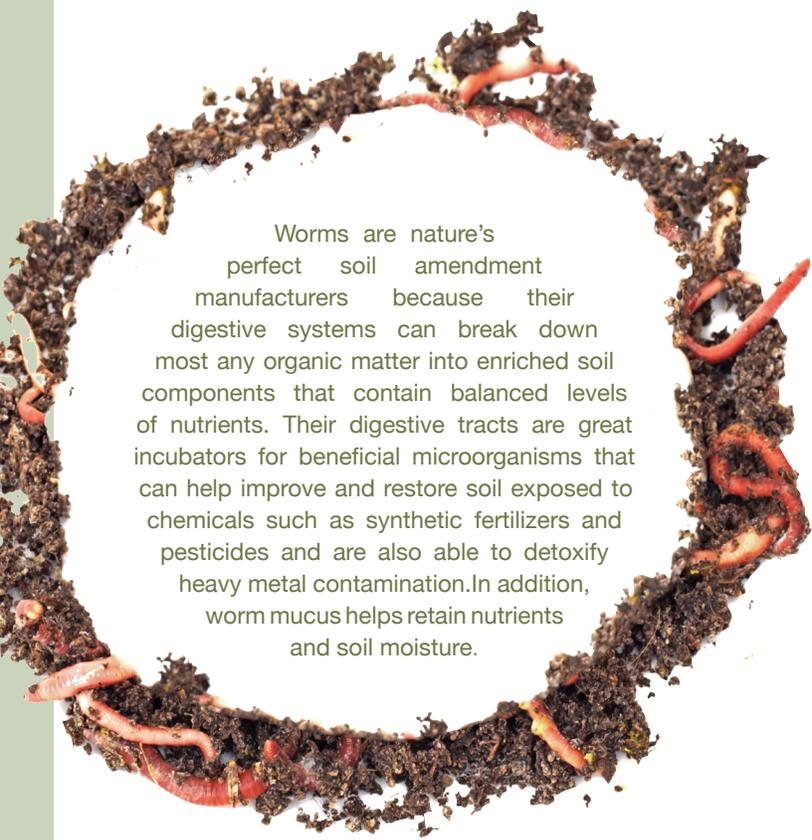


Worm Your Way to a Healthy Garden

By Amos Oak Arber – Assistant Curator, ABQ Botanic Garden

” *“It may be doubted whether there are many other animals which have played so important a part in the history of the world as these lowly organized creatures.”*
– Charles Darwin writing about worms in 1881



Worms are nature's perfect soil amendment manufacturers because their digestive systems can break down most any organic matter into enriched soil components that contain balanced levels of nutrients. Their digestive tracts are great incubators for beneficial microorganisms that can help improve and restore soil exposed to chemicals such as synthetic fertilizers and pesticides and are also able to detoxify heavy metal contamination. In addition, worm mucus helps retain nutrients and soil moisture.

What is Vermicompost? Vermicompost (from the Latin *vermis* meaning “worm”) is the product or process of composting using earthworms. The result is a heterogeneous mixture of decomposing vegetable or food waste, bedding materials and worm castings that provides terrific nutrition for your plants, helps them grow more vigorously and increases their resistance to disease and insects. It is also very mild, so you never have to worry about accidentally burning or over fertilizing.

To create your own compost, you will need four basic ingredients: a container, bedding, food and worms.



The Container: Manufactured worm container systems can make harvesting compost easier, but they can also be costly. A simple plastic storage container 10 to 14 inches deep works well. You will need to add holes or mesh for aeration and a spout or holes in the bottom for drainage. A bin that is too deep is not as efficient and could become an odor problem because the worms feed only in the top layers of the bedding.

The Bedding: Shredded newspaper, shredded cardboard (unbleached) or partially broken-down leaves are excellent fibrous materials that can be used to fill about three-fourths of your worm bin. This bedding needs to be kept quite damp (if squeezed, a handful should yield a few drops of water), and should be monitored frequently, especially in dry climates such as Albuquerque. It's helpful to keep a supply of dry bedding material on hand in case the bin becomes imbalanced with too much moisture or too many food scraps. A properly balanced worm bin should not be stinky and can be kept in the garage or basement without producing foul odors.

The Food: There are few food wastes that worms cannot compost. These include, but are not limited to: all fruits and vegetables, peels and ends; coffee grounds and filters; tea bags; paper towels; grains such as bread, cracker and cereal (including moldy and stale); eggshells (rinsed off); leaves and grass clippings (pesticide-free). Avoid meat waste and dairy products because they are likely to putrefy and can attract vermin. Worms have a gizzard like chickens, so a very small amount of fine grit (sand or sandy soil) should be added occasionally to help them digest food.

The Worms: Redworms (*Eisenia foetida*) are most commonly used in composting systems. They can produce their own weight in castings in 24 hours, will easily adapt to life in a container and are available locally and through mail order. One to two pounds should be adequate for a small household, while larger families or vegetarian households may need more. Remember, too, that the worms will reproduce quickly, probably doubling their population within one year.

Temperature and Climate: Redworms feed most rapidly at temperatures between 55 and 75 degrees F, although they can survive in more extreme conditions. Place an outdoor worm bin in a sheltered location away from direct sunlight and insulated against frost in winter. In Albuquerque, try shifting your bin location with the season to find the most suitable spot.

Kitchen Scraps: First and foremost, start slowly. It takes time for bacteria to form and your bin can quickly become very smelly if you add too much food too quickly. Begin with very small amounts of fine grit (sand or sandy soil) and vegetable matter--the worms won't starve because they also eat bedding. As the bin becomes established, gradually increase the amount of food, but if you notice odors, cut back. Less fruit and citrus and more leafy vegetables seem to work best.



Bits of dried leaves make great bedding material.



When harvesting compost, return worm eggs to the bin.



The finished product or "black gold" as some gardeners call it.

Harvesting: To keep your bin going, you will need to remove worm castings regularly. The vermicompost is generally ready for harvest after four to six months when there are few-to-no food scraps or pieces of bedding. Several weeks prior to harvesting, stop adding new bedding and food to give the worms a chance to work on the material already in the bin.

One harvesting method is to shine a bright light into the bin because the worms are sensitive to light and will move to the lower layers. Use your hands or a sieve to remove the top layer of castings which exposes the worms underneath to light and forces them to continue migrating to the bottom of the bin. Refill the bin with fresh layers of moist bedding and food.

Another method is to push all the black, decomposed material to one side of the bin and fill the other side with new moist bedding and kitchen scraps. After several days, the worms will migrate to the freshly-filled side, at which point you can scoop out the finished compost.

While harvesting, try to pick out as many eggs/cocoons and worms as possible and return them to the bin. Eggs are small, lemon-shaped yellowish objects that can be seen with the naked eye.

To use the compost on potted plants, add a thin layer to the top of the potting soil. In the garden, simply work it into the ground around the base of each plant.

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Amos Arber is a native of Albuquerque, earned a master's of landscape architecture from the University of New Mexico, has worked in landscape design, installation, and maintenance for over 13 years, has designed landscapes for public projects and performed construction observation. He began working at the ABQ Bio Park in November where he supervises landscape maintenance at Tingley Beach, Tingley Drive, the Cottonwood Gallery and the large bamboo fields. He is currently working to become the Certified Arborist for the Bio Park and complete exams to become a licensed landscape architect.

RecommendedBook

>> *Worms Eat My Garbage*, by Mary Appelhof

MouseClicks



Worm bin set-up and maintenance
www.bioparksociety.org/worms.html

Useful information from Cal-recycle
www.bioparksociety.org/calrecycle.html

New York Times composting article
www.bioparksociety.org/compost.html

