



Vermiculture:

the cultivation of earthworms, especially in order to use them to convert organic waste into fertilizer.

Benefits

- Waste reduction. A bin about 30 cm (1 ft) high by 60 cm (2 ft) wide by 1 m (3.3 ft) long, together with about 6000 worms will be able to process about 2.5-5 kg (6-11 lbs.) of waste weekly.
- Increases the nutrients in the soil by producing excrement that acts like fertilizer that feeds the plant.
- Make a liquid solution called “Worm Tea” by steeping castings in water. This makes a liquid fertilizer that can be diluted and given to plants for a nutrient boost!
- Aerates the soil.
- Helps with soil structure.
- Their underground burrows also create channels in the soil, which makes the soil more porous, allowing water to move to greater depths. Worm burrows also allows for drainage after heavy rains reducing erosion.
- An easy way to add income to a household.



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THE SCIENCE OF SOIL HEALTH

Best Worms for Composting

- Red Worms or Manure worms. *Eisenia fetida*, *Lumbricus rubellus*. 赤子爱胜蚓,
- European Nightcrawler. *Eisenia hortensis*
- African Nightcrawler. *Eudrilus eugeniae*

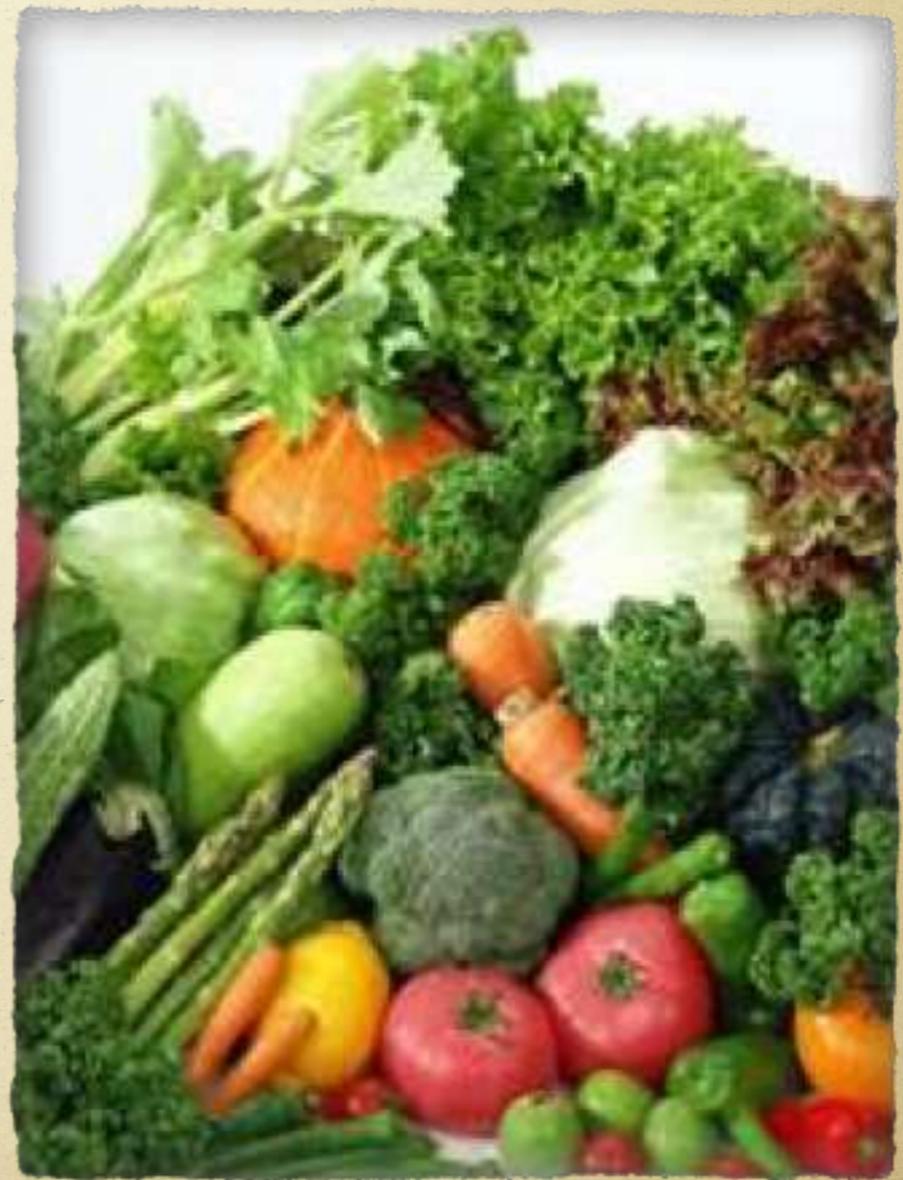
Constructing a Worm Bin

- Bin (Plastic or Wood)
- Bedding (Shredded paper or cardboard, Coconut coir, Etc.)
- Moisture
- Ratio
 - *1000 worms/ 1 cubic foot area
 - *1sqft. surface area/ 1 lb garbage per week
- Harvesting Worm Castings.



What to feed the Worms

- ✧ Vegetables
- ✧ Small amounts of fruit
- ✧ Tea leaves
- ✧ Coffee grounds
- ✧ Egg shells
- ✧ Newspaper, card board, paper
- ✧ Dead plants, leaves, grass
- ✧ Small doses of onion and garlic



What NOT to feed the Worms

- ❧ Citrus fruits (orange, lemons, youzi, etc.)
- ❧ Dairy products
- ❧ Fat
- ❧ Meat
- ❧ Fish



Worm Castings

Some Uses

- Mix with peat for seedlings.
- Make “Worm Tea.”
- Add to top of house plants.
- Add to garden to boost nutrients.
- Sell for income.



Vermiculture, Garden Composting Tower



- Efficient recycling of clean vegetable residues.
- Feed and multiply earthworms to populate a garden area of up to 1000 sq. ft. (32' X 32').
- Protect young worms from animal predators.
- Worm numbers per bed increased 25 fold, over 6 months at ECHO in N. Fort Meyers, FL.
- Improved conditions, year around, for efficient composting.
- Enhances the management of permanently located, no till, organic, raised beds.
- Worm tunnels improve soil aeration, moisture conditions, plant root development and nutrient cycling.
- Highly favors beneficial microbial, soil health.
- Improved and better balanced soil fertility.
- With some three years of use, on poor sandy soil, the Brannen's report improved soil quality and higher vegetable yields and quality.

