



A57 Building a heated propagator



Propagators are helpful appliances that speed up seed germination and root formation of cuttings. There are several models available to purchase. They range from small windowsill trays with plastic lids, to large, thermostatically controlled heated units with flexible covers. You can also make a custom model to fit available space using soil warming cables.

Resources

- Area suitable for propagator, eg sturdy greenhouse or polytunnel bench, cold frame base, brightly lit bench in a classroom, etc
- Appropriate tools and materials for making your propagator (see next page)
- Suitable power source

Activity

- 1 Plan how you would use a propagator for seeds and cuttings. Before investing too much, try using simple unheated models and upgrade to a heated system or make your own if it proves useful.
- 2 If making your own propagator, plan the location and size. Build a robust design that will last and be big enough. Once you have a design, source tools and materials.

Top tip



Minimise energy use

Organic gardening seeks to minimise energy use. If you need a heated unit, only turn on during weeks/seasons of use. Make sure the thermostat is working to maintain an adequate but not excessive temperature. Keep heat in by covering plants with clear lids.

Buying tips for propagators



- Select models able to maintain desired temperatures in the chosen position, eg windowsill models reach stated temperatures indoors (eg 15°C), but would struggle outside in a cold greenhouse/polytunnel or cold frame where a more powerful heating element is required. Ideally, buy models with an adjustable thermostat as these offer much greater flexibility.
- Include a lid to keep in heat. They should have adjustable ventilators to avoid excess humidity and prevent rotting.
- Mist units are also available. These spray water over plants to maintain high humidity, but require their own power and mains water supply. These are mainly commercial models.

Health & Safety

Consult an electrician if installing electrical items in outdoor structures such as greenhouses or cold frames. Adhere to manufacturer's instructions when using bought propagators and tools. Follow Manual Handling guidelines for lifting heavy bags of sand (SG1.3).

See also Health and Safety Guidelines (Section SG1.2)

Further information

G4.6 Germinating difficult seeds

G4.7 Increasing plant stocks

'Propagating Plants' by Alan Toogood, Royal Horticultural Society. ISBN 1405315253

Building a heated propagator

1 Make a wooden frame to sit on top of a sturdy shelf, adding a wooden base if needed. Use timber 10cm wide and 2.5cm thick. Line the sides and base with plastic, adding polystyrene underneath for extra heat conservation.



2 Fill the bottom 5cm with sharp or silver sand, available from builders' merchants and garden centres. Do not use soft sand.



3 Prepare the soil warming cable. They are sold in lengths intended to heat a certain area, eg 3m heats approximately 50cm². Buy thermostats separately or pre-wired together. Connect to an insulated, fused socket, seeking advice from an electrician. Lay soil warming cables in a series of 'S' bends, ensuring that the loops don't touch. Follow manufacturer's instructions for the appropriate distance apart, usually 5-10cm. Cover the cables with another 5cm of sharp sand.



5 Push in a series of plastic tubes or stout wire to create a tunnel over the sand base. Secure plastic sheeting over the top to create a lid that can be adjusted by rolling up at the sides.

