

GARBAGE-EATING WORMS

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Earthworms may seem like slimy insignificant creatures, but they are actually pretty amazing animals. Consider what the famous naturalist, Charles Darwin, had to say about them:

"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, 1881.

Darwin, who studied earthworms for over 40 years, considered them to be extremely important in the development of human culture. Why? The answer lies in the prominent role earthworms play in the production of agricultural soils. The earthworm is nature's plow, constantly tilling and improving the soil through which it moves.

We can also look at the earthworm as one big digestive tract. Earthworms are perfectly adapted to eating and excreting. They eat almost everything they encounter as they move through the soil. They leave behind tunnels, which aerate the soil, and nutrient-rich manure, called **castings**.

There are at least 1,800 known species of earthworms, although there may be many we do not know about yet. Some earthworms may be capable of living up to eight years, but most die after only a few months of life. They are susceptible to being eaten by birds and other animals, to sudden freezes, and to exposure to toxic chemicals like pesticides. Fortunately, earthworms multiply pretty fast. A mature

worm may produce a capsule of eggs every 7 to 10 days. Each egg capsule can contain up to 20 baby worms.

Speaking of multiplying, how do you tell a male earthworm from a female earthworm? You can't. Earthworms are **hermaphrodites**: Each worm is equipped with both male and female reproductive structures. Each must mate with another worm to reproduce, however.

Earthworms really are slimy, but slimy for a reason. Their skin is covered by a film of mucus which helps keep it moist. This mucus also lubricates the worm as it burrows through the soil and aids in the exchange of oxygen and carbon dioxide through the skin, which is how the worm breathes.

Let Them Eat Garbage...

Because of their ability to eat almost anything and turn it into soil, earthworms are excellent composters. The worm mini-farm you constructed during this program topic lesson will allow you to turn your household garbage into nutrient-rich soil.

There are a few things you need to know about the care and feeding of your worms:

- * Keep them in a dark place.
- * Don't let them get too hot. Keep them at about 70-75 degrees Fahrenheit.

- * Make sure the bedding (newspaper) in the bottle stays moist, but not soggy.
- * Feed the worms organic garbage from your kitchen every three to four days. You can give them almost anything except meat, bones, or dairy products, which are hard to digest and tend to spoil. Cover the food with about an inch of new, moist, newspaper strips.
- * You may want to purchase litmus paper at your pharmacy to make sure your worm farm is not too acidic. The pH should be between 6.5-8.5. If it is lower than this, try adding some crushed eggshells to the bedding.
- * When your worms have turned your garbage into rich soil, you can put it on your garden!

Worm Watching...

Your worm farm is more than just a great garbage disposal. If there are children in your house, it can provide hours of fun learning. Try the following:

- * Ask children to figure out which end of the worm is the mouth (the darker end). Point out the large band near the front of the worm. This is called the **clitellum**.
- * Point out the bristles (called **setae**) on the bottom of the worm which help it move. Have the children watch the worms move.

- * Place a worm on a piece of glass and hold it up to the light. See if the children notice the blood vessels and beating heart.
- * See what other observations the children make while watching worms!

For the serious worm farmer...

If you enjoy some success with your mini-farm, you may want to expand your operation. Start a worm farm in a large plastic bucket or wooden box. In addition to newspaper, you can use peat moss and leaves from your yard for bedding. Be creative. Experiment!

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1995: 6M