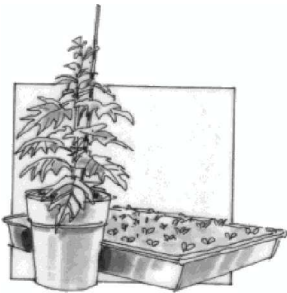


Growing from seed

Growing your own plants from seed gives you the opportunity to grow varieties not available in the shops. It is also much cheaper and you get more plants for your money.

Growing from seed means that you can use organic methods from the start, even if you can't buy organic seed.



Growing a healthy plant is the best way of avoiding pests and diseases. A good start is important.

Germination

If seeds are to germinate quickly, and seedlings grow vigorously, they must be started in the right conditions.

Temperature—this is the first thing to consider. Details of seed temperature needs can usually be found on the seed packet or in a gardening book. Most seeds germinate better in warmth, but there are some that need cold in order to germinate. Where warmth is needed it is best to aim for a few degrees above the minimum figures given on the packet.

Moisture—seeds need to be moist to germinate and grow. Too much moisture will cool them down, drive out air and encourage fungal diseases. Avoid overwatering pots and trays.

Light—many seeds will germinate in either dark or light conditions. However, some do much better in light, such as Busy Lizzies. Others germinate better in the dark, such as pansies. Check the needs of the seed on the packet, or in a book.

Conditions for growing on

Once germinated, seedlings do not need high temperatures, but they still need warmth and good light or they will become pale and straggly. Draughts are very dangerous to newly germinated seedlings. Seedlings need protection against frosts if they are to make good growth. When sowing seed outdoors, wait until the outside temperature is at the minimum stated for at least a week.

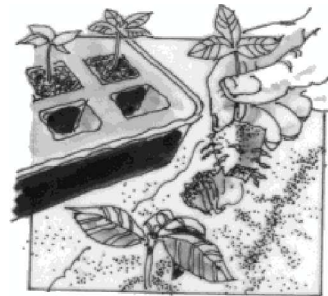
Time before flowering or cropping.

Many slow maturing crops, such as summer flowering geranium, and tomatoes, can only succeed if started indoors—if you wait until the weather outside is suitable, there is insufficient time for the plants to reach maturity.

Transplanting

The advantages of transplanting are that plants can be started indoors then planted out as strong transplants. It gives them a head start.

It also means that other quick growing crops such as radish can be grown temporarily in the space set aside for the seedlings.



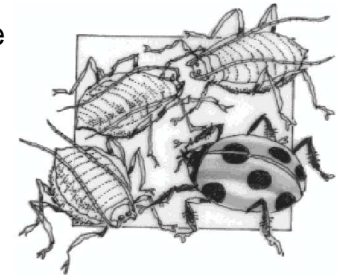
Growing from Seed—A Teacher's Guide

Some plants are happy to be transplanted. Others such as carrots and parsnips, do not like root disturbance. Grow these in their final position directly from seed.

Growing in modules (divided trays) helps avoid root disturbance.

Avoiding pests and diseases

Sowing indoors may give seedlings protection against pests and diseases while they are most vulnerable. Drier conditions reduce the chance of fungal infections.



Further reading

Growing from seed—
HDRA Step by Step booklet

Grow your own organic vegetables—Getting started—*HDRA Step-by-Step Booklet*

Growing Naturally—A Teacher's Guide to Organic Gardening—*M. Brown, Southgate 1996*

RHS Organic Gardening—
P. Pears and S. Stickland, RHS

Muck and Magic—*J. Readman, HDRA/Search Press 1993*

Growing from seed - outdoors

Good soil preparation is essential when growing from seed. Drainage and fertility need to be right, whatever you are growing. The top inch of soil needs special attention.

The 'tilth' is the condition of the soil surface when ready for seed sowing. A particularly fine tilth is needed for small seeds such as carrots and onions. To achieve this rake the soil, break up any lumps, then even the soil surface.

Spring sowing—Don't sow too early as cold, wet soil will rot the seeds. A good time to start sowing is when weeds begin to grow. For earlier sowing cover with clear polythene and grass for a week or two to warm up the soil. Remove when ready to sow.

Summer sowing—If soil temperatures are too high for certain crops, such as lettuce, water the ground well and cover with sacking or other shading material to cool it down before sowing.

Autumn sowing—The soil is still warm so this is a good time to sow hardy annuals to overwinter. Try Californian poppies and nasturiums. This gives them a head start in spring.

If sowing in a row, you need to create a drill - a shallow trench. You can also broadcast sow, which means sprinkling the seeds evenly across the plot.

If the soil is dry, water the bottom of the drill before sowing. If you water after sowing, a hard crust of soil (a pan) can form. It can stop seeds emerging.

Details of spacings and how deep to sow the seeds will be on the seed packets. Do not sow too thickly. This will waste seed and result in overcrowding.

Once sown, cover the seeds with fine soil and press it down with the back of the rake. Seed and soil must make good contact.

Growing from seed - indoors

The traditional method of starting off seeds indoors is to sow them in a single pot or in trays. Once the seedlings have emerged they are pricked out into trays or individual pots.

The modern alternative is to sow directly into modules (trays divided into small sections). Thinning the seedlings is unnecessary and seedlings do not suffer from being moved. Seed modules avoid overcrowding, so there is less risk of disease.

Potting Compost—it is preferable to use organic potting compost for sowing, but if this can't be found then use a peat-free mix.

You can make your own potting compost. See HDRA's Growing from Seed Step-by-Step or factsheet for recipes and instructions.

Sowing seeds

Fill the pot with potting compost to 2cm below the brim.

Firm the surface with something flat, like the bottom of another pot, and sow the seeds thinly.

Cover large seeds with sieved compost to a depth no greater than twice the size of the seed. Very small seeds should be left uncovered.

Stand the pot in a bowl of water and allow the water to soak up from below. Do not saturate, the compost should be moist. Drain excess water. Cover the pot with clingfilm to stop moisture escaping. Place the pot in a warm, light place. As soon as the seeds germinate take off the cover.

Growing from Seed



A teacher's guide to growing plants from seed both indoors and outdoors.



**DUCHY ORIGINALS HDRA
Organic Gardens for Schools**

Growing from seed

Growing plants from seed means you get cheaper plants and more choice of which plants to grow.



A healthy plant is the best defence against pests and diseases. This is very important at the start of a plants life. So how do you make sure your plants get a good start?

Germination conditions

Temperature—details of seed temperature needs can be found on the seed packet or in a gardening book. Usually seeds **germinate** better at higher temperatures, but some seeds need to be cold in order to germinate.

Moisture—seeds need to be moist so they germinate and grow. Too much moisture will cool them down, drive out air and encourage fungal diseases.

Light—many seeds will germinate in either dark or light conditions. However, some do much better in light, for example busy lizzies.

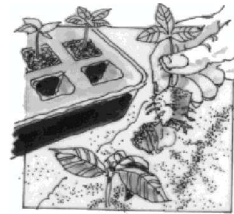
There are also some that germinate better in the dark, for example pansies. So check the needs of the seed on the packet or in a book.

Conditions for growing on

Once germinated seedlings do not need such high temperatures, but they still need warmth and good light or they will grow pale and straggly. Seedlings also need protection against frosts. If you are sowing outside wait until the temperature is at the minimum needed for at least a week.

Time to flowering or cropping.

Many slow crops will only be successful if started indoors—if you wait until the weather outside is warm enough, the plants will not have time to flower or crop before the weather gets too cold.



Transplanting

The advantages of **transplanting** are that plants can be grown indoors to give them a good start. It also means that other quick growing crops for example radish can be grown in the space set aside for the seedlings while they are growing inside.

Some plants are happy to be transplanted. Others such as carrots and parsnips do not like their roots being disturbed, so they are better sown as seed where they will crop. Growing in modules (divided trays) helps avoid too much root disturbance.

Avoiding pests and diseases

Sowing indoors will give seedlings protection against pests and diseases while they are weakest. The drier conditions also make fungal infections less likely.

Glossary

Fertility—how many nutrients the soil has
Germinate—when seeds start to grow they develop a root and stem.

Hardy—plants that will survive the cold weather of winter.

Moisture—water

Prick out—to move seedlings to a larger pot.

Thin—reduce the number of seedlings in a pot

Tilth—the condition of the top inch of soil.

Transplanting—moving seedlings from a seed tray to the place where they are going to flower or crop.

Growing from seed - outdoors

It is important to prepare the soil well. The drainage, **fertility** and **pH** need to be right for the plants you want to grow. The top inch of soil needs special attention as this is where the seed germinate. The '**tilth**' is the condition of the top of the soil when ready for sowing. A fine tilth is needed for small seeds such as carrots and onions. To achieve the tilth, rake the soil, breaking up the lumps of soil where needed.

Spring sowing—when the weeds start to grow well the soil is warm enough to sow seeds. To warm up the soil for earlier sowing, the soil can be covered with clear polythene for a week or two before sowing.

Summer sowing—if soil temperatures are too high for certain crops for example lettuce, water the ground well to cool down before sowing and cover with sacking.

Autumn sowing—the soil is warm and so this is a good time to sow **hardy** annuals, for example Californian poppies, that will overwinter so that they have a head start in spring.

If you are sowing in a row you need to create a **drill**. This is a shallow trench. If not you can broadcast sow, which means sprinkling the seeds evenly across the soil.

If the soil is dry, water the planting area before sowing. Details of how deep to sow the seed and spacings will be on the seed packets. Do not sow too thickly as this will waste seed and means plants get overcrowded.

Cover the seed with fine soil and tamp it down well with the back of the rake so that seed and soil make good contact.

Growing from seed - indoors

The traditional way of starting off seeds indoors is to sow them all in a single pot and then **prick out** the seedlings into trays or individual pots.

The modern alternative is to sow seed directly into **modules**. This means that you don't have to **prick out** and **thin** the seedlings. So the seedlings do not suffer when moved. The modules help stop plants becoming overcrowded so there is less risk of disease.

Compost—it is better to use organic compost for sowing, but if this can't be found then peat free compost should be used.

Why not make your own potting compost? See HDRA's Growing from Seed Step-by-Step for recipes and instructions.

To sow seeds the pot should be filled loosely to the brim—this should be moist, not dry or soaking wet.

Firm surface with something flat like the bottom of another pot and sow the seeds thinly.

Cover large seeds with sieved compost to a depth no greater than the width of the seed. Very small seeds should be left uncovered.

Stand the pot in a bowl of water and allow the water to soak up from below. Cover the pot to stop moisture escaping. Place the pot in a warm place. As soon as the seeds germinate take off the cover.

Growing from Seed



A student's guide to growing plants from seed both indoors and outdoors.



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