

EMBRACING EARTHWORMS

EARTHWORMS
AS ONE
INDICATOR OF
SOIL HEALTH

New Zealand has over **200 known species of native earthworms (noke)**, with many more yet to be discovered. In addition to the native species, there are also 23 non-native species that have been introduced, primarily from Europe. Many native species are unique to New Zealand and live in undisturbed habitats like forests, while the introduced species are more commonly found in disturbed areas like pastures and gardens. The 23 non-native species were introduced by settlers in the 19th century and have since spread, often with help from humans, to improve soil for agriculture.



HOW DO EARTHWORMS BENEFIT SOIL?

Earthworms benefit soil by improving its structure through burrowing, aerating it, and increasing water infiltration. They also recycle organic matter, making nutrients more available to plants through their castings (worm poop), and help incorporate fertilisers and lime deeper into the soil. This leads to a healthier and more fertile soil that can support better plant growth.

IS HAVING MORE WORMS AN INDICATOR OF HAVING HEALTHY SOIL?

Having more worms is generally considered a strong positive indicator of healthy soil. While the presence of many worms is a reliable sign, soil health is determined by a combination of factors, including having appropriate pH, good aeration and drainage, sufficient organic matter, and a diverse range of microorganisms. A healthy soil ecosystem supports all of these elements, making it an ideal habitat for earthworms, but noting that in some natural environments (e.g. mountain lands) worm numbers may be low.

HOW TO COUNT EARTHWORMS

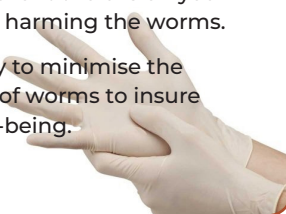
1. Firstly, dig a **soil pit** (typically 20 x 20 x 30 cm deep).
2. Place the soil on a tray, and manually separate and count the worms.
3. You should assess the worm count in roughly the same sized soil sample, and in the same place in any paddock or garden each year (from a place or places that are representative of your land).
4. Undertake the counts at **roughly the same time in the spring**. Precision in doing this allows you to be confident that you are seeing reliable changes in the worm population.

Some scientists suggest that healthy soil for growing plants has 16 or more earthworms present in the above soil pit.

SAFETY – FOR YOU AND YOUR EARTHWORMS

You should wear latex or nitrile gloves when handling earthworms to protect your hands from potential pathogens and contaminants in the soil, and to prevent the oils on your skin from harming the worms.

Always try to minimise the handling of worms to insure their well-being.



OTHER ACTIVITIES

- » Can you identify different earthworm species?
- » Can you identify adults and juveniles of the same species?
- » If you dig deeper than 20 cm, can you see different earthworm species?
- » Can you see the holes in the soil left by the earthworms?

FURTHER DETAILS

agpest.co.nz/wp-content/uploads/2016/02/EARTHWORM-ID-BROCHURE-Jan2016.pdf