

The Great “Tighty Whities” Soil Your Underwear Microbe Challenge

Based on the viral challenge from the California Farmers Guild

How healthy is your soil? Whether you're at school, your backyard, the forest or the middle of a wheat field you can learn about your soil's health by “planting” a pair of cotton underwear.

What You'll Need:

- one pair of new 100% cotton underwear
(White briefs are the most popular, but the shape is not as important as the fabric)
- shovel
- dowel rod, metal or wooden stake or other site marker
- smart phone
- soil challenge record card or notebook



What To Do:

Select your test site. Using your smartphone and your favorite map app, drop a GPS pin and then record the address/description and Lat/Long coordinates for your site on your record card.

Lay the pair of underwear on the ground at your site and use your phone to take a picture of it and the surrounding groundcover.

Use a shovel to dig a shallow hole, setting the soil off to the side for later. The hole will need to be about 3 inches deep and large enough to lay your test undies out flat.

Once you finish digging, place the underwear in the bottom of the hole and then fill in the rest of the space with the loose soil.

Mark the spot with a wooden stake, flag or other site marker.

Wait 60 days, then dig the undies back up and inspect and document the changes. Use your phone to take a comparison picture. Document the level of decomposition you see on your card. How microbially active was your soil site? Compare your results with underwear from other sites.

What's Going On

Your undies won't break down in just any soil. Healthy soil contains organic matter, and as a result, it also houses millions of tiny organisms (bacteria, fungi, earthworms etc.) that eat that organic matter. With the exception of the elastic band, cotton underwear is made of cellulose which makes it a tasty snack for the decomposers that live in the soil. The condition of the undies when they are retrieved indicates the health of the microbiome. If there is not much left of the cloth, then the soil is healthy and teeming with activity. If it is mostly intact, then the soil needs help.

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Date Buried

Site Location Description

***Site Location Coordinates
(Latitude/Longitude)***

(drop a pin from your phone's map app)

Site Observations

*(note the wildlife, insects, plants do you see at
the site)*

Date Retrieved (60 days after burying)

Level of Decomposition Observed

before photo

after photo