



## Vermiwash Preparation

Vasudhevan I<sup>1\*</sup>, Roshini M<sup>2</sup> and Subhitsha S<sup>2</sup>

<sup>1</sup>Assistant Professor, PG & Research Department of Zoology, Vivekananda College, Agasteeswaram, Kanyakumari, Tamil Nadu, India.

<sup>2</sup>UG Student, PG & Research Department of Zoology, Vivekananda College, Agasteeswaram, Kanyakumari, Tamil Nadu, India.

\*Corresponding Author E-mail: [goldvasu1953@gmail.com](mailto:goldvasu1953@gmail.com)

### Abstract

*Vermiwash is a nutrient rich liquid fertilizer and organic pesticide collected by passing water through earthworm castings. It acts as a eco friendly plant growth enhancer, promoting healthy root development, enhancing immunity against diseases and providing essential macro-micro nutrients. It is widely used for vegetables, flowers and fruits. It's a powerhouse for plants and soil. Boosts plant growth: Stimulates root development and nutrient uptake. Improves soil health, Adds beneficial microbes and organic matter. Eco-friendly: Natural, non-toxic alternative to chemical fertilizer. Versatile use, can be used as a foliar spray or soil drench.*

*Keywords: Macro and micro nutrient, productivity and Plant disease resistant.*

### Introduction

During earthworm culture, water is sprinkled over the feed. The excess water, coelomic fluid extraction collection of excretory products and mucus secretion of earthworms along with nutrient from the soil organic molecules is slowly drained out. This is called as Vermiwash.

Vermiwash contains nutrients, growth hormones for plants. It contains growth regulator which is rich in enzymes, vitamins, hormones along with macro and micronutrients.

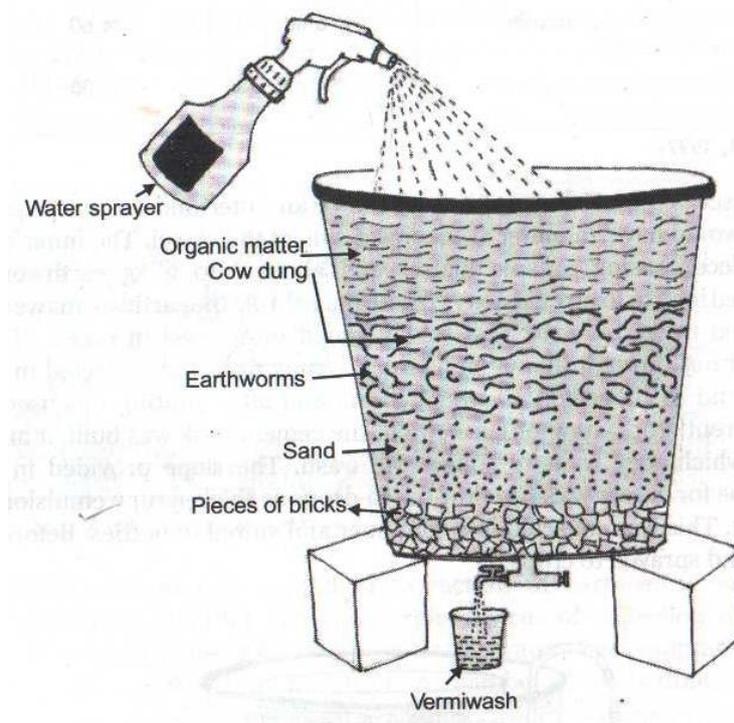
## Vermiwash Preparation

There are three common methods developed by 3 scientists.

1. Ismail Method
2. Kale Method
3. Karuna et\_al Method

### 1. Ismail (1997)

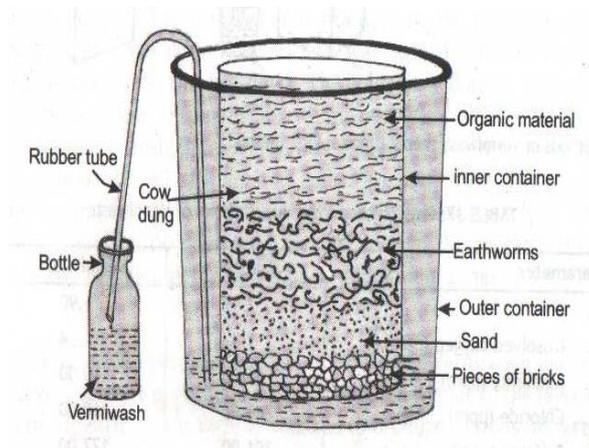
- 1) Suggested a method to prepare vermiwash.
- 2) A barrel with tap at the bottom was taken.
- 3) At the bottom pieces of bricks were placed.
- 4) Over which sand is filled.
- 5) On the top of layer of soil cattle dung and hay were placed.
- 6) The epigeic worms were introduced to produce compost at faster.
- 7) Anecics were put to produce a large number drilospheres.
- 8) From the above with the help of perforated mud (or) metal pot water is sprinkled.
- 9) Vermiwash was collected from the bottom of the barrel



**Figure 1: Ismail Method**

## 2. Kale method

- 1) There are two vessels, outer and an inner vessel.
- 2) The inner vessel has an outlet at the lower side of the vessel.
- 3) The inner vessel was filled with decomposing organic matter.
- 4) To this accommodated worms were slowly added into the vessel in Excess.
- 5) (1 to 2kg of worms were accommodated in 12 – 16 lit capacity vessel)
- 6) Excess water flows out through the outlet as thick syrupy fluid
- 7) This was collected in the outer vessel
- 8) Collected fluid was siphoned out and diluted
- 9) The diluted liquid is used as foliar spray to crops



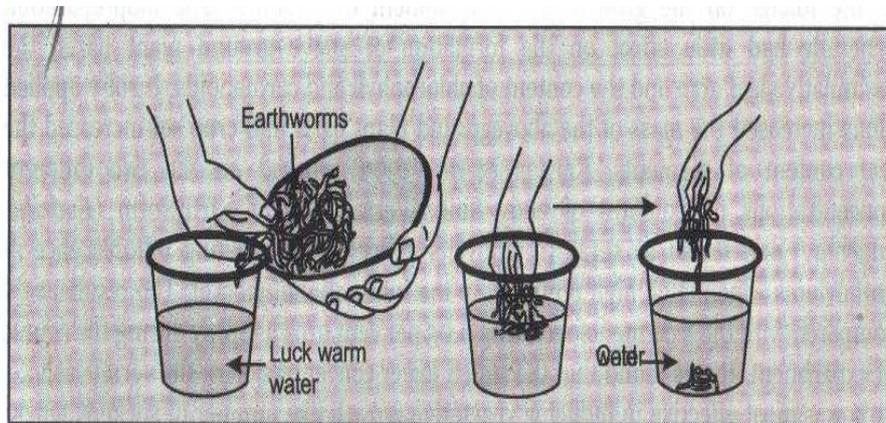
**Figure 2: Kale Method**

## 3. Karuna *et.al* Method

- 1) Clitellated earthworms of *Eudrilus eugeniae* (one kg) were taken and placed in a dry enamel tray for 15-20 min.
- 2) Earthworms were then carefully separated from their excreta.
- 3) Take a glass/plastic bowl with 500 ml of luke warm distilled water (37-40°C).
- 4) To this water, earthworms are added.
- 5) Then the worms are agitated for 3-5 min.
- 6) The worms are removed and added into another bowl containing 500 ml of water (25-27°C) .
- 7) They are rinsed thoroughly.
- 8) The exudates adhering to the worm's body were collected.

9) The worms are released back to the culture bins.

The contents (light, yellow syrupy fluid) in the two bowls were mixed to use as a spray



**Figure 3: Karuna *et.al* Method**

## Other Methods

### A. Described by Ramesh

- 1) 30 cm height earthen pots were taken with a hole at the bottom.
- 2) Filled with stone pieces upto 10 cm height from the bottom.
- 3) Above which a filter paper / muslin cloth was spread.
- 4) Above which a layer of humus along with 150-200 worms was laid down.
- 5) The hole situated at the bottom of pot was fixed with a rubber hose.
- 6) Every day 2-3 tablespoon of fresh dung slurry was poured on the humus as feed.
- 7) About 100ml of water was also added everyday from the top.
- 8) As this water passes through earthworms burrows.
- 9) It washes down all the materials adhering the body of the worm as well as the castings.
- 10) Through hose vermiwash was collected.
- 11) Every day we can obtain 100 ml of vermiwash used as foliar spray.

### B. Used by Giraddi (2001)

- 1) A plastic crates are used.
- 2) Equipment consists of culturing compartment and collection chamber.
- 3) At the bottom these two chambers are connected.
- 4) Water sieve is kept enclosed on the culturing chamber.

- 5) Culturing chamber have got small holes to allow water from sieve to culturing compartment and then to collection chambers.
- 6) Water is allowed to follow and vermiwash is collected.

**Table 1: Physico-Chemical Characteristics of Vermiwash**

Parameter	Control	Vermiwash
1. P <sup>H</sup>	7.97	6.90
2. Dissolved Oxygen (ppm)	1.37	1.14
3. Alkalinity (ppm)	65.00	70.00
4. Chloride (ppm)	245.00	110.00
5. Sulfates (ppm)	201.00	177.00
6. Inorganic Phosphate (µg/l)	21.08	50.09
7. Ammonical Nitrogen (ppp)	0.05%	0.05%
8. Potassium (ppm)	67.00	69.00
9. Sodium (ppm)	124.00	122.00
10. Total Hardness (ppm)	300.00	375.00
11. Calcium Hardness (ppm)	130.00	175.00
12. Magnesium Hardness (ppm)	170.00	200.00
13. BOD (ppm)	6.60	4.60
14. COD (ppm)	184.00	97.00

### Effects of Vermiwash Application

- 1) Improvement of the quality and quantity of yield.
- 2) Foliage turned dense green.
- 3) Early flowering in plants.
- 4) Inducing vegetative growth.
- 5) Uptake of NPK by crops increased.

## Summary

Vermiwash is a liquid organic fertilizer produced by allowing water to pass through a column of vermicompost and earthworms. It contains enzymes, mucus, vitamins, micronutrients and beneficial microbes secreted by earthworms, making it highly useful for plant growth.

## References

*Edwards C.A and Bohlen P.J (1996). Biology and ecology of earthworms-comprehensive information on earthworms and their role in organic farming.*

*Woodburry. PB 1992. Trace elements in municipal solid waste composts: a review of potential detrimental effects on plants, soil biota and water quality. Biomass Bioenergy 3;239*

*Pramoth A 1995. Vermiwash- A potent bio-organic liquid "Ferticide" M.Sc dissertation University of Madras,29pp*

*Arumugam. N. Biocomposting for Entrepreneurship 2024. Saras Publications, Nagercoil*

*Seetha Lekshmy M, Santhi R. Vermitechnology 2022. Saras Publications, Nagercoil*