

VERMIWASH

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INTRODUCTION:

Vermiwash is a liquid substance of vermicompost, extracted in the presence of earthworms and contains several enzymes, plant growth hormones, vitamins along with micro and macronutrients which increases the crop resistance power against various diseases and enhances the growth and productivity of crops. Abundant use of inorganic fertilizers along with herbicides and pesticides in the present agriculture system poses a great threat to the soil and water sustainability. Under such alarming situation it is necessary to look for alternatives which are effective and eco-friendly.

Composting is an aerobic process involving decomposition of solid wastes for producing nutrients to plants. Vermicomposting is the process of composting with worms (or) use of worms for composting organic materials. Vermiwash is a liquid bio-fertilizer can be collected through the column of activated earthworm. It is an organic fertilizer decoction obtained from units of vermiculture / vermicompost as drainage.

It contains excretory products of earthworm secretions, the worm coelomic fluid oozing through dorsal pores, mucus, enzymes secreted by worm & microorganisms, plant nutrients, vitamins & plant growth promoting substances. It is a collection of excretion called vermicasts. Which contain lot of nutrients particularly soluble K, Ca & Mg which find their way into vermiwash. It also contains plant growth hormones (auxin & cytokinin) and nitrate fixing bacteria and phosphorus solubilizing bacteria.

MATERIALS NEEDED FOR VERMIWASH PREPARATION:

A barrel (250 l) or small bucket, broken stones, coarse sand, garden soil, earthworms, cattle dung, straw, water.

Worms species used:

Two species of red earthworms are used for commercial composting or worm farming, due to their relatively high tolerance of environmental variations.

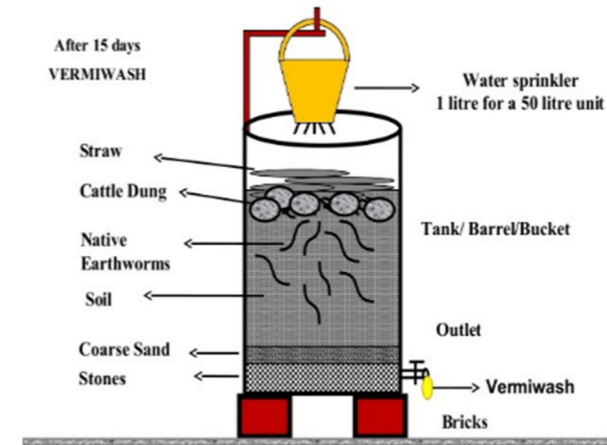
- Red wiggler – *Eisenia foetida*
- *Lumbricus rebellus* – Red worm

Methods of vermiwash production:

1. ECO – SCIENCE research foundation method
2. Ismail's method
3. Karunas method
4. Economic technique
5. KAU's method
6. Plastic drum method(1000lt)
7. Households device
8. Kales method
9. Fluid method

Most commonly and commercially followed methods are ECO – SCIENCE research foundation method and Ismail's method. A base layer of gravel or broken pieces of bricks are placed up to height of 10-15 cm. on the coarse sand layer place 40-45 cm pre decomposed organic wastes and moisten the different layers by

using water. Introduce about 2000 worms into the container. Spray water regularly for 7-10 days. After 10 days vermin wash will be produced in the bucket. Hang one pot with a bottom hole over the bucket in a way so that water fall drop by drop. Every day 4-5lt of water is poured in the hanging pot. Keep another pot under the stop cork and collect 3-4lt of vermiwash everyday.



COMPOSITION OF VERMIWASH:

Component	Quantity
pH	7.48
Organic carbon	0.008 %
Nitrogen	0.01 %
Available phosphorus	1.69 %
Potassium	25 ppm
Sodium	8 ppm
Calcium	3 ppm
Copper	0.01 ppm
Ferrous	0.06 ppm
Magnesium	158.44 ppm
Manganese	0.58 ppm
Zinc	0.02 ppm

PRECAUTIONS OF VERMIWASH USAGE:

- The tap should be always kept open to collect the washings
- The unit starts yielding good quality vermiwash after 10 days
- The vermiwash should be stored in cool dry place
- Water should be poured slowly
- Do not mix un-decomposed material, while watering
- Do not add any green material
- Do not allow to compact the contents.

BENEFITS OF USING VERMIWASH:

- Vermiwash is an eco-friendly natural fertilizer prepared from biodegradable organic wastes and is free from chemical inputs
- It helps to develop resistance against various diseases and pests in plants
- It helps in initiating good flowering and produce good yield in some vegetable crops
- Vermiwash is a liquid fertilizer and reported that at 20-30% dilution inhibits the mycelia growth of pathogenic fungi
- Act as a bio-pesticide when diluted with 10% cow urine or neem extract or garlic extract
- It does not have any adverse effect on soil, plant and environment.

CONCLUSION

Vermiwash acts not only as a liquid organic fertilizer but also as a mild biocide, which can be used as an effective input in organic agriculture for both soil health and disease management for sustainable crop production with low cost.

