



Garden Clippings



Niagara College Greenhouse Centre Success Sheet No. 40

Benefits of Earthworms

Introduction

Earthworms can be found almost everywhere unless the soil does not meet their proper living conditions. Seeing earthworms is a sign that the soil is good for growing plants as they tend to stay away from soil that is too acidic or alkaline, too hot or cold, or too wet or dry.

Did you know that an acre of good soil could have over 1200 miles of tunnels with more than a million worms passing 40 tonnes of castings per acre each day? Worms are capable of improving soil fertility and soil quality, leading to better plant growth, plant health, and weed control.

Soil Fertility

Worms eat mainly plant debris. They extract the organic matter and minerals found in the debris, causing their castings to be higher in nutrients than the surrounding soil is. The plants can directly use nitrogen found in the castings. Also, dead worms tend to decompose quickly, increasing nitrogen levels.

Roots find these high-nutrient passages and grow further down, making the root system stronger and helping prevent erosion.

Worms also reverse the leaching process by bringing up minerals found in the subsurface so that the plants can use the minerals that would otherwise have been lost.

Soil Quality

Worms develop an extensive tunnelling system as they move, which aerates and loosens the soil, allowing water to seep through. In addition, worm castings can absorb more water than pure soil can.

A study found that a field with 100 night crawlers per square yard was able to absorb a 2-inch rainfall in 12 minutes whereas a regular field took up to 12 hours. It also found that these tunnels increased the pore space by 75 to 100%.

Plant Growth and Health

Worms discourage organisms that are harmful to soil quality, and they help eliminate thatch since their main diet is plant debris.

Compost formed by worms also has been proven to increase plant germination and growth in most plants, and twice as many roots form when there is a strong presence of castings.

Many earthworms eat harmful fungi and bacteria and, in turn, promote good microbes. Worms also can detoxify chemicals when the soil moves through their systems.

Weed Control

The presence of worms stimulates microorganisms in the soil to destroy some weed seeds. These same microorganisms live on plant roots and help them compete with the weed roots for the same water and nutrients.

Conclusion

Earthworms can be very beneficial in your garden. You should do your best to promote them by increasing organic matter in the soil and limiting the use of chemical pesticides.

For more information, try these sites:

<http://www.sugarlandgardenclub.org/Earthworms.doc>

<http://www.agric.nsw.gov.au/reader/15055>

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