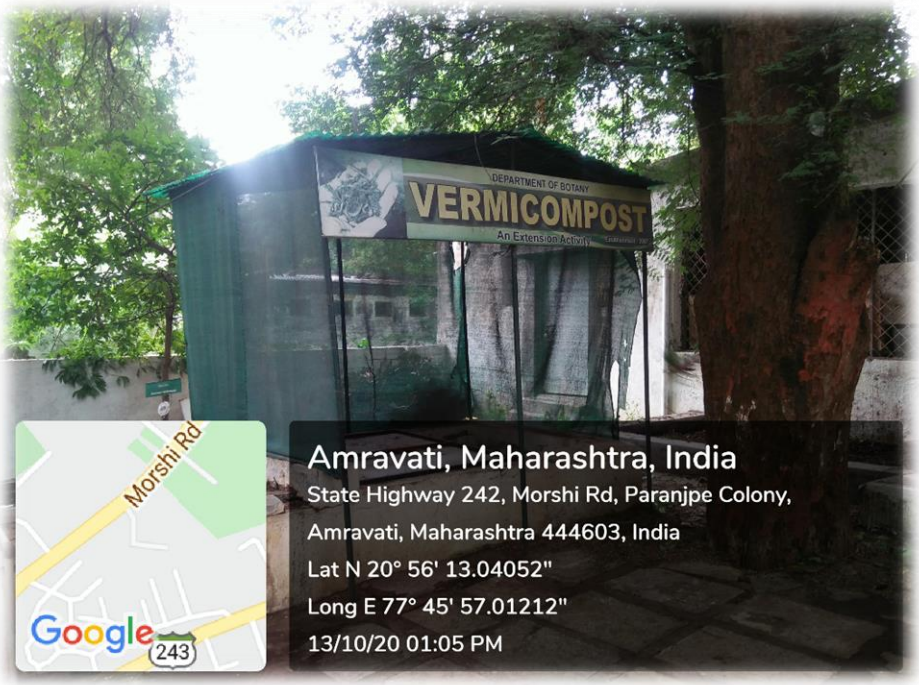
Shri Shivaji Science College Amravati
Department of Botany
Vermicomposting: An Extension Activity



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Vermicomposting Report
Year: 2016-2017

In year 2016-17 the organic waste materials were collected from the college campus by the college students. The collected bio waste was brought to the garden and with the help of students and garden workers it was cleaned up and wet by spraying water to moisten the biomass. A special vermicomposting tank was already built in the botanical garden of college campus. The demonstration was given to school children of Edify School, Amravati who visited on 12/02/2017 at the time of work. The moisten molasses with cow dung and soil, at least three layers were made in a tank and watered with time intervals. After that the tank was introduced with a 1 kg of earthworms. It's then shadowed and cover with green leaves of Neem and cloth to keep the worms in working live condition. The tank then leaved for the 7 to 8 weeks for conversion into compost manure. In the race of population versus food demands of this hungry world, use of chemical fertilizers, chemical pesticides, insecticides are massively forced for the increase in crops production. Farmers are successively using chemicals since long generations. Such chemicals practises results in deterioration of the soil quality and moreover the fertility. Hence to prevent this mother earth from conversion into chemical laboratory attempts must be made for natural farming and to promote such resources to the society. Vermicomposting maintains the texture of soil, pH, Fertility with good N, P, K, ratio for the crops. It is completely odourless and having well water holding capacity and maintains balance of nature. Such natural fertilizer increases resistance to the pest, insects and fungi etc. with good soil aeration.Two pipes outlet was kept at the bottom of tank to collect vermiwash which are already fixed during tank setup. This vermiwash can be used as growth regulators by spraying on crops and vegetables. Using 50% greenhouse net the tank was covered to avoid excess radiation and also protection from external environmental damages. Shadowed place needed where the unit is desired to setup which should be free from insects and ants so that they can't harm the worms.

Vermicomposting Report
Year: 2017-2018

The second activity of Vermicompost unit installation was done on 22.10.2018 with the presence of our B.Sc. undergraduate students in the botanical garden. Using cow dung, earthworms and soil mixture is made with appropriate proportions. With help of students this mixture installed in tank and watered properly for 4-8 weeks. First flush of pure, odourless and granular, soft vermicompost get obtained. Technical protocol and support was provided to the students in case of mass production. Vermiwash, a liquid can be obtained from the tank by pipe in case of excessive water. This extension activity of the Botany Department promotes Vermicomposting awareness among students and farmers for eco-friendly organic farming.

The tank first layered with bricks pieces and stone to set the bed of Vermicompost which keeps soil stable and also to held water for moist condition. The second layer is done by keeping black smooth soil over the bricks to make bed even. Then the third layer is of raw material which was evenly spread and sprayed by water to make it fully wet. Forth layer evenly and spray water. Then, place the dung compost over the raw material and gain make it wet. Then Fifth covered with half decomposed compost over the layer and spray water. Then Sixth the tank was covered with grass or straws or cloth to retain water and avoid evaporation water. After that 1 Kg/2 Kg worms were introduced into the tank. The tank was kept wet and moist by spraying water frequently because worms required wet conditions for survival. The worms were provided by K.V.K. Ghatkhed. By regular water spraying and case this unit was successfully installed and giving the output of vermi-compost. This whole demonstration was given to the students of UG and PG as a part of counselling. By degrading Biomass with the help of worms produce a rich organic component which act as fertilizer. A granular, black coloured, soft, light weight vermicompost is obtained after 40 - 50 day keep it under shade for drying and soaking. The students were told and instructed for the collection of dried biomass from the campus so that the campus will clean up & will get raw material for the decompose. The material required for the installation was collected from the garden waste, shaded leaves etc. The worms were brought from Krishi Vigyan Kendra, Ghatkhed.

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Vermicomposting Report

Year: 2018-2019

The Third activity of the year was conducted on 17 January 2019 in Botanical Garden with the help of B.Sc, N.S.S. and M.Sc. students. In today's era, students and farmers must be aware of the changing scenario of eco environmental impact caused due to extensive use of chemical farming. Efforts must be taken to convince them regarding the importance of natural fertilizers and organic farming. Considering the need of awareness the vermicompost activity proposed the organic waste materials were collected from the college campus by the students. The tank first layered with bricks pieces and stone to set the bed of Vermicompost which keeps soil stable and also to held water for moist condition. The second layer is done by keeping black smooth soil over the bricks to make bed even. Then the third layer is of raw material which was evenly spread and sprayed by water to make it fully wet. Forth layer evenly and spray water. Then, place the dung compost over the raw material and gain make it wet. Then Fifth covered with half decomposed compost over the layer and spray water. Then Sixth the tank was covered with grass or straws or cloth to retain water and avoid evaporation water. After that 1 Kg/2 Kg worms were introduced into the tank. The tank was kept wet and moist by spraying water frequently because worms required wet conditions for survival. By degrading Biomass with the help of worms produce a rich organic component which act as fertilizer.

Method

Choose the shadow or appropriate place where the unit is desired to setup. Make min 10' x 8' x 2' Ft. size tank either on the surface or in the soil. Place 2" x 3" inches of bricks & stone layer. Lay down 2"-3" inches of black soil layer over the surface to held water, soil and for aeration to keep soil moist. Place 4' - 5" inches of dry biomass over this layer and spray water to make wet. Now speed the dung compost only over the biomass and also spray water place some half-decomposed dung compost over the bed. Now introduce about the 1 kg to 2 kg of worms into the dung compost layer. [Gobar gas slurry can be also used] Cover it with the Jute Cloth straws or grass to present evaporation of water. Spray water regularly to keep unit moist. After 40 - 50 days, collect the granular, a dark coloured, vermicompost and keep it under shade for soaking and drying. Vermiwash can be obtained by keeping outlet to the tank.

Result:

A granular, black coloured, soft, light weight vermicompost is obtained after 40 - 50 day keep it under shade for drying and soaking. The students were told and instructed for the collection of dried biomass from the campus so that the campus will clean up & will get raw material for the decomposition.

Dr. Tushar Wankhede

Prof-in-charge, Vermicomposting