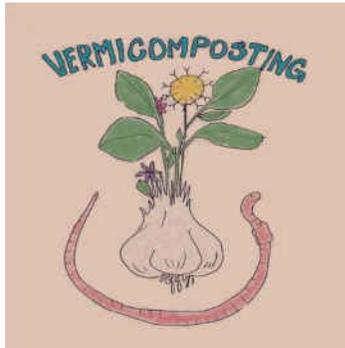


## VERMI-COMPOSTING- A GREEN APPROACH TO RECYCLE GREEN WASTE



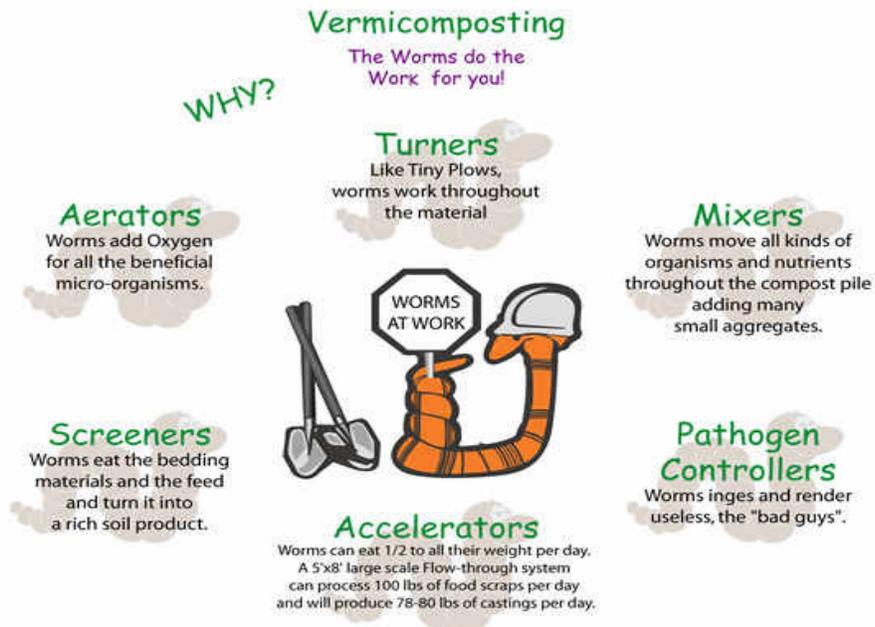
### *Composting by means of worms*

Vermicomposting- A method that relies on the work of small earthworms “specialized” in decomposing organic matter. It is a **“TEAMWORK”** which involves worms and microorganisms to convert organic waste into nutrient rich organic substance known as vermicompost.

## Use “Worms” against Climate Change

Our societies are producing millions of tons of kitchen and garden waste that gets dumped on landfill sites where it produces carbon dioxide and methane. Especially methane is a very potent greenhouse gas that takes up to 20 years to reach the upper layers of the earth atmosphere. This practice of dumping organic matter is not only a waste of valuable resources but as well entirely avoidable. Earthworms can thrive on nearly all organic matter and can recycle huge amounts of wet waste on a continuous basis. Thus humans can use worms as weapons against fighting the battle against climate change.

## Role of worms in composting



### Why to compost with worms?



- It requires little in terms of equipment
- It can transform kitchen scraps and plant cuttings into rich soil conditioner.
- Can be done indoors in bins too if open space is NOT available
- Compost will help your garden soil to retain moisture after rain or watering.
- Enhances germination, plant growth and crop yield
- Reduce the use of chemical fertilizers and help in improving the environment.

### Steps to convert your organic waste into compost-

- Selection of site. Preferably under shade, proximity to water and higher ground.
- Making of "Vermi and Feeder" beds. Two beds required one for vermi and second for feeder.
- Fill both beds with dry leaves
- Water and turn leaves every day for 15 days
- Cover both beds with gunny bags/Hessian cloth
- Spread cooled cow dung (Not manure) on top of vermi bed and induce red worms (Eisenia fetida) also called composte worms.
- Water and turn leaves after 2-3 days
- After six weeks vermi compost will be ready in vermi bed which can be harvested



## Tips for maintenance

### Temperature & Humidity

- Compost worms work best in temperatures ranging from 15°C to 25°C: and humidity from 45-60%; outside this range, they will slow down their activities and their population may decline.

### Aeration

- Since composting process requires a fair amount of oxygen, there must be air circulation
- around the vermicomposting

### Be Aware of Acidity

- Over time, the bedding will become acidic through the composting process, which could eventually harm the worms. To offset this, it is recommended to add crushed dry egg shells or dolomitic lime regularly, which will provide calcium for the worms and help them to create their cocoons.

### C: N Ratio

- During the vermicomposting process, nitrogen may get loss due to leaching, volatilization and denitrification processes. For maintaining the C:N ratio, pits need to be covered to reduce leaching process; adding carbon rich food or soil can be a remedy for volatilization; and proper aeration of the bedding can avoid the denitrification process.

### Type of food for worms

- Worms are very sensitive species, apart from abovementioned factors one important factor which affects their life is the type of food provided to worms. One should always ensure that the kitchen waste preferably fruits, veggies, coffee grounds, filters, tea bags is added while preparing vermicompost. However, horticulture waste like dry leaves, grass and garden clippings, rinsed egg shells can also be added but not frequently. At the end one thing which should be strictly avoided is dry waste (like paper, plastic, tissue, metal cans etc), meat, bones and dairy products.



### Trouble-Shooting?

<b>Problems</b>	<b>Cause</b>	<b>Solutions</b>
Foul Smell	Too much food/ not enough worms	Decrease the amount of food/add more worms
Ammonia Smell	Too much nitrogen rich material (green fresh food)	Balancing by adding carbon rich food
Escaping of Worms	Bedding is either too moist or acidic/ worm population is too high	Add dry leaves, crushed dry egg shells or dolomite powder; harvest the vermicompost and restart the pit with fresh bedding and worms
Rodents & Fruit flies	Too much of food available and exposed to air particularly dairy products or meat	Covering the waste thoroughly by at least 2 inches of bedding. Maintaining pH level.