

Vermiculture

There are significant and well documented benefits offered to land managers interested in the production of high quality worm products.

Benefits include;

- improving soil's physical structure;
- improving water holding capacity;
- stimulating and inoculating soil micro-organisms;
- adding plant hormones such as auxins and gibberellic acid, and important enzymes such as phosphatase and cellulase;
- attracting deep-burrowing earthworms already present in the soil;
- enhancing germination, plant growth, and crop yield;
- improving plant health and quality and;
- improving root growth and structure;
- reducing the need for fertilisers, herbicides and pesticides

Resulting in resilient, healthy and profitable enterprises.

SITE SELECTION

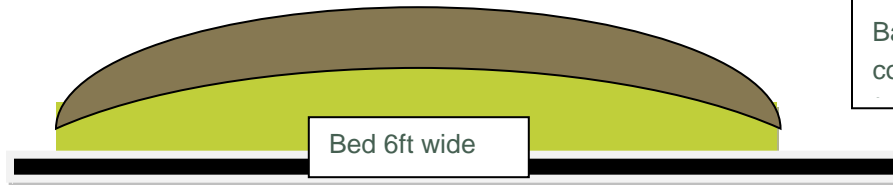
Vermiculture is pretty simple really; all worms need is food, water and air, just like your soil microbes.



Choose a site with the following attributes:

- Gently sloping to ensure water doesn't pond and any leachates can be collected (and to meet any local council standards)
 - Close to a water source
 - Hard packed to provide a robust surface for machinery (if required)

Building the worm bed



(Compostex cover on top)

Top layer; feed 2 inches of fresh feed at a time.

Bottom layer; 4 inches deep bedding rotted straw with woodchip

Base layer; ag lime or compacted area suitable

Management Tips

Feed the worms, little and often, dairy effluent can feed worms solely, however to make a good quality end product white wood chip (or very aged pine chip) is recommended as a base. This will create an excellent biological material. Feeding often helps to build vermicast and worm numbers as quickly as possible. Worms can go months without food.

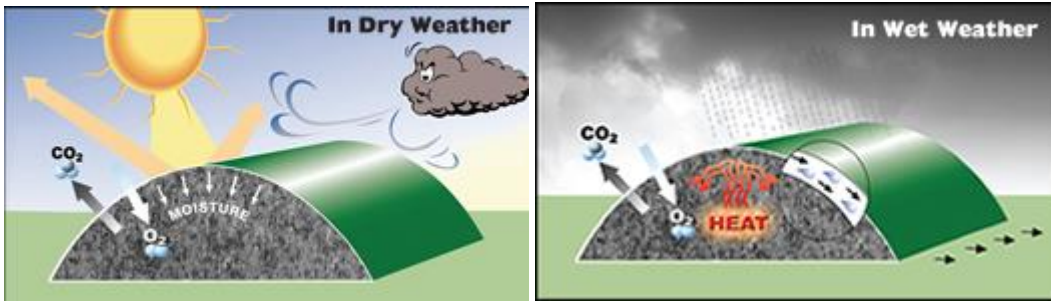
Temperature; measure temperature- ideal range 50-74 degrees C. If too hot, aerate and water, if too cold add 1/2 cup molasses per sq yard, or fresh grass clippings in a strip HALF of the bed. Avoid adding too much food at once, or adding new food on top of food which has yet to be processed, composting will heat up the bed.

Worms require calcium; add a dusting of ag lime once a month.

Keep the materials moist, you may need to add more water in summer.

Feed could be grass clippings, manure, wood chip, sawdust, seaweed, leaves, swedes, pumpkins, paper pulp, cardboard, paunch, crab shells etc etc.

Over the wetter months, compost covers are recommended to reduce waterlogging and keep the beds warmer. Compostex covers are the best covers on the market- I have been using the same covers at home for over 10 years now and they still show little signs of wear.



ComposTex compost cover (also known as “compost fleece”) is a completely breathable, non-woven fabric (or geotextile membrane) made of 100% UV-resistant polypropylene that completely sheds rainfall from covered windrows. See www.chaossprings.co.nz to order

Although it’s counterintuitive that a breathable fabric could shed rainfall, this is accomplished through capillary action, gravity, and the properties of cohesion and surface tension between water molecules. Simply stated, at the point that the ComposTex cover becomes saturated with rainfall, surface tension and cohesion cause this water to follow the path of least resistance and “wick” from fibre to fibre inside the cover and down the gravitational gradient created by the sloped sides of the covered pile. Eventually, this water reaches the bottom edge of the cover, where it drips out onto the ground.

Whether used on a short term basis or for continuous protection through an entire compost cycle, ComposTex will protect piles from excess rainfall, thereby ensuring optimum aerobic compost conditions and preventing the saturated/anaerobic conditions that produce unpleasant odors, nutrient-laden leachate, and wet compost that increases costs associated with screening, bagging, and transportation. See www.cvcompost.com/ccovers.php

Applications

Vermicompost can be used in the following ways;

- As an additive to compost tea;
- As a liquid extract at 2 gallons/acre;
- Applied to the soil as a solid soil conditioner 750 lbs/acre every third year;
- Humic and fulvic acids can be extracted from the vermicast.

Worms can provide additional income streams:

- Vermicast is commercially available from \$350/ T or up to \$1000/T for high quality products.
- Worms are typically sold for \$55-\$80 per kg or \$30 for 250 grams.
- A certified organic humic/fulvic acid is a very high value product.

All of the successful worm systems I’ve been involved with and seen around the world use a low-tech, low-capital investment approach. I recommend not investing in large capital costs until you reap the financial benefits from the use of vermicast. The up-front investment to establish the worm beds will be able to provide a measurable economic return within 6 months of its application to land.