

Composting with Worms

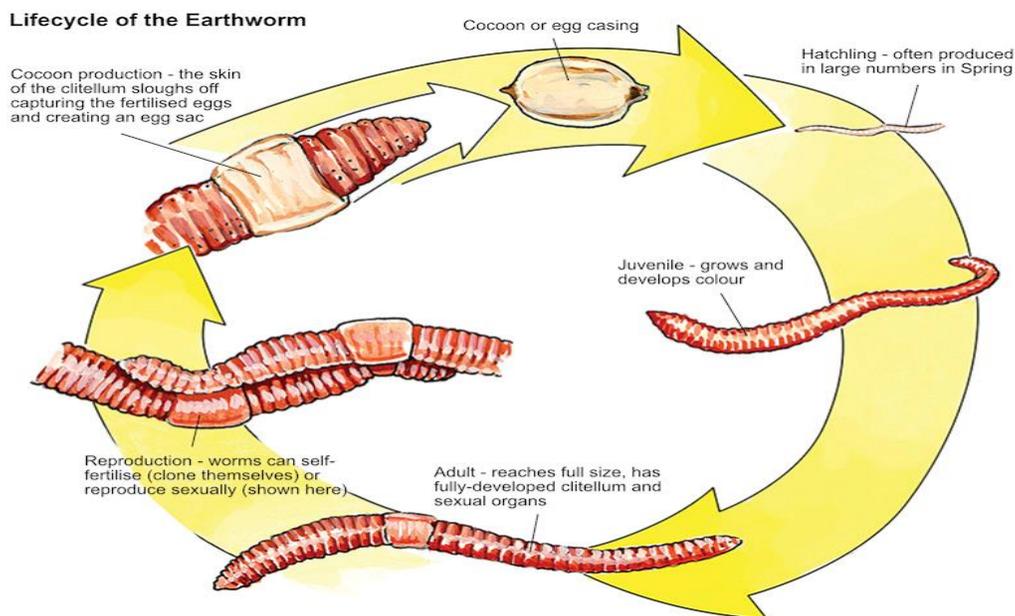
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Vermicomposting is the use of worms to aid in the decomposition of organic waste materials to form castings (worm poo) that is rich in plant nutrients and beneficial bacteria and fungi. It is used as an additive to soils to promote plant growth as a source of nutrients and beneficial bacteria and fungi.

The benefits are recycling produce, yard or paper waste, micronutrients from imported produce, decrease in pathogens, increases beneficial microbes, suppresses plant diseases, provides and retains plant nutrients, improves soil aeration and water retention.

The best worm is *Eisenia Fetida*(Andrei) or red wiggler, red, tiger, manure, bandling, +. It eats more and reproduces fast. Others include the European Nightcrawler, Malasian Blue, and African Nightcrawler.

Under ideal conditions the hermaphroditic adult with clitellum (raised ring) produces a worm capsule or cocoon per week that hatches a few to 20 young wisps in about 3 weeks. Each of these mature in 6 to 8 weeks leading to a population explosion.



Good overview at: <https://www.calrecycle.ca.gov/organics/wormfact>

Worm bins can be bought or made. Anything from a simple storage container, vertical migration tray systems, continuous flow through bag or bin with bottom harvest, and more. There are unlimited options both commercial or diy. Just search the web.

Worm bedding provides an ideal environment, but also serves as food for the worms. See my handout on how to make bedding. There are many options, but realize manures will heat up if not aged, and it or leaves will bring in potential pests.

Bins should be about half bedding by volume to produce the best castings. A layer of newspaper or dry material on top to keep it moist and can be mixed in to avoid it getting too wet. A light above new bins will keep worms from leaving until they settle in.

Wigglers can consume about half their weight per day, but most foods need to start decomposing first. Always check previous feedings to avoid overfeeding, and bury food in the bedding. Overfeeding and too wet are the most common failures.

Foods include produce scraps, coffee and tea grounds and waste paper products. Avoid meat, dairy, oil, grease, excess acidic fruits like citrus and pineapple, and odor producers like excess onion, garlic, and raw broccoli.

Worms thrive on neglect. Checking and feeding once a week is enough, and they can survive for a month or more if they don't dry out.

Harvesting castings will vary by type of bin. Vertical migration layers, continuous flow through, baiting or light sorting. Sifting screens can be helpful. Anything not broken down can be added back or disposed off. Castings are alive and should be stored moist in a breathable container. They can be added to soils for containers or in the garden. They are used to make worm compost teas for foliar or root feeding in a diluted solution.

The major problems are pests, moisture, and overfeeding. Best to avoid by proper care. Traps and coverings are used for fruit flies. Mosquito bits and covering are used for fungus gnats. Dry bedding and lime avoid excess for pot worms and mites.

Worms work well in outdoor compost piles and will help consume garden wastes or animal manures by mixing and aerating. It can be just a mound, a surrounding structure or a large windrow. Harvest by baiting to one side and screening. Winter survival depends on size, compost heat and insulation. Several cubic yards with fresh manure or grass clippings with leaves or garden waste will provide heat. I cover with bags of dry leaves and an old tarp as insulation. Some years it remains unfrozen under the bags, but if it freezes worms have avoided freezing below and return to the surface as it thaws.