

Vermicomposting in College Campus of S.G.J.Quaderia College, Burhanpur, M.P., India

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ABSTRACT

When the green revolution was done in 1960, then there were a lot of increase in agricultural products, but use of chemical fertilizers and pesticides also gets increase. Due to which soil acidity is increase day by day, cause infertility of soil, that's why today's need to stop this problem is vermicomposting. Earthworm plays an important role in the recycling of waste of college. College waste consist of weed, grass, twigs obtained by pruning, tree droppings (leaves), food waste generated by home science lab and other degradable waste by all labs. It is eco friendly technique to manage college waste. vermicomposts are defined as organic matter of plant and/or animal origin consisting mainly of finely-divided earthworm castings, produced non-thermophilically with bio-oxidation and stabilization of the organic material, due to interactions between aerobic microorganism and earthworms, as the materials pass through the earthworm gut. We observe many benefits of this technique. It increases nitrogen, phosphorus, potash, Ca, Mg in soil. It increases soil fertility. Earthworm mix and spread humus and soil in all layers. Due to activities of earthworm, soil become porous, which do aeration properly and it increase water holding capacity of soil. Weed less grow in soil which rich in vermicompost.

Keyword:-vermicompost, earthworm, green waste, chemical fertilizer

I INTRODUCTION

Vermicompost is a great bio fertilizer rich in nutrition's. Vermicompost is an organic matter, made by weed, grass, twigs obtained by pruning, tree droppings (leaves), food waste generated by home science lab and other degradable waste by all labs. Earthworm's casting released by eating all of this called as vermicompost. This is good for secure to environment.

Tree droppings (leaves) are major waste generated in the campus. About 15kg tree dropping waste generated per week in the campus, which is managed by vermicomposting.

II MATERIAL AND METHOD

There is a 350 species of earthworm found on the earth. But only few are used in vermicomposting which live on the surface of soil like Eiseniafoetida, Eudriluseugeniae etc.

Vermicomposting is practiced in 3X8 area. It is located near the green house in botanical garden. First collect the organic waste and separate non bio-degradable waste in this. green waste (, grass, twigs

obtained by pruning, tree droppings (leaves) etc.) are spread in a layer for 1-2 days in the sun light, than deep into the water filled pot for pre decomposing process.

In a bed at the bottom lay the plastic sheets. On it lay 3-4'' thick layer of Green waste and neem leaves. Sprinkle water 2-3 times in a day. Make 3-4'' thick layer of cow dung and soil in proportion to 1:3. Now add earthworm. Again make 3-4'' thick layer of cow dung and soil in proportion to 1:3. Sprinkle water one times in a day. On it lay 3-4'' thick layer of Green waste and neem leaves.

Here is a point to be noted, bed is not heighted more than 1-1.5 feet. Now covered by stack that keeps moisture in it. Temperature should be controlled at 25-30^o C.

Now leave this unit for 20-25 days. To maintain temperature, regularly sprinkle water on it.

In 20-25 days numbers of earthworm increase rapidly. Vermicompost is ready after 3months. Vermicomposting should be practiced in shadow. Earthworm can be live in 0-40^o C. so, it is required to plan for it. Only surface dwelling earthworm should be selected.



Fig No. 1 (a) Fresh Organic Waste



Fig No. 1 (b) Spreading in Layers



Fig No. (c) Arranged in a bed



Fig. 2 (d) Vermicomposting



Fig No. 2 Key steps in vermicomposting process

III OBSERVATION & VERMICOMPOST RESULT

The result of proposed vermicomposting is summarised below.

- (a) Harvested in – 1-1.5 month
- (b) Nutrients present
 - (i) Nitrogen - 2-3 %
 - (ii) Phosphorus - 1-2 %
 - (iii) Potash - 1.5- 2 %
 - (iv) M.O. and others - comparatively less than other manure.

IV CONCLUSION

The proposed vermicompost system is being used in college garden and college waste recycled. It is eco-friendly method to manage college waste. It increases nitrogen, phosphorus, potash, Ca, Mg in soil. It increases soil fertility. Earthworm mix and spread humus and soil in all layers. Due to activities of earthworm, soil become porous, which do aeration properly and it increase water holding capacity of

soil. Increase useful bacteria in soil. Weed less growth of soil enriches vermicompost.

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