



Experiments with Vermicast

For Schools or Home

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Vermicast, or worm poo, as it is sometimes described, contains millions and millions of beneficial microbes. Beneficial, that is to the soil and to the plants and crops that grow in it. Here are a series of experiments for you, designed to show the difference that vermicast can make to the soil, when added as a soil conditioner.

Precautions

For health reasons, it is important to wash your hands after handling either compost worms or worm castings

Experiment 1:

Comparing Growth Mediums

What is the best growing medium for plants? This experiment will give you an understanding of the time needed to grow plants in the different mediums available.

What You'll Need

- 6 small flower pots 15 cm high
- Vermicast
- Potting mix
- Sand
- Packets of seeds. e.g tomato seeds, pumpkin seeds or a variety of flower seeds

What You'll Do

Fill the flowerpots with the varying amounts of vermicast and soil and sand. Into each flowerpot add some of the seeds.

Then What Happens?

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During a period of two to three weeks, the seeds will germinate and grow at varying rates. After 6-8 weeks, you can measure the

difference in height, root length and weight of the plants.

Plot a graph according to your results.

Flowerpot No.1	100% Vermicast
No.2	100 % Sand
No.3	100 % Potting Mix
No.4	50% Sand & 50%, Potting Mix
No.5	50% Vermicast, 50% Potting Mix
No.6	50% Vermicast, 50% Sand

1. Fill the flowerpots as above and label each one appropriately.
2. Choose a variety of seeds and add the same number of seeds to each flowerpot.
3. Water regularly and allow to grow for 6-8 weeks
4. Each week measure the difference in height between the seedlings.
5. Which seedlings grew the fastest?
6. Did the same seedling grow the fastest over the entire period?
7. Which combination showed the greatest in growth?
8. Which combination showed the least growth? Why do you think this is so?
9. What other factors should be taken into account when analysing your results?
10. What benefits to the environment do worm castings have? Why are they better than chemical fertilisers and pesticides?



Experiment 2:

Discovering the best growing medium combination

Plants may grow better when a soil “mixture” is used. This experiment looks at the different types of growing mediums used and examines a variety of combinations.

Use the same seeds in each group of 6 pots to work out the best combination of potting mix, sand and vermicast.

Note: Tomato seeds and pumpkin seeds grow the fastest. You could use the same seeds for each group of pots or different seeds in each group.

What You'll Need

- 3 groups of 6 similar pots
- Packet of seeds. e.g tomato or pumpkin seeds (Do not mix seeds within one group)
- Vermicast
- Sand
- Potting mix

Fill each flowerpot with the appropriate “mixture” as outlined below

Group1: Vermicast and Potting Mix

Flower pot 1	100 % Vermicast
No.2	100% Potting Mix
No.3	50% Potting Mix and 50% Vermicast
No.4	20% Vermicast and 80% Potting Mix
No.5	80% Vermicast and 20% Potting Mix
No.6	40% Vermicast and 60% Potting Mix

Group 2: Vermicast and Sand

Flower pot 1	100 % Vermicast
No.2	100% Sand
No.3	50% Sand and 50% Vermicast
No.4	20% Vermicast and 80% Sand
No.5	80% Vermicast and 20% Sand
No.6	40% Vermicast and 60% Sand

Group 3: Sand and Potting Mix

Flower pot 1	100 % Potting Mix
No.2	100% Sand
No.3	50% Sand and 50% Potting Mix
No.4	20% Potting Mix and 80% Sand
No.5	80% Potting Mix and 20% Sand
No.6	40% Potting Mix and 60% Sand

- Make a hole with your finger in the soil and drop the seeds into the hole. Cover with soil
- Use the same number of seeds in each flowerpot.
- Mark your pots clearly.
- Water them regularly and ensure that they all receive the same amount of sunlight and the same amount of darkness.
- Which combination of potting mix and vermicast grew the tallest seedlings? Plot the results on a graph
- Why do you think this is so?
- Weigh the seedlings. Which combination of potting mix and vermicast produced the greatest weight?
- Why is the weight of the plant important for farmers?
- Which combination germinated the most seedlings?
- What recommendations based on your results, would you suggest to a person who wanted to grow vegetables?

Worm Castings

- Worm castings can go straight onto the garden or pot plants. If they are covered with mulch, their moisture and nutrient content will be conserved.
- An excellent liquid fertiliser can be made from worm castings by adding water until the moisture looks like weak tea. African violets and other plants that like being fed from the roots love this mixture.



Few people know that Leonardo da Vinci's famous painting the *Mona Lisa* was – in fact- based on an earlier, less well-known study – the *Worm Lisa*