

1st experiment: Plants and nutrients

We share a sea. Diet for a clean Baltic

In *We share a sea* the children visit Elisabeth and Jens Otto at Stone Farm. They learn that plants need nutrients to grow. On the organic farms the nutrients come either from manure, slurry or – as far as nitrogen is concerned – from legumes. Conventional farmers are likely to cover the need for nutrients with synthetic fertilisers. Before doing this experiment you might find it useful to look at the figures on page 10-11 and read page 14-15 again.

This is what you need:

- Seed of wheat or barley
- Sand
- 3 flowerpots with saucers
- Liquid flower fertiliser (for experimental use in this exercise – not allowed on organic farms)
- Tap water
- Three bottles
- Labels and waterproof markers
- Transparent plastic bags and twist-ties

This is what you do:

1. Put labels on the flowerpots and mark each of them with a letter: A, B and C, so you can tell the difference.
2. Rinse the sand carefully with running water so it does not contain any nutrients. Spread the sand in the flowerpots.
3. Sow the seeds, 15-20 grains in each pot, approximately 1 cm deep.
4. Fill three bottles with a mixture of water and liquid flower fertiliser - one for each flowerpot
A: Pure water without fertiliser
B: Standard dilution as described on the fertiliser bottle.
C: 10 times the standard dilution - calculate what it is.
5. Water each flowerpot with its own water bottle (A-A, B-B, C-C)
6. Put a transparent plastic bag over each pot and close it with a twist-tie.
7. Water the pots frequently. The soil should neither dry out nor overflow with water.
8. Remove the plastic bag when the seeds have germinated, but keep on watering while the plants are growing.

Questions:

- How do the sprouts look? Describe the differences. Do some of them grow faster than others? Which ones? Write down your observations in a logbook.
- Go through the observations when the experiment is over.
- Try to explain the differences and discuss your findings in class.