sensors for analyzing soil content, such as, N P and K suggestions cannot be provided immediately. Real time sensors for detection of soil components, can be used to receive NPK values real time, like the moisture sensor. This would greatly help the user as, Regular visits to the lab for soil testing can be avoided. Since these sensors are currently unavailable, future scope of this project could include, making use of these sensors as and when they are available. Besides, more factors such as detection of carbon content (organic matter), accurate weather forecast can be used, depending upon the location.

Therefore, the project can be improved by using in-situ sensors and considering more elements for measuring soil content in real time.

Project Report on

“Soil quality in selected areas of Chandur Rly.Tahasil (block) under Amravati district, Maharashtra”

Submitted by partial fulfillment of
Degree of
Master of Science
In
Chemistry
Sant Gadge Baba Amravati University,
Amravati.

By

Miss. Pallavi S. Lingot

Under Guidance of

Dr. H.G.Wankhade

M.Sc. Ph.D.

P. G. Department of Chemistry
Shri Shivaji Science College, Amravati
2019-2020

Certificate

Certified that the work incorporated in this thesis entitled “Soil quality in selected areas of Chandur Rly.Tahasil (block) under Amravati district, Maharashtra” by Miss. Pallavi Shrikrishna Lingot was carried out by the candidate under my supervision. The work incorporated in this dissertation has not been submitted to this or any other university or any other degree of academic award.

Place: Amravati

Date: / 08 / 2020

Dr. H. G. Wankhade
Department of Chemistry
Shri Shivaji Science College,
Amravati.

Chapter V:-

CONCLUSION AND FUTURE WORK

CONCLUSION

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FUTURE WORK

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Therefore, the project can be improved by using in-situ sensors and considering more elements for measuring soil content in real time.

“Soil Analysis”

Submitted by partial fulfillment of
Degree of
Master of Science
In
Chemistry
Sant Gadge Baba Amravati University,
Amravati.

By

Mr. Shashikant A. Patil

Under Guidance of

Dr. V.R. kinhikar

M.Sc. Ph.D. (NET)

Submitted to

P. G. Department of Chemistry
Shri Shivaji Science College, Amravati
2019-2020

Certificate

Certified that the work incorporated in this thesis entitled “**Soil Analysis** ” by **Mr. Shashikant A. Patil** was carried out by the candidate under my supervision. The work incorporated in this dissertation has not been submitted to this or any other university or any other degree of academic award.

Place: Amravati

Date: / 09 / 2020

Dr. V. R. Kinhikar

Department of Chemistry

Shri Shivaji Science College,

Amravati

Chapter V

CONCLUSION AND FUTURE WORK

CONCLUSION

This project would help a regular user to maintain his farm better by providing fertilizers in the right amount. It can also help the user by suggesting a schedule. The predictions and suggestions are made based on past records and present input. It also makes use of feedback from the user to improve the prediction. The network of moisture sensors provides real time irrigation and minimizes the load of watering. This helps save water and also prevents over saturation of soil.

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FUTURE WORK

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Therefore, the project can be improved by using in-situ sensors and considering more elements for measuring soil content in real time.


Dr. H. S. LUNGE
IQAC Coordinator
Shri Shivaji Science College
Amravati.




Principal
Shri Shivaji Science College
AMRAVATI.

Department of Computer Science

List of the Students under taking Field Projects

Shri Shivaji Science College, Amravati (2019-2020)

Department of Computer Science

MSc II Projects - Guide Allocation List

Roll No	Name	Topic	Guide
1	Kalyani S. Kawade	Document Sharing System	Gawande sir
2	Apurwa D. Sawalkar	Medical Store Maintenance System	Mankar sir
3	Prajakta R. Girulkar	Online Teacher Staff Payroll System	Chawke madam
4	Harsha A. Zade	Online Book Store	Chawke madam
5	Akshita G. Pathak	File Shared System Using Cloud Computing	Mankar sir
6	Prajakta R. Ghogare	Personal Blogs	Kakade madam
7	Bharati Ambarte	Departmental Stock Maintenance System	Hushare sir
8	Pratiksha C. Choukade	Online Art Gallery	Korde madam
9	Karishma R. Dabhade	Online Credit Card Management System	Bahadure madam
10	Vedika M. Sarosare	Departmental Stock Maintenance System	Hushare sir
11	Mayuri S. Lunge	Online mess finder system	Chavan sir
12	Rutuja Gophane	SSSC Online food delivery	Korde madam
13	Pallavi Neware	Real estate system	Chawke madam
14	Kiran C. Raut	Online medical search web application	Mankar sir
15	Vivek D. Jawanjal	College Complaints Box	Dandge madam
16	Vaishnavi Fale	Online Admission System	Junghare madam
17	Pooja Bire	Online Ration System	Gawande sir
18	Shraddha Indhane	Student Performance Prediction System	Kabire madam
19	Rohan S. Gayakwad	Designing college website	Kabire madam
20	Shivani S. Bodile	Online old book reseller system	Junghare madam
21	Meenal S. Chakre	College Alumni Web Portal	Kabire madam
22	Prajwal B. Harne	SSSC Vehicle Parking System	Kakade madam
23	Snehal S. Deshmukh	Online movie ticket booking system	Hushare sir
24	Nandkishor B. Belankar	Teacher Assistant App	Gawande sir
25	Vaishnavi A. Raut	Online Admission System	Junghare madam
26	Komal Wagh	Electronic Healthcare Advisor	Chavan sir
27	Pooja S. Jaware	E-learning for students.	Dandge madam
28	Dharati D. Kharbade	Employee Management System	Bahadure madam
29	Manoj Kavitkar	Online Bakery Shoppe	Kakade madam

Head
Dept. of Computer Science
Shri Shivaji Science College,
Amravati.

Title and Place of Work

Document Sharing System

PROJECT REPORT
ON
“DOCUMENT SHARING SYSTEM”

Submitted to
Sant Gadge Baba Amravati University
Amravati

In partial fulfillment of the requirement of
M.Sc. (Computer Software) Final Year Examination

Submitted by
Miss. Kalyani Saheblal Kawade

Under the guidance of
Mr. S. S. Gawande

(Department of Computer Science)



DEPARTMENT OF COMPUTER SCIENCE
Shri Shivaji Education Society Amravati's
SHRI SHIVAJI SCIENCE COLLEGE
Amravati.

Project Work Completion

CERTIFICATE

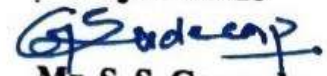
This is to certify that the project report entitled “Document Sharing System” is carried out and developed by **Ku. Kalyani Saheblal Kawade** in partial fulfillment of the M.Sc. (Final Year) and submitted to **Sant Gadge Baba Amravati University, Amravati** under my guidance and supervision.

To the best of my knowledge the matter presented in this project has not been presented earlier for similar degree/diploma.

Place: Amravati

Date: 22-08-2020

Project Guide


Mr. S. S. Gawande


Head

Department of Computer Science

External Examiner


Internal Examiner

Document Sharing System

6. Conclusion

Hence we can assure that "DOCUMENT SHARING SYSTEM" has been implemented successfully. This project can be very beneficial for the Educational Institute and Organization. As it eliminates the tedious work of saving the documents and access it from remote destination and very importantly reduces the unnecessary human efforts and time. The project "DOCUMENT SHARING SYSTEM" provide easy and effective interface to maintain their educational and confidential documents, reduce their workload and to provide a secure environment in which all their official activities will be carried out.

This project is currently used at our institute only, but with more modifications and updating we can use it at the World Wide also.

6.1 Limitations of the System:

- In this system, notification is not generated if someone sends a friend request to another person.
- The internet connection is required to use this web application.

6.2 Future Scope of the Project:

It is not possible to develop a system that makes all the requirements of the user. User requirements keep changing as the system is being used. Some of the future enhancements that can be done to this system are:

- As the technology emerges, it is possible to upgrade the system and can be adaptable to desired environment.
- Because it is based on object-oriented design, any further changes can be easily adaptable.
- Based on the future security issues, security can be improved using emerging technologies.
- Attendance module can be added
- sub admin module can be added

PROJECT REPORT
ON
“Medical Store Maintenance System”

Submitted to
Sant Gadge Baba Amravati University
Amravati

In partial fulfillment of the requirement of
M.Sc. Final Year(Semi.IV) Examination

Submitted by
Ku. Apurwa Devendra Sawalkar

Under the guidance of
Mr. Prafull S. Mankar
(Department of Computer Science)



DEPARTMENT OF COMPUTER SCIENCE
Shri Shivaji Education Society Amravati's
SHRI SHIVAJI SCIENCE COLLEGE
Amravati.
2019-2020

Shri Shivaji Education Society Amravati's
Department of Computer Science
Shri Shivaji Science College, Amravati

CERTIFICATE

This is to certify that the **project report entitled “Medical Store Maintenance System”** is carried out and developed by **Ku. Apurwa D. Sawalkar** in partial fulfillment of the M.Sc. (Final Year) and submitted to **Sant Gadge Baba Amravati University , Amravati** under my guidance and supervision.

To the best of my knowledge the matter presented in this project has not been presented earlier for similar degree/diploma.

Place: Amravati

Date:

Project Guide


(P.S. Mankar)



Head
Department of Computer Science

External Examiner


Internal Examiner

6. CONCLUSION

Our project is only a humble venture to satisfy the needs to manage their project work. Several user-friendly coding has also adopted. This package shall prove to be a powerful package in satisfying all the requirements of the school. The objective of software planning is to provide a frame work that enables the manger to make reasonable estimates made within a limited time frame at the beginning of the software project and should be updated regularly as the project progresses.

At the end it is concluded that we have made effort on following points...

- A description of the background and context of the project and its relation to work already done in the area.
- Made statement of the aims and objectives of the project.
- The description of Purpose, Scope, and applicability.
- We define the problem on which we are working in the project.
- We describe the requirement Specifications of the system and the actions that can be done on these things.
- We understand the problem domain and produce a model of the system, which describes operations that can be performed on the system.
- We included features and operations in detail, including screen layouts.
- We designed user interface and security issues related to system.
- Finally, the system is implemented and tested according to test cases.

Teacher Staff Payroll System

PROJECT REPORT

ON

Teacher Staff Payroll System

Submitted to

SantGadge Baba Amravati University**Amravati**

In partial fulfilment of the requirement of
M.Sc. (Computer Software) Final Year Examination

Submitted by

Prajakta Raju Girulkar

Under the guidance of

Miss. R.Y. Chawke**(Department of computer science)**

Department of computer science Shri shivaji Science College
Amravati . 2019-2020

Page 1

Teacher Staff Payroll System**CERTIFICATE**

This is certify that the project report entitled “ **Teacher Staff Payroll System**” is carried out and developed by **ku. Prajakta Raju Girulkar** inpartial fulfilment of the M. Sc. (final year)and submitted to **SantGadge Baba Amravati University, Amravati** under guidance and supervision.

To the best of my knowledge the matter presented in this project has not been presented earlier for similar degree/diploma.


Head**Department of computer Science****Project Guide****Miss. R.Y. Chawke****External Examiner**

con

Place :Amravati**Date: 5-9-2020****Internal Examiner**

Teacher Staff Payroll System

6. CONCLUSION

This project is built keeping in mind that it is to be used by only one user that is the admin. It is built for use in small scale organization where the number of Teachers is limited. According to the requested requirement the admin can add, manipulate, update and delete all Teacher data in his organization. The admin can add new departments and delete them. The Admin can also add predefined pay grades for the Teachers. The required records can be easily viewed by the admin anytime time he wants in an instant. The payment of the Teacher is based on monthly basis. Numerous validations implemented would enable the admin to enter accurate data. The main objective of this framework is to save time, make the system cost effective and management records efficiently.

PROJECT REPORT
ON
“ONLINE BOOK STORE”

Submitted to
Sant Gadge Baba Amravati University
Amravati

In partial fulfillment of the requirement of
M.Sc.(Computer Software) Final Year Examination

Submitted by
Ku.Harsha A.Zade

Under the guidance of
Miss. R.Y.Chawke
(Department of Computer Science)



DEPARTMENT OF COMPUTER SCIENCE
Shri Shivaji Education Society Amravati's
SHRI SHIVAJI SCIENCE COLLEGE
Amravati.
2019-2020

Shri Shivaji Education Society Amravati's
Department of Computer Science
Shri Shivaji Science College, Amravati

CERTIFICATE

This is to certify that the **project report entitled “Online Book Store”** is carried out and developed by **ku. Harsha A.Zadein** partial fulfillment of the M.Sc. (Final Year) and submitted to **Sant Gadge Baba Amravati University , Amravati** under my guidance and supervision.

To the best of my knowledge the matter presented in this project has not been presented earlier for similar degree/diploma.

Place: Amravati
Date:

Project Guide

Miss .chauke


Head
Department of Computer Science

External Examiner


Internal Examiner

6 CONCLUSIONS

6.1 Limitations of the system

Although I have put my best efforts to make the software flexible, easy to operate but limitations cannot be ruled out even by me. Thought the software presents a broad range of options to its users some intricate options could not be covered into it partly because of logistic and partly due to lack of sophistication. Paucity of time was also major constraints, thus it was not possible to make the software foolproof and dynamic. Lack of time also compelled me to ignore some part such as storing old results of the candidate etc.

Considerable efforts have made the software easy to operate even for the people not related to the field of computers but it is acknowledge that a layman may find it a bit problematic at the first instance. The user is provided help at each step for this conversation is working with the software.

List of limitations which is available in the Online Book Store

Excel export has not been developed for Books, Stock due to some critical.

- The transaction are executed in offline mode, hence online data for customers, Order capture and modification is not possible.
- Offline report of Books, Payment, Customer cannot be generated due to batch mode execution.

PROJECT REPORT

ON

“File Shared System Using cloud computing ”

Submitted to

Sant Gadge Baba Amravati University

Amravati

In partial fulfillment of the requirement of

M.Sc.(Computer Software) Final Year Examination

Submitted by

Akshita Gajanan Pathak

Under the guidance of

Mr. P. S. Mankar

(Department of Computer Science)



DEPARTMENT OF COMPUTER SCIENCE

Shri Shivaji Education Society Amravati

SHRI SHIVAJI SCIENCE COLLEGE

Amravati. 2019-2020


Shri Shivaji Education Society Amravati
Department of Computer Science
Shri Shivaji Science College, Amravati

CERTIFICATE

This is to certify that the **project report entitled "File Shared System Using Cloud Computing"** is carried out and developed by **ku. Akshita Gajanan Pathak** in partial fulfillment of the M.Sc. (Final Year) and submitted to **Sant Gadge Baba Amravati University, Amravati** under my guidance and supervision.

To the best of my knowledge the matter presented in this project has not been present earlier for similar degree/diploma.

Place: Amravati
Date:

Project Guide

Mr. P. S. Mankar


Head
Department of Computer Science.

External Examination.


Internal Examiner

6. CONCLUSION

6.1 Limitations of the System:

- In this system, heavy files cannot be process, because we use our system as server. This limitation can be overcome by live server.
- The internet connection is required to use this web application.

6.2 Future Scope of the Project:

It is not possible to develop a system that makes all the requirements of the user. User requirements keep changing as the system is being used. Some of the future enhancements that can be done to this system are:

- As the technology emerges, it is possible to upgrade the system and can be adaptable to desired environment.
- Because it is based on object-oriented design, any further changes can be easily adaptable.
- Based on the future security issues, security can be improved using emerging technologies.
- SMS gateway module can be added.
- Sub admin module can be added.
- Digital Signature concept can be added to maintain security of documents.

Shri Shivaji Education Society Amravati's
Department of Computer Science
Shri Shivaji Science College, Amravati

CERTIFICATE

This is to certify that the **project report entitled “Personal Blog”** is carried out and developed by **Prajakta Ghogare** in partial fulfillment of the M.SC. (Final Year) and submitted to **Sant Gadge Baba Amravati University, Amravati** under my guidance and supervision.

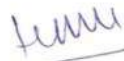
To the best of my knowledge the matter presented in this project has not been presented earlier for similar degree/diploma.

Place: Amravati

Date:



Project Guide
(Miss.S.A.Kakade)



Head

Department of Computer Science

External Examiner



Internal Examiner

CONCLUSIONS:

6.1 Limitations of the System:

- The user unable to change the core elements of the personal blog. Hence there is a limitation of customization.
- User can't change the layout of his/her personal blog

6.2 Future Scope of the Project:

There are some IT companies which are already working on this type of project
eg. www.wix.com

6.3 Conclusion:

- The person doesn't need to know any programming skill for creating his/her personal blog.
- So, the person can keep his/her biodata profile up to date easily.

PROJECT REPORT
ON
"THE STOCK MAINTENANCE SYSTEM"

Submitted to
Sant Gadge Baba Amravati University
Amravati

In partial fulfillment of the requirement of
M.Sc.(Computer Software) Final Year Examination

Submitted by
Bharti Pandurang Ambarte

Under the guidance of
Mr.Prof. Yogesh Hushare

(Department of Computer Science)



DEPARTMENT OF COMPUTER SCIENCE
Shri Shivaji Education Society Amravati's
SHRI SHIVAJI SCIENCE COLLEGE
Amravati.
2018-2019

Shri Shivaji Education Society Amravati's
Department of

Computer Science

Shri Shivaji Science College,

Amravati

CERTIFICATE

This is to certify that the project report entitled "The Stock Maintenance System" is carried out and developed by **ku. Bharti Pandurang Ambarte** in partial fulfillment of the M.Sc. (Final Year) and submitted to **Sant Gadge Baba Amravati University , Amravati** under my guidance and supervision.

To the best of my knowledge the matter presented in this project has not been presented earlier for similar degree/diploma.

Place: Amravati
Date: 14/9/2020


Project Guide

Mr.Prof.

Yogesh Hushare


Head

Department of Computer Science

External Examiner


Internal Examiner

[Type text]Page 2

Stock Maintenance System

the new system (that is a design question) but improper will prevent it. Implementation is the process of having systems personal check out and put new equipment to use, train users, install the new application and construct any files of data needed to use it. This phase is less creative than system design. Depending on the size of the organization that will be involve in using the application and the risk involved in its use, system developer may choose to test the operation in only one area of the firm with only one or two persons. Sometimes, they will run both old and new system in parallel way to compare the results. In steel other situations, system developers stop using the old systems one day and start using the new one the next. The implementation of the web based or LAN base network project has some extra steps at the implement. We need to configure the system according the requirement of the software. For the project we need to install and configure, database server and deployment directory for the project.

6. CONCLUSION

Our project is only a humble venture to satisfy the needs to manage their project work. Several user friendly coding have also adopted. This package shall prove to be a powerful package in satisfying all the requirements of the school. The objective of software planning is to provide a frame work that enables the manger to make reasonable estimates made within a limited time frame at the beginning of the software project and should be updated regularly as the project progresses.

At the end it is concluded that we have made effort on following points.

PROJECT REPORT
ON
“ONLINE Art Gallery

Submitted to
Sant Gadge Baba Amravati University
Amravati

In partial fulfillment of the requirement of
M.Sc.(Computer Software) Final Year Examination

Submitted by

Pratiksha chandu choukade

Under the guidance of

Miss.A.P.korde

(Department of Computer Science)



DEPARTMENT OF COMPUTER SCIENCE
Shri Shivaji Education Society Amravati's
SHRI SHIVAJI SCIENCE COLLEGE
Amravati.
2019-2020

CERTIFICATE

This is to certify that the **project report** entitled "**Online Art Gallery**" is carried out and developed by **ku. Pratiksha chandu choukade** in partial fulfillment of the **M.Sc. (Final Year)** and submitted to **Sant Gadge Baba Amravati University , Amravati** under my guidance and supervision.

To the best of my knowledge the matter presented in this project has not been presented earlier for similar degree/diploma.

Place: Amravati

Date:


Project Guide

Miss.A.P.korde


Head

Department of Computer Science

External Examiner


Internal Examiner

6. Conclusion :-

6.1 Limitation of the system :- training for simple computer operation is necessary for the users working on the system.

Time to time data entries requires for smooth process.

6.2 Future Scope of project

A lot of scope is there... It gives new faces equal status with the old ones...

online art galleries are the future scope of selling, exhibiting the art works market. Gradually it will be more and more improved and grow throughout the world. Now they had also started using the 360 degree view and panoramic image for better feel of the virtual art gallery experience.

6.3 Conclusion

This project will be helpful for online art gallery to manages their whole factory such as maintaining their customer record, maintaining record of art. This system also shows the final bill to the customer he/she buy from the gallery and also show the art details to the people who want to sold their art to gallery

Credit Card Management System

PROJECT REPORT

ON

Credit Card Management System

Submitted to

Sant Gadge Baba Amravati University, Amravati

In partial fulfilment of the requirement of
M.Sc.(Computer Software)Final Year Examination

Submitted by

Karishma Rajendra Dabhade

Under the guidance of

Miss. P. V. Bahadure**(Department of computer science)**

Department of computer science Shri Shivaji Science College Amravati .
2019-2020

Credit Card Management System

CERTIFICATE

This is certify that the project report entitled “ **Credit Card Management System**” is carried out and developed by **Karishma Rajendra Dabhade** in partial fulfilment of the M. Sc. (final year)and submitted to **Sant Gadge Baba Amravati University, Amravati** under guidance and supervision.

To the best of my knowledge the matter presented in this project has not been presented earlier for similar degree/diploma.


Head

Department of Computer Science

Project Guide
Miss. P.V. Bahadure

External Examiner



Internal Examiner

DEPARTMENT OF COMPUTER SCIENCE , SHRI SHIVAJI SCIENCE COLLEGE
AMRAVATI 2019-2020.

Place :Amravati

Date: 7-Sep-2020

Credit Card Management System

10. CONCLUSION

The system is designed in order to make the existing system more effective. It allows the customer to access cash easily. The Card Management System could interact with an external Card Transaction System, thereby updating the Card-related information maintained by the bank. The purpose is to build a Card Management System which provides complete card processing, to meet the needs of full-fledged Credit card based ATM or Point of Sale network. Customer can apply for credit card and know his eligibility from his own place just by giving his personal details. Everything comes to his door. Person comes to collect the required documents. Verification and other process will be finished within 5 days and customer is intimated about the sanctioned loan amount and EMI that he has to pay

Stock Maintenance System

PROJECT REPORT
ON
“THE STOCK MAINTENANCE SYSTEM”

Submitted to
Sant Gadge Baba Amravati University
Amravati

In partial fulfillment of the requirement of
M.Sc.(Computer Software) Final Year Examination

Submitted by
Vedika Madhukar Sarosare

Under the guidance of
Mr.Prof. Yogesh Hushare

(Department of Computer Science)



DEPARTMENT OF COMPUTER SCIENCE
Shri Shivaji Education Society Amravati's
SHRI SHIVAJI SCIENCE COLLEGE
Amravati.
2018-2019

Stock Maintenance System

Shri Shivaji Education Society Amravati's
Department of Computer Science
Shri Shivaji Science College, Amravati

CERTIFICATE

This is to certify that the project report entitled "The Stock Maintenance System" is carried out and developed by ku. Vedika Madhukarrao Sarosare in partial fulfillment of the M.Sc. (Final Year) and submitted to Sant Gadge Baba Amravati University , Amravati under my guidance and supervision.

To the best of my knowledge the matter presented in this project has not been presented earlier for similar degree/diploma.

Place: Amravati
Date:14/9/2020




Project Guide

Mr.Prof. Yogesh Hushare



Head
Department of Computer Science

External Examiner



Internal Examiner

Stock Maintenance System

put new equipment to use, train users, install the new application and construct any files of data needed to use it. This phase is less creative than system design. Depending on the size of the organization that will be involve in using the application and the risk involved in its use, system developer may choose to test the operation in only one area of the firm with only one or two persons. Sometimes, they will run both old and new system in parallel way to compare the results. In steel other situations, system developers stop using the old systems one day and start using the new one the next. The implementation of the web based or LAN base network project has some extra steps at the implement. We need to configure the system according the requirement of the software. For the project we need to install and configure, database server and deployment directory for the project.

6. CONCLUSION

Our project is only a humble venture to satisfy the needs to manage their project work. Several user friendly coding have also adopted. This package shall prove to be a powerful package in satisfying all the requirements of the school. The objective of software planning is to provide a frame work that enables the manger to make reasonable estimates made within a limited time frame at the beginning of the software project and should be updated regularly as the project progresses.

[Type text]Page 59

Online Mess Finder System

A
PROJECT REPORT
ON

ONLINE MESS FINDER SYSTEM

Submitted to

Sant Gadge Baba Amravati University

Amravati

In partial fulfilment of the requirement of
M.S.C(Computer Software) Final Year Examination

Submitted by

Ku. Mayuri Shrikrushna Lunge

Under the guidance of

Mr. A. D. Chavan

(Department of computer science)

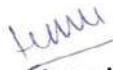
Department of computer science Shri shivaji Science College Amravati .
2019-2020

Online Mess Finder System

CERTIFICATE

This is certify that the project report entitled "Mess Finder System" is carried out and developed by ku. Mayuri Shrikrushna Lunge in partial fulfilment of the m.s.c(final year)and submitted to Sant Gadge Baba Amravati University, Amravati under guidance and supervision.

To the best of my knowledge the matter presented in this project has not been presented earlier for similar degree/diploma.



Head

Department of computer Science



Project Guide

Mr. A.D. Chavan

External Examiner



Internal Examiner

DEPARTMENT OF COMPUTER SCIENCE , SHRI SHIVAJI SCIENCE
COLLEGE AMRAVATI.
2019-2020

Place: Amravati

Date: 03-09-2020

Page 2

CONCLUSION

Top-k Query processing is essential for large information retrieval system. Top-k processing techniques such as the adopted query model, data access, implementation level, and supported ranking functions. The main objective of top-k query processing is to return the k highest ranked results quickly and efficiently.

In this project we proposed the Best Positioning Algorithm, using which we can get faster result point of interest according to distance and ranking. For calculation of distance between two point of interest, we use geo-code function. The efficacy and efficiency of our technique are confirmed by detailed evaluations. The best position algorithm executes the top k queries more efficiently rather than threshold algorithm. Best position algorithm avoids re-accessing data items via sorted and random access, without having to keep data at the query originator. We showed that best position algorithm is instance optimal over all databases, and its optimality ratio is better than or equal to that of threshold algorithm.

7.1 Inference

Inference is nothing but one prediction about the system that we proposed for searching Mess Owners and Messes. In the proposed system there is a possibility of same point of interest may get the different rating at different LBSPs, so users may get confused.

7.2 Future Scope

In this dissertation work we have described a best position algorithm which is able for answering top-k queries over sorted lists is the Threshold Algorithm (TA). However, TA may still incur a lot of useless accesses to the lists. As the developers and also the service-providers in the LBS sectors are trying to combat issues such as that of security and signal strength; in the coming days we are sure to get efficient services with a personalized appeal. As future work, we plan to develop BPA-style algorithms for P2P systems, in particular for the popular DHTs where top-k query support is challenging. We also plan to adapt our BPA2 algorithm for replicated DHTs providing currency guarantees. This could be useful to perform top-k queries that involve results ranked by currency. The system is originally developed for end users. Various approaches are considered to improve the performance of system. By adding more features in the future it is expected that this system will go long way in a satisfying users requirements. The system is able to achieve the objective and provide the ultimate result. With a wide range of location scenarios demonstrate that project greatly improves user satisfaction by performing Mess and Mess Owner search effectively and efficiently.

PROJECT REPORT
ON
**“ONLINE FOOD ORDERING
SYSTEM”**

Submitted to
Sant Gadge Baba Amravati University
Amravati

In partial fulfillment of the requirement of
M.Sc.(Computer Software) Final Year Examination

Submitted by
Rutuja G. Gophane

Under the guidance of
Miss. A. P. Korde

(Department of Computer Science)



DEPARTMENT OF COMPUTER SCIENCE
Shri Shivaji Education Society Amravati's
SHRI SHIVAJI SCIENCE COLLEGE
Amravati.
2019-2020

Shri Shivaji Education Society Amravati's
Department of Computer Science
Shri Shivaji Science College, Amravati

CERTIFICATE

This is to certify that the **project report entitled “Online Food Ordering System”** is carried out and developed by **ku. Rutuja Gajanan Gophane** in partial fulfillment of the M.Sc. (Final Year) and submitted to **Sant Gadge Baba Amravati University , Amravati** under my guidance and supervision.

To the best of my knowledge the matter presented in this project has not been presented earlier for similar degree/diploma.

Place: Amravati

Date:


Project Guide

Miss. A.P. Korde


Head

Department of Computer Science

External Examiner


Internal Examiner

6. Conclusion

So the Online Food Ordering System is mainly used to place online food order and that will be useful for everyone. The application is also serving as a useful site to know what is going on in online food application and can also know about the various offers of the application. The application can be further expanded by following the future Enhancements mentioned in future scope.

6.1 Limitations of the System:

- In this system, notification is not generated if someone sends order request to admin person.
- The internet connection is required to use this web application.

6.2 Future Scope of the Project:

It is not possible to develop a system that makes all the requirements of the user. User requirements keep changing as the system is being used. Some of the future enhancements that can be done to this system are:

- As the technology emerges, it is possible to upgrade the system and can be adaptable to desired environment.
- Because it is based on object-oriented design, any further changes can be easily adaptable.
- Based on the future security issues, security can be improved using emerging technologies.
- Mobile App module can be added

6.3 Project Summary:

In this project we can share place the order for food. The order and transaction data will be secure and safe. The user can easily access all the order and placed it, admin can easily access and complete the order of the user.

Real Estate System

PROJECT REPORT
ON
“REAL ESTATE PROPERTY SYSTEM”

Submitted to
Sant Gadge Baba Amravati University

Amravati

In partial fulfillment of the requirement of

M.Sc. (Computer Software) Final Year Examination

Submitted by

Ku. Pallavi Ramkrishna Neware

Under the guidance of

Miss . R.Y. Chowke

(Department of Computer Science)



DEPARTMENT OF COMPUTER SCIENCE
Shri Shivaji Education Society Amravati's
SHRI SHIVAJI SCIENCE COLLEGE
Amravati.
2019-2020

M.ScFinal[Computer Software]

Page 1

Real Estate System

Shri Shivaji Education Society Amravati's
Department of Computer Science
Shri Shivaji Science College, Amravati

CERTIFICATE

This is to certify that the project report entitled “Real Estate property System” is carried out and developed by **ku. Pallavi Ramkrishna Neware** in partial fulfillment of the M.Sc. (Final Year) and submitted to **Sant Gadge Baba Amravati University , Amravati** under my guidance and supervision.

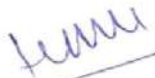
To the best of my knowledge the matter presented in this project has not been presented earlier for similar degree/diploma.

Place: Amravati

Date:

Project Guide


Miss . R.Y. Chowke



Head

Department of Computer Science

External Examiner


Internal Examiner

Real Estate System

6. Conclusion:

In this “Real Estate Portal” describe the property of (Plot, Farm, and Flat). Many people has a problem of purchasing the property in daily life ,so avoid this problem we can implement “Real Estate Portal” .It is convenient for purchaser to select particular property .This procedure consuming less time without money. Also in this portal,register the selling property easily. And convenient for user it enhancement theclarity purchasing and selling property.

6.1 Future Scope of the Project:

This application used through the desktop with support of internet. In this application one has drawback this application is only available in internet use in the desktop .Future scope of this design and develop application using the Smartphone.

- Providing Good User Interface.
- Providing access permissions to the seller/buyer.

Online Medical Search **2020**

A

PROJECT REPORT

ON

Online medical search web application

Submitted to

Sant Gadge Baba Amrvati University

Amravati

In partial fulfilment of the requirement of

M.Sc.(Computer Software)Final Year Examination

Submitted by

ku. Kiran c. Raut

the guidance of

Prof. Prafull Mankar

(Department of computer science)


Department of computer science Shri shivaji Science College

Amravati . 2019-2020

CERTIFICATE


This is certify that the project report entitled “Online medical search web application” is carried out and developed by ku. Kiran chandrabhanji Raut in partial fulfilment of the M. Sc. (final year)and submitted to Sant Gadge Baba Amravati University, Amravati under guidance and supervision.

To the best of my knowledge the matter presented in this project has not been presented earlier for similar degree/diploma.


Head Department of computer Science

External Examiner


internal Examiner

Project guide: prof. Prafull Mankar 

DEPARTMENT OF COMPUTER SCIENCE , SHRI SHIVAJI
SCIENCE COLLEGE AMRAVATI. 2019-2020

Place :Amravati

Date: 13-9-2020

CONCLUSION:

By adding more features in the future it is expected that this system will go long way in a satisfying users requirements. The system is able to achieve the objective and provide the ultimate result.

We have presented a web-based system for medical search. The system is originally developed for end users. Various approaches to improve the performance of the system. One of the drawbacks observed is that, they lack perfect user input and the generation of weak results. The experiments with a wide range of medical scenarios demonstrate that project greatly improves user satisfaction by performing medical search effectively and efficiently.

PROJECT REPORT
ON
“Collage Complaints Box”

Submitted to

Sant Gadge Baba Amravati University
Amravati

In partial fulfillment of the requirement of
M.Sc.(Computer Software)Final Year Examination

Submitted by

Vivek Diliprao Jawanjale

Under the guidance of

Miss. S. S. Dandage

(Department of computer science)

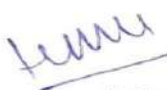


Department of computer science Shri Shivaji Science College
Amravati. 2019-2020

CERTIFICATE


This is certify that the project report entitled “**Collage Complaints Box**” is carried out and developed by **Vivek Diliprao Jawanjal** in partial fulfillment of the M. Sc. (final year)and submitted to **Sant Gadge Baba Amravati University, Amravati** under guidance and supervision.

To the best of my knowledge the matter presented in this project has not been presented earlier for similar degree/diploma.


Head Department of Computer Science

External Examiner
Miss. S. S. Dandge




Internal Examiner Project guide:

DEPARTMENT OF COMPUTER SCIENCE , SHRI SHIVAJI SCIENCE
COLLEGE AMRAVATI. 2019-2020

Place :Amravati

Date:

College Complaints Box**10. CONCLUSION**

- College Complaints Box provides a direct communication between the citizen and the College department.
- This will again help in registering the problems that one is facing in particular area and by continuously following up them will result in a good, clean and peaceful environment.

A

PROJECT REPORT

ON

“Online Admission For Post-Graduation”

Submitted to
Sant Gadge Baba Amravati University
Amravati

In partial fulfilment of the requirement of
M.Sc.(Computer Software) Final Year Examination

Submitted by
Vaishnavi V. Fale.

Under the guidance of
Dr. U. S. Junghare.

(Department of Computer Science)



DEPARTMENT OF COMPUTER SCIENCE
Shri Shivaji Education Society Amravati's
SHRI SHIVAJI SCIENCE COLLEGE
Amravati.
2018-2019

Shri Shivaji Education Society Amravati's
Department of Computer Science
Shri Shivaji Science College, Amravati

CERTIFICATE

This is to certify that the **project report** entitled “ **Online Admission For Post-Graduation**” is carried out and developed by **Ku. Vaishnavi Vinodrao Fale** in partial fulfilment of the M.Sc. (Final Year) and submitted to **Sant Gadge Baba Amravati University, Amravati** under my guidance and supervision.

To the best of my knowledge the matter presented in this project has not been presented earlier for similar degree/diploma.

Place: Amravati

Date:

Project Guide

Dr. U. S. Junghare.

Head

Department of Computer Science

External Examiner

Internal Examiner

6. Conclusion

6.1 Limitation of the System

- Students have to wait in long queues to take admission forms, deposit admission fee and to get know the status of their admission. Even sometimes, they cannot take admission in higher studies outside the state.
- The manual admission system leads to errors, more time consumption, inefficient and wastage of valuable resources.
- There is repetition of work in the existing system, the same data is written again and again by different branches.
- In existing system, managing of student's record is very tedious. Searching of students' records in manual registers, maintaining of records and reconciliation etc. are very time consuming.

6.2 Future Scope of Project

- We will send the login details to register candidate his/her mobile number.
- We will send the admission confirmation message to registered Email id of candidate.

PROJECT REPORT
ON
“ONLINE RATION CARD SYSTEM”

Submitted to
Sant Gadge Baba Amravati University,
Amravati
In partial fulfillment of the requirement of
M.Sc. (Computer Software) Final Year Examination

Submitted by
Pooja Bire

Under the guidance of
Prof. S S Gawande
(Department of Computer Science)



DEPARTMENT OF COMPUTER SCIENCE
Shri Shivaji Education Society Amravati's
SHRI SHIVAJI SCIENCE COLLEGE
Amravati.
2019-2020

CERTIFICATE

This is to certify that the **project report** entitled "**Online Ration Card System**" is carried out and developed by **Ku. Pooja Bire** in Partial Fulfillment of the M.SC.(final year) and Submitted to **Sant Gadge Baba Amravati University, Amravati** under my guidance and supervision.

To the best of my knowledge the matter presented in this project has not been presented earlier for similar degree/diploma.

Place: Amravati

Date:



Project Guide

Prof. S S Gawande



Head

Department of Computer Science

External Examiner



Internal Examiner

CONCLUSION

This paper depicts the computerized version of the Public Distribution System (PDS) and its advantages over the present ration cards. Using this technique or method we can reduce the corruption level and can mostly eradicate it from the above mentioned system which will help the country's economy to reach new heights. The computerized PDS is simple to implement and requires much less hard work when compared to the other system. So implementing this will be really helpful to the people below poverty line.

PROJECT REPORT
ON
“STUDENT PERFORMANCE
PREDICTION SYSTEM”

Submitted to
Sant Gadge Baba Amravati University
Amravati

In partial fulfilment of the requirement of
M.Sc. (Computer Software) Final Year Examination

Submitted by
Ms. Shraddha S. Indhane

Under the guidance of
Miss. S. K. Kabire

(Department of Computer Science)



DEPARTMENT OF COMPUTER SCIENCE
Shri Shivaji Education Society Amravati's
SHRI SHIVAJI SCIENCE COLLEGE
Amravati.
2019-2020


Shri Shivaji Education Society Amravati's
Department of Computer Science
Shri Shivaji Science College, Amravati

CERTIFICATE

This is to certify that the **project report entitled “Student Performance Prediction System”** is carried out and developed by **Ms. Shraddha Suresh Indhane** in partial fulfillment of the M.Sc. (Final Year) and submitted to **Sant Gadge Baba Amravati University, Amravati** under my guidance and supervision.

To the best of my knowledge the matter presented in this project has not been presented earlier for similar degree/diploma.

Place: Amravati
Date: 23/08/2020


Project Guide
Miss.S. K. Kabire


Head
Department of Computer Science

External Examiner


Internal Examiner

Student performance prediction system

We need to configure the system according to the requirement of the software. For the project we need to install and configure weblogicserver8.1, database server and deployment directory for the project.

6. Conclusion

6.1 Limitation of the System

Examination and problems associated with it is the main centre of focus in the field of education in our country today. Publication of results also takes a very long time owing to which students remain idle for months together. Some of the drawbacks in the existing examination system are as follows:

- Students from different areas have to visit university for every query regarding filling up of application forms, examination date, results and syllabus etc are collected by the student personally, thus wasting his/her precious time and money.
- Students have to wait in long queues to take examination forms, deposit examination fee and to get know the status of their results. Even sometimes, they cannot take admission in higher studies outside the state.
- The manual examination system leads to errors, more time consumption, inefficient and wastage of valuable resources.

Student performance prediction system

- There is repetition of work in the existing system, the same data is written again and again by different branches.
- In existing system, managing of student's record is very tedious. Searching of students' records in manual registers, maintaining of records and reconciliation etc. are very time consuming.

6.2 Future Scope of Project

- We have envisioned a product called Eatable that aims to bring this concept to reality and available to all.
- We will send the login details to register candidate he/her mobile number.
- We will send the result card to registered Email id of candidate.

6.3 Conclusion

This Web Application provides facility to conduct online examination worldwide. It saves time as it allows number of students to give the exam at a time and displays the results as the test gets over, so no need to wait for the result. Its automatically generated by server. Administrator has a privilege to create, Modify and delete particular paper its particular questions. User can register, login And give the test with his specific id, and can see the result as well.

Drawback of existing system leads to the designing of computerized system that will be compatible to existing system with existing which is more user friendly and more GUI oriented. We can improve the efficiency of the system, thus overcome the drawback of existing system.

1. Less human error.
2. Strength and strain of manual labour can be reduced.

PROJECT REPORT

ON

“DESIGN COLLEGE WEBSITE OF GPA”

Submitted to

Sant Gadge Baba Amravati University

Amravati

In partial fulfillment of the requirement of

M.Sc.(Computer Software) Final Year Examination

Submitted by

Rohan Shridharrao Gayakwad

Under the guidance of

Miss .SnehaK. Kabire

(Department of Computer Science)



DEPARTMENT OF COMPUTER SCIENCE

Shri Shivaji Education Society Amravati's

SHRI SHIVAJI SCIENCE COLLEGE

Amravati.

2019-2020

Shri Shivaji Education Society Amravati's
Department of Computer Science
Shri Shivaji Science College, Amravati

CERTIFICATE

This is to certify that the **project report entitled “Design College Website Of GPA”** is carried out and developed by **Mr.Rohan Shridharrao Gayakwad** in partial fulfillment of the M.Sc. (Final Year) and submitted to **Sant Gadge Baba Amravati University , Amravati** under my guidance and supervision.

To the best of my knowledge the matter presented in this project has not been presented earlier for similar degree/diploma.

Place: Amravati

Date:



Project Guide

Miss .Sneha K. Kabire



Head

Department of Computer Science

External Examiner



Internal Examiner

CONCLUSION

- In today's fast life the writing on papers and storing it at different places is quite difficult.
- People want a facility where they can easily store student information and reduce the paper work.
- The facility to achieve schedule data by SMS.
- We like this opportunity to convey our special thanks to all those who played a role in making this project a success and a great learning experience for us.

PROJECT REPORT**ON****Online old book reseller management system****Submitted to****Sant Gadge Baba Amravati University****Amravati****In partial fulfillment of the requirement of M.Sc.****(Computer Software) Final Year Examination****Submitted by****Ku. Shivani .S. Bodile****The guidance of****Prof. U. S. Junghare****(Department of computer science)****Department of computer science Shri shivaji Science College Amravati.
2019-2020**

CERTIFICATE

*This is to certify that the project report entitled “Online old book reseller management system” is carried out and developed by **ku. Shivani .S. Bodile** in partial fulfillment of the M.Sc. (Final Year) and submitted to **Sant Gadge Baba Amravati University, Amravati** under my guidance and supervision.*

To the best of my knowledge the matter presented in this project has not been presented earlier for similar degree/diploma.

Place: Amravati

Date:



Project Guide

Mr.Prof. U. S. Junghare



Head Department of Computer Science

External Examiner



Internal Examiner

Conclusion :-

1. Introduction

The goal of this document is to present all the test results using the test cases defined in the Test Plan Document. I have performed Manual and Performance testing for my Online Book store project.

2. Manual Testing

Manual testing is done to test the correctness of all the functionalities by manually entering the data.

Test case functionalities for manual testing include:

USER:

- Registration
- Login
- Add To Cart
- Edit Cart

ADMIN:

- Create and Delete book from Category
- Create and Delete a Category
- Manage Orders
- Manage Members

PROJECT REPORT

ON

“College Alumni Web Portal”

Submitted to

Sant Gadge Baba Amravati University

Amravati

In partial fulfillment of the requirement of

M.Sc (Computer Software) Final Year Examination

-Submitted by-

Meenal Sunil Chakre

Under the Guidance Of

Miss. S. K. Kabire

(Department of Computer Science)



DEPARTMENT OF COMPUTER SCIENCE
Shri Shivaji Education Society, Amravati

SHRI SHIVAJI SCIENCE COLLEGE


Amravati.
2019-2020


CERTIFICATE

This is to certify that the **project report entitled “College Alumni Web Portal”** is carried out and developed by **ku. Meenal Sunil Chakre** in partial fulfillment of the M.Sc. (Final Year) and submitted to **Sant Gadge Baba Amravati University , Amravati** under my guidance and supervision.

To the best of my knowledge the matter presented in this project has not been presented earlier for similar degree/diploma.

Place: Amravati
Date: 24/08/2020


Project Guide
Miss .S. K. Kabire


Head
Department of Computer Science

External Examiner


Internal Examiner

Alumni Web Portal

6. Conclusion

So the Alumni Web Portal is mainly used to share the views between the users of the application which is very useful to upgrade the knowledge of everyone. The application is also serve as a useful site to know what is going on in our in our college and can also know about the various opportunities of the outer world. The application can be further expanded by following the future Enhancements mentioned above.

6.1 Limitations of the System:

- In this system, notification is not generated if someone sends a friend request to another person.
- The internet connection is required to use this web application.

6.2 Future Scope of the Project:

It is not possible to develop a system that makes all the requirements of the user. User requirements keep changing as the system is being used. Some of the future enhancements that can be done to this system are:

- As the technology emerges, it is possible to upgrade the system and can be adaptable to desired environment.
- Because it is based on object-oriented design, any further changes can be easily adaptable.
- Based on the future security issues, security can be improved using emerging technologies.
- Attendance module can be added
- sub admin module can be added

Vehicle Parking System**PROJECT REPORT**
ON
“VEHICLE PARKING SYSTEM”

Submitted to
Sant Gadge Baba Amravati University
Amravati

In partial fulfillment of the requirement of
M.Sc.(Computer Software) Final Year Examination

Submitted by
Prajwal Bhanudasrao Harne.

Under the guidance of
Miss. S. A. Kakade

(Department of Computer Science)



DEPARTMENT OF COMPUTER SCIENCE
Shri Shivaji Education Society Amravati's
SHRI SHIVAJI SCIENCE COLLEGE
Amravati.
2019-2020

Vehicle Parking System

Shri Shivaji Education Society Amravati's
Department of Computer Science
Shri Shivaji Science College, Amravati

CERTIFICATE

This is to certify that the **project report** entitled "**Vehicle Parking System**" is carried out and developed by **Mr. Prajwal Bhanudasrao Harne** in partial fulfillment of the M.Sc. (Final Year) and submitted to **Sant Gadge Baba Amravati University , Amravati** under my guidance and supervision.

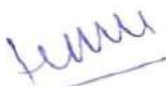
To the best of my knowledge the matter presented in this project has not been presented earlier for similar degree/diploma.

Place: Amravati

Date:



Project Guide
Miss. S. A. Kakade



Head
Department of Computer Science

External Examiner



Internal Examiner

Vehicle Parking System**8. CONCLUSION**

The project entitled is done in an effective manner is an efficient, time saving and easy way to report, view and control the version of file. All the operation is done efficiently. To use one, Start by Admin Login to a portal of the Vehicle parking system.

The portal shows that the information about any vehicle can fill up and it will store in a local storage. It is helpful for security that vehicle shows check-in or check-out.

This software is done using Java Script, HTML and CSS. This software is time reducing. Easy to simple and handle. Paperwork reduce and store information in a table format.

PROJECT REPORT
ON
“ONLINE MOVIE TICKET BOOKING
SYSTEM”

Submitted to
Sant Gadge Baba Amravati University
Amravati

In partial fulfillment of the requirement of
M.Sc.(Computer Software) Final Year Examination

Submitted by
Snehal Santoshrao Deshmukh

Under the guidance of
Mr.Prof. Yogesh Hushare

(Department of Computer Science)



DEPARTMENT OF COMPUTER SCIENCE
Shri Shivaji Education Society Amravati's
SHRI SHIVAJI SCIENCE COLLEGE
Amravati.
2018-2019

Shri Shivaji Education Society Amravati's
Department of Computer Science
Shri Shivaji Science College, Amravati

CERTIFICATE

This is to certify that the **project report** entitled "**Online Movie Ticket Booking System**" is carried out and developed by **ku. Snehal Santoshrao Deshmukh** in partial fulfillment of the M.Sc. (Final Year) and submitted to **Sant Gadge Baba Amravati University , Amravati** under my guidance and supervision.

To the best of my knowledge the matter presented in this project has not been presented earlier for similar degree/diploma.

Place: Amravati
Date:



Project Guide

Mr.Prof. Yogesh Hushare



Head

Department of Computer Science

External Examiner



Internal Examiner

FUTURE SCOPE

- Convenient online ticket booking through the Internet, which in turn leads to more, and repeat customers and shorter queues.
- Access to information and other movie-related promotional news through newsletters.
- Online Brand extension by projecting a tech-savvy image, and appealing to Generation Y consumers who spend a lot of time browsing the Internet.
- The Club Class memberships through the portal have built successful and lasting relationships with customers who are provided with special services like contests, loyalty points and redemption against exciting gifts, home delivery of tickets at a nominal cost, online account maintenance and more.

CONCLUSION

Nowadays, traditional reservation ways of cinema ticketing is dying. It's new age where technology dominates human life. With the software and technological devices, exceptions are reduced and even terminated. Also, people prefer easy, quick and safe way for every part of his life. This project is designed to meet the requirements of a cinema ticket booking system. It has been developed in ASP..net and the database has been built in SQL server keeping in mind the specifications of the system.

In our project: with this cinema ticketing system; cinema companies can satisfy comfortable facilities to their customers. The relationship between cinema manager, employee, and customer satisfy a good communication to complete

ticketing process. With this platform we developed, we are hoping to reduce time wasting, avoid misunderstandings, provide easy data flow, customer pleasure, and less hard work. We believe that we have accomplished our goals and satisfied with the code we developed.

REFERENCES:

- [1] Elmasri and Navathe, "Fundamentals of Database Systems" , 3/e, Addison - Wesley, 2001
- [2] A Silberschaltz, H.F. Korth, and S sudarshan, "Database System Concepts", 3/e, Tata Mcgraw Hill,1997
- [3] Thomas M. Connolly, Carolyn E. Begg, "Database Systems & Practical Approach to Design Implementation and Management", 4/e,Addison – Wesley, 2005

PROJECT REPORT
ON
“Teacher Assistant App”

Submitted to
Sant Gadge Baba Amravati University
Amravati

In partial fulfillment of the requirement of
M.Sc. (Computer Software) Final Year Examination

Submitted
by
Nandkishor Balabhau Belankar

Under the guidance of
Mr. S. S. Gawande

(Department of Computer Science)



DEPARTMENT OF COMPUTER SCIENCE
Shri Shivaji Education Society Amravati's
SHRI SHIVAJI SCIENCE COLLEGE
Amravati.
2019-2020

Shri Shivaji Education Society Amravati's
Department of Computer Science
Shri Shivaji Science College, Amravati

CERTIFICATE

This is to certify that the **project report entitled "Teacher Assistant App"** is carried out and developed by **Nandkishor Balabhau Belankar** in partial fulfillment of the M.Sc. (Final Year) and submitted to **Sant Gadge Baba Amravati University , Amravati** under my guidance and supervision.

To the best of my knowledge the matter presented in this project has not been presented earlier for similar degree/diploma.

Place: Amravati

Date:


Project Guide

Mr. S. S. Gawande


Head

Department of Computer Science

External Examiner



Internal Examiner

Teacher Classroom Assistant

6. Conclusion

This whole work is to access the details about the student attendance information and generate a final reports. This project “Teacher Assistant App” is a collection of mobile application based pages. This project provides an offer to the user to enter the data through their respective registration forms. It is very helpful for the teachers and admin to keep and maintain the information about the students easily. In future this work can be expanded to store the internal marks, semester marks, college events and college placement activities of the students to get minimized all stuffs at one place in a systematic way to import and export the data through the admin and authorized persons whenever it will be needed in future by the educational organization

6.1 Limitations of the System:

- The system can be run on android platform only. Though most of the mobiles now are android version and available in reasonable rate so it won't be a big issue.
- The internet connection is required to use this application.

6.2 Future Scope of the Project:

It is not possible to develop a system that makes all the requirements of the user. User requirements keep changing as the system is being used. Some of the future enhancements that can be done to this system are:

- As the technology emerges, it is possible to upgrade the system and can be adaptable to desired environment.
- Because it is based on object-oriented design, any further changes can be easily adaptable.
- Based on the future security issues, security can be improved using emerging technologies.
- Attendance module can be added
- sub admin module can be added

//6.3 Project Summary:

This android project intended to help the teachers to track the class activity and the online attendance of the classroom students. Here the teacher can take the attendance of the students as well as can make the schedules for the upcoming subjective classes.

PROJECT REPORT
ON
“Online Admission for Post-Graduation”

Submitted to
Sant Gadge Baba Amravati University
Amravati

In partial fulfillment of the requirement of
M.Sc. (Computer Software) Final Year Examination

Submitted by
Miss Vaishnavi Avinash Raut

Under the guidance of
Dr. U. S. Junghare
(Department of Computer Science)



DEPARTMENT OF COMPUTER SCIENCE
Shri Shivaji Education Society Amravati's
SHRI SHIVAJI SCIENCE COLLEGE
Amravati.
2019-2020

Shri Shivaji Education Society
Amravati's Department of
Computer Science Shri Shivaji
Science College, Amravati

CERTIFICATE

This is to certify that the **project report entitled “Online Admission For Post- Graduation”** is carried out and developed by **Miss Vaishnavi Avinash Raut** in partial fulfillment of the M.Sc. (Final Year) and submitted to **Sant Gadge Baba Amravati University, Amravati** under my guidance and supervision.

To the best of my knowledge the matter presented in this project has not been presented earlier for similar degree/diploma.

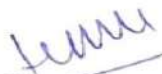
Place: Amravati

Date:

Project Guide



(Dr. U. S. Junghare)



Head

Department of Computer Science

External Examiner



Internal Examiner

College Online Admission System

- Students have to wait in long queues to take admission forms, deposit admission fee and to get know the status of their admission. Even sometimes, they cannot take admission in higher studies outside the state.
- The manual admission system leads to errors, more time consumption, inefficient and wastage of valuable resources.
- There is repetition of work in the existing system, the same data is written again and again by different branches.
- In existing system, managing of student's record is very tedious. Searching of students' records in manual registers, maintaining of records and reconciliation etc. are very time consuming.

6.2 Future Scope of Project

- We will send the login details to register candidate his/her mobile number.
- We will send the admission confirmation message to registered Email id of candidate.

6.3 Conclusion

By this project we are making to heighten and implement the improvements in college admission system, which is good and an easy way for reduce in hand work and making less handwork necessary. Students' database can be retrieved within quick interval of time proper maintaining of records can be achieved. Our system presently aims on creation of an good management system for the college universities. System will solve the problem of seat status by showing dynamic display of the seat status after every session of admission, so that student can select their seat preference accordingly in a hassle freeway which will make a clear impact for selecting their desired branch in a quick interval of time. This online admission management system will do the best for the needful who are at very large distance and will clear information about the process so that admission can be implemented in an smooth way and by reducing the efforts and by increasing

College Online Admission System

design. Depending on the size of the organization that will be involve in using the application and the risk involved in its use, system developer may choose to test the operation in only one area of the firm with only one or two persons. Sometimes, they will run both old and new system in parallel way to compare the results. In steel other situations, system developers stop using the old systems one day and start using the new one the next. The implementation of the web based or LAN base network project has some extra steps at the of implement. We need to configure the system according the requirement of the software. For the project we need to install and configure weblogicserver8.1, database server and deployment directory for the project.

A

PROJECTREPORT

ON

HealthCareAdvisor System

Submittedto

SantGadgeBabaAmrvatiUnivercity

Amravati

Inpartial fulfilment of the requirement of
M.S.C(Computer Software) Final Year Examination

Submitted by

Komal Gopal Wagh

The guidance of

Mr.Chauhan Sir

(Department of computer science)

Department of computer science

Shri shivaji Science College Amravati.

2019-2020

Healthcare Advisor System

CERTIFICATE

This is to certify that the project report entitled "Healthcare Advisor System" is carried out and developed by ku.Komal Gopal Wagh in partial fulfilment of the m.s.c(final year) and submitted to Sant Gadge Baba Amravati University, Amravati under guidance and supervision.

To the best of my knowledge the matter presented in this project has not been presented earlier for similar degree/diploma.



Head

Department of computer Science

External Examiner



Project guide:
Chauhan Sir



Internal Examiner

DEPARTMENT OF COMPUTER SCIENCE,
SHRI SHIVAJI SCIENCE COLLEGE AMRAVATI.

2019-2020

Place: Amravati

Date: 12-09-2020

A

PROJECT REPORT

ON

E-learning

Submitted to

Sant Gadge Baba Amravati University

Amravati

In partial fulfilment of the requirement of

M.S.C(Computer Software)Final Year Examination

Submitted by

pooja sunilrao jaware

the guidance of

Miss.Dandge mam

(Department of computer science)

S

CERTIFICATE

This is certify that the project report entitled "E learning " is carried out and developed by ku. Pooja sunilrao jaware in partial fulfilment of the m.s.c(final year)and submitted to Sant Gadge Baba Amravati University, Amravati under guidance and supervision.

To the best of my knowledge the matter presented in this project has not been presented earlier for similar degree/diploma.


Head

Department of computer Science



Project guide
Miss. S.S. Dandge

External Examiner



internal Examiner

DEPARTMENT OF COMPUTER SCIENCE ,

SHRI SHIVAJI SCIENCE COLLEGE AMRAVATI. 2019-2020

Place :Amravati

Date: 28-8-2020

5.3 Implementation

Implementation testing generally refers to the process of testing implementations of technology specifications. This process serves the dual purpose of verifying that the specification is implementable in practice, and that implementations conform to the specification. This process helps to improve the quality and interoperability of implementations.

Company Employee Management system | 2020

A
PROJECT REPORT
ON
EMPLOYEE MANAGEMENT SYSTEM

Submitted to

Sant Gadge Baba Amravati University

Amravati

In partial fulfilment of the requirement of
M.S.C(Computer Software) Final Year Examination

Submitted by

Ku. Dharati D. Kharbade

Under the guidance of

Miss. P.V. Bahadure

(Department of computer science)

Department of computer science Shri shivaji Science College
Amravati . 2019-2020

CERTIFICATE

This is certify that the project report entitled "Mess Finder System" is carried out and developed by ku. Dharati D. Kharbade in partial fulfilment of the m.s.c(final year)and submitted to Sant Gadge Baba Amravati University, Amravati under guidance and supervision.

To the best of my knowledge the matter presented in this project has not been presented earlier for similar degree/diploma.



Head

Department of computer Science



Project Guide

Miss. P.B. Bahadure

External Examiner



Internal Examiner

DEPARTMENT OF COMPUTER SCIENCE , SHRI SHIVAJI SCIENCE
COLLEGE AMRAVATI.

2019-2020

Place: Amravati

Date: 03-09-2020

5 Conclusion:

By adding more features in the future it is expected that this system will go long way in a satisfying administrator requirements. The system is able to achieve the objective and provide the ultimate result.

The proposed system would serve the purpose of managing all data generated during the training sessions conducted in the organization. Also the proposed system is secure, efficient, robust, comprehensive and user friendly. The system would help in monitoring the attendance and performance of employees: easily handle scheduling of different sessions. In all the system is capable of fulfilling all training needs of the organization. To maximize organization and efficient staff, managers have to invest in web-based collaborative solutions to optimize the business processes in the organization for faster development and better throughput. The proposed model has advantages over the existing models:

- The previous model does not support flexible learning process but the proposed model supports this feature, depending on the learning goal, the trainee (learner) has numerous opportunities about the different features of the learning process (time, mode, place, learning content,).
- Training is provided to the users but there is no co-ordination and interaction whereas the proposed model provides helping to resolve issues that influence employee performance and productivity by effective interaction.
- Training schedule provided in the existing models was inefficient whereas the proposed system provides proper scheduling as per the user's requirements which reduce time where experts are spending out of their office and their duties.

PROJECT REPORT
ON
“ONLINE BAKERY SHOPE”

Submitted to
Sant Gadge Baba Amravati University
Amravati

In partial fulfillment of the requirement of
M.Sc.(Computer Software) Final Year Examination

Submitted by
Manoj Diliprao Kavitkar

Under the guidance of
Miss. S. S. Kakade

(Department of Computer Science)



DEPARTMENT OF COMPUTER SCIENCE
Shri Shivaji Education Society Amravati's
SHRI SHIVAJI SCIENCE COLLEGE
Amravati.
2019-2020

CERTIFICATE

This is to certify that the project report entitled “Online Bakery Shope” is carried out and developed by **Mr. Manoj Diliprao Kavitkar** in partial fulfillment of the M.Sc. (Final Year) and submitted to **Sant Gadge Baba Amravati University , Amravati** under my guidance and supervision.

To the best of my knowledge the matter presented in this project has not been presented earlier for similar degree/diploma.

Place: Amravati

Date:

Project Guide



Miss .S. S. Kakade



Head

Department of Computer Science

External Examiner



Internal Examiner

6. Conclusions.

6.1 Future Scope Of The Project.

The future of this project depend on whether the author has enough spare time over the next 2 month to continue with the developing. The author feels that last few remaining features would round off the system. If the author was to try to sell this system then more system testing would have to be done, in a particular a more comprehensive real – world. Testing environment would have to be adopted along with some real words usage. Multiple concurrent users would be command in real world usage but have been difficult to test for considering there was only tester involved in this project. This type of system would benefit for the hardware in case of a system failure for the software in case of newly found bugs, in return of a subscription free.

6.2 Conclusion.

The project entitled “Online Bakery Shope” was completed successfully. The system has been developed with much care and free of errors and at the same time it is efficient and less time consuming. The purpose of this project was to develop a web application and an android application for purchasing items from a shop.

This project helped us in gaining valuable information and practical knowledge on several topics like designing web pages using html & css, usage of responsive templates, designing of android applications, and management of database using mysql . The entire system is secured. Also the project helped us understanding about the development phases of a project and software development life cycle. We learned how to test different features of a project.

This project has given us great satisfaction in having designed an application which can be implemented to any nearby shops or branded cookies and Chocolates selling various kinds of products by simple modifications.

There is a scope for further development in our project to a great extend. Another feature we wished to implement was providing classes for customers so that different offers can be given to each class. System may keep track of history of purchases of each customer and provide suggestions based on their history. These features could have implemented unless the time did not limited us.


Dr. H. S. LUNGE
IOAC Coordinator
Shri Shivaji Science College
Amravati.




Principal
Shri Shivaji Science College
AMRAVATI.

Department of Environmental Science

List of the Students under taking Field Projects (UG)

Shri Shivaji Science college, Amravati Admission Committee 2019-20 Admitted Student List B.Sc. III	
S.N.	NAME
1	BANUBAKODE PARITOSH ATUL
2	BARBUDDHE SHREYASH PRADIPRAO
3	CHAKRE VRUSHALI SURESH
4	DESHMUKH SHIVANI NILKANTHRAO
5	GANGWANI JANA VI BALDEV
6	JAISWAL SHRADDHA HEMANT
7	MAHURE SAMIKSHA SURENDRA
8	MALAMKAR SHARAYU RAVINDRA
9	MANKAR AKSHADA SANJIV
10	PACHPOR NANDINI VARSHA
11	PALEKAR VAISHNAVI RAJENDRA
12	PANDE MANALI JEEVAN
13	RAUT SHREYA SHASHIKANT
14	TALE ANJALI DAYANESHWAR
15	TATHOD PRADNYA MOTIRAMJI
16	WADI PALLAVI SUDHAKARRAO
17	WANKHADE SHRUTI RAJENDRA
18	WERULKAR SHRADDHA VILASRAO
19	NAKHALE D. S.

S.N.	NAME
1	AGADKAR SNEHAL SUNILRAO
2	DAHIWALE VIDISHA SUSHIL
3	DESHMUKH AMISHA VIJAY
4	GADE PRATIKSHA KISHOR
5	HIVE PRANJALI RAJU
6	KHARDE AMAN CHAITNYA
7	NISHANE SHRAVANI VIJAYRAO
8	RAMTEKE MRUNAL DILIPRAO
9	SAGANE SAKSHI DIVAKARRAO
10	SAWAI SHRAVANI PRAVIN
11	TAKARKHEDE KALYANI PRAMODRAO
12	TAYADE VISHAKHA VIJAY
13	THAKARE GAYATRI SANJAYRAO
14	UIKE RENUKA BABURAO

Title and Place of Work

SHRI SHIVAJI SCIENCE COLLEGE, AMRAVATI

Department of Environmental Science

SESSION 2019-2020

Project Report

Name of Student Shradha H. Jaiswal

Class B.sc III Group CEB Semester VI Roll No. 2831

Shri Shivaji Education Society, Amravati's

SHRI SHIVAJI SCIENCE COLLEGE,

Shivaji Nagar, Amravati – 444603 (M.S.)

Re-accredited by NAAC with A grade (Very Good) with a CGPA of 3.10
"College with Potential for Excellence"

Department of Environmental Science



PROJECT REPORT

ON

...Effects of air pollutants on leaves

= SUBMITTED BY =

.....Shraddha H. Jaiswal.....

SHRI SHIVAJI SCIENCE COLLEGE, AMRAVATI

2019-2020

Project Work Completion

Shri Shivaji Education Society, Amravati's

SHRI SHIVAJI SCIENCE COLLEGE,

Shivaji Nagar, Amravati – 444603 (M.S.)

Re-accredited by NAAC with A grade (Very Good) with a CGPA of 3.10
"College with Potential for Excellence"**Department of Environmental Science****CERTIFICATE**

This is to certify that,

Mr. / Ms. Shraddha H. Jaiswalwith College Roll No. 2831 Studying in the Class/Group B.Sc III / CEBSemester VI during academic Session 2019-2020 of this institute.He/She has completed Project Work based on the Syllabus and given
satisfactory account of it in this project.

Date: / /2020

Signature of the Incharge

Head of the Department

SHRI SHIVAJI SCIENCE COLLEGE, AMRAVATI
Department of Environmental Science

SESSION 2019-2020

Project Report

Name of Student Nandini Varsha Pachpor

Class B.Sc. IIIrd Group CEB Semester VI Roll No. 2835

Shri Shivaji Education Society, Amravati's

SHRI SHIVAJI SCIENCE COLLEGE,

Shivaji Nagar, Amravati – 444603 (M.S.)

Re-accredited by NAAC with A grade (Very Good) with a CGPA of 3.10
“College with Potential for Excellence”

Department of Environmental Science



PROJECT REPORT

ON

Estimation of impact of refuses on soil quality

= SUBMITTED BY =

Nandini V. Pachpor

SHRI SHIVAJI SCIENCE COLLEGE, AMRAVATI

2019-2020

Shri Shivaji Education Society, Amravati's

SHRI SHIVAJI SCIENCE COLLEGE,

Shivaji Nagar, Amravati – 444603 (M.S.)

Re-accredited by NAAC with A grade (Very Good) with a CGPA of 3.10
"College with Potential for Excellence"

Department of Environmental Science



CERTIFICATE

This is to certify that,

Mr. / Ms. Nandini V. Pachpor

with College Roll No. 2835 Studying in the Class/Group B.Sc. IIIrd year (CEB)
Semester VIIth during academic Session 2019-2020 of this institute.

He/She has completed Environmental Literacy Survey based on the
Syllabus and given satisfactory account of it in this survey.

Date: / /2020


Signature of the Incharge

Head of the Department

SHRI SHIVAJI SCIENCE COLLEGE, AMRAVATI

Department of Environmental Science

SESSION 2019-2020

Environmental Literacy Survey Report

Name of Student Mrunal Diliprao Ramteke

Class BSC-III Group CEZ Semester VI Roll No. 2883

Shri Shivaji Education Society, Amravati's

SHRI SHIVAJI SCIENCE COLLEGE,

Shivaji Nagar, Amravati – 444603 (M.S.)

Re-accredited by NAAC with A grade (Very Good) with a CGPA of 3.10
“College with Potential for Excellence”

Department of Environmental Science



PROJECT REPORT

ON

Estimation of impact of refuses on soil quality

= SUBMITTED BY =

...Mrunal...Diliprao...Ramteke.....

SHRI SHIVAJI SCIENCE COLLEGE, AMRAVATI

2019-2020

Shri Shivaji Education Society, Amravati's

SHRI SHIVAJI SCIENCE COLLEGE,

Shivaji Nagar, Amravati – 444603 (M.S.)

Re-accredited by NAAC with A grade (Very Good) with a CGPA of 3.10
“College with Potential for Excellence”

Department of Environmental Science



CERTIFICATE

This is to certify that,


Mr./Ms. Mrunal Diliprao Ramteke

with College Roll No. 2883 Studying in the Class/Group BSC-IIIrd [CEZ]

Semester VI during academic Session 2019-2020 of this institute.

He/She has completed Project Work based on the Syllabus and given satisfactory account of it in this project.

Date: / /2020


Signature of the Incharge

Head of the Department

Department of Environmental Science

List of the Students under taking Field Projects (PG)

M.Sc-II	
Sr. No.	Name of Student
1	Ku. Ankita Rajendra Kanhekar,
2	Ku. Akansha Anilsingh Gautam
3	Ankit Satish Jawanjal
4	Ku. Ashwini Ravindra Giri,
5	Ku. Chakuli Ramesh Bayaskar,
6	Ku. Gayatri Rajendra Ugale,
7	Ku. Kanchan Pramodrao Bansod
8	Ku.Kishori Vijayrao Sambhare
9	Ku. Leena Shivanand Madane
10	Ku. Manisha Umakant Bhatkar,
11	Ku. Minal Vijay Ingole
12	Ku. Parvani Shivajirao Ghormade,
13	Ku. Pooja sakharam Dutonde
14	Ku. Pooja Rajendra Choudhary,
15	Ku Radhika Sharadrao Dahane
16	Ritesh Kailasrao Januskar
17	Ku.Rucha Hari Kaple,
18	Ku. Samiksha R. Kale
19	Ku. Shravani Yasudeo Jaware,
20	Ku. Shweta Nandkishor Lahane,
21	Ku. Tejaswini Prabhakar Dhandar,
22	Ku. Vishakha Pramodrao Wankhade
23	Ku. Yamini Pundlikrao Madke
24	Ku. Archana Manikrao Raibole

Title and Place of Work

A
Project Report
On
" Impact of road construction activity on vegetation in the way of
construction"



Submitted to

*Sant Gadge Baba Amravati University In Partial Fulfillment of Requirement For The Degree
of Master of Science In The Subject of Environmental Science*

By

Miss. Ankita rajendra kanherkar

M.Sc.-II (SEM IV)

Environmental Science

Guided By

Miss Priti Bonde

**P.G.Department of Environmental Science,
Shri Shivaji Science College, Amravati 2019-2020**

Project Work Completion

CERTIFICATE

This is to certify that, I have been supervising the project work entitled, “**Impact of road construction activity on the vegetation in the way of construction,**” submitted in partial fulfilment of the requirement for the degree of “**Master of Science (Environmental science)**” of Sant Gadge Baba Amravati university, Amravati is a record of bonafide research work carried out by **kanherkar Ankita Rajendra** under my guidance and supervision.

SUPERVISOR**DEPARTMENT****Miss. Priti Bonde****Lecturer****(Dept. of Environmental Science)****HEAD OF****Dr. Mrs. S.P. Ingole**

**A
PROJECT REPORT
ON**

**“THE INVASIVE PLANTS AND ITS EFFECTS ON ECOSYSTEM A
CASE STUDY”**



Submitted to

*Sant Gadge Baba Amravati University In Partial Fulfilment Of Requirement For The
Degree Of Master Of Science In The Subject Of Environmental Science*

By

**Miss. Akanksha Gautam
M.Sc. –II (Sem-IV)
Environmental Science**

Guided By

**Tushar Hedau Sir
Lecturer**

**P.G. Department of Environmental Science
Shri Shivaji Science College, Shivaji Nagar, Amravati.
2020-2021**

CERTIFICATE

This is to certify that I have been supervising the project work entitled “THE INVASIVE PLANTS AND ITS EFFECTS ON ECOSYSTEM A CASE STUDY” of **Miss. Akanksha Gautam** for partial fulfilment of the degree of Master of Science (Environmental Science), Sant Gadge Baba Amravati University, Amravati. She has completed her project work satisfactorily and it is ready for evaluation.

Guide Teacher

Mr. Tushar Hedau Sir

Head of Department

Dr. S. P. Ingole

Coordinator

Miss. Manisha Jane Madam

Lecturer

Conclusion

In this paper, we have illustrated the range of economic benefits from managing invasive species, including safeguarding biodiversity, reducing losses from forestry and agriculture, and improving ecosystem health. As invasive species and their impacts continue to increase, so does the need to develop appropriate policy and management responses. Recognizing the economic benefits of control provide vital information to policy makers and practitioners to prioritize invasive species control actions. Benefits of managing invasive species are not limited to those associated with market valued goods such as crops, but should include increased exposure to disease and disruption to ecosystem service supply and impacts on biodiversity. We made clear the importance of thinking about the most appropriate context, whether private or social, in measuring the benefits of management, and in predicting whether private landowners apply sufficiently robust controls from the perspective of society. Decision making also needs to account for the impact of uncertainty over the outcomes associated with control of invasive species, and the potential irreversibility of control actions. This paper contributes to consolidating an understanding of the economic benefits of invasive species control. What economic valuation currently demands of ecologists in this regard is simple to set out. These demands include being able to quantify the impacts of invasive on end-points which people care about, or end-points related to producer profits; and the extent to which specific management actions mediate such undesirable effects on production and utility. Given the fast-changing landscape of invasive species management, these demands are certainly not trivial. However, this is only half of the equation, as policy makers and practitioners also need to account for the costs and effectiveness of control when making management decisions. We would direct readers to the growing literature on the effectiveness of invasive species control options (e.g. IUCN, 2017; Sameroff, Keitt, & Pickett, 2018; Sameroff, 2001) and encourage full consideration of costs in combination with the economic benefits of control we present here. Control of established invasive species is also only one tool in reducing impacts of invasive species, as enhanced biosecurity could arguably have more benefits than control efforts following establishment (Rout et al., 2011). However, biosecurity measures also have potentially high costs, and trade-offs related to risk of invasion, spread, and potential severity of damage must be considered alongside costs (Epanchin-Niell & Liebhold, 2015; Rout, Moore, & McCarthy, 2014).

Project Report

On

“A case study of Jigaon Dam for its positive and negative impact with respect to Social, Economic, Rehabilitation and Environmental issue”



Submitted to

Sant Gadge Baba Amravati University In Partial Fulfillment of Requirement For The Degree of Master of Science In The Subject of Environmental Science

By

Miss Ashwini R. Giri

M.Sc.-II (SEM IV)

Environmental Science

Guided By

Miss M. Jane

Lecturer

P.G.Department Of Environmental Science,

Shri Shivaji Science College, Amravati 2019-2020

This is to certify that I have been supervising the project work entitled, "*ACASE STUDY OF JIGAON DAM FOR ITS POSITIVE AND NEGATIVE IMPACT WITH RESPECT TO SOCIAL, ECONOMIC, REHABILITATION, AND ENVIRONMENTAL ISSUES* " Of Miss. Ashwini R. Giri for partial fulfilment of the degree of Master Of Science (Environmental Science) , Sant Gadge Baba Amravati University, Amravati. She has completed her project work satisfactorily and it is ready for evaluation.

A**Project Report****On****“COMPARATIVE STUDY OF GREEN AUDIT OF RURAL SCHOOL AND
URBAN SCHOOLS IN AMARAVTI DISTRICT”****Submitted to**

*Sant Gadge Baba Amravati University In Partial Fulfillment of Requirement For The
Degree of Master of Science In The Subject of Environmental Science*

By

Miss. Chakuli R. Bayaskar
M.Sc.-II (SEM IV)
Environmental Science

Guided By

Miss Priti Bonde
P.G.Department Of Environmental Science,
Shri Shivaji Science College,Amravati 2019-2020

CERTIFICATE

This is to certify that, I have been supervising the project work entitled, “**COMPARATIVE STUDY OF GREEN AUDIT OF URBAN SCHOOL AND RURAL SCHOOL,**” submitted in partial fulfilment of the requirement for the degree of “**Master of Science (Environmental science)**” of Sant Gadge Baba Amravati university, Amravati is a record of bonafide research work carried out by **Bayaskar Chakuli Rameshrao** under my guidance and supervision.

Head of Department
Dr. S.P. Ingol

Coordinator
Miss Priti Bonde madam

Supervisor

**A
PROJECT REPORT
ON**

**STUDY OF GREEN AUDIT OF SHRI SHIVAJI SCIENCE
COLLEGE AMRAVTI**

SUBMITTED TO

*Sant Gadge Baba, Amravati University, Amravati in partial fulfillment of the requirement for
the Degree of Master of Science in the subject of Environmental Science*

By

Miss Gayatri R. Ugale

M. Sc. II (Sem – IV)

Environmental Science

Guided by

Miss. Priti Bonde

Lecturer

P.G. DEPARTMENT OF ENVIRONMENTAL SCIENCE

Shri. Shivaji Science College, Shivaji Nagar, Amravati.

2019 -2020

A PROJECT REPORT ON

Analysis Of Physico-chemical and biological Parameters of
Naldamyanti Sagar after and before filtration (Comparative Study)



Submitted to

Sant Gadge Baba Amravati University in Partial Fulfillment Of
Requirement For The Degree Of Master Of Science in the Subject Of
Environmental Science.

By

Miss.Kanchan Pramodrao Bansod

M.Sc. – II (Sem-IV)

Environmental Science

Guided By

Rahul Mankar sir

**Department of environmental Science Shri shivaji Science
College, Shivaji Nagar Amravati**

2019-2020

CERTIFICATE

This is to certify that I have been supervising the project work entitled, **"Analysis Of Physico-chemical and biological Parameters of Naldamyanti Sagar(Shimbhora Dam)after and before filtration (Comparative Study)"** by **Miss Kanchan Pramodrao Bansod** for partial fulfillment of the Degree of Master Of Science (Environmental Science), Sant Gadge Baba Amravati University, Amravati

She has completed her project work satisfactorily and it is ready for evaluation.

Date :

Place : Amravati

Supervisor

Miss M.A.Jane

Head

Dr.Mrs.S.P.Ingole

Department of Environmental Science

Coordinator

Prof.R.Mankar

SUMMARY AND CONCLUSION

Summary :

The study was conducted the drinking water sample in Naldamyanti Sagar after and before filtration .

The water sample collected in the sterilized bottle for analysis. The water analyzed by physico-chemical parameters, the physical parameters like Temperature, pH, Conductivity, Turbidity, TDS & TS etc. by using the instrument like thermometer, pH meter, conductivity meter, Nephalo meter & other instrument.

And the chemical parameters like Alkalinity, Chloride, Dissolved Oxygen (DO), Total Hardness, by titration method. Chemical oxygen demand (COD), Sulphate, and Phosphate & Nitrate. Measure by the instrument COD multiparameter bench photometer.

And the water also analyzed by bacteriological parameter like Most Probable Number (MPN).

After the complete analysis, the obtained observations compared with the BIS (Bureau of Indian Standards) Standards and W.H.O.(World Health Organisation)The conclusions with proper suggestions put forth in the respective chapters.

Conclusion:

The main objective of this study was evaluation of quality of fliter water samples from drinking water sources. Water quality indicates that pollution of the water is increasing alarmingly and that it has created serious threat to human health and environment.

The quality water parameters studies are in three ways i.e.

- 1) Physical
- 2) Chemical
- 3)Bactrological

After the experimental procedure the obtained observation were tabulated together. And they were compared with the WHO and BIS standards the parameter of samples are compared.

A PROJECT REPORT ON
“EMERGENCE OF AGARBATTI FROM WASTE FLOWER COMING
FROM TEMPLES”



Submitted to

*Sant Gadge Baba Amravati University In Partial Fulfillment Of
Requirement For The Degree Of Master Of Science In The Subject Of
Environmental Science.*

By

Miss. Kishori Vijayrao Sambhare

M.Sc.-II (Sem-IV)

Environmental science

Guided by:-

Prof: Mr. Tushar M. Hedau

Assistant Professor

P. G. Department of Environmental Science

Shri Shivaji Science College, Shivaji Nagar , Amravati.

2019-2020

Certificate

This is to certify that I have been supervising the project work entitled, "Emergence of Agarbatti from Waste Flower Coming From Temples" of Miss. Kishori Vijayrao Sambhare for partial fulfillment of Master fulfillment of the degree of Master of Science (Environmental Science). Sant Gadge Baba Amravati University, Amravati. She has completed her project work satisfactorily and it is ready for evaluation.

Guided by:-

Prof. Tushar Hedau.
Asst. Prof. Of Dept. Of
Environmental science.

Head of Department

Dr. Mrs. S. P. Ingole

Dept. Of Environmental science

Coordinator

Prof.Dr. M. A. Jane

Asst. Prof. Of Dept. Of Environmental science

Summary and Conclusion

By the lamination of incense sticks it showed that as compare to the normal incense sticks the releasing smoke from waste flower and Ca CO_3 containing incense sticks is low. The releasing ash from incense stick of flower is also low.

According to some author the incense stick from merigold flower kill's the atmospheric bacteria, microbes, mosquitoes. So that merigold flower called antimicrobial.

After the completion of the process of making homemade incense stick which will caused less harmful effect to the environment using merigold flower.

The emission of CO_2 (carbon dioxide) from flower stick is less as compare to general incense stick. Also the emission of sulfur dioxide observed low. But after the applying of ghee on stick parameter get again changed as compare to before. It decreases by 1 ppm (parts per million) as compare to before parameter.

Due to this project the waste of flower will be decreases and decomposition of flower on land which causes lichen will also decreases. And burning rate of flower will reduced which help to pollution free environment.

A
PROJECT REPORT
ON

“PREPARATION OF WASTE VEGETABLES (GARBAGE) COMPOST COLLECTED FROM MARKET AND IT’S SUSTAINABLE EFFECTS ON SOIL AND CROP (PLANT) QUALITY”.



SUBMITTED TO

Sant Gadge Baba, Amravati University, Amravati in partial fulfillment of the requirement for the Degree of Master of Science in the subject of Environmental Science

By

Miss. LEENA S. MADANE

M. Sc. II (Sem – IV)

Guided by

Miss. PRITI BONDE MAM.

Lecturer.

P.G. DEPARTMENT OF ENVIRONMENTAL SCIENCE

Shri. Shivaji Science College, Shivaji Nagar, Amravati.

▪ CERTIFICATE

This is to certify that I have been supervising the project work entitled Preparation Of Waste Vegetables (Garbage) Compost Collected From Market And It's Sustainable Effects On Soil And Crop (Plant) Quality). Of **Miss.LEENA S. MADANE** for partial Fulfillment of the degree of Master of Science (environmental Science), Sant Gadge Baba Amravati University, Amravati.

She has completed his project work satisfactorily and it is ready for evaluation.

Head of Department And Supervisor:-

Dr. Mrs. S. P. Ingole.

(Department of Environmental Science
Shri. Shivaji Science College, Amravati.)

Guided By:-

Miss. Priti Bonde Mam.
Lecture

(Department of Environmental Science
Shri. Shivaji Science College, Amravati)

Co-ordinator

Dr. M. A. Jane
Lecturer

(Department of Environmental Science
Shri. Shivaji Science College, Amravati.)

❖ Summary and Conclusion

Composting is the best method to recycle waste of vegetables or the kitchen waste. Its more useful than chemical fertilizer. no cost, no side effect. India is the 2nd largest waste producing country. And as well as 1st no of farming sector. We can reuse the waste and use in the farming. We can make in less quantity also for home garden. Composting is the very cheapest method.

It will concluded that the recycling of the vegetable waste is a simple method to process and operate which is nuisance free environmentally friendly, aesthetically good looking, economically long term and socially acceptable as the final Product has good fertilizer value.

A Report on

“Application of Remote sensing and GIS in Agricultural Management in Amravati Taluka, Maharashtra”



A Thesis submitted to

**SANT GADGE BABA AMRAVATI UNIVERSITY,
AMRAVATI-444601**

In the partial fulfillment of the requirements for the degree of

**MASTER OF SCIENCE
(ENVIRONMENTAL SCIENCE)**

By

Miss. Manisha U Bhatkar
M.Sc. IInd Year (Environmental Science)

**Under the guidance of
Dr. M. J. Jane**

**DEPARTMENT OF ENVIRONMENTAL SCIENCE
SHRI SHIVAJI SCIENCE COLLEGE,
SHIVAJI NAGAR, AMRAVATI
YEAR 2020-2021**

CERTIFICATE

This is to certify that, I have been supervising the project work entitled, **“Application of Remote sensing and GIS Technology in Agriculture Management of Amravati Taluka, Maharashtra”** of Ms. Manisha U. Bhatkar for partial fulfilment of the Degree Of Master Of Science (Environmental Science), Sant Gadge Baba Amravati University.

The assistance and help received during the course of desertation of this report and source of the literature referred to have been duly acknowledged.

She has completed her project work satisfactory and it is ready for evaluation.

Guide By,
Dr. Aniket R. Borgawkar
M. Deshmukh

Supervior Head
Miss. Shivall

Geotech GIS Training Institute,
Training Institute
Aurangabad.
Amravati (M.S)

Geotech GIS

(M.S)

Date: / / 2020

Place: Aurangabad

GeoTech

CHAPTER V

SUMMARY AND CONCLUSIONS

5.1 SUMMARY

Maharashtra has always faced droughts. The drought has persisted for four consecutive years and has affected drinking water security and crop production and productivity severely all over the Maharashtra state. Vidharbha is the region in of taluka comes in Amravati district in marathawada region also suffering from the same problem of irrigation and agricultural productivity. Annual average rainfall in the Amravati taluka is approximately 857.4 mm, this rainfall is not constant and every four to five years less rainfall occurs in this area. If we see technically this rainfall is sufficient in all respect, but due to the improper practices, unavailability of water storing structures and lack precision in agricultural practices cause decreases in overall agricultural yield and deficiency of water has been observed.

Study area is situated in the Vidharbha region which also faces draught after four to five consecutive years. Study area is located in Amravati taluka, Amravati district in Maharashtra, India 20°32' and 21°46' north latitude and 76°37' and 78°27' east longitudes covering an area of approximately 904 km² and fall in survey of India Toposheets No. 55 G/12, 55 G/16, 55 H/9 and 55 H/13 and having population 7,88,327 as per 2011 Census. Amravati is a city and municipal council in Amravati District, in the Indian state of Maharashtra. It is bordered by the Bhatkuli Tehsil to the west, Morshi Tehsil to the north, Tiwsa Tehsil to the east and Nadgaon Khandeshwar to the south. Amravati is the headquarters' of Amravati Tehsil and also known as the Gateway of Vidharbha region. Amravati is located 343 meters [1125feet] above sea level on the western margin of the Deccan plateau.

The objective of the work is to study and to prepare various map like land use land cover, types of soil, contour, hill-shade etc. Using GIS and give the suggestions of sustainable development of Agriculture in Amravati. The software use for the work is ArcGIS 10.3 which is developed by ESRI (Environmental Space Research Institute) located in Redlands, California. Land use and land cover map is prepare to study the how land in Amravati is distributed like agricultural, barren land, residential zone etc. This LULC map shows that area covered by barren land is most dominant among all other types. Which comes to conclusion that there is scope for increasing crop productivity? The thematic maps prepared from DEM were useful in assessing the topographic, geologic, and drainage characteristics of the area under study. DEM based maps include Hill shade, contour and slope map.

*Msc project submitted to Sant Gadge Baba Amravati University,
Amravati* Page 76

APPLICATION OF REMOTE SENSING AND GIS IN AGRICULTURE MANAGEMENT, AMRAVATI TALUKA,
MAHARASHTRA

CERTIFICATE

This is to certify that I have been supervising the project work entitled, “**Bioremediation Of Textile Dye of Wastewater Using Dye Degrading Bacteria**”, by **Miss. Minal V. Ingole** for partial fulfillment of the Degree of Master of Science (Environmental Science), Sant Gadge Baba Amravati University , Amravati.

She has completed her project work satisfactorily and it is ready for evaluation.

Supervisor

Head

Dr.Mr. Vikram M. Pundkar

Dr. Mrs. S. P. Ingole

(Department of Enviromental science)

Coordinator

CHAPTER 6

SUMMARY AND CONCLUSION

This study reports that an enriched bacterial consortium can efficiently decolorize textile dye up to 92% and 81%, respectively in 9th day. The bacterial consortium exhibited maximum decolourization ability of dyes.

Colour removal of industrial effluent has been a major concern in waste water treatment, especially for the waste water that originates from textile and dye stuff plant with a continuous discharge of great quantity of remaining dyes to the environment. The efficient treatment of the effluent is an eco-friendly method for the treatment of textile effluent. Textile industries are largest generator of dye containing waste water. The release of dye containing effluent into the environment is of great concern due to its aesthetic value, toxicity, mutagenicity, carcinogenicity.

Various physico-chemical treatment methods in the removal of colour from textile effluent are now used or have been suggested, but often aren't implemented due to the excessive cost involved in the method and generation of secondary pollutants bacteria is the most frequently applied microorganisms for the removal of dyes from textile effluents because they are easy to cultivate, adapted to survive in extreme environmental conditions and decolorize the dyes at a faster rate as compared to other available microorganisms.

Bioremediation offers easy, cheaper and effective alternative for colour removal of textile dyes. The present study concluded that the collected effluent samples were good source of dye degrading bacteria. All the isolated bacteria can able to degrade the textile dye effluent the bacterial isolates of *Actinobacteria*, *S.aureus*, *Bacillus Subtilis* shows the maximum dye decolourization. The potential of these bacterias can be exploited for the removal of residual dyes from the waste water streams for environmental cleanup and restoration of ecosystem

CERTIFICATE

This is to certify that I have been supervising the project work entitled, **“INNOVATION OF ECOFRIENDLY BIOPLASTIC”**. Of **Miss. Parvani S. Ghormade** for partial fulfillment of the Degree of Master of Science (Environmental Science), Sant Gadge Baba Amravati University, Amravati. She has completed her project work satisfactorily and it is ready for evaluation.

Supervisor

Miss. Priti Bonde
Lecturer
(Dept. Of Environmental Science)

Head of Department

Dr. Mrs. S.P. Ingole

Co- Coordinator

CHAPTER-5

SUMMARY AND CONCLUSION:

5.1 Summary:

The study was conducted on the Innovation of ecofriendly bioplastic. Plastic pollution is the accumulation of plastic objects and particles (e.g. plastic bottles, bags and microbeads) in the Earth's environment that adversely affects wildlife, wildlife habitat, and humans. Plastics that act as pollutants are categorized into micro-, meso-, or macro debris, based on size. Plastics are inexpensive and durable, and as a result levels of plastic production by humans are high. Basically, plastics can be classified as a group of man-made or natural organic materials that can be molded and then hardened, including many types of resins, resinoids, polymers, cellulose derivatives, casein materials, and proteins.

Plastics, made from non-renewable resources such as petroleum products, are now very common and are being used almost everywhere as such; in packing materials, in bottles, cell phones, plastic bags and more. They are being so extensively used because of their durability, strength, malleability, low reactivity and cost efficiency.

However, together with all its benefits is the fact that it is highly pollutant and plastics nowadays have become a big environmental issue. To solve this big plastic issue of environment & make our earth plastic pollutant free we innovate eco-friendly bioplastic.

So we can really use bioplastic as a alternative of petroleum base plastic we did several test like

- 1) Strength test
- 2) Heat resistant test
- 3) Solubility test &
- 4) Degradability test

A Project on

**"IMPACT OF ARTIFICIAL GROUNDWATER STRUCTURE IN
AMRAVATI TALUKA (MAHARASHTRA) USING GIS AND REMOTE
SENSING TECHNIQUES"**



A Thesis submitted to

**SANT GADGE BABA AMRAVATI UNIVERSITY,
AMRAVATI-444601**

In the partial fulfilment of the requirements for the degree of

**MASTER OF SCIENCE
(ENVIRONMENTAL SCIENCE)**

By

Miss. Pooja S. Dutonde
M.Sc. IInd Year (Environmental Science)

Under the guidance of
Prof. Tushar M. Hedau

**DEPARTMENT OF ENVIRONMENTAL SCIENCE
SHRI SHIVAJI SCIENCE COLLEGE,
SHIVAJI NAGAR, AMRAVATI**

YEAR 2019-2020

CERTIFICATE

This is to certify that, I have been supervising the project work entitled, “**Impact of Artificial Ground Water Structure in Amravati Taluka Using GIS and Remote Sensing Techniques**” of Ms. Pooja S. Dutonde for partial fulfillment of the Degree of Master of Science (Environmental Science), Sant Gadge Baba Amravati University.

The assistance and help received during the course of dissertation of this report and source of the literature referred to have been duly acknowledged.

She has completed her project work satisfactory and it is ready for evaluation.

Guide By,
Prof. Tushar M. Hedau
Lecturer

Head
Dr. S. P. Ingole
Dept. of Environmental Science,
Shri Shivaji Science College,

Amravati

Coordinator
Dr. M.A. Jane
Lecturer

Date: / /2020

Place: Amravati

A
PROJECT REPORT
ON

“Implementation of Swacchh Bharat Mission in Biomedical waste Management”



Shri Shivaji Education Society, Gadge Baba Amravati University In Partial Fulfillment Of Requirement For The Degree
Of Science In The Subject Of Environmental Science

By

Miss. Pooja R. Choudhary

M.Sc-II (Sem-IV)

Environmental science

Guided by

Prof: Mr. Tushar M .Hedau

Lecturer

P. G. Department of Environmental Science

Shri Shivaji Science College, Shivaji Nagar , Amravati. 2019-2020

CERTIFICATE

This is to certify that, I have been supervising the project work entitled, "**Implementation of swacch Bharat mission in Biomedical waste management**" Ms. Pooja R. Choudhary for partial fulfillment of the degree of Master of Science (Environmental science), Sant Gadge Baba Amravati University, Amravati. She has completed her project work satisfactorily and it is ready for evaluation.

Supervisor

Prof. Tushar M. Hedau

Head of Department

Dr. Mrs. S P. Ingole

Coordinator

Miss M. A. jane

IMPLIMENTATION OF SWACCH BHARAT MISSION IN BIOMEDICAL WASTE MANAGEMENT

CHAPTER -V**DISCUSSION AND CONCLUSION**

The study investigated that the Swacchh Bharat mission Implemented in Biomedical waste management practices in Seven Categories of the hospital and during the field survey, In hospital waste management the major source of Hazardous waste individually have been found, have been mainly from the government Hospitals and The private clinics which are generating different types of waste & huge amount of clinical waste. The minor source were generated by diagnostic center (kg / day) and small healthcare centers(kg/ day) waste. which are particularly very small amount. Although the fraction is very small but this small fraction is not managed in proper manner.

In hospital there is generated are found as a mixture of Hazardous and non - Hazardous components of waste where the non Hazardous waste found big amount. In Hospital survey there are huge amount of floor cleaning agent , detergent and cleaning agent are used. And mixing with water and By the water is polluted .

In hospital the Biomedical waste management is very important. Because the Biomedical waste measure problem in healthcare. The study also observe that the some weakness of the current BMW waste management system such as, trained waste staff, inadequate budget, lack of awareness and appropriate guidelines and also there is absence of rigorous laws in area, which is essential for a dedicated medical waste management team.

In hospital on -site transportation Method are not found safety in most hospital. In hospital one good thing is their the separate dustbins provided patients to collect the waste. But dustbin there is all types of waste will be collected. The segregation at the point of generation and the authorities and management sector have not taken any proper effort to advance this critical situation.

In recyclable waste is found in big on the record of hospital waste. At the time of survey doctors said that they record all waste related information how many kg waste is generated per day? , Types of waste, which waste is Hazardous, and which activity is not good for the patient health this of information is recorded in hospital.

The hospital waste generated in hospital which observed to handled by waste staff and scavenger without any protecting clothing. Our government has not taken any extra regulations yet proper management of recyclable waste. During survey it was found that the all over therein no. Of individual method to separate the mixed recyclable waste based on their different

IMPLEMENTATION OF SWACCH BHARAT MISSION IN BIOMEDICAL WASTE MANAGEMENT

characteristics, for instance the mixed recyclable waste on even unused sharp without needle/ syringes and saline bags have been found together in collecting and storing in one color caintaner.

The main problem obtained from overall Survey is the incorrect segregation Practice. The incorrect segregation practices is the reason for increasing the generation rate is waste.

The proper labelling of waste bin and caintaners found in the hospital but hospital but the minimum five labelling Dustbin is available inthe hospital for different types of waste collection.

In Swacchh Bharat mission Implemented in private clinics is shown their guidelines, but perticularly found that minor. As compound to the Government Hospital private hospital waste management system is well. In government Hospitals this is large Hospital then the quantity of patients is more by means the waste is generated in the hospital is large quantity.

In government Hospitals like irwin , Dafreen and PDMC or super special Hospital this multi-speciality Hospital different are in this Hospital then large amounts of the Biomedical waste, kitchen waste, waste water is generated from this Hospital.

In government Hospitals there is the available canteen for the food facility by this canteen the health problems are increase . Because of food availability in canteen is all types, oily food which is not good patients Health. Not using clean water. By all this the microorganism are created on food and this microorganism are responsible for the various disease.

Conclusion:-

In Hospital waste management Implementing swachh Bharat mission survey , concluded that the The private Hospital are clean but in government Hospitals are various changes and waste management system is proper and others facility is available then Implementing swachh Bharat mission . And As campaire to private hospital government super speciality hospital is very clean and all facility is available and invegastigated that the government Hospitals is available type of machine for treatment of the patient.

PROJECT REPORT**ON****“PREPARATION OF LIQUID ORGANIC FERTILIZER (JEEVAMRIT) AND IT’S SUSTAINABLE EFFECTS ON SOIL AND CROP (PLANT) QUALITY”.****SUBMITTED TO**

Sant Gadge Baba, Amravati University, Amravati in partial fulfillment of the requirement for the Degree of Master of Science in the subject of Environmental Science

By**Mr. RITESH K. JANUSKAR****M. Sc. II (Sem – IV)****Guided by****Mr. K. J. GAVAI****P.G. DEPARTMENT OF ENVIRONMENTAL SCIENCE****Shri. Shivaji Science College, Shivaji Nagar, Amravati.****2019-2020**

CERTIFICATE

This is to certify that I have been supervising the project work entitled "Preparation of Organic liquid fertilizer (Jeevamrit) and it's effects on (crop) plant. " Of Mr. Ritesh K. Janusk for partial Fulfillment of the degree of Master of Science (environmental Science), Sant Gadge Baba Amravati University, Amravati. He has completed his project work satisfactorily and it ready for evaluation.

Head of Dept.

S. P. Ingole,
Dept. Of Evn. Sci.
Shri Shivaji Sci. College
Amravati.

Supervisor

Dept. Of Evn. Sci.
Shri Shivaji Sci. College
Amravati.

Co-ordinator

Dr. M. A. Jane

Lecturer

Dept of Env. Sci

Shri. Shivaji Sci. College, Amt.

In control condition due to the no use of any type of fertilizer, we saw there is no proper germination and growth of coriander plants. As shown in following picture :



4.3 CONCLUSION

Heavy use of chemicals in agriculture has weakened the ecological base in addition to degradation of soil, water resources and quality of the food. At this juncture a keen awareness has sprung on the adoption of organic farming as a remedy to cure the ills of modern chemical agriculture. It is very much essential to develop a strong workable and compatible package of nutrient management through organic resources for various crops based on scientific facts, local conditions and economic viability. The aim of these products is not to supply nutrition but rather to favour and stimulate the metabolism of plant. The biostimulant products offer a sustainable, environmental-friendly means of enhancing crop productivity in broad acre and specialty crops worldwide. Many scientific studies have demonstrated the potential of various categories of biostimulants to improve crop production and to ameliorate abiotic stresses such as drought and soil salinity.

Liquid Organic preparations contain higher number of bacteria, fungi, actenomycets, N-fixers and P-solubilizers. From the studies it is evident that jeevamrut is to be used between 9 to 12 days after preparation. The application of these liquid formulations would supplement the application of biofertilizers and they can be prepared easily by locally available materials by the farmers, in rural areas.

CERTIFICATE

This is to certify that, I have been supervising the project work entitled, “**Conservation of Air Quality through GIS of Amravati Urban Area**” of Ms. Rucha H Kaple for partial fulfillment of the Degree of Master Of Science (Environmental Science), Sant Gadge Baba Amravati University.

The assistance and help received during the course of dissertation of this report and source of the literature referred to have been duly acknowledged.

She has completed her project work satisfactory and it is ready for evaluation.

Date: / /2020

Place: Amravati

Supervisor
Dr. M. A. Jane
Project Guide

Head
Dr. S. P. Ingole
Dept. Of Environmental Science,
Shri Shivaji Science College,
Amravati.

Coordinator
Dr. K .J .Gawai
Asst. Prof

PROJECT REPORT ON

"Phytoremediation of Heavy metals in Industrial waste water by using aquatic plant
(Ipomoea aquatica)"



Submitted to

*Sant Gadge Baba Amravati University In Partial Fulfillment Of Requirement For The
Degree Of Master Of Science In The Subject Of Environmental Science.*

By

Miss. Samiksha Rameshwar Kale
M.Sc.-II (Sem-IV)
Environmental science

Guided by:-

Prof: Dr Manisha A. Jane
Assistant Professor

P. G. Department of Environmental Science
Shri Shivaji Science College, Shivaji Nagar , Amravati.

2019-2020

Certificate

This is to certify that I have been supervising the project work entitled,

Phytoremediation of Heavy metals in Industrial waste water by using aquatic plant (Ipomoea aquatica) of Miss. Samiksha Rameshwar Kale for partial fulfillment of Master fulfillment of the degree of Master of Science (Environmental Science). Sant Gadge Baba Amravati University, Amravati. She has completed her project work satisfactorily and it is ready for evaluation.

Supervisor

Prof. Dr. Manisha A. Jane
Asst. Prof. Of Dept. Of Environmental science.

Head of Department

Dr. Mrs. S. P. Ingole
Dept. Of Environmental science

Coordinator

Prof. Dr. M. A. Jane
Asst. Prof. Of Dept. Of Environmental science

COMPARATIVE STUDY ON PRODUCTION OF ALCOHOL PRODUCE FROM
DIFFERENT FRUITS



SUBMITTED TO
SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI AS A PARTIAL
FULFILMENT FOR THE DEGREE
OF
MASTER OF SCIENCE IN THE SUBJECT OF ENVIRONMENTAL SCIENCE

BY
SHWETA N. LAHANE
M.SC. II (ENVIRONMENTAL SCIENCE)

GUIDED BY
Dr. V. M. PUNDKAR
LECTURER
P.G. DEPARTMENT OF ENVIRONMENTAL SCIENCE
SHRI SHIVAJI SCIENCE COLLEGE, AMRAVATI

2019-2020

CERTIFICATE

This is to certify that I have been supervising the project work entitled, **“COMPARATIVE STUDY ON PRODUCTION OF ALCOHOL PRODUCE FROM DIFFERENT FRUITS”** of Miss. Shweta N. Lahane for partial fulfillment of the degree of Master of Science (Environmental Science), Sant Gadge Baba Amravati University, Amravati.

She has completed her project work satisfactorily and it is ready for evaluation.

Supervisor

Dr. V. M. Pundkar

Head of Department

Dr. S. P. Ingole

Dept. of Environmental Science

Shri. Shivaji Science College,

Amravati.

Co-ordinator

**“Potential Assessment to Establish Material Recovery Facility for
Municipal Solid Waste in Amravati Municipal Corporation”**

**Dissertation Submitted to Sant Gadge Baba Amravati University,
Amravati for Partial Fulfillment towards the degree of M.Sc. in
Environmental Science**



Submitted By

Miss. Tejaswini Prabhakar Dhandar

M.Sc. II

**Department of Environmental Science
Shri Shivaji Science College, Amravati**

Under the Guidance of

**Dr. Mrs. S. P. Ingole
Head of Department of
Environmental Science**

**Shri Shivaji Science College
Shivaji Nagar, Morshi Road, Gadge Nagar,
Amravati, Maharashtra 444603
2019-2020**

CERTIFICATE

This is to certify that the project work entitled “**Potential Assessment to Establish Material Recovery Facility for Municipal Solid Waste in Amravati Municipal Corporation**” submitted By

Miss. Tejaswini Prabhakar Dhandar for partial fulfillment of the degree of Master of Science (Environmental Science), Sant Gadge Baba Amravati University, Amravati.

She has successfully completed her project work satisfactory and it is ready for evaluation

Place: Amravati

(Dr. (Mrs) S. P. Ingole)

Date: /06/2020

**Supervisor & Head of Department
Department of Environmental Science
Shri Shivaji Science College.**

CERTIFICATE

This is to certify that, I have been supervising the project work entitled, **“Environmental Auditing of Government and Private Schools Data in Morshi city ”** of **Ms.Vishakha pramodrao wankhade.** for partial fulfilment of the Degree Of Master Of Science (Environmental Science), Sant Gadge Baba Amravati University.

The assistance and help received during the course of desertation of this report and source of the literature referred to have been duly acknowledged.

She has completed her project work satisfactory and it is ready for evaluation.

Guide By,

Mr.Tushar Hedau sir

Date: / / 2020

Place: Morshi

A
Project Report
On
**“EFFECT OF HOMEMADE BIO-PESTICIDES AND
ORGANIC PEST MANAGEMENT IN ORGANIC
FARMING”**



Shri. Shivaji Science College, Amravati

Submitted to Sant. Gadge Baba Amravati University Amravati
in partial fulfillment of the requirement for the degree of **Master of
Science** in the subject of **Environment Science**.

By

Ms. Yamini P. Madke

M.Sc. II year

Under the supervision of

Dr. V. Bute

P.G. Department of Environment Science

Shri. Shivaji Science College, Amravati

2019-2020

CERTIFICATE

This is to certify that I have been supervised the project work, entitled “ **Effect of homemade Bio – Pesticides in organic pest management in organic farming**” of **Ms. Yamini p. Madke** for partial fulfillment of the degree of Master of Science (**Environmental Science**). Sant Gadge Baba Amravati University, Amravati. She completed her project work satisfactory and it is ready for evaluation .

Supervisor
(**Dr. Vikrant Bute**)

Head of Department
(**Dr. Sangita P. Ingole**)



P.G. Department of Environment Science
Shri. Shivaji Science College, Amravati

A
PROJECT REPORT
ON

“LAND USE LAND COVER MAPPING DHAMANGAON RAILWAY
MAHARASHTRA USING GIS AND REMOTE SENSING”



Submitted to

*Sant Gadge Baba Amravati University In Partial Fulfilment Of Requirement For The
Degree Of Master Of Science In The Subject Of Environmental Science*

By

Miss. Archana Manikrao Raibole
M.Sc. –II (Sem-IV)
Environmental Science

Guided By

Tushar Hedau Sir
Lecturer

P.G. Department of Environmental Science
Shri Shivaji Science College, Shivaji Nagar, Amravati.
2020-2021

CERTIFICATE

This is to certify that I have been supervising the project work entitled, “**Land use Land cover Mapping Dhamangaon Railway Maharashtra using GIS and Remote Sensing**” of **Miss. Archana Manikrao Raibole** for partial fulfilment of the degree of Master of Science (Environmental Science), Sant Gadge Baba Amravati University, Amravati. She has completed her project work satisfactorily and it is ready for evaluation.

Supervisor

Mr. Tushar Hedau Sir

Head of Department

Dr. S. P. Ingole

Coordinator

Miss. Manisha Jane Madam

Lecturer

CHAPTER V

SUMMARY AND CONCLUSION

Mapping land use land cover changes at regional scales is essential for a wide range of application, including, landslide, erosion, land planning, global warming etc.

The aim of the project is to develop an action plan for land use cover mapping is the process of creating and implementing plans. To maintain the present natural resources and to understand to causes and consequences of over exploitation of soil and water resources the land use, a land cover mapping and monitoring was done in the study area i.e. Dhamanagaon railway.

In this study satellite image for January 2015 and February 2019 were used for LULC (land use land cover) supervised classification. For the classification purposes, seven LULC classes were decided change detection between both the image for all the land use and land cover classes were computer.

It is the acquisition of information about an phenomenon without making physical contact with the object and thus in contrast to on site observation.

Remote sensing is used in numerous fields, including geography and most Earth science disciplines (for example, hydrology, ecology, oceanography, glaciology, geology,) it also has military, intelligence, commercial economic, planning and humanitarian applications. In current use term generally refers to the use of aerial sensor technologies to detect and classify object on earth both on the surface and in the atmospheric and oceans by means of propagated signals (electromagnetic radiation). It may be split into active remote sensing when a signal is first emitted from aircraft or satellites or passive (e.g. sunlight) when information merely recorded.

Conclusion

The study produced several thematic maps to show that computerized GIS is an effective tool in delineating Agro climate and Agro ecosystem. Some of the methods requires more data and time-consuming process. Satellite image are useful for mapping of groundwater using different parameters like geology, geomorphology, drainage, land use land cover. Remote sensing and GIS technologies are very effective tool for suggesting action plane

Land use Land cover Mapping Dhamangaon Railway Maharashtra using GIS and Remote Sensing”

and management strategies for agricultural sustainability of any region. In that area 2015 large area of agricultural zone but 2019 agricultural zone decreases. In change detection method.

S. No	LULC Area	2015	2019
1	Agricultural Zone	494197	113063
2	Barren Land	146761	8953
3	Settlement	21007	34215
4	Waterbody	6951	1524
5	Forest Land	16999	11718


Dr. H. S. LUNGE
 IQAC Coordinator
 Shri Shivaji Science College
 Amravati.




Principal
 Shri Shivaji Science College
 AMRAVATI.

Department of Physics

List of the Students under taking Field Projects

<p style="text-align: center;">Dept. of PHYSICS Students Undertaking Project Work 2019-20</p>					
Sr. No.	Name of Student	Uni. Roll No.	Supervisor	Project Title	Project Report Link
1	Anurag Diliprao Ajmire	85027	Dr. W. S. Barde	SYNTHESIS OF CALCIUM PHOSPHATE FROM ANIMAL BONES	https://drive.google.com/open?id=1QzYrxoa8WCxmA2itDZevb7OTHrWvipGe
2	Ku. Anuradha Nareshrao Kaple	85028	Dr. W. S. Barde	CALCIUM PHOSPHATE PREPARED FROM EGGSHELL	https://drive.google.com/open?id=1JoCf6XxjXZnl7VqtFOROkn_nd3yllw57
3	Dipali Sureshrao Atkare	85029	Dr. P. A. Nagpure	TL AND OSL DATING OF ROCKS	https://drive.google.com/open?id=1wH_t5aOkHTrtGthELXv8z5H_r_q4PSj
4	Eshwari Laxmanrao Thakare	85030	Dr. P.A.Nagpure	STRUCTURAL, OPTICAL & ELECTROCHEMICAL PROPERTIES OF TiO ₂ NANOPARTICLES SYNTHESIZED USING MEDICINAL PLANT LEAF EXTRACT	https://drive.google.com/open?id=1h4iVuZH_BJdPi6w3JpdvDvib3lqaJG_t
5	Gauri S. Wankhade	85031	Dr.W.S.Barde	SYNTHESIS OF ULTRALIGHT SUPER HYDROPHOBIC CARBON AEROGEL BASED ON CELLULOSE NANO FIBERS/POLYVINYL ALCOHOL/GRAPHENE OXIDE.	https://drive.google.com/open?id=182gWgYSIVUGK0YieAta1vj37bN81ubRH
6	Ku. Hadiya Firdous Tawangar Khan	85032	Dr. S.S.Arsad	"SYNTHESIS AND CHARACTERIZATION OF MgB ₂ O ₃ :Ce ³⁺ , MgB ₂ O ₃ :Cu PHOSPHOR"	https://drive.google.com/open?id=1BqJeoN_nzSvubne44uQzHBKU-Ki7w2VM
7	Kalyani Ashokrao Chaudhari	85033	A. B. Bodade	TO STUDY STRUCTURAL AND DIELECTRIC PROPERTIES OF NANOMATERIAL La DOPED CrO ₃	https://drive.google.com/open?id=1wP1O1JukPTBix2Bto3ciHIFO2CAYZcp9
8	Madhuri Vitthalrao Nayak	85034	Dr. A. B. Bodade	" TO STUDY STRUCTURAL AND ELECTRICAL CHARACTERIZATION OF LaCrO ₃ NANOPARTICLES"	https://drive.google.com/open?id=1Barh3OUJL9SWNPgEv3Fo2OhH12_6U61

<p style="text-align: center;">Dept. of PHYSICS Students Undertaking Project Work 2019-20</p>					
9	Pooja Vinodrao Wankhade	85035	Miss.S.M.Butte	SYNTHESIS OF GRAPHENE QUANTUM DOTS FROM GRAPHITE	https://drive.google.com/open?id=1mf19SsAJAywKAVcet7G2lFf00ck5G9K
10	Pradnya Sainath Pawar	85036	Ms. S. M. Butte	SYNTHESIS OF GRAPHENE QUANTUM DOTS AND ITS CHARACTERIZATION	https://drive.google.com/open?id=1lVzN_w6WfbNnazu_iFBkPdKunTjVY_ne
11	Ku. Puja Vijayrao Nimbhorkar	85037	Dr. V. V. Deshmukh	SYNTHESIS AND CHARACTERIZATION OF LAlNO ₃ USING SOL GEL METHOD.	https://drive.google.com/open?id=1QUAt1Ho1PP5thA0Onx_2xj23zdBYHMLc
12	Samiksha Sanjay Deshmukh	85038	Dr. Pankaj P. Khirade	"INVESTIGATIONS ON STRUCTURAL AND PHYSICAL PROPERTIES OF MULTIFUNCTIONAL PEROVSKITE NANOCERAMICS"	https://drive.google.com/open?id=1hufjuS9jR5LQGNP8vsOsn7Elg9Jz1a0Y
13	Sharmeen Hameed Sayyad	85039	S.K. Sayyad	SYNTHESIS OF GRAPHENE OXIDE BY MODIFIED HUMMERS METHOD	https://drive.google.com/open?id=1ruChnjmIYTKlWjyCrJwMWNhCFgzjzK8
14	Veena Vitthal Giri	85040	Dr. Shahin K. Sayyad	SYNTHESIS OF GRAPHENE OXIDE BY HUMMER'S METHOD	https://drive.google.com/open?id=1iiDASyeVx8cHp6-eS6LDCTWwTJzjkwQG
15	Om Panjabrao Gunjkar	85041	Dr. V. V. Deshmukh	"SYNTHESIS AND CHARACTERIZATION OF LaMnO ₃ PEROVSKITE BY USING CO-PRECIPIATION METHOD."	https://drive.google.com/open?id=177bn3_9thpmSk_qEG3dwQj7YVHy5lB0f
16	Sanket Dhanwate	85043	Dr. N.N. Sarkar	NANOCELLULOSE-NANOFINISHING IN COTTON TEXTILE	https://drive.google.com/open?id=1OrvKp-vGalafDDGbuCK6pkBED5rlytUm
17	Sanket Shailendra Korde	85044	Dr. N. N. Sarkar	"GREEN SYNTHESIS OF HIGHLY LUMINESCENT CARBON QUANTUM DOTS FROM LEMON JUICE"	https://drive.google.com/open?id=1bvxxwuKDeluOEA0yEcbYMnPHybVsk9-5G
18	Roshan L Jadhav		Dr. Pankaj P. Khirade	"INVESTIGATIONS ON STRUCTURAL AND PHYSICAL PROPERTIES OF MULTIFUNCTIONAL PEROVSKITE NANOCERAMICS"	https://drive.google.com/file/d/18VpaoPMDiHKeI9Hrb0oO14tOvX7WPgae/view?usp=sharing

Title and Place of Work

“Synthesis of Calcium Phosphate from Animal bones.”

**Review/Survey Report of the Project to be carried out in Final Semester of
M.Sc. Physics**

**Prepared By
Mr. Anurag D. Ajmire
M.Sc. Physics
Semester-IV
2020**

**Supervisor
Dr. W. S. Barde
Head of department of physics
Shri Shivaji Science College, Amravati**

**Submitted to
SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI
(M.S.)**

Project Work Completio

CERTIFICATE

This is to certify that project report of the proposed project entitled “**Preparation of calcium phosphate from animal bones**” to be carried out in the final semester for the partial fulfilment of the requirements for the award of degree of Master of Science (M.Sc.) Physics is prepared by Mr. Anurag D. Ajmire under my supervision and consultation.

Place: Amravati

Date:22\09\2020

Dr. W. S. Barde
(project guide)

n

5.2. Conclusion

Calcium Phosphate were extracted from dry old bones of animals through chemical treatment. The paper provided a brief summary of the experimental studied performed there in. showing the effects of two parameters in production rate. By studying several Calcium Phosphate productions under different parameters such as the variation of pH, different concentration of Ammonia and Hydrochloric acid. The experiment results have shown that the maximum yield depends on the pH and ammonia concentration. The waste is being converted into a useful product by this process.

1

“Calcium phosphates prepared from eggshell”**Review/Survey Report of the Project to be carried out in Third Semester of M.Sc. Physics****Prepared By****Ku.Anuradha N. Kaple****M.Sc. Physics****Semester-IV****2019-20****Supervisor****Dr. W.S. Barde****Associate Professor in Physics****Shri Shivaji Science College, Amravati****Submitted to:****SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI (M.S.)**

1

CERTIFICATE

This is to certify that review/survey report of the proposed project entitled “Calcium phosphates prepared from eggshell” to be carried out in the final semester for the partial fulfilment of the requirements for the award of degree of Master of Science (M.Sc.) Physics is prepared by Ku.Anuradha N. Kaple under my supervision and consultation.

Place: Amravati

Date:22-09-2020

Dr. W.S.Barde

1

Stoichiometric, pure and thermally stable powder

was synthesized using eggshell and phosphoric acid by

precipitation method. XRD analyses indicated

the phase purity and crystallinity of the HAP powder.

The present study suggests the eggshell as a possible ma-

terial-recycling technology for future waste management

and ecology. Also, eggshell-originated HAP is a potential

ceramic, which could be useful as an inexpensive ceramic for biomedical applications.

TL and OSL Dating of Rocks

**Review/Survey Report of the Project to be carried out in FORTH Semester of
M.Sc. Physics**

Prepared By

Ku. Dipali S. Atkare

M.Sc. Physics

Semester- IV

2020-21

Supervisor

Dr. P. A. Nagpure

Assistant Professor

Department of Physics

Shri Shivaji Science College, Amravati

CERTIFICATE

This is to certify that review/survey report of the proposed project entitled “**TL and OSL Dating of Rocks**” to be carried out in the final semester for the partial fulfillment of the requirements for the award of degree of Master of Science (M.Sc.) Physics is prepared by **Ku. Dipali S. Atkare** under my supervision & consultation.

Place: Amravati

Date: 22/09/2020

Dr. P. A. Nagpure

**“ Structural, Optical And Electrochemical Properties of TiO₂
Nanoparticles
Synthesized Using Medicinal Plant Leaf Extract ”**

**Review/Survey Report of the Project to be Carried Out in the Final
Semester of M.Sc Physics**

Prepared By

Ms. Eshwari L. Thakare

M.Sc Physics

Semester IV

2019-2020

Supervisor

Dr. P.A.Nagpure

Assistant Professor In Physics

Shri Shivaji Science College, Amravati

Submitted To

**SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI
(M.S.)**

CERTIFICATE

This is to certify that review/survey report of the proposed project entitled “**Structural, optical and electrochemical properties of TiO₂ nanoparticles synthesized using medicinal plant leaf extract**” to be carried out in the final semester for the partial fulfillment of the requirements for the award of degree of Master of Science (M.Sc.) in Physics is prepared by **Ms. Eshwari L. Thakare** under my supervision and consultation.

Place : Amravati

Date :

Dr. P.A.Nagpure

6. Conclusion

- TiO₂ nanoparticles have been successfully synthesized by a simple green synthesis method using Calotropis Gigantea plant (CGP) and Ocimum Tenuiflorum plant (OTP) extracts at room temperature.
- The XRD data confirmed that the anatase and rutile phases of TiO₂ nanoparticles resultant from OTP and CGP extracts respectively.
- Finally it is concluded that the TiO₂ nanoparticles synthesized from OTP and CGP plant shows a key method of producing low cost and environmentally clean nanostructures and their properties proved that the anatase and rutile phases of TiO₂ be the electrode material for efficient next generation electrochemical energy storage devices.

“Synthesis of Ultralight Super Hydrophobic Carbon Aerogels Based on Cellulose Nanofibers / Poly(Vinyl Alcohol)/ Graphene Oxide (Cnfs/PVA/GO) for Highly Effective Oil-Water Separation.”

**The Project Report of the Project carried out in Final Semester of
M.Sc. Physics**

Prepared By

Ms. Gauri S. Wankhade

M.Sc. Physics

Semester-IV

2019-20

Supervisor

Dr. W. S. Barde

Associate Professor in Physics

Shri Shivaji Science College, Amravati

Submitted to

**SANT GADGE BABA AMRAVATI UNIVERSITY,
AMRAVATI (M.S.)**

CERTIFICATE

This is to certify that review/survey report of the proposed project entitled “**Synthesis of ultralight super hydrophobic carbon aerogels based on cellulose nanofibers / poly(vinyl alcohol) / graphene oxide(CNFs/PVA/GO) for highly effective oil-water seperation**” to be carried out in the final semester for the partial fulfilment of the requirements for the award of degree of Master of Science (M.Sc.) Physics is prepared by **Ms. Gauri S. Wankhade** under my supervision & consultation.

Place: Amravati

Date: 18.09.2020



Dr. W.S. Barde

RESULTS AND DISCUSSION

Synthesis of graphene oxide was achieved by placing graphite in concentrated acid in presence of an oxidizing agent. Hummer's method demonstrated a less hazardous and more efficient method for graphite oxidation. This and its modified versions are presently the most commonly used method for the oxidation of graphite. Individual sheets of GO can be viewed as graphene decorated with oxygen functional group on both sides of the plane and around the edges. Due to ionization of carboxyl groups which are primarily present at the edge of sheet, GO can be electrostatically stabilized to form a colidal suspension in water, alcohol, and certain organic solvents without surfactants. Exfoliation of graphite oxide into individual sheets can be facilitated by ultrasonic agitation or rapid heating but excessive ultra-sonication can result in the decrease of lateral dimensions. Oxidation of graphite results in brown coloured viscous slurry, which include graphite oxide and exfoliated sheets along with non-oxidized graphite particles and residue of the oxidizing agent in the reaction mixture. After repeated centrifugation, salts and ion from the oxidation process can be removed from GO suspensions.

CONCLUSION

The graphene oxide was prepared by oxidizing purified natural flake graphite via modified Hummer's method.

Synthesis and characterization of $\text{MgB}_4\text{O}_7:\text{Ce}^3$, $\text{MgB}_4\text{O}_7:\text{Cu}$ Phosphor**Project Report****Prepared by****Ku. Hadiya Firdous Tawangar Khan****M.Sc. Physics****Semester –IV****2019 -2020****Supervisor****Dr.S.S. ARSAD****Assistant Professor in physics****Shri Shivaji Science College, Amravati****Submitted to****SANT GADGE BABA AMRAVATI UNIVERSIT ,AMRAVATI(M.S.)**

CERTIFICATION

This is to certify that review report of the proposed project entitled

“Synthesis and characterization of $\text{MgB}_4\text{O}_7:\text{Ce}^3$, $\text{MgB}_4\text{O}_7:\text{Cu}$ Phosphor” is bona -fide work for the the partial fulfillment of the requirement for the award of degree of Master of science (M.SC) in physics is prepared by Ku. Hadiya Firdous Tawangar Khan under my supervision and consultation.

Place: Amravati

Date :

Signature of the supervisor

(Dr S.S. ARSAD)

Head of Department

Department of physics

SHRI SHIVAJI SCIENCE COLLEGE AMRAVATI

4.2 Conclusion:-

The $\text{MgB}_4\text{O}_7:\text{Ce}^{3+}$ AND $\text{MgB}_4\text{O}_7:\text{Cu}$ phosphor was successfully synthesized by wet combustion synthesis Method . The process of synthesis was simple ,fast and cost effective .we have analyze that the XRD Pattern which indicates the presence of a cubic phase for $\text{MgB}_4\text{O}_7:\text{Ce}^{3+}$ AND $\text{MgB}_4\text{O}_7:\text{Cu}$.

“To Study structural and Dielectric properties of Nanocomposite La doped CrO₃”

Report of the project carried out in final semester of M.Sc Physics

Presented By

Miss : Kalyani A.Chaudhari

M.Sc Physics (Semester-IV)

2019-20

Supervisor

Dr. A.B.Bodade

Assistance professor

DEPARTMENT OF PHYSICS

Shri Shivaji Science College, Amravati

Submitted to

SANTA GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI

CERTIFICATE

This is to certify that reported of the proposed project entitled “Effect of Dielectric properties on Nanocomposite La dope CrO_3 ” be to carried out in the final semester for the partial fulfilment requirements for the award of Master of Science (M.Sc) Physics is prepared by Miss.Kalyani A. Chaudhari under my supervision and consultation.

Place :Amravati

Date :

Dr.A.Bodade.

A

Review Project Report On

“ To Study Structural and Electrical Characterization of LaCrO_3 Nanoparticles”

In partial fulfilment of the requirements for the award of degree of
Master of Science in Physics

Submitted To

Sant Gadge Baba Amravati University, Amravati

By

Madhuri Vitthalrao Nayak**M.Sc.(PHYSICS) PART II (SEM IV)**

UNDER THE GUIDENCE OF

Dr. A. B. Bodade**Assistant Professor****DEPARTMENT OF PHYSICS****Shri Shivaji Science College Amravati**

CERTIFICATE

This is certify that the review report entitled , “**To Study Structural And Electrical Characterization of LaCrO₃ Nanoparticles**”contains the bonafied record of Miss. Madhuri Vitthalrao Nayak who has worked on this project under my supervision and completed the in academic year 2019-2020 for fulfilment for the award of “*master of science in physics*”of Sant Gadge Baba Amravati University,Amravati during the academic year 2019-20.

This project report has not been submitted anywhere for degree, diploma or any other certificate to any other university.

Dr. V. B. Bhatkar
(Head of Department)

Dr. A. B. Bodade
(Project Guide)

Date : 22/09/2020

Place : Amravati

CONCLUSIONS

The LaCrO₃ Pervoskite material successfully prepared by sol-gel method.

The pellets are made to study impedance characteristics.

“Synthesis of Graphene Quantum Dots Electrochemical Exfoliation method from graphite”

Project Report of the Project to be carried out in Final Semester of

M.Sc. Physics

Prepared By

Miss. Pooja V. Wankhade

M.Sc. Physics

Semester-IV

2019-20

Supervisor

Miss. S. M. Butte

Assistant Professor

Department of Physics

Shree Shivaji Science College, Amravati

Submitted to

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI

(M.S)

CERTIFICATE

This is to certify that **Project report** entitled “**Synthesis Graphene Quantum Dots by Electrochemical Exfoliation Method from graphite**” to be carried out in the final semester for the partial fulfilment of the requirements for the award of degree of Master of Science (M.Sc.) Physics is prepared by **Pooja V.Wankhade** under my supervision & consultation.

Place: Amravati

Date:

In this report, the different characterization techniques have proved this from analysis. Like in XRD, size of GQDs varies with molar concentration. The XRD confirms the structural purity as well as the particle size in the quantum size. The particle size is found to be 3.32 nm. The formation of quantum dots is confirmed. The PL spectra show the strong blue light emission. The UV Visible Spectroscopy shows the \rightarrow^* transition. The synthesis of GQDs can be utilized to extend the application of these nanoparticles to molecular biotechnology and bioengineering, also used to increase the efficiency of solar cell.

Future scope:

Graphene quantum dots can be used to increase the efficiency of solar cells. These can be used in CRT displays to increase clarity. Graphene quantum dots can be used for low power consumption.

References :

1. Journal of Physical Chemistry C indusdictum.
2. Y.Kim,S.Cho, H.Kim, S.Seo,H.Lee,J.Lee,H.Ko,M.Chang, and B.Park.,Graphene Quantum Dot (GQD)-Induced Photovoltaic and Photovoltaic and Photoelectric Memory Elements in a Pentacene/GQD Field Effect Transistor as a Probe of Functional Interface

“Synthesis of Graphene Quantum Dots and its Characterization”

Project report

Prepared By

PRADNYA PAWAR

M.Sc. Physics

Semester-IV

2019 - 2020

Supervisor

Ms. S. M. Butte

Associate Professor in Physics

Shri Shivaji Science College, Amravati

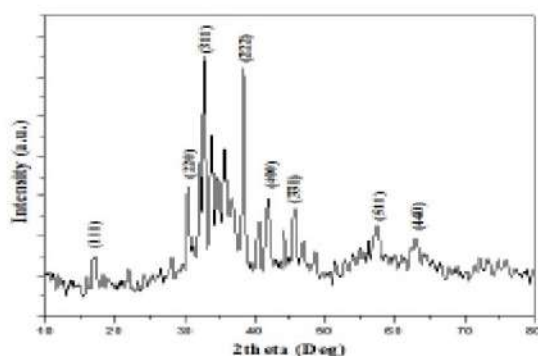
Submitted to

SHRI. SHIVAJI SCIENCE COLLEGE, AMRAVATI.



Change in colour when placed in UV light

3. The nanocomposite (GQD/CoFe₂O₄) was prepared using 4mM FeCl₂.6H₂O, 2mM Co(NO₃)₂.6H₂O. And it was brownish in colour as expected. It can be confirmed using X ray diffraction.
4. The X-ray diffraction peaks was in good agreement with the pure cobalt ferrite showing peaks at 17.15, 30.59, 32.38, 40.41, 57.67 which can be assigned the (111), (220), (311), (222), (400), (331), (511) and (440) planes respectively.



Conclusions:

1. Thus the green colour of solution in UV light confirms the presence of graphene quantum dots in the solution.
2. It is concluded from the result that lower the molarity more is the dispersion of the particles in the solution. This could be confirmed using spray pyrolysis.
3. The colour of the nanocomposites and the xray diffraction report confirms the formation of nanocomposites.
4. The peaks in X-ray diffraction agrees with the desired nanocomposite.

Synthesis and characterizations of nanostructured LaNiO_3 perovskite by using sol gel method

Review/Survey Report of the Project to be carried out in Final Semester of M.Sc. Physics

Prepared By

Ms. Puja V. Nimbhorkar
M.Sc. Physics
Semester-III
2019-20

Supervisor :

Dr. V. V. Deshmukh
Assistant Professor in Physics
Shri Shivaji Science College, Amravati

Submitted to,

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI (M.S.)

CERTIFICATE

This is to certify that review/survey report of the proposed project entitled “**Synthesis and characterizations of nanostructured LaNiO₃ perovskite by using sol gel method.**” to be carried out in the final semester for the partial fulfilment of the requirements for the award of degree of Master of Science (M.Sc.) Physics is prepared by **Ms. Puja V. Nimbhorkar** under my supervision &consultation.

Place: Amravati

Date: 22/09/20.

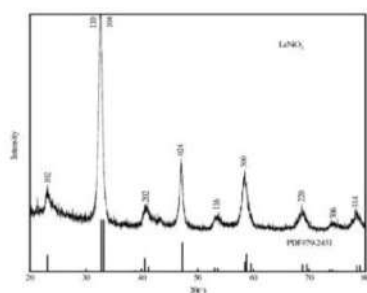
Dr. V. V. Deshmukh.

Dr. W. S. Barde HOD,

Department of physics.

the LaNiO_3 nanoparticles obtain from the precipitation method will be larger in size than those prepared by the sol-gel method used in the present study. This indicates that the sol-gel method can be used for the synthesis of smaller nanoparticles.

Scheme 1- The X-ray diffraction of LaNiO_3 nanoparticles prepared by sol-gel method.



XRD pattern of LaNiO_3 .

Conclusion

The X-ray diffraction (XRD) patterns of the LaNiO_3 samples were measured using an X-ray diffraction. Nanosized material was prepared by sol-gel method. The LaNiO_3 nanoparticles were characterized by XRD only and surface area analysis. The average crystallite size of LaNiO_3 nanoparticles was about 7 nm. These results concludes that the Sol gel method used for the synthesis of LaNiO_3 nanoparticles is used for the synthesis of smaller size particles than others method.

“Investigations on structural and physical properties of multifunctional perovskite nanoceramics”



A Project Synopsis Submitted to
Sant Gadge Baba Amravati University, Amravati

For the Degree of
Master of Science

In
Physics

By
Miss. Samiksha Sanjay Deshmukh

Under the Guidance of
Dr. Pankaj P. Khirade
Assistant Professor,
Department of Physics,
Shri Shivaji Science College,
Shivaji Nagar, Amravati (MS),

2019-2020

CERTIFICATE

This is to certify that review report of the proposed project entitled “**Investigations on structural and physical properties of multifunctional doped and undoped perovskite nano ceramics**” to be carried out in the final semester for the partial fulfilment of the requirements for the award of degree of Master of Science (M.Sc.) Physics is prepared by Samiksha Sanjay Deshmukh under my supervision and consultation.

Place: Amravati

Date:(21/09/2020)



Dr. Pankaj P. Khirade

(PROJECT GUIDE)

DR. W.S.BARDE

(HOD OF PHYSICS)

- ❖ It seen that crystallized BTO phase can be obtained at heating temperature 1200°C for 530min , indicating that single phase of BTO presented in the prepared pure samples.

CONCLUSION

Uniform Ce doped BaZrO₃ multifunctional nanoceramics with the simple cubic perovskite structure with $p4mm$ space group were synthesized by sol-gel auto combustion method.

The average crystallite size was found to be 24 to 32 nanometer.

FTIR spectra showed major absorption band in the range of 563 cm⁻¹ and 596 cm⁻¹ characterizing the cubic perovskite structure of the prepared samples.

The synthesized nanoceramics can be used for multifunctional applications in electronics sectors.

**“ SYNTHESIS OF GRAPHENE OXIDE
BY MODIFIED HUMMERS METHOD ”**

Review Report of the Project to be carried out in Final Semester of

M.Sc. Physics

Prepared By

SHARMEEN HAMEED SAYYAD

M.Sc. Physics II

Semester-IV

2019-2020

Supervisor

Dr. S. K. SAYYAD

Assistant Professor in Physics

Shri Shivaji Science College, Amravati

Submitted to

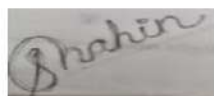
SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI (M.S.)

CERTIFICATE

This is to certify that review report of the proposed project entitled “**Synthesis of Graphene Oxide By Modified Hummers Method** ” to be carried out in the final semester for the partial fulfilment of the requirements for the award of degree of Master of Science (M.Sc.) Physics is prepared by SHARMEEN HAMEED SAYYAD under my supervision and consultation.

Place: Amravati

Date: 21-09-2020



Dr. S. K. SAYYAD

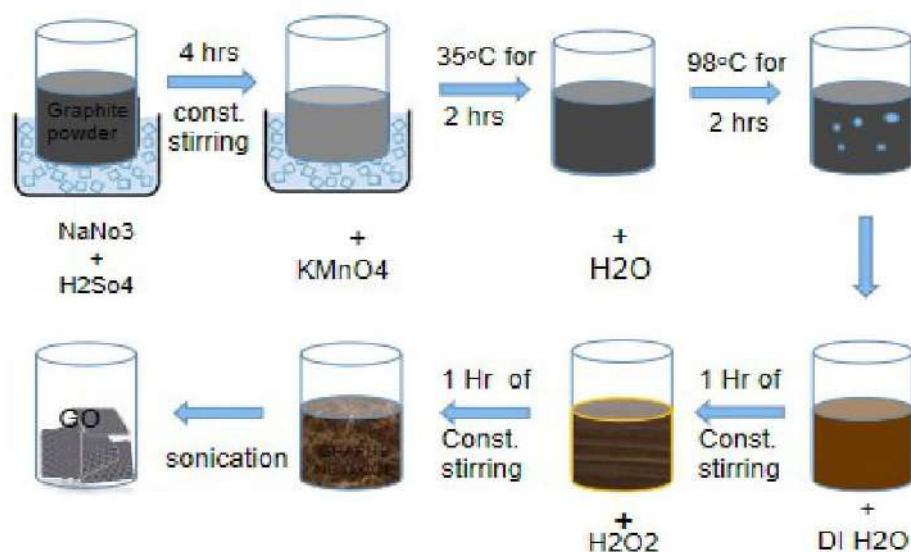
(PROJECT GUIDE)

Dr. W. S. BARDE

(HOD OF PHYSICS)

11. After sonication the gel like substance was vacuum dried at 60°C for more than 6 hrs to GO Powder.

SYNTHESIS METHOD OF GRAPHENE



5. CONCLUSION

Graphene oxide (GO) was successfully prepared using Hummers method. This can be concluded on the basis of colour change and visible property change like nano graphite flakes are hydrophobic in nature whereas produced graphene oxide is hydrophilic in nature. This indicates that successful penetration of oxygen functional groups between graphene layers.

“Synthesis of Graphene Oxide by Hummers method.”

Report of the Project carried out in Final Semester of M.Sc. Physics

Prepared By

VEENA V. GIRI

M.Sc. Physics

Semester-IV

2019 - 20

Supervisor

Dr. S. K. SAYYAD

Associate Professor in Physics

Shri Shivaji Science College, Amravati

Submitted to

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI (M.S.)

CERTIFICATE

This is to certify that review report of the proposed project entitled “**Synthesis of Graphene oxide by Hummers Method**” carried out in the final semester for the partial fulfilment of the requirements for the award of degree of Master of Science (M.Sc.) Physics is prepared by Veena V. Giri under my supervision and consultation.

Place: Amravati

Date: 21-09-2020



Dr. S. K. SAYYAD

Dr. W.S. BARDE
HOD, Department of Physics

“Synthesis and characterization of LaMnO_3 perovskite by using Co-precipitation method.”

**Review/Survey Report of the Project to be carried out in Final Semester of
M.Sc. Physics**

Prepared By

Mr. Om P. GUNJKAR

M.Sc. Physics

Semester-IV

2019-20

Supervisor

Dr. V. V. Deshmukh

Assistant Professor in Physics

Shri Shivaji Science College, Amravati

Submitted to

SANT GADGE BABA

AMRAVATI UNIVERSITY, AMRAVATI

CERTIFICATE

This is to certify that review/survey report of the proposed project entitled “**Synthesis and characterization of LaMnO₃ perovskite by using Co-precipitation method**” to be carried out in the final semester for the partial fulfilment of the requirements for the award of degree of Master of Science (M.Sc.) Physics is prepared by Mr. Om P. Gunjkar under my supervision & consultation.

Dr. W. S. Barde
(Head of Department)

Dr. V. V. Deshmukh
(project Guide)

Place: Amravati

Date: 22/09/2020

RESULT AND DISCUSSION :-

The LaMnO₃ nanoparticles were characterized by X-ray diffraction at room temperature without further treatment.

XRD analysis of the precursor and its claimed samples :-

It showed the XRD patterns of the precursor and its claimed samples. The LaMnO₃ sample is in the paramagnetic phase occurs above 900 K.

CONCLUSIONS :-

Nano crystalline LaMnO₃ was synthesized via thermal decomposition of La³⁺ and Mn²⁺ carbonates mixture in air. XRD analysis showed that precursor was a mixture containing orthorhombic La(NO₃)₃.6H₂O and MnCl₂.4H₂O. We studied XRD of LaMnO₃ material by coprecipitation method. There are different methods to synthesis of nanoparticles but we used coprecipitation method. This method is potentially important to many environmental issues closely related to water resources including acid mine drainage, radionuclide migration in fouled waste repositories, metal transport at industrial and defence and waste water treatment technology.

REFERENCES :-

[1] F.A. Fabian ^{a,n}, P.P. Pedra ^a, J.L.S. Filho ^a, J.G.S. Duque ^b, C.T. Meneses ^b ^a Universidade Federal de Sergipe, Campus Prof. Aluísio Campos, Departamento de Física, 49100-000 São Cristóvão, SE, Brazil ^b Universidade Federal de Sergipe, Campus Prof. Alberto Carvalho, Departamento de Física, 49500-000 Itabaiana, SE, Brazil

[2] Azhar Mahmood ^a, Muhammad Farooq Warsi ^{a, *}, Muhammad Naeem Ashiq ^b, Muhammad Sher ^c ^a Chemistry Department, Baghdad-ul-Jaded Campus, The Islamia University of Bahawalpur, Bahawalpur 63100, Pakistan ^b Department of Chemistry, Bahauddin Zakaryia University of Multan-60000, Pakistan ^c Chemistry Department, The University of Sargodha, Sargodha 40100, Pakistan

CERTIFICATE

This is to certify that review/survey report of the proposed project entitled “**Nanocellulose Nanofinishing of cotton textile** ” to be carried out in the final semester for the partial fulfilment of the requirements for the award of degree of Master of Science (M.Sc.) Physics is prepared by **Mr. Sanket N. Dhanwate** under my supervision & consultation.

Place: Amravati

Date: 22/09/2020

Dr. N. N. Sarkar

CHAPTER 5

5. Results and discussion

Nanocellulose (NC) is the polymer material that can be obtained cheaply from the plant sources. NC has a wide range of daily applications, including as foam, cloth, food, paper, and safety materials. In addition, in the industrial sector NC plays a pivotal role with medicine, hygiene and adsorbent products, emulsion, cosmetic and pharmaceutical. Recent developments in the nanotechnology brought enormous developments with NC-based materials and made significant achievements. In this study, nanocellulose from the natural fibre has been generated by treating with aqueous sodium hydroxide solution followed by the acid hydrolysis. NC was obtained by following the methods outlined above and subjected to FTIR, XRD and SEM analyses to characterize the chemical group, crystallinity and the surface morphology.

**“Green Synthesis of Highly Luminescent Carbon Quantum Dots from
Lemon Juice”**

**The Project Report of the Project to be carried out in Final Semester of
M.Sc. Physics**

Prepared By

**Mr. Sanket S. Korde
M.Sc. Physics
Semester-IV 2019-20**

Supervisor

**Dr. N. N. Sarkar
Assistant Professor
Department of Physics
Shri Shivaji Science College, Amravati**

Submitted to

**SANT GADGE BABA AMRAVATI UNIVERSITY,
AMRAVATI (M.S.)**

CERTIFICATE

This is to certify that review/survey report of the proposed project entitled “**Green Synthesis of Highly Luminescent Carbon Quantum Dots from Lemon Juice**” to be carried out in the final semester for the partial fulfilment of the requirements for the award of degree of Master of Science (M.Sc.) Physics is prepared by **Mr. Sanket S. Korde** under my supervision & consultation.

Place: Amravati

Date: 21 September 2020

Dr. N. N. Sarkar

8. Conclusions

In this article, we herein have demonstrated that the strong and stable green light emission of C-dots could be synthesized successfully by the one-pot of hydrothermal method. In particular, The PL intensity of the C-dots increases with increasing hydrothermal temperature and time. In addition, C-dots diluted by polar solvents induced stronger luminescence than did the pure C-dots. -e obtained C-dots having strong, inert, and stable luminescent properties would be particularly important for potential applications in optoelectronics and bioimaging.

“Synthesis and characterization of multifunctional doped and undoped perovskite nanoceramics”

Review/Survey Report of the Project to be carried out in Final Semester of M.Sc. Physics

Prepared By

Mr. Roshan L. Jadhao

M.Sc. Physics

Semester-IV

2020-21

Supervisor

Dr. Pankaj P. Khirade

Associate Professor in Physics

Shri Shivaji Science College, Amravati

CERTIFICATE

*This is to certify that review/survey report of the proposed project entitled “**Synthesis and characterization of multifunctional doped and undoped perovskite nanoceramics**” to be carried out in the final semester for the partial fulfilment of the requirements for the award of degree of Master of Science (M.Sc.) Physics is prepared by Mr. Roshan L. Jadhav under my supervision and consultation.*

Place: Amravati

Date:

4.3. Conclusion

Inorganic perovskite-type oxides are excellent nanomaterials for wide applications in catalysis, fuel cells, and electrochemical sensing, exhibiting attractive physical and chemical characteristics. They showed electronic conductivity, electrical active structure, the oxide ions mobility through the crystallite, variations on the content of the oxygen, thermal and chemical stability and supermagnetic, photocatalytic, thermoelectric, and dielectric properties. Nano perovskites have been utilized as catalysts in oxygen reduction and hydrogen evolution reactions exhibiting high electrocatalytic activity, lower activation energy and high electron transfer kinetics. In addition, some perovskites are promising candidates for the development of effective anodic catalysts for direct fuel cells showing high catalytic performance. Moreover, they are recently utilized in electrochemical sensing of alcohols, gases, glucose, H₂O₂, and neurotransmitters. They can enhance the catalytic performance in terms of unique long-term stability, sensitivity, excellent reproducibility, selectivity, and anti-interference ability. In addition, organometallic halide perovskites exhibited deficient intrinsic properties to be utilized as a photovoltaic solar cell with good stability and high efficiency.

Department of Zoology

List of the Students under taking Field Projects

SHRI SHIVAJI SCIENCE COLLEGE, AMRAVATI

P.G. Department of Zoology

Project List(2019-20)

Sr No	Name Of Students	Project title	Guide Name	Year 2019-20
1	Miss Divya N. Raghatare	"The studies on silk harvesting from some sericulture farms in Wardha and Amravati District"	Dr. N.V. Bhatkar	2019-20
2	Miss Krutikav.Belsare	"Effect of chromium on protein of Channapunctatus .	Dr. J.D. Dhote	2019-20
3	Miss Renuka R. Gupta	"Effect of chromium on lipid of Channa punctatus".	Miss P.G Puranik	2019-20
4	Miss Sunita G. Kale	" Nesting Bird Survey in Wadali Garden Amravati, Maharashtra".	Dr. G.A. Wagh	2019-20
5	Miss Divya D. Jarode	"Effect of chromium on protein of Channapunctatus .	Dr. J.D. Dhote	2019-20
6	Miss Bhavika N. Lukka	Determination of metals in spinach by Atomic Absorption Photometric Method"	Mr. Kushal D. Ingle	2019-20
7	Miss. Prajakta S. Raut	Assesment of Bird Diversity in wadali Garden, Amravati, Maharashtra	Dr. G.A.Wagh	2019-20
8	Miss Netravati Dipak Anasane	Biofabrication of silver nanoparticles from the leaf extract of durantaerecta and it's in vitro efficacy against microbes	Dr. R. G. Jadhao	2019-20
9	Miss Shivani G. Bhatkar	Effect of chromium on lipid of channa punctatus	Miss. P.G. Puranik	2019-20
10	MissAkansha N. Makeswar	"Study of Diabetes Mellitus among the people of Amravati region, Maharashtra."	Dr. S. J. Kawade	2019-20
11	Pratiksha S. Dugane	" Data analysis of HIV/AIDS among the people of Amravati District"	Dr. G.D.Hande	2019-20
12	Shreya.S. Shanware	Biofabrication of silver nanoparticles from the leaf extract of durantaerecta and it's in vitro efficacy against microbes	Dr. R. G. Jadhao	2019-20
13	Anuradha V Shrikhande	Assesment Of Bird Diversity in Wadali Garden, Amravati	Dr.G.A.Wagh	2019-20
14	Ankita Wade	" Nesting Bird Survey in Wadali Garden Amravati, Maharashtra".	Dr.G.A.Wagh	2019-20

Title and Place of Work

**“ The studies on silk harvesting from some sericulture farms in
Wardha & Amravati district”**

A project work submitted to

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI



In Partial Fulfilment of Degree of Master of Science in Subject Zoology

Submitted By

Miss. Divya N. Raghatate

Under the supervision of

Dr. N. V. Bhatkar

Asst. Professor, Department of Zoology

Shri Shivaji Science College, Dist. Amravati

P. G. Department of Zoology,

Shri Shivaji Science College, Amravati.

2019 – 2020

Project Work Completion

CERTIFICATE

This is to certify that I have been supervising and guiding the project work of **Miss. Divya N. Raghatate** entitled “ **The studies on silk harvesting from some sericulture farms in Wardha & Amravati district**” for partial fulfilment of the degree of Master of Science in Zoology, in the faculty of Science, Sant Gadge Baba Amravati University, Amravati.

She has completed her project work satisfactorily and project is ready for evaluation.

Place: Amravati

Date: 24/09/2020

Dr. N. V. Bhatkar

(Supervisor)



Dr. R. G. Jadhao

(Head of Department)

Dr. R. G. Jadhao
Head & Associate Professor
Shri Shivaji Science College, Amravati.

“ The studies on silk harvesting from some sericulture farms in Wardha & Amravati district”**CONCLUSION**

Several farmers have shared their success in the sericulture field. Farmer I of Waygaon, Wardha district has had high production under his belt. He has yielded 400kg from 100dfls during 2018-19 with an income of Rs.50,000. Another sericulturist is of Bhivapur, Wardha district, is planting V1 mulberry in 4 acres and gains Rs.62,000 for his cocoons. Another farmer is of Allipur, Wardha district. Being a JICA member, he cultivates G4 mulberry and rears bivoltine. He now earns rupees 70,000 per month from sericulture. Another sericulturist is from Nandgaon, Amravati district, Maharashtra state who has an average income of Rs.30,000 per crop and boasts the use of JICA technology and well-maintained mulberry garden. Residing at Takarkheda of Amravati district, Maharashtra state invested much in order to develop an infrastructure that includes a good rearing house, drip irrigation system and manures and others. His farm yields 450kg per 100dfls.

The range of rearers in Wardha and Amravati district covers farmers with two-four acres of mulberry garden to small rearers dependent on purchased leaves. Survey was conducted by Maharashtra State Sericulture Research and Development Institute, for the transfer of technology programme 12 findings are listed giving statistics for sericulture in the village. The average cocoon yield is above average. Low yield and crop losses are directly linked to shortcomings in practising the recommended packages at farmer's level - extra care would prove beneficial and a series of observations and remedial measures are then suggested. Mulberry cultivation include wider spacing of trees and higher yielding varieties. Silkworm rearing with appropriate remedial action. The cost-effectiveness of these measures is summarised in the conclusion.

EFFECT OF CHROMIUM ON PROTIEN OF CHANNA PUNCTATUS

Sant Gadge Baba Amravati University,

Amravati

**In Partial Fulfillment of Degree of Master of Science In Subject
Zoology**

Submitted by

Miss. Krutika V. Belsare

Under the Supervision of

Dr. J. D. Dhote

Asso. Professor

P. G. Department of Zoology

Shri Shivaji Science College, Amravati



2019 - 2020

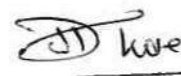
CERTIFICATE

This is to certify that Miss. Krutika V. Belsare has worked under my guidance for her M.Sc. (Zoology) Semester-IV project entitled, **“EFFECT OF CHROMIUM ON PROTIEN OF CHANNA PUNCTATUS”** for the Master Degree of Zoology in the faculty of Science, Sant Gadge Baba Amravati University, Amravati.

She has completed her project work satisfactorily and it is ready for evaluation.

Date: 24-09-2020

Place: Amravati



(Dr. J. D. Dhote)

Asso. Professor



Head

Dr. R. G. Jadhao

Associate Professor
Department of Zoology
Shri Shivaji Science College, Amravati.

CONCLUSION

Aquatic pollution is going to be a substantial threat to the ecosystems. This review indicates a direct correlation between the survival and concentration of Cr-III and Cr-VI to the fish population. Cr (VI) is comparatively more toxic to fresh water fish species. Cr toxicity was greater affected by slight change in pH. There is a need for monitoring the industrial effluents for Cr concentration level. The heavy metals have toxicity of Cr was noted in liver and gills. Various research studies indicated adverse effects of chromium in fish at hematological and biological level, subsequently declining the level of protein content in turn affect the enzyme mediated bio defense mechanisms of the fish. Continual exposure to Cr changes various enzyme activities like succinate dehydrogenase, and lactate dehydrogenase in kidney, brain, and liver. While ATPase activity diminished in gills, kidneys and intestine. Chronic exposure to Cr may also induce irregular behavioral responses in various species of fish. Therefore, the root causes of fish death are multiple but Cr induced toxicological pathology is significantly affected by particular factors as species type, age, environmental conditions, exposure time and concentration. This review offers a base for comprehending the potential impact, as well as for advancing our data about the ecotoxicology and risk assessment of chromium.

This investigation may be helpful in determining health status of *Channa punctatus* fish. The estimation of proteins will certainly detect early signs of clinical pathology with respect to their habitat. It also indicates the comparative values of reference and exposed fishes. Correlation and pattern of biochemical changes in tissues like liver, pancreases, gills and muscles are found in protein content.

A dissertation entitled
**EFFECT OF CHROMIUM ON LIPID OF *CHANNA*
*PUNCTATUS***

Submitted for Partial fulfillment of requirement for the degree of

MASTER OF SCIENCE

In

ZOOLOGY

By

Miss. Renuka R. Gupta

Under the supervision of

Miss. P. G. Puranik



Department of Zoology

Shri Shivaji Science College Amravati

Sant Gadge Baba Amravati University, Amravati

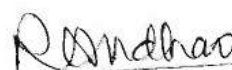
2019-2020

Shri Shivaji Science College, Amravati**Department of Zoology****CERTIFICATE**

This is to certify that **Miss. Renuka R. Gupta** have satisfactorily completed the project works towards **Master of Science Degree** of Sant Gadge Baba Amravati University, Amravati in **Zoology** discipline on the topic entitled **“EFFECT OF CHROMIUM ON LIPID OF CHANNA PUNCTATUS”** during the academic year 2019-2020 under my supervision and guidance.

Miss P. G. Puranik

Project Guide



Dr. R. J. Jadhao


Head of the Department
Shri Shivaji Science College, Amravati.

Discussion and conclusion

Aquatic pollution is going to be a substantial threat to the ecosystems. This review indicates a direct correlation between the survival and concentration of Cr-III and Cr-VI to fish population. Cr (VI) is comparatively more toxic to fresh water fish species. Cr toxicity was greatly affected by slight change in pH. There is a need for monitoring the industrial effluents for Cr concentration level. The heavy metals have toxic effects on various organs of fishes but higher toxicity of Cr was noted in liver and gills. Various research studies indicated adverse effects of chromium in fish at hematological and biochemical level, subsequently declining the level of proteins and glycogen. The decrease in total protein content in turn affects the enzyme mediated bio defense mechanisms of the fish. Continual exposure to Cr changes various enzyme activities like succinate dehydrogenase, pyruvate dehydrogenase, and lactate dehydrogenase in kidney, brain, and liver.

Each method currently employed for the determination of lipid content has its advantages and disadvantages, and there is no procedure available which is suitable for all types of lipids. For choosing suitable methods for preparation of lipid extracts from fish tissues based on solvent extraction, different criteria must be considered. The simplicity and efficiency of the method are of central interest. However, the choice of method used for the determination of lipid content will be dictated to a large extent by the cost and by the urgency with which the results are required. Fish lipid content varies according to species, age, sex, season, and location, and it can range from around 0.5% to 20% w/w or more in the wild. BCF values for lipophilic compounds estimated on a wet weight basis (BCFW) increase with increasing lipid contents.

Lipid contents are commonly used to calculate BCF values on a percent lipid basis (BCFL) but can be further used to calculate a normalized whole body BCF assuming a fixed whole body lipid content. Fish lipid content varies according to species, age, sex, season, and location, and it can range from around 0.5% to 20% w/w or more in the wild. The estimation of proteins and lipids will certainly detect early signs of clinical pathology with respect to their habitat. It also indicates the comparative values of two parameters like protein and fats of three different fishes.

Nesting Bird Survey in Wadali Garden, Amravati, Maharashtra

A dissertation submitted to
Sant Gadge Baba Amravati University, Amravati



In partial fulfillment of Degree of Masters of Science in Subject Zoology

Submitted by

Ku. Sunita G.Kale

P G. Department of Zoology

M.Sc. II (Sem IV)

Under the Supervision of

Dr. G.A. Wagh

Associate Professor

Department of Zoology

Shri Shivaji Science College Amravati 444603

2019-2020

Certificate

This is to certify that **Ku. Sunita G. Kale** has completed her project work, entitled “**Nesting Bird Survey in Wadali Garden, Amravati, Maharashtra**” for partial fulfillment of the Degree of Masters of Science in Zoology in the faculty of Science, Sant Gadge Baba Amravati University, Amravati.

She has completed her project satisfactorily and project is ready for evaluation.

Place: Amravati

Date: 24-09-2020



Dr. R.G. Jadhao

Head

Department of Zoology

Shri Shivaji Science College, Amravati



Head & Associate Professor
Shri Shivaji Science College, Amravati.

Conclusion:

During the study periods of four months, we observed that there is total 49 nesting of 12 birds species are observed in forest area of garden. The nesting of Indian Pond Heron and cattle Egret was widely present on Ashok plant from Annonaceae family, these are water birds species. A richness of water birds species nesting is more as compared to forest bird's species in study area.

The species spatial distributions are directly affected by global warming and subsequently climate change. Evidence found specifically from bird's shows that there is a correlation between bird population characteristics and alterations in climatic factors such as temperature and precipitation.

The most critical threat facing threatened birds is the destruction and fragmentation of habitat. Don't touch the birds in nest it is illegal for touch or otherwise physically disturb an active nest. So public awareness is so important for the preservation of bird's habitats.

The nests built in trees offer more protection, but they also have some predators such as snakes, larger bird species and arboreal mammals, and in addition, the bad weather. However, the big nests of raptors, herons, storks and other large birds are placed high in trees, or on old buildings, poles or cliffs, in order to provide good access to these imposing birds.

Lake is an important habitat for wild birds, which could use it as a breeding, stopover and wintering site. Birds preferred roosting sites, which provided protection from the predators and adverse weather conditions. Site specific initiation such as shrub and tree plantation, restoration of water bodies and increasing vegetative diversity can improve bird diversity in urban areas. Knowledge on bird communities of the edge habitats of urban areas would be useful in developing long form strategies for avian conservation.

Since communities lack awareness that birds are important part of ecosystem as environmental health indicator, pollinators and pest controller, the department of Natural Resource, Land and Environment in the municipality has to provide conservation education to the communities so that the contribution of birds in the ecosystem can be realized.

EFFECT OF CHROMIUM ON PROTIEN OF CHANNA PUNCTATUS

**Sant Gadge Baba Amravati University,
Amravati**

**In Partial Fulfillment of Degree of Master of Science In Subject
Zoology**

Submitted by

Miss. Divya D. Jarode

Under the Supervision of

Dr. J. D. Dhote

Asso. Professor

P. G. Department of Zoology

Shri Shivaji Science College, Amravati



2019 - 2020

CERTIFICATE

This is to certify that Miss. Divya D. Jarode has worked under my guidance for her M.Sc. (Zoology) Semester-IV project entitled, **“EFFECT OF CHROMIUM ON PROTIEN OF CHANNA PUNCTATUS”** for the Master Degree of Zoology in the faculty of Science, Sant Gadge Baba Amravati University, Amravati.

She has completed her project work satisfactorily and it is ready for evaluation.

Date: 24.09.2020

Place: Amravati



(Dr. J. D. Dhote)

Asso. Professor



Head

Dr. R. G. Jadhao

Department of Zoology

Faculty of Science Collage, Amravati.

CONCLUSION

Aquatic pollution is going to be a substantial threat to the ecosystems. This review indicates a direct correlation between the survival and concentration of Cr-III and Cr-VI to the fish population. Cr (VI) is comparatively more toxic to fresh water fish species. Cr toxicity was greater affected by slight change in pH. There is a need for monitoring the industrial effluents for Cr concentration level. The heavy metals have toxicity of Cr was noted in liver and gills. Various research studies indicated adverse effects of chromium in fish at hematological and biological level, subsequently declining the level of protein content in turn affect the enzyme mediated bio defense mechanisms of the fish. Continual exposure to Cr changes various enzyme activities like succinate dehydrogenase, and lactate dehydrogenase in kidney, brain, and liver. While ATPase activity diminished in gills, kidneys and intestine. Chronic exposure to Cr may also induce irregular behavioral responses in various species of fish. Therefore, the root causes of fish death are multiple but Cr induced toxicological pathology is significantly affected by particular factors as species type, age, environmental conditions, exposure time and concentration. This review offers a base for comprehending the potential impact, as well as for advancing our data about the ecotoxicology and risk assessment of chromium.

This investigation may be helpful in determining health status of *Channa punctatus* fish. The estimation of proteins will certainly detect early signs of clinical pathology with respect to their habitat. It also indicates the comparative values of reference and exposed fishes. Correlation and pattern of biochemical changes in tissues like liver, pancreases, gills and muscles are found in protein content.

“Determination of metals in spinach by Atomic Absorption Photometric Method”

A project work submitted to

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI



In Partial Fulfilment of Degree of Master of Science in Subject Zoology

Submitted By

Miss. Bhavika N. Lukka

Under the supervision of

Mr. Khushal D. Ingle

**Asst. Professor, Department of Zoology
Mahatma Fule Arts, Commerce and Sitaramji Chaudhary Science
Mahavidyalaya, Warud, Dist. Amravati (M.S.) 444906**

**P. G. Department of Zoology,
Shri. Shivaji Science College, Amravati.**

2019 - 2020

CERTIFICATE

This is to certify that I have been supervising and guiding the project work of **Miss. Bhavika N. Lukka** entitled “**Determination of metals in spinach by Atomic Absorption Photometric Method**” for partial fulfilment of the degree of Master of Science in Zoology, in the faculty of Science, Sant Gadge Baba Amravati University, Amravati.

She has completed her project work satisfactorily and project is ready for evaluation.

Place: Amravati

Date: 24/09/2020



Mr. K. D. Ingle

(Supervisor)



Dr. R. G. Jadhao

(Head of Department)

Head & Associate Professor
Sant Shivaji Science College, Amravati

Determination of Metals in Spinach by Atomic Absorption Spectrophotometric Method

AAS technique was used to determine the contents of Cd, Pb, Na, Ca and various other elements from the sample. The calibration from the measurements of AAS revealed good linear graph. Result concluded from the study showed that the collected spinach is good source of calcium and sodium but it contains higher amount of cadmium whereas very lower amount of lead. Further research need to be carried out on the parameters by HPLC method to find out the heavy elements which are present in sample.

Assessment of Bird Diversity in Wadali Garden, Amravati Maharashtra

A dissertation submitted to
Sant Gadge Baba Amravati University, Amravati



In partial fulfillment of Degree of Masters of Science in Subject Zoology

Submitted by

Ku. Prajkata S. Raut

P G. Department of Zoology

M.Sc. II (Sem IV)

Under the Supervision of

Dr. G.A. Wagh

Associate Professor

Department of Zoology

Shri Shivaji Science College Amravati 444603

2019-2020

Certificate

This is to certify that **Ku. Prajkata S. Raut** has completed her project work, entitled “**Assessment of Bird Diversity in Wadali Garden, Amravati, Maharashtra**” for partial fulfillment of the Degree of Masters of Science in Zoology in the faculty of Science, Sant Gadge Baba Amravati University, Amravati.

She has completed her project satisfactorily and project is ready for evaluation.

Place: Amravati

Date: 24-09-2020



Dr. R.G. Jadhao

Head

Department of Zoology

Shri Shivaji Science College, Amravati

Dr. R. G. Jadhao
Head & Associate Professor
Shri Shivaji Science College, Amravati.

CONCLUSION

During the study periods of four months the total 126 bird's species are observed in grassland and wetland area. The total birds species belonging to 34 families were present in study area and *columbiae*, *muscapidae*, *passeridae* families are widely present in study area, such a richness in birds species can be explained by the particular characteristics of the area. In fact it includes man-made lake and mixed forest made of big and thick tree provide good habitat, and main reason is rhythmically availability of food, healthy ecological suitable place for nesting and breeding.

Lake is an important habitat for wild birds, which could use it as a breeding, stopover and wintering site. We suggest that intensified urbanization and reclamation during the last few decades has driven away sensitive species, while synanthropic species have increased rapidly. Wetland restoration projects have benefited many bird species, especially waterbirds. Distribution of different water bird species is highly dependent on human activities.

Human requirements for buildings and transports infrastructure put high pressure on urban green space, to stop this process. We want to stress that urban planning and management decisions are already effective at comparatively fine scales.

We regard general conservation efforts and we plan and manage urban green area as habitats for birds. So suggest recommendation for the surviving of bird diversity.

- 1) The conservation or re-planting of tree and is regarded as the most effective long term measures to enhance both bird species richness and diversity.
- 2) Since communities lack awareness that birds are important part of ecosystem as environmental health indicator, pollinators and pest controller, the department of Natural Resource, Land and Environment in the municipality has to provide conservation education to the communities so that the contribution of birds in the ecosystem can be realized.

**“Biofabrication of silver nanoparticles from the leaf extract
of *Duranta erecta* and evaluation of its *in vitro* efficacy
against microbes.”**

PROJECT REPORT

Submitted to

Sant Gadge Baba Amravati University, Amravati

As a partial fulfillment for the Degree of

MASTER OF SCIENCE IN ZOOLOGY

By

Miss. Netravati D. Anasane

M.Sc. II (Zoology)

Supervisor

Dr. R. G. Jadhav

Asst. Professor

Department of Zoology

Shri Shivaji Science College, Amravati

Place of work



P. G. DEPARTMENT OF ZOOLOGY

SHRI SHIVAJI SCIENCE COLLEGE, AMRAVATI

2019-2020

CERTIFICATE

This is to certify that work incorporated in the project entitled “**Biofabrication of silver nanoparticles from the leaf extract of *Duranta erecta* and evaluation of its *in vitro* efficacy against microbes**” submitted by **Miss. Netravati D. Anasane** was carried out by the candidate herself under my supervision for the degree of Master of Science in zoology during the year **2019-2020**

Place: Amravati

Date: 24/09/2020

Forwarded By

Dr. N. V. Bhatkar

Head, Dept. of Zoology

Shri Shivaji Science College,

Amravati.

SUPERVISOR :-

Dr. R. G. Jadhav

Assd Professor

Department of Zoology

Shri Shivaji Science College,

Amravati.

Dr. R. G. Jadhav

Head & Associate Professor
Shri Shivaji Science College, Amravati.

Biofabrication of silver nanoparticles from the leaf extract of *Duranta erecta* and evaluation of its *in vitro* efficacy against microbes.

Conclusion

1. AgNPs were synthesized by using leaf extracts of *Duranta erecta*.
2. Characterization of AgNPs was performed with the help of visual observation and UV VIS Spectrophotometry.
3. Samples were prepared for the further characterization.

DEPARTMENT OF ZOOLOGY

**Sant Gadge Baba Amravati University,
Amravati**

**PRACTICAL RECORD****Practical - VIII****PROJECT WORK**

M.Sc (ZOOLOGY) Semester – IV

2019-2020

Submitted by

MISS. SHIVANI G. BHATKAR


ROLL NO.

Shri Shivaji Science College, Amravati
Department of Zoology

CERTIFICATE

This is to certify that **Miss. Shivani G. Bhatkar** have satisfactorily completed the project works towards **Master of Science** Degree of SantGadge Baba Amravati University, Amravati in **Zoology** discipline on the topic entitled **“EFFECT OF CHROMIUM ON LIPID OF *CHANNA PUNCTATUS*”** during the academic year 2019-2020 under my supervision and guidance.

Miss P. G. Puranik
Project Guide


Dr. R. J. Jadhao
Head of Department
Head & Associate Professor
Shri Shivaji Science College, Amravati.

Discussion and conclusion

Aquatic pollution is going to be a substantial threat to the ecosystems. This review indicates a direct correlation between the survival and concentration of Cr-III and Cr-VI to fish population. Cr (VI) is comparatively more toxic to fresh water fish species. Cr toxicity was greatly affected by slight change in pH. There is a need for monitoring the industrial effluents for Cr concentration level. The heavy metals have toxic effects on various organs of fishes but higher toxicity of Cr was noted in liver and gills. Various research studies indicated adverse effects of chromium in fish at hematological and biochemical level, subsequently declining the level of proteins and glycogen. The decrease in total protein content in turn affects the enzyme mediated bio defense mechanisms of the fish. Continual exposure to Cr changes various enzyme activities like succinate dehydrogenase, pyruvate dehydrogenase, and lactate dehydrogenase in kidney, brain, and liver.

Each method currently employed for the determination of lipid content has its advantages and disadvantages, and there is no procedure available which is suitable for all types of lipids. For choosing suitable methods for preparation of lipid extracts from fish tissues based on solvent extraction, different criteria must be considered. The simplicity and efficiency of the method are of central interest. However, the choice of method used for the determination of lipid content will be dictated to a large extent by the cost and by the urgency with which the results are required. Fish lipid content varies according to species, age, sex, season, and location, and it can range from around 0.5% to 20% w/w or more in the wild. BCF values for lipophilic compounds estimated on a wet weight basis (BCFW) increase with increasing lipid contents.

Lipid contents are commonly used to calculate BCF values on a percent lipid basis (BCFL) but can be further used to calculate a normalized whole body BCF assuming a fixed whole body lipid content. Fish lipid content varies according to species, age, sex, season, and location, and it can range from around 0.5% to 20% w/w or more in the wild. The estimation of proteins and lipids will certainly detect early signs of clinical pathology with respect to their habitat. It also indicates the comparative values of two parameters like protein and fats of three different fishes.

Dissertation Entitled

**“Study of Diabetes Mellitus among the People
of Amravati Region, Maharashtra”**

Submitted to

**Sant Gadge Baba Amravati University,
Amravati**



**In partial fulfillment for the degree of
Master of Science In Zoology**

Submitted by

Miss. Akansha N. Makeshwar

M.Sc. II (Zoology)

Under the supervision of

Dr. S. J. Kawade

P.G. Department of Zoology,

SHRI SHIVAJI SCIENCE COLLEGE AMRAVATI.

2019-2020

P. G. Department of Zoology
Shri Shivaji Science College, Amravati



CERTIFICATE

This is to certify that **Miss. Akansha N. Makeshwar** has satisfactorily ~~completed~~ completed the project work towards Master of Science Degree of Sant ~~Grade~~ Baba Amravati University, Amravati in Zoology discipline on the ~~topic~~ topic entitled “**Study of Diabetes Mellitus among the People of Amravati Region, Maharashtra**” during the academic year 2019-2020 under my ~~supervision~~ supervision and guidance.

Place: Amravati

Date: 24/09/2020

Dr. S. J. Kawade
(Project Guide)

Dr. R. G. Jadhao

(Head of Department)

Dr. R. G. Jadhao
Head & Associate Professor
Shri Shivaji Science College, Amravati.

“Study of Diabetes Mellitus among the People of Amravati City, Maharashtra”

CHAPTER -VI**CONCLUSION**

Diabetes mellitus is a metabolic disorder and its management have made the clinicians aware all over the world. In current status, a high number of populations have this disease which is related with the modern life style, unhealthy diet and sedentary life. The management of Diabetes Mellitus for Type I, is usually injectable insulin delivery in contrast to Type II in which the majority of drugs are orally administered.

The present study reveals that the BMI values, Fasting Blood sugar levels and Post meal blood sugar levels vary according to the age and the sex of an individual. Higher BMI values and higher blood glucose levels have been recorded in the present study which may be due to the change in the life style patterns, sedentary life styles and shift in the dietary patterns.

Thus in the present study it is suggested that there should be a change in the life style which should involve more physical activity, daily walking, exercise and yoga. It is essential for people with diabetes to self-monitor blood glucose levels. Patients may be referred to a dietitian for an appropriate diet. A low Carbohydrate and Mediterranean diet is suggested with high consumption of legumes, high consumption of grains and cereals, high consumption of fruits and vegetables, low consumption of meat and meat products and increased consumption of fish and moderate consumption of milk and dairy products. If lifestyle changes do not put blood glucose levels in the target range, medications may be required. Medications for type 2 diabetes include antidiabetic pills or injections, insulin injections, or a combination of these.

Medications are very effective at treating diabetes and reducing the symptoms and long-term effects of the condition. It is also recommended to keep a health history and regular check-up of the patients. Patients with diabetes should be tested for heart disease risk factors like high blood pressure or unbalanced blood fats and treated aggressively. Public awareness of these issues is important to get healthy.

“Study of Diabetes Mellitus among the People of Amravati City, Maharashtra”

Education is recommended combined with other preventive measures to reduce these complications.

Life style management is a fundamental aspect of diabetes care and includes diabetes self-management education and support (DSMES), medical nutrition therapy (MNT), physical activity, smoking cessation counselling and psychosocial care.

It is also suggested in this study that any country should have a national diabetes policies to reduce key risk factors and national guidelines or protocols to *improve management of diabetes*.

More than most conditions, treating diabetes requires a significant amount of *real effort on the person's part*. Coping with diabetes is a lifelong challenge.

**DATA ANALYSIS OF THE HIV/AIDS AMONG THE PEOPLE
OF AMRAVATI DISTRICT**



DISSERTATION

**AS A PARTIAL FULFILLMENT OF DEGREE OF MASTER OF SCIENCE IN
ZOOLOGY**

SUBMITTED TO

**SANT GADGE BABA AMRAVATI UNIVERSITY,
AMRAVATI**

SUBMITTED BY

MISS. PRATIKSHA S. DUGANE

M.SC II (ZOOLOGY)

SUPERVISOR

DR.MRS.GAYATRI D. HANDE

ASSISTANT PROFESSOR,

P.G. DEPARTMENT OF ZOOLOGY

SHRI SHIVAJI SCIENCE COLLEGE, AMRAVATI

Shri Shivaji Science College, Amravati

CERTIFICATE

This is certified that **Miss. Pratiksha S. Dugane** has completed their project work entitled **“DATA ANALYSIS OF THE HIV/ AIDS AMONG THE PEOPLE OF AMRAVATI DISTRICT”** in this Department as submission of the award of degree of master of science in the subject Zoology during year 2019-2020.

Place: Amravati

Date: 23/09/2020


23/09/20

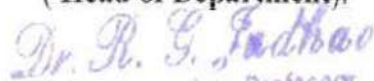
Dr. Mrs. Gayatri D. Hande

Supervisor



Dr. R.G. Jadhao

(Head of Department),


Head & Associate Professor
Shri Shivaji Science College, Amravati.

DISCUSSION AND CONCLUSION:

The result shows that, the age wise distribution data revealed that, maximum number of suffers 74 belong to the age group 31-40. The majority of GNC is 175.06 in April 18-March 19. The majority of ANC is 152.18 in April 19- March 20.

National AIDS control organization is the nodal agency for strategy formulation for HIV surveillance and commissioning each round of HSS. Data collected from any ANC sentinel site is considered valid only if 75% of the target sample size is achieved.

Trends among different population groups at national as well as state level are derived using three year moving averages of HIV prevalence at consistent site from 2003 to 2015 for ANC and from 2003 to 2011 for HRGs and bridge population.

In 2013, WHO published consolidated guidelines on general HIV care and use of Antiretroviral drugs for treating and preventing HIV infection. HIV related tuberculosis (TB) remain a serious challenge as TB remain the leading cause of death among people living with HIV.

HIV epidemic in India is largely concentrated in the populations with behavior that puts them at risk. (Jacob Dee, MPH, Jesus Garcia Calleja, MPH, MD and Mahesh swaminathan).

Discussion of the potential benefits of providing antiretroviral therapy in resource- poor countries focus on the ability of antiretroviral therapy to reduce the quantity of HIV in body fluids, thereby reducing the risk of transmission. (Vernazza and others 1999).

The model of transmission divides the population into four group based in their sexual behavior: low risk men, low risk women, male clients of sex workers, and female sex worker.

The study showed that, the majority of the patients had a good knowledge about the main routes of HIV/AIDS transmission with no significant difference between male and

female. The high proportion of patients were able to identify that sexual intercourse can transmit HIV/ AIDS, sharing needles, blood transfusion. (Huang et al 2005).

HIV replicates many times each day and each new generation of virus particles contain many slight genetic variations, a drug regime that permits any replication at all will rapidly select for resistant strains of the virus. (Perelson and other 1996, sugiura and others 2002).

NACO estimates that, 84 percent of new HIV infection occur through heterosexual transmission.

From this study, we concluded that patients suffering from AIDS mainly involve sufferers of age group 21-30 year. Major route of transmission is sexual contact and ignorance of preventive measure. High adherence to ART had shown increased in CD4 count. But some sufferers showed decline in CD4 count even through having 100% adherence. Knowing about the spread of HIV is the first step to preventing transmission. HIV is a complicated virus that has a complex history. During 2015, the global target of reaching 15 millions people living with HIV was achieved. Overall, 2015 has been an important year for consolidation of prevention benefits of oral provided the first evidence of pre-exposure prophylaxis (PrEP) and early 2016 has provided the first evidence of modest protection against HIV by dapivirine intravaginal ring. (Ward Cates and Quarraisha AbdoolKarim).

The first stage of National AIDS Control Program (NACP) (1992-1999) utilized mass media campaigns and awareness raising programs among general population to inform and educate people about the disease.

“Biofabrication of silver nanoparticles from the leaf extract of *Duranta erecta* and evaluation of its *in vitro* efficacy against microbes.”

Project report

Submitted to

Sant Gadge Baba Amravati University, Amravati

**As a partial fulfillment for the Degree of
MASTER OF SCIENCE IN ZOOLOGY**

By

**Miss. Shreya S. Shanware
M.Sc. II (Zoology)**

Supervisor

Dr. R. G. Jadhav

Asst. Professor

Department of Zoology

Shri Shivaji Science College, Amravati

Place of work



**P. G. DEPARTMENT OF ZOOLOGY
SHRI SHIVAJI SCIENCE COLLEGE, AMRAVATI**

2019-2020



CERTIFICATE

This is to certify that work incorporated in the project entitled “**Biofabrication of silver nanoparticles from the leaf extract of *Duranta erecta* and evaluation of its *in vitro* efficacy against microbes**” submitted by **Miss. Shreya S. Shanware** was carried out by the candidate herself under my supervision for the degree of Master of Science in zoology during the year 2019-2020

Place: Amravati

Date: 24/09/2020

Forwarded By

Dr. N. V. Bhatkar

Head, Dept. of Zoology

Shri Shivaji Science College,

Amravati.

SUPERVISOR:-

Dr. R. G. Jadhav

Asstt Professor

Department of Zoology

Shri Shivaji Science College,

Amravati.



Dr. R. G. Jadhav
Head & Associate Professor
Shri Shivaji Science College, Amravati.

Conclusion

1. AgNPs were synthesized by using leaf extracts of *Duranta erecta*.
2. Characterization of AgNPs was performed with the help of visual observation and UV VIS Spectrophotometry.
3. Samples were prepared for the further characterization.

Assessment of Bird Diversity in Wadali Garden, Amravati, Maharashtra

A dissertation submitted to
Sant Gadge Baba Amravati University, Amravati



In partial fulfillment of Degree of Masters of Science in Subject Zoology

Submitted by

Ku. Anuradha V. Shrikhande

P G. Department of Zoology

M.Sc. II (Sem IV)

Under the Supervision of

Dr. G.A. Wagh

Associate Professor

Department of Zoology

Shri Shivaji Science College Amravati 444603

2019-2020

Certificate

This is to certify that **Ku. Anuradha V. Shrikhande** has completed her project work, entitled “**Assessment of Bird Diversity in Wadali Garden, Amravati, Maharashtra**” for partial fulfillment of the Degree of Masters of Science in Zoology in the faculty of Science, Sant Gadge Baba Amravati University, Amravati.

She has completed her project satisfactorily and project is ready for evaluation.

Place: Amravati

Date: 24-09-2020


Dr. R.G. Jadhao

Head

Department of Zoology

Shri Shivaji Science College, Amravati


Head & Associate Professor
Shri Shivaji Science College, Amravati

2019-20

CONCLUSION

During the study periods of four months the total 126 birds species are observed in grassland and wetland area of study area. The total birds belonging 34 families were present in study area and *columbiae*, *muscapidae*, *passeridae* families were widely present in study area, such a richness in birds species can be explained by the particular characteristics of the area. In facts it includes man-made lake and mixed forest made of big and thick tree provide good habitat, and main reason is rhythmically availability of food, healthy ecological suitable place for nesting and breeding.

Lake is an important habitat for wild birds, which could use it as a breeding, stopover and wintering site. We suggest that intensified urbanization and reclamation during the last few decades has driven away sensitive species, while synanthropic species have increased rapidly. Wetland restoration projects have benefited many bird species, especially waterbirds. Distribution of different water bird species is highly dependent on human activities.

Human requirements for buildings and transports infrastructure put high pressure on urban green space, to stop this process. We want to stress that urban planning and management decisions are already effective at comparatively fine scales.

We regard general conservation efforts and we plan and manage urban green area as habitats for birds. So suggest recommendation for the surviving of bird diversity.

- 1) The conservation or re-planting of tree and is regarded as the most effective long term measures to enhance both bird species richness and diversity.
- 2) Since communities lack awareness that birds are important part of ecosystem as environmental health indicator, pollinators and pest controller, the department of Natural Resource, Land and Environment in the municipality has to provide conservation education to the communities so that the contribution of birds in the ecosystem can be realized.

Nesting Bird Survey in Wadali Garden, Amravati, Maharashtra

A dissertation submitted to
Sant Gadge Baba Amravati University, Amravati



In partial fulfillment of Degree of Masters of Science in Subject Zoology

Submitted by

Ku. Ankita M.Wade

P G. Department of Zoology

M.Sc. II (Sem IV)

Under the Supervision of

Dr. G.A. Wagh

Associate Professor

Department of Zoology

Shri Shivaji Science College Amravati 444603

2019-2020


Certificate

This is to certify that **Ku. Ankita M. Wade** has completed her project work, entitled “**Nesting Bird Survey in Wadali Garden, Amravati, Maharashtra**” for partial fulfillment of the Degree of Masters of Science in Zoology in the faculty of Science, Sant Gadge Baba Amravati University, Amravati.

She has completed her project satisfactorily and project is ready for evaluation.

Place: Amravati

Date: 24-09-2020



Dr. R.G. Jadhao

Head

Department of Zoology

Shri Shivaji Science College, Amravati



Head & Associate Professor
Shri Shivaji Science College, Amravati.

2019-20

Conclusion:

During the study periods of four months, we recorded and observed total 49 nests of 12 bird's species in garden area. The nesting of Indian Pond Heron and cattle Egret is widely present on Ashok plant from Annonaceae family, these are water birds species. A numbers of water birds species nesting is more as compared to forest bird's species in study area.

The species spatial distributions are directly affected by global warming and subsequently climate change. Evidence found specifically from bird's shows that there is a correlation between bird population characteristics and alterations in climatic factors such as temperature and precipitation.

The most critical threat facing threatened birds is the destruction and fragmentation of habitat. Don't touch the birds in nest it is illegal for touch or otherwise physically disturb an active nest. So, public awareness is so important for the preservation of bird's habitats.

The nests built in trees offer more protection, but they also have some predators such as snakes, larger bird species and arboreal mammals, and in addition, the bad weather. However, the big nests of raptors, herons, storks and other large birds are placed high in trees, or on old buildings, poles or cliffs, in order to provide good access to these imposing birds.

Lake is an important habitat for wild birds, which could use it as a breeding, stopover and wintering site. Birds preferred roosting sites, which provided protection from the predators and adverse weather conditions. Site specific initiation such as shrub and tree plantation, restoration of water bodies and increasing vegetative diversity can improve bird diversity in urban areas. Knowledge on bird communities of the edge habitats of urban areas would be useful in developing long form strategies for avian conservation.

Since communities lack awareness that birds are important part of ecosystem as environmental health indicator, pollinators and pest controller, the department of Natural Resource, Land and Environment in the municipality has to provide conservation education to the communities so that the contribution of birds in the ecosystem can be realized.


Dr. H. S. LUNGE
IQAC Coordinator
Shri Shivaji Science College
Amravati.




Principal
Shri Shivaji Science College
AMRAVATI.

Field Work

Department of Botany

Permission Letter, Report and Photos (Sample)

SHRI SHIVAJI SCIENCE COLLEGE AMRAVATI
DEPARTMENT OF BOTANY
Permission Letter & Excursion Report

प्रति,
 मा. प्राचार्य,
 श्री शिवाजी विज्ञान महाविद्यालय, अमरावती

विषय: B.Sc. III (वनस्पतीशास्त्र) सत्र २०१९-२० च्या विद्यार्थ्यांची शैक्षणिक सहल साठी परवानगी मिळणेबाबत

मार्फत: १. मा.विभागप्रमुख, वनस्पतीशास्त्र विभाग
 २. Convenor, Tour and Excursion Committee

मा. महोदय,

वरील विषयाच्या अनुषंगाने विनंतीपूर्वक कळवितो की B.Sc. III (वनस्पतीशास्त्र) सत्र २०१९-२० या विषयाच्या विद्यार्थ्यांची शैक्षणिक सहल हि शैक्षणिक संकुले, संशोधन केंद्रे व त्याच प्रमाणे प्रेक्षणीय स्थळे पुणे – कोंकण – रायगड या ठिकाणी दिनांक २५/१२/२०१९ ते २९/१२/२०१९ जाण्याचे नियोजन करावयाचे असून खालील प्रमाणे कार्यक्रम अपेक्षित असून आखलेला आहे.

दिनांक २५/१२/२०१९	सकाळी	अमरावती ते पुणे
दिनांक २६/१२/२०१९	सकाळी	पुणे ते अलीबाग
दिनांक २७/१२/२०१९	सकाळी	अलिबाग ते मुरुड जंजिरा
दिनांक २८/१२/२०१९	सकाळी	मुरुड ते रायगड
दिनांक २८/१२/२०१९	रात्री	रायगड ते अमरावती

तसेच सदर सहलीसाठी B.Sc. III (वनस्पतीशास्त्र) चे एकूण चाळीस विद्यार्थी इच्छुक असून एक खालील कर्मचारी वर्ग सोबत आहेत.

१. डॉ. तुषार वानखेडे (Prof-in-charge)
२. सौ. मनिषा वानखेडे (Lady Escort)
३. श्री. रवी काळे (Lab Assistant)
४. श्री. सोपान भारंबे (Lab Attendant)

करीता सदर, B.Sc. III (वनस्पतीशास्त्र) च्या विद्यार्थ्यांचे तृतीय वर्ष आणि इच्छा लक्षात घेता कृपया सदर शैक्षणिक सहलीला परवानगी देण्यात यावी ही विनंती.

अभिप्राय (विभागप्रमुख)
 डॉ. तुषार वानखेडे
 सहायक प्राचार्य
 अमरावती
 23.12.2019

(Convenor, Tour and Excursion Committee)

Tushar B. Wankhede
 आपला नम्र
 Dr. Tushar B. Wankhede
 M.Sc, Ph.D, SET
 Associate Professor in Botany
 Shri Shivaji Science College
 Amravati

Recommended & forwarded

Squadra
 24.12.19
Prakash

EXCURSION REPORT 2019-20

Department of Botany, Shri Shivaji Science College Amravati organised 5 day educational excursion to the Konkan-Pune- Amravati from 25 to 28 December 2019. The major objective was to familiarize the students with the flora of Konkan and western sea shore of costal area and part of western ghats.

Beneficiaries: 40

In charge: Dr. Tushar Wankhede

Assistant accompanied: Mr. Ravi Kale, Mr. Bharambe

Objective of the study tour: To make the students understand the vegetation of Konkan Region Western Ghats, one of the hotspot for biodiversity. The Western Ghats biogeographic region is a major genetic ocean with an enormous biodiversity. During the study tour students were able to observe a variety of plants belonging to different plant groups. The students were motivated which developed an interest in them to learn through experience. During the course of the tour they collected wild plant specimen and captured images of the rare plants. To name a few plants collected *Riccia*, *Anthoceros*, *Polytrichum*, *Funaria*, *Adiantum* and silver fern from Raigarh. The overall result of the tour was development of a positive impact regarding vast diversified flora of the region. Students were able to observe some of the medicinal plants and know the medicinal importance of them.





Dr. Tushar Wankhede
Prof Incharge



Shri. B. K. Dorkar
Head of Department



Department of B.VOC. Forensic Science


Permission Letter, Report and Photos (Sample)

**SHRI SHIVAJI SCIENCE COLLEGE,
AMRAVATI.****PERMISSION LETTER & REPORT:**

REGIONAL FORENSIC SCIENCE LABORATORY, AMRAVATI VISIT

(22nd JANUARY ,2020)

(B.VOC.FORENSIC SCIENCE.)

	<p>प्रादेशिक न्यायसहायक वैज्ञानिक प्रयोगशाळा REGIONAL FORENSIC SCIENCE LABORATORY गृह विभाग, महाराष्ट्र शासन HOME DEPARTMENT, MAHARASHTRA STATE दुरध्वनी: (०७२१) २५५२५९२ Tel : (0721) 2552592 फॅक्स : (०७२१) २५५२६९२ Fax: (0721) 2552692 E-mail Id – csm.amravati@maharashtra.gov.in Website - www.dfsi.maharashtra.gov.in</p>	<p>Shri Shivaji Science College, Amravati Inward No. 5310 (विशेष-प्रा.न्या.व.प्र.-६) (Sp.R.F.S.L-6) Date: 10/11/20</p>
		<p>सामाजिक न्यायभवनच्या बाजूला, Besides Building of Social Justice, पोलीस आयुक्त कार्यालयाच्या मागे, Behind Police Commissioner's office, चांदुर रेल्वे रोड, Chandur Railway Road अमरावती - ४४४ ६०६ Amravati - 444 606</p>
		<p>क्रमांक/No: अम/का/२६८/२०२० दिनांक:- ५/१२/२०२०</p>
<p>प्रति, मा.प्राचार्य, श्री.शिवाजी विज्ञान महाविद्यालय, शिवाजी नगर, मोर्शी रोड, अमरावती, जि. अमरावती,</p>		
<p>विषय:- प्रादेशिक न्यायसहायक वैज्ञानिक प्रयोगशाळा, अमरावती येथे भेट दिल्याबाबत. संदर्भ:- आपले पत्र क्र.SSC/FS/Visit/२०२०, दि.१७/०९/२०२०.</p>		
<p>महोदय,</p>		
<p>वरील संदर्भाकित विषयान्वये आपणास कळविण्यात येते की, प्रादेशिक न्यायसहायक वैज्ञानिक प्रयोगशाळा, अमरावती येथे न्यायसहायक जनजागृती सप्ताह निमित्त आयोजित कार्यक्रमास दि.२२/०९/२०२० रोजी डॉ.पी.आर.पडोळे, प्राध्यापक यांच्या मार्गदर्शनाखाली एकुण ३२ विद्यार्थी यांनी भेट दिली. तसेच त्यांना प्रयोगशाळेत होणा-या कामाची माहिती व मार्गदर्शन करण्यात आले.</p>		
<p>डा. पंडेकर 11/12/2020</p>	<p>11/12/2020</p>	<p>(र.का. जगताप) उप संचालक प्रादेशिक न्यायसहायक वैज्ञानिक प्रयोगशाळा, महाराष्ट्र शासन, अमरावती-०६</p>

ACTIVITY REPORT :

Visit to **Regional Forensic Science laboratory, Amravati** was organized by the Department of Chemistry for B.Voc. Forensic science students on the occasion of Forensic Awareness Week on 22nd January, 2020. All Students with their guardian teachers Dr. S.P. Ingole and Ms. K.S. Mawande visited the lab.

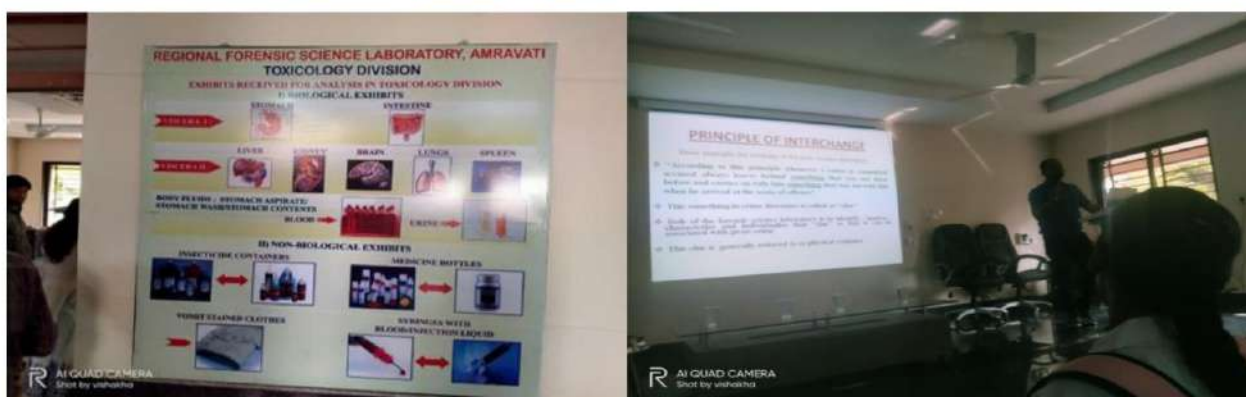
Every year RFSL, Amravati organizes such programs in Forensic Awareness Week. RFSL staff members welcomes us and brief us for further schedule. Through PowerPoint Presentation, working of forensic laboratories and how it helps to track the different types of crime in the society. Also the information about the available facilities was given. Their presentation includes legal part and duties of experts to help judiciary system. Posters were also displayed in the lab to get knowledge about specificity and working of each department. The presentations and posters help student to get knowledge about department and working techniques in field of forensic science.

After presentations students have conversation with all officers regarding their queries .The Deputy Director of RFSL, AMRAVATI also communicate with students to guide them about significance of forensic science.

Shri Shivaji Science College, Amravati organized visit to Regional Forensic Science laboratory, Amravati for B.Sc.I year(BIO) students on the occasion of forensic Awareness Week on 22nd January, 2020. All Students with guardian teachers prof. Dr. R.G.Jadhao and Dr.. R.A.Patil Bhagat visited on given time.

As students entre in RFSL , members from department welcome them and ask them to sit in conference hall for further schedule. Assistant Chemical Analyser and scientific assistant present PowerPoint presentations to introduce students with departments in forensic laboratories and location all over Maharashtra. Also they explain all the facilities, equipments and experties working in laboratory. Their presentation includes legal part and duties of experts to help judiciary system. Posters were also there for students to get knowledge about specificity and working of each department. The presentations and posters help student to get knowledge about department and working techniques in field of forensic science.

After presentations students were allowed to had conversation with all officers regarding their queries .The Deputy Director of RFSL, AMRAVATI also communicate with students to guide them about significance of forensic science.





Department of Environmental Science

Permission Letter, Report and Photos (Sample)

Field Visit 2019-20

1. Visit to Wadali (Lake):

On 23rd Jan 2020, at 3.00 p.m. Department of Environmental Science has organized visit to Wadali Lake to study Pond Ecosystem. Visit was organized for of B.Sc. Ist& M.Sc. IInd year students. 40 students from B.Sc. Ist and 22 students from M.Sc. IInd were present along with 3 faculty members.

The purpose to visit this pond is to introduce the students, the stagnant water ecosystem & its structural and functional aspects. The students were introduced the biotic & abiotic factors of the pond ecosystem as apart of curricular activity involved in the syllabus of B.Sc. Ist & M.Sc. IInd

In Wadali lake, the producers found were Valisneria, Chara, Hydrilla, Wolfia, Nilumbo, Nymphaea etc. ; Zooplanktons and fishes were the Primary consumers ; Frogs, Big Fishes, Ducks were the secondary consumers and Snakes, Mungus , Hawk were the tertiary consumers observed by the students.

The abiotic factors studied by the students were Temperature, pH, Turbidity, D.O., TDS, light penetration by Secchi disk. etc.

The students collected water samples in the plastic water bottles for estimation of its physico chemical parameters needed for the study of abiotic factors of pond ecosystem.

Students also enjoyed the diversity of birds & animals found in Wadali Garden on the way back to college at around 6.00 p.m. Some students enjoyed boating also.

Really Wadali lake & Garden visit refreshed the students and teachers. The garden and lake were good maintained by Amravati Municipal Corporation.



2. Visit Sewage Treatment Plant:

Department of Environmental Science organized visit of B.Sc. IInd& M.Sc. IInd year students to sewage treatment plant on **25th Feb. 2020**. 33 students from B.Sc. IInd and 22 students from M.Sc. IInd were present along with 3 faculty members.

The sole purpose of the visit is to introduce students the severity of water pollution of the city and various processes carried out in sewage treatment plant to treat waste water.

Mr. Kulat Sir guided student about the various treatments carried out in the plant. At first students were introduced screening chamber where sewage is screened mechanically and coarse material etc. were removed from sewage. Screening involves the removal of large objects for example cotton buds, plastics, diapers, rags, sanitary items, face wipes, broken bottles or bottle tops that in one way or another may damage the equipment.

Then he introduces students sedimentation tank where water is allowed to settle. This is the primary treatment. Primary treatment is done by pouring the wastewater into big tanks for the solid matter to settle at the surface of the tanks which is removed by large scrapers at the center of the cylindrical tanks. The remaining water is then pumped for secondary treatment.

The next step of the treatment process is secondary clarifier. The water from the primary tank is transported to the secondary clarifier for adding chemicals such as lime and alum to reduce the PH of water.

This water is then passes to aeration chamber. It is where water is sprayed so that air is well mixed in the sewage and to promote the growth of micro-organisms. Some of this sludge is recycled to the inlet of the aeration tank to maintain the biomass, hence the name for the process – 8 activated sludge. The remainder is pumped to anaerobic digester for further treatment.. Students were also introduced with chlorination chamber where water is chlorinated. Students were also introduced to newly prepared biogas plant where biogas would be generated from sludge and the organic waste from solid waste dumping site

From this visit, we get the information and practical knowledge about the treatment of waste water and components used in treatment plant. And got the knowledge about detailed process of treatment.

Sewage Treatment Plant at Lalkhadi



Field Work at Bamboo Garden

On **4th March 2020**, Department of Environmental Science has organized visit to Bamboo Garden to study afforestation programme run by forest department. Visit was organized for of M.Sc. IInd year students. 22 students from M.Sc. IInd were present along with 2 faculty members. It's the unique type garden in India devp.by forest department to educate the people,the importance of use of various species of bamboo. Bamboo is the alternative for wood . It also help to maintain environmental balance. Some importance of bamboo are-

- It generates up to 35% more oxygen than an equivalent stand of trees.
- Helps mitigate water pollution due to its high nitrogen consumption
- Reduces runoff, prevents massive soil erosion;
- An effective erosion control plant and natural control barrier due to its widespread root system and large canopy.

Bamboo Garden is one of the attractions places of tourists because this is the only place where we can see more than 63 species of bamboo and 300 species of cactus all over in India. In 63 species of bamboo, 56 species are form india and 7 species are from other countries.As per research, China has 340 species of bamboo, India has such 134 species and Maharashtra is the highest bamboo growing State and its largest and most famous bamboo nursery is known as Wadali that is Bamboo Garden.

Cactus garden is one of the highlights where you will see quite a few varieties of cactus plants. And if it is a blooming season you will be elated to see the beauty coming out of thrones. It is such a peaceful place, where you can enjoy with your loved ones, family and friends. Bamboo garden is full of natural beauties, tourist especially comes for a photoshoot, from last few years Pre-wedding shoot is in trend, the bamboo garden is the most favorite and perfect place for this.

It is a place where everything is built using bamboos. In the future, they are dreaming of making unusual products from the bamboo-like shirt, medicines, as well as pickles and many more. There are adventure sports for adults and kids which is a major attraction in the bamboo garden. There are 20 ft high sky-wall and also series of many other fun and adventure activities. Students enjoyed it a lot.

Bamboo Garden



Department of Geology

Permission Letter, Report and Photos (Sample)

Permission Letter & Field Excursion Activity Report

To,
The Principal
Shri Shivaji Science College,
Amravati.

Subject: Permission for Geological Field Excursion (one Day)

Respected Sir,

We wish to bring to your kind information that we have organized Educational tour to **Kondeshwar on dated 16 February 2020** for B.Sc IInd and IIIrd year students. The total number of students going for tour are and 3 staff member is accompanying them.

We have taken consent letters from the parents/guardian of student for their permission to take the students for Geological field Excursion.

We humbly request you to kindly give permission to take the geological field Excursion to above mention place. The Schedule of the tour and List of the student are enclosed hereby.

Thank You.

Date:

Place: Amravati

M.M. Deshmukh
Dr. M.M. Deshmukh
Asst. Professor & Head
Dept. of Geology
Shri Shivaji Science College
Amravati

Yours Faithfully,

1. Dr. Mayura M. Deshmukh *M.M. Deshmukh*
2. Mr Saurabh Paunikar *Saurabh Paunikar*
3. Mr. Kartik P. Tiwari *Kartik P. Tiwari*

Department of Geology

Field Excursion Activity Report

Department of Geology organized 1-day field excursion to **Belkher** from 29th September 2019 which was accomplished successfully under the guidance of three staff members; Dr. M. M. Deshmukh, Head Department of Geology; Mrs. A. D. Fuladi, Assistant Professor (Fix Pay) and Mr. K. P. Tiwari, Assistant Professor (Fix Pay) and was accompanied by one lab attendant Mr. Sanjay Salbarde. Total 39 students actively participated in field excursion activity from B.Sc. I year students.

Field Excursion activity details are as follows: -

As per the schedule students along with 3 staff members and 1 attendant gathered in college premises on 7 am. All students and staff with 1 lab attendant departed for Belkher from college premises in pre-arranged 40 seater Bus after taking attendance of students on 8 am. 1st stop was tea break in Paratwada at 9:15 am. Bus Reached Spot 01 'Belkher' on 11 am and students executed field excursion under the guidance of all 3 staff till 2 pm. Bus departed for Spot 02 'Wazzar dam' at 2:15 pm. Bus Reached Spot 02 'Wazzar dam' and all students along with staff took lunch from 3 pm till 3:30 pm. All students executed field excursion under the guidance of all 3 staff at Spot 02 'Wazzar dam' from 3:30 pm to 4:30 pm. The return journey started on 4:45 pm and took a tea break in Paratwada from 5.30 pm to 6 pm. Bus departed from Paratwada on 6 pm and reached college premises at 7 pm. After departure of all students with their respective parents/ guardian all staff members and lab attendant also departed and the tour was concluded till 8.30 pm.

Filed Photographs Belkher



Date: 06-09-2019

Place: Amravati

Dr. M .M. Deshmukh
Head & Asst. professor
Department of Geology
Shri Shivaji science College, Amravati

Field Excursion Activity Report

Department of Geology organized 1-day field excursion to **Kondeshwar**, Amravati on 16th February, 2020 which was accomplished successfully under the guidance of three staff members; Dr. M. M. Deshmukh, Head Department of Geology; Mr. S. K. Paunikar, Assistant Professor and Mr. K. P. Tiwari, Assistant Professor (Fix Pay). Total 34 students actively participated in field excursion activity from B.Sc. II and B.Sc. III year students.

Field Excursion activity details are as follows: -

As per the schedule students along with 3 staff members departed from college premises on own 2 wheelers at 8 am. Reached Spot 01 ‘A Rock quarry’ on Amravati-Akola highway and executed field excursion activity under the guidance of all the 3 staff members from 9:30am-11:30 am. All vehicles departed for Spot 02 on 11:45 am and reached Spot 02 ‘Kondeshwar’, Amravati by 12:30 pm followed up with execution of field excursion activity under the guidance of all the 3 staff members. Mr. M. D. Phale, Assistant Professor Shri Shivaji College of Arts, Commerce & Science, Akola joined the field excursion activity as a guest and shared his valuable guidance to students till 2:40 pm. After completion of field excursion activity all students along with staff visited the temple in the vicinity for refreshment & enjoyed their lunch which was already carried by all respective staff and students from 2:40 pm – 3:45 pm. All students and staff departed for college 4 pm and reached college premises by 6 pm. After departure of all students to their respective home, staff also departed and day was concluded till 7 pm.

Field Photographs of Kondeshwar



Date: 17-02-2020

Place: Amravati

Dr. M .M. Deshmukh
Head & Asst. professor
Department of Geology
Shri Shivaji science College, Amravati

Field Excursion Activity Report

Department of Geology organized 3-day field excursion to **Pachmari** from 5th December 2019 to 7th December 2019 which was accomplished successfully under the guidance of three staff members; Dr. M. M. Deshmukh, Head Department of Geology; Mr. S. K. Paunikar, Assistant Professor and Mr. K. P. Tiwari, Assistant Professor (Fix Pay) and was accompanied by one lab attendant Mr. Sanjay Salbarde. Total 17 students actively participated in field excursion activity from B.Sc. I, B.Sc. II and B.Sc. III year students.

Filed Excursion activity details are as follows: -

As per the schedule students along with 3 staff members and 1 attendant gathered on Amravati railway station on 5 pm dated 5th December 2019. Further journey from Amravati to Pachmari was done by Indian railways. Railway to Pachmari departed from Amravati railway station on 5:45pm by train AMI JBP SF EXP (12159). Train reached nearest railway station to Pachmari Pipariya around 5:45 am dated 6th December 2019. After taking morning breakfast we hired local tempo taxi to reach Pachmari by 6 am. We reached Pachmari and lodged at Raj-Laxmi hotel, Pachmari on 8 am and all students were accommodated with 1 staff in each room with group of 5 students together. Further journey was carried by gypsy as area was not accessible by other transportation modes. All left the rooms in gypsy at 9:30 am. We reached Spot 01 'Forest Museum' where students observed and learned about various rocks and minerals present in area with various species of animals and plant from 10 am- 11 am. Spot 02 was 'Mahadev rock painting' which was not accessible after a point thus a 13 km trek (up and down) with varied geology on the way was explained in area by all 3 staff member from 11:30 to 2:00 pm. All gypsy returned hotel by 2:30 pm for lunch. Spot 03 was 'Bee Waterfall' where students executed field excursion activity from 3.30 pm to 4:30 pm. Spot 04 was 'Rajendra Giri Hill' where students under the guidance of staff executed field work from 5 pm- 6:30 pm. All were back to hotel by 8 pm followed by dinner on 9 pm and the day was concluded. After getting ready and taking morning breakfast we departed for Spot 05 'Handikhoh' and 'Bada-mahadev' at 9:30 am dated 7th December 2019 where students observed various geomorphological structures and groundwater activity till 12 noon. We returned to hotel on 12:30 pm for lunch and left for Spot 06 'Priyadarshani' where students under the guidance of staff executed field work from 2 pm- 3 pm and last geological spot was Spot 07 'Jata Shankar' which took from 3:30 pm -4:30 pm. We went back to Raj Laxmi hotel, Pachmari on 5:30 pm, packed dinner and took bus for return journey to Pipariya railway station on 7 pm. We reached Pipariya railway station at 9 pm and had dinner at Railway station which was carried along from Raj Laxmi hotel, Pachmari from 9:30 pm – 10:20 pm. By train we departed for return journey from Pipariya railway station to Amravati railway station at 11 pm by train JBP AMI SF EXP. We arrived to Amravati railway station at 9 am dated 8th December 2019. After departure of all students with their respective parents/ guardian all staff members and lab attendant also departed and the tour was concluded till 11 am on 8th December 2019.



Filed Photographs Pachmari

Date: 9-12-2019

Place: Amravati

Dr. M .M. Deshmukh
Head & Asst. professor
Department of Geology
Shri Shivaji science College, Amravati

Department of Zoology

Permission Letter, Report and Photos (Sample)

**SHRI SHIVAJI SCIENCE COLLEGE,
AMRAVATI.****REPORT :**

REGIONAL FORENSIC SCIENCE LABORATORY ,AMRAVATI VISIT

(22nd JANUARY ,2020)

(B.Sc. Department of Zoology.)

SHRI SHIVAJI SCIENCE COLLEGE AMRAVATI
DEPARTMENT OF ZOOLOGY

To,
Principal
Shri Shivaji Science College Amravati

Through :- Study tour Committee.

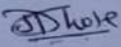
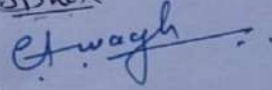
Subject :- Kindly permit for the study tour.

Respected Sir,

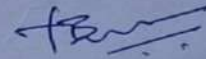
Department of Zoology has arranged the study tour to ~~to~~ Semadoh and Kolkas for M Sc & B.Sc.II (MEB) students on **21 September 2019**. The visit is arranged as per the practical course. Total 70 (40+30) students will participate.

So, we kindly request you to permit the study tour and oblige.

Thanking you.

Dr.J D Dhote 
Dr.G.A. Wagh 
(In-charge teachers)

Yours Truly

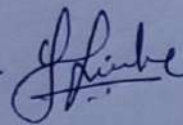


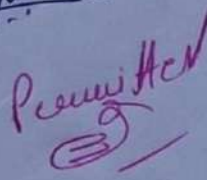
HOD

(Dr.N.V.Bhatkar)

Date :- 14.09.2019

Place :- Amravati

Approved For permission 
for route details &
holding before departure.

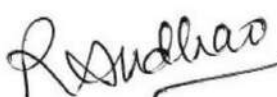
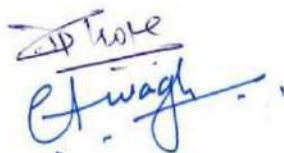
Permitted


Department of Zoology was organized one day study tour at Sipana division of Melghat Tiger Reserve on 21 September 2019. This study tour was arranged as a part of their university curriculum. In all seventy students of UG (B. Sc .II) & PG (M.Sc. Zoology) were actively participated in this zoological excursion. Students were visited Semadoh Nature interpretation centre, Sipna river basin & Kolkhas Rest house. Students were participated in nature trail and observed the various species of butterfly, dragonfly, Spiders, snails, fishes, frogs, Lizards, birds and large carnivores & herbivorous tracks & signs and also they learned about their micro habitats & Ecology.

This zoological study tour was led by DR.R.G.Jadhao, Dr.J.D.Dhote & Dr.G.A.Wagh as a teacher in charge & Mr. Raju Pachel was accompanied them.

Date:26-9-2019

Tour In charge- i) Dr.J.D.Dhote
ii) Dr.G.A.Wagh



Dr.R.G.Jadhao
Head
Dept. of Zoology

Sipna Division of Melghat Tiger Reserve



Dr. H. S. Lunge
Dr. H. S. LUNGE
IQAC Coordinator
Shri Shivaji Science College
Amravati.



Principal
Principal
Shri Shivaji Science College
AMRAVATI.