# GROW YOUR OWN ARABIDOPSIS MUTANTS

*Arabidopsis* mutants are used in exciting research programmes throughout the world and are conserved at the Nottingham *Arabidopsis* Stock Centre. By following the simple instructions in this leaflet and using the seed provided, you too can exploit the rapid growth cycle of this plant and perform simple experiments to see mutants and demonstrate genetic inheritance. See how changing a single gene can bring about dramatic changes in the way that the plant appears. Mendel's peas were never this quick!

Arabidopsis.info

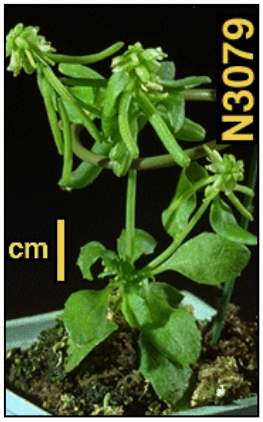
## Why not have a go and see for yourselves?

In the tube is a mixture of seeds of five different mutants of Arabidopsis and the wild type or 'normal' line from which the mutants were generated. Arabidopsis is very easy to grow. You can even grow it on your window-sill at home. Sow the seeds and see if you can spot all the mutants (answers at the bottom of the page).

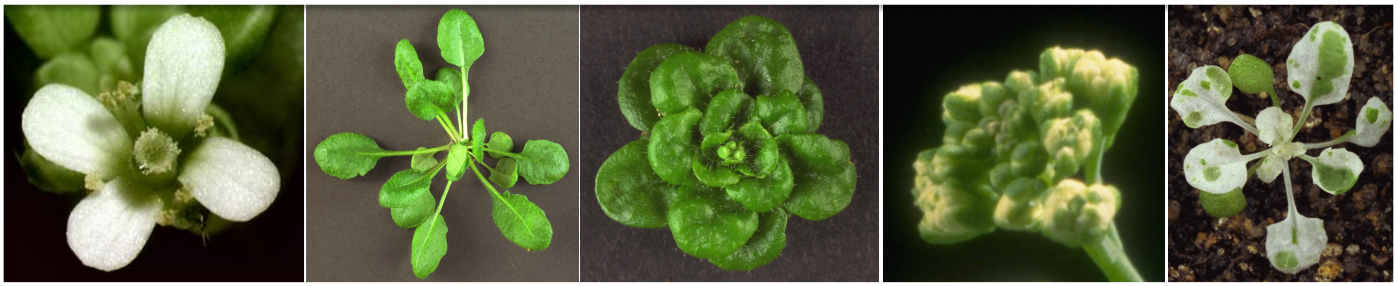

Our glasshouses

1. Use any multipurpose compost (arabidopsis is not fussy).
2. Fill your pots with compost and press down to even out lumps.
3. Water until the surface of the compost is damp (not until it is mud).
4. Label the pots so that you know what they are later.
5. Sow the seed onto the surface of the compost. Take care, they are tiny.
6. Watch for germination and check that the plants do not dry out.
7. Be careful not to over-water the plants either.
8. If the pots are likely to dry out then you can stand them in a tray (or saucers) with no more than a cM of water.
9. Sometimes plants will germinate more quickly if you cover the pots with a freezer bag until the first green plants appear – remove the bag at this point or you will end up growing fungus instead of plants.

• The plants will start to grow as quite flat 'rosettes'.
• Note how the first two 'leaves' look different to later leaves – these are not true leaves but are the cotyledons and each one is expanded from the two halves of the original seed.
• True leaves 1 & 2 grow out at right angles to the two cotyledons then true leaves 3 & 4 come out at right angles to 1 & 2.
• After that the leaves come out one at a time in a spiral. Watch the development of the different mutants.
• Following a few more leaves the plant sends up flower stalks (inflorescences) and after a while you can see all stages of flowering (from bud to seed pod [siliques]) ordered down the plant as it expands and grows upwards.
• These plants pollinate themselves (because the flowers are closed to start with) and you can leave them to set their own seed.
• If you want to, you can harvest seed in about 2 months from germination. Just scrunch up the seed pods - the seed will fall out.
• Be careful not to mix them up if you want to see if the plants breed true (the children look like the parent).



One of the kit mutants



If you would like more seeds or more information please contact: -

Professor Sean May (sean@arabidopsis.info)
Nottingham Arabidopsis Stock Centre (http://arabidopsis.info)
School of Biosciences, Nottingham. LE12 5RD

1. Wild type (Landsberg erecta). 2. Small yellow green plant (chlorina). 3. Plant where seed pods bed downwards and the stem is kinked (bre vipedicellus). 4. Plant with bright green stem (eecrifrum). 5. Plant with bent club-shaped seed pods (clavata). 6 Plant with no hairs on the leaves (glabra)