EARTH'S HELPERS: Earthworms add nutrients to soil

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An earthworm in a farmer's hand

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A common earthworm slithers in the dirt.

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Summer 2023 Kid's Camp Earth, Rain, Wind, Fire and Health included sessions on one of earth's amazing creatures, the earth worm. Lumbricus terrestris is the scientific name for the common earthworm. It is an annelid (Phylum Annelida) because it is a segmented worm with rings and segments on its body.

Earthworms benefit soil in two ways. Earthworms help improve soil nutrition. They feed on decomposing organic matter such as leaves and dead plant roots. The nutrients they eat become concentrated in their digestive system and are deposited back into the soil as body waste. This waste, called castings, is rich in nitrogen and phosphorus. Bacteria and fungi thrive on these nutrients creating a positive cycle of building good soil.

Earthworms also help create good soil structure. Their burrows open up the soil and create aeration and drainage channels allowing necessary air and water in.

Three categories of earthworms are defined by the part of our environment the worm predominately inhabits. Earthworms are epigeic, endogeic, or anecic worms.

Epigeic worms are the surface dwellers, they like the top two to three inches of soil. Epigeic is the Greek translation for 'on the earth.' These worms don't burrow, or at least not much, but live among decaying organic matter on the surface. They like piles of leaves and compost heaps.

Endogeic worms live deep within the earth. This type is usually only seen when digging a large, deep hole to plant a tree or large bush. Endogeic is the Greek translation for 'within the earth.' They create horizontal burrows as they eat certain types of organic matter and minerals already present in the soil.

'Anecic' is Greek for 'out of the earth.' These worms may form vertical burrows that extend from the soil surface down through the mineral layer. The most famous type of anecic worm is the common nightcrawler. Nightcrawlers do forage on the surface for food and then drag the food into their burrows. They can be spotted on the ground or the sidewalk after a rain. Nightcrawlers are the preferred type of worm to use as fish bait.

Earthworms are invertebrates. They have no backbone or any bones in their slender, tender bodies. Their cylindrical shaped body is divided into small segments. Each segment has muscles and bristles called setae. These tiny bristles help anchor and control movement as the worm moves through soil.

Earthworms have no eyes, no nose, no ears, and only a very tiny brain. But, their sensory system allows them to live in dark, closed in places. Worms rely on their sense of touch. Nerve endings cover their entire body so they can feel vibrations and textures in the surroundings which helps them avoid predators.

The sensory system allows them to sense and avoid light. Sunlight can dry out their skin. Being able to sense light allows them to burrow into the soil and survive.

The worms get their nutrition from the microorganisms they eat. Their digestive system breaks down the intake and excretes the waste, the castings. Vermicompost is richer in essential plant nutrients such as nitrogen, phosphorous and potassium than traditional compost.

Vermicomposting is the practice of raising worms in containers for growing the population and capturing the worm castings for use in enriching soil. The worms happily consume just about any decomposing food or other organic waste. Kitchen scraps such as fruit and vegetable peelings, rinds, cores, eggshells and coffee grounds are favorites. They are big eaters.

Thank goodness for the earthworms that create castings, improve soil nutrition and soil structure.

Earthworms in the dirt.

Public Domain Pictures

References:

trees.com/gardening-and-landscaping/types-of-earthworms#Common-Earthworm, December, 2022.

Wiese, Sandra. "The Best Place for Garbage; The Essential Guide to Recycling with Composting Worms." WiR Press, Bennett, CO 2011

Brothers Worm Farm: brotherswormfarm.com

The Gardener's Dirt is written by members of the Victoria County Master Gardener Association, an educational outreach of Texas A&M AgriLife Extension Victoria County. Mail your questions in care of the Advocate, P.O. Box 1518, Victoria, TX 77901; or vcmga@vicad.com, or comment on this column at Victoria Advocate.com.