



Earthworm Watch experiment

Earthworms may lack the beauty of some other invertebrates such as butterflies or ladybirds but their daily work is just as vital. Humans depend on healthy soils, and earthworms to keep soils healthy. Despite their importance, we don't know enough about earthworms and soils, especially in gardens and other green spaces such as allotments, school grounds and parks. There are two methods we can use to answer questions about how many earthworms are in different garden habitats - we can **compare** two different areas and look at patterns in the number and type of earthworms, or we can run an **experiment**.

Background

The standard Earthworm Watch survey **compares** earthworms and soils in two different areas to help us understand how human activities are affecting soils and earthworms in green spaces. This is what's known as a **matched pair of observations**. They're matched because they're made by the same person in sites very close to one another – and that's why they're so great to analyse. But they're not really experimental results because nothing about the sites was changed specially in order to see how it affected the earthworms.

But you can also do an **experiment** - choosing two similar areas, leave one unchanged (the **control**), manipulate the other in some way and then compare the two. It is important to try to change only what we are interested in, so we can be surer of the results (this is known as a **fair test**). If there is a change in the number of earthworms compared to the control area, we know that this is likely due to our manipulation.

Preparation

You will need about 400g (four handfuls) of vegetable peelings – please only use root vegetables, **but not onions** as earthworms do not like them. Find an area in your allotment or vegetable patch large enough to measure out two squares 50 cm x 50 cm spaced at least 3 m apart, if possible. The soil does not have to be bare but if not, both areas should have the same plants. You are going to choose one of the squares to add the peelings to, and it is really important that this choice is random – please **toss a coin** to decide which square gets the peelings, as that will help to make sure you have a fair test. Leave one square as it is (this is the control area) and spread the vegetable peelings evenly over the other (this is the treatment area). Mark the squares (e.g., with canes), making it clear which one is the control and which the treatment, and leave them for a month.

Complete the Earthworm Watch survey

After a month it's time to survey your two areas using the survey pack. Note whether the soil pit is the control or treatment area in questions 10 and 20.

Enter your results

Enter your results at our website at: www.earthwormwatch.org, noting which soil pit is the control and which is the treated area in the 'Other information e.g. fertilised, mulched (if needed)' field.