

# HOW HEALTHY IS YOUR SOIL?



Biological indicators of soil health and the role of earthworms and dung beetles as ecosystem engineers

**noslam**  
North Otago Sustainable Land Management  
Collectively enhancing North Otago's Land, Water and Community Resources



Soils provide the ecosystem services and the basis of biodiversity, food production and carbon storage which our economy, culture and communities rely on.

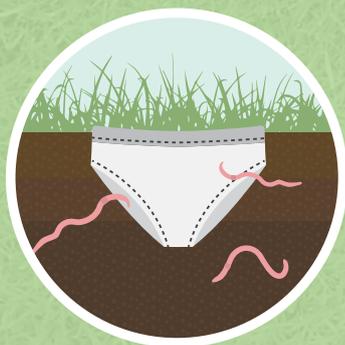


Dung beetles and earthworms are ecosystem engineers.



The cotton strip (undies) test and earthworm counts are biological indicators of the health of soil.

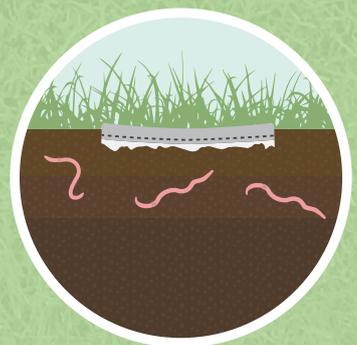
## THE COTTON STRIP (UNDIES) TEST



DAY 1



DAY 30



DAY 60



# HOW TO SOIL YOUR UNDIES

- 1 Choose several sites for comparison (eg. best/worst soils)
- 2 At each strip site, create a vertical slit in the soil with a flat spade
- 3 Place the cotton strip (or undies) on the spade with the waistband closest to the handle, and the other end at the bottom of the spade
- 4 Insert undies into the soil so that the waistband is flush with the soil surface
- 5 Push back the soil to have good contact with both sides of the cotton
- 6 Mark each site with the flag - you will need to find them later!

**TIP:** The time required to see decomposition depends on your location, season, moisture and soil type. Generally 2 months is a good guide and starting point. Warm and wet weather will help decompose the cotton faster, and cold and dry will be slower.

- 7 Carefully remove the strips (dig them out, don't pull them as they will tear)
- 8 Wash them in water to remove all the soil. The strips will have concentrated bacteria and fungi on them so be careful with hygiene, ie maybe use gloves, and don't breathe in close to the strips
- 9 Compare the amount of decomposition on the strips. Estimate how much cotton is eaten away as a percentage and compare sites



Bury undies or cotton strip 10 cm deep



Leave buried for two months



Take a photo for your records

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