

PROPAGATION

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Propagating camellias is another part of the challenge of being a camellia lover and is essential to the hybridizer's craft.

Wholesale nurseries who supply retail outlets, must restrict the catalogue of plants they grow. They are governed by commercial considerations and need to produce reliable, rapidly growing plants that are in high demand. As a result it is often not possible to obtain a particular camellia and only private propagation will fill the need. Membership of Camellias Victoria will enable you to obtain hard to get and rare camellias and expand your interest in propagation.

Many wonderful camellias have been raised by enthusiastic small growers to be later taken up by commercial concerns and given widespread distribution.

Propagation whether from seed, cuttings or grafts is made much easier with the modern facilities of bottom heat, misting and extra lighting. However the old time growers had none of these and using simple methods the home gardener can achieve good results perhaps adding equipment later should this aspect of camellia growing prove attractive.



Small heat mat



Covered & vented seedling tray

Seeds

Growing camellias from seed is a labour of love requiring much patience as camellia seedlings can take from four to seven years to flower. Seedlings do not generally come true to the parent and are usually single or semi-double flowers.

Seed pods should be collected late March to April when they are splitting open and the seed is ripe. If possible, label the seed with the name of the seed parent.

Seeds can be sown individually into small pots filled with a commercial seed-raising mixture, or a home made mix of 75% coarse sand and 25% peat moss. Seed should be placed near the top of the pot covered with a light layer of mix.

Cover the pot with an improvised frame and plastic which could be a simple sealed plastic bag, or even a plastic bottle with the bottom cut off. Place the pot in a warm, well lit position outside (but not in direct sunlight) and keep just moist.



Commercial seed raising mix



Potting up single seed



Don't forget to label seedlings



Emerging seedling

Seeds can take 6—8 weeks to germinate.

Repot once the new root (radicle) is 40-50 mm long. The tip of the radicle can be nipped off at this time and hormone powder mixed with fungicide applied. This process usually creates a better root system.



Healthy seedlings



Cutting the Radicle

Plant in a small pot (7-10 cm) filled with 2 parts river sand and 1 part peat moss or an open seed raising mixture. Make a hole in the centre of the mixture, place the root in so that the seed kernel rests on the surface of the mix. Place in a well lit, protected area inside or outside. Keep the mixture moist but do not overwater. Only pot up when the roots comfortably fill the pot. Never overpot and use only a free draining, open mix.

Occasional waterings of weak water soluble fertilizers such as Aquasol after a few months of growth will help strengthen the seedling.

Reduced amounts of slow release fertilizer can be used after the first year, or before if the plant is vigorous.

Cuttings

Most varieties grow from cuttings, a simple and inexpensive method of propagation that does not require complex equipment. Some reticulata hybrids grow on their own roots but broadly speaking reticulatas are better grafted.

Cuttings should be taken in late December/January when the spring growth has hardened off. Bend the new growth gently, if the wood is too green it will bend, if it appears to be ready to snap it is ready to use.

Sever the cutting approx. 10 cm. long with sharp secateurs, making sure that only healthy, insect and disease-free wood and foliage is selected. If collecting multiple cuttings place them in plastic bags and label with a waterproof marker.

Remove excess leaves from each cutting, leaving two per cutting. Some growers like to cut about a third from each remaining leaf to reduce the amount of moisture transpired, and to allow more cuttings per container.

Using a razor sharp knife, cut the base of your cutting just below a growth bud on a slant using a soft wood cutting board to prevent squashing the cambium layer. Good results have been obtained by making a cut about 1cm long, exposing the cambium layer at the lower end of the cutting by removing the bark, which gives a much greater area to callus and produce roots. Cuttings may be dipped in hormone power if available, eg. "Rootex" or "Clonex".



How to prepare a cutting



Rooting hormone to improve strike rate



Specially formulated propagating mix



Healthy cuttings

The medium used for planting should be three parts clean washed river sand and one part peat moss or commercial propagating mix in tubes or tapered cell propagating trays. The container should be filled and firmed to the brim with this medium which has been well watered.

Make holes with a large nail or similar object, gently insert the cuttings, making sure that the end is at the bottom of the hole, then firm around the cutting with your fingers. The cuttings should not have more than half of their length covered by the mix.

Cuttings should be gently watered, labelled with their name and then covered with a plastic bag or bottle. Place the pot in a warm, well lit position outside (but not in direct sunlight). Aim for a high humidity level as this will assist your cuttings to remain alive until a root system is developed. This should begin within 2—3 months although some take longer. When roots develop, plants should be placed in their own 7—10 cm. pot in a light porous mix. Liquid fertilizer at half strength can be applied to encourage growth. Early spring should be soon enough to use a slow-release fertilizer raked into the top of this mix.

Some varieties, particularly the *reticulatas*, can be difficult to strike if propagated from cuttings but will grow rapidly when grafted onto vigorous understock. The main method of camellia grafting in Australia is the simple cleft graft. The two components are the scion, which is a cutting of the variety you wish to grow, and the understock—the rootstock you will utilise to provide the energy for the scion to grow through the established root system.

Grafting

Grafting can be carried out during any month when the plants are not in active growth, however, the optimum time is during July and August just prior to the new growth starting in spring.

The ideal scion is from the top growth of a plant that is healthy, free of insect pests and dormant. Two leaves are all that is required with one or more growth buds where the new growth will emerge. After cutting the scion with sharp secateurs place it in a plastic bag to keep it turgid, never leaving this bag in the sun as the scion will be placed under great stress. If a delay occurs before the graft can be completed, place the sealed plastic bag in the refrigerator.

Grafting Tools



Sharp knives



Grafting tape

The understock must be growing well, free from disease, and can be either established in the ground or in a container. A three-year-old seedling should be about the right size for this purpose. It is best if the understock can be reasonably dry when grafting is carried out.

Having selected your understock, make a sloping cut about 7cm above the soil level, cutting off the top of the plant. The size of the plant will determine whether you use secateurs, branch loppers or a pruning saw. Whatever is used, the cut should be devoid of jagged edges and torn bark. Clean up the cut surfaces with a razor-sharp knife, leaving the area clean and smooth. Make a second cut across the top of the sloping surface forming a small flat surface approx. 5mm across.

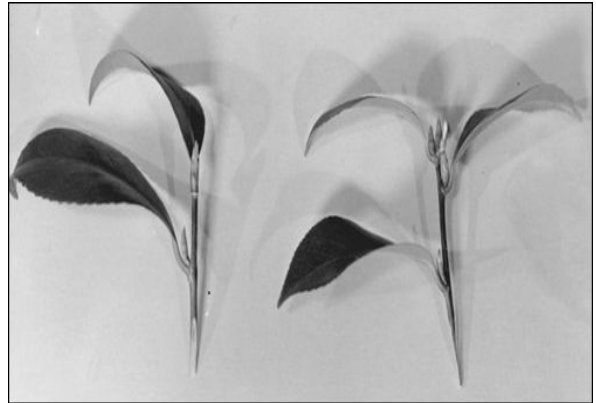
With a large knife, split the stem down the centre to a depth of 35mm or so. Should the understock be too large to cut with the knife, gently tap your knife with a hammer or similar object. Take great care not to split the stem right down to the soil level. When grafting on a very large understock it is wise to make the cut or cuts down the stem, near the edge, rather than the centre of the understock, in order to prevent pressure squashing the scion.

You are now ready to trim the scion prior to inserting it in the split understock. Using either a razor blade or a razor-sharp knife, cut the end of the scion in the form of a wedge to fit the split or cleft in the understock. Taper the wedge thinner on what will be the inner side of the scion to allow the cleft to close after the insertion of the scion. Whenever possible have a growth bud on the scion facing outwards on the portion inserted into the understock as this stimulates cambium activity. The cambium cell layer is light green in colour and lies between the bark and the wood of the plant and is clearly visible.

Open the cleft with the grafting knife or small screwdriver, insert the scion leaving the top of the cut wedge protruding above the understock to enable the callus to knit over the top. The critical factor is the matching of the cambium layers of both the scion and understock. Without this taking place the graft is doomed to failure. The scion can be tilted either slightly in or outwards to ensure the cambium layers cross, however, this may not be necessary if due care is exercised with the two touching in as many places as possible down the cleft.



Splitting the rootstock



Camellia scions

Most grafts require to be secured with grafting or budding tape around the top of the understock to prevent the scion moving or even falling out of the cleft, however, a very large understock will provide enough pressure to make tying unnecessary. If you have any doubts at all tie the graft rather than take a chance. Label your graft, cover the soil with a layer of clean sand and enclose the graft with a large glass jar or plastic bag



Tying off after scion insertion



Scion housed under bell jar

The use of a plastic bag will mean that short stakes or wire frame will be required to support the bag to keep it from leaning on the scion. The bag will need to be securely tied around the container or the base of the understock if it is an inground plant. The completed graft must be shaded from direct sunlight—newspaper, opaque plastic bags, hessian or similar material will be satisfactory for this purpose.

Soil mix in containers should be on the dry side for grafting, but monitor the graft to make certain the plant does not suffer stress through lack of water.

The graft should be inspected at least weekly to observe any physical changes such as the callus forming, the swelling of the growth buds or new growth from the understock below the graft junction. Any such growth should be removed at once.

Once the graft has formed a callus and then started to grow, remove the glass jar gradually, perhaps starting at night time and covering again each morning until a cool overcast day, then leave the jar off all day after misting the leaves and watering the plant. Should the new growth wilt, replace the jar and start again.

Remove the tie and apply grafting mastic to the cleft; this will keep water from forming inside the plant where the wounds have not as yet healed.

Keep spraying water on the leaves and water the plant, as your new graft needs lots of care at this stage. Keep out of direct sunlight until a cool spell then place the container outside to enable the new growth to harden off.

Protect the new plant from pests, pets and children. A strong stake may be useful in protecting a long very tender shoot from terminal damage. When new growth has hardened off treat the plant the same as other plants regarding water, fertilizer and repotting.

Air Layering

Air layering is possibly the easiest way of propagating camellias and obtaining a reasonable sized plant within six to nine months. The months October - December are considered to be the best time for this undertaking. At any other time root formation may be slower.

Select a well formed branchlet about 30-45cm long, preferably on a shaded and sheltered part of the plant. Girdle the lower part of the stem using a sharp knife or blade, cutting through to the wood, then cut again at least 30mm below this cut, then cut vertically down from the first cut to the lower cut. The ring of intervening bark may be removed.

When making these cuts allow room for covering. At times other than October-December the bark may be more difficult to remove and scraping may be necessary. If desired the cut area may be dusted with a root promoting powder.

Sphagnum moss is used to encase the cut area. It should be first placed in a container of water to which a fungicide may be added. The moss is then tightly squeezed, leaving it moist, and a good handful is wrapped around the cut surface and secured in place by wrapping a length of precut black or clear polythene around the moss and tying it at each end to form the shape of a small football. This operation can be difficult and the help of a second person can be valuable.



The stem is girdled to induce root formation above the cut.



The girdled stem is covered with damp moss.



Aluminium foil or plastic sheeting is wrapped around the moss and tied at both ends. This cover is removed 2-3 months after tying or when the roots can be seen.



Sphagnum moss around girdling before covering

The polythene should be cut long enough to encircle the ball of moss twice to ensure a good airtight seal to prevent moisture loss.

It is also important that the top tie is firm enough to exclude water from the ball otherwise waterlogging will occur preventing root development. A good seal can be achieved using adhesive tape and aluminium foil has been used instead of polythene with good results.

After several months the ball of moss will be found to be firmer as the roots develop—this generally takes about six months and when it is obvious that a mass of roots has formed the branchlet may be cut off and the cover removed exposing the roots intermingled with the moss.

Do not disturb this moss and root mass but place in a pot slightly larger than the root ball and fill with a good quality potting mix, gently pressing some of the mixture into parts of the root ball making sure not to damage the roots. Place the plant in a shaded, wind protected area, and water as necessary. Water occasionally with weak liquid fertilizer or apply Osmocote Plus to the surface. If early flower buds develop these should be removed to help promote future growth.



From little things



Great things grow