The Practical Pages

Propagation by cuttings John Knight

December through to April or May presents ideal conditions to propagate new plants. Spring growth has hardened sufficiently in most woody species, and herbaceous plants are bursting with energy.

In grandmother's day, it seemed everyone was sharing 'slips' as cuttings of soft wooded plants were known. There was a simple joy in producing new plants from these pieces. It seems that in recent years, less and less people have experienced the wonder of making a new plant from such slips, and therefore are missing one of the great aspects of gardening.

There is no secret to propagation, but there is science which if understood can lead to great results. However, much success can be had without knowing the science, but I will offer some, interspersed through the articles just in case you might be interested.

When considering propagation by cuttings, the conditions in which the cuttings are kept is important.
The best strike rate is recorded if the cuttings can be kept in a turgid state.
This requires protection from hot sun and wind, a moist and humid atmosphere, and good drainage.

As a start for those undertaking the process for the first time, a simple propagation set up can be constructed from a lidded polystyrene box. The best size to use I find, is a broccoli box, readily obtained for a small amount from a fruit store.
To prepare the box for use, the centre section of the lid is cut away, and replaced by clear or opaque plastic sheet. It is wise also to reinforce the box by applying heavy tape around its perimeter and under the bottom so that box does not break when being moved.

In the base of the box, place a 50mm layer of clean coarse sand as a water reservoir. This can be kept wet to provide humidity. I prefer to put cuttings into small pots, and nestle these pots into sand to allow for wicking of moisture into the cutting mix. The pots I use are 50mm square, bottomless, and 70mm high. You can use any clean container, but best results in this set up are pots 100mm high or less. Into each of these you can put 4 – 6 cuttings.

The photo at right shows the type of pots suggested, the cutting mix including perlite (the large white pieces) and a pot with cuttings in place, labeled. In the back is a thermometer which is inserted into the base sand to record the temperature at the base of the cuttings

For cutting mix, the tried and tested 3 parts coarse sand and one part peat moss, coco peat or vermiculite has proved successful for decades. Because sand is heavy and the propagation box might need to be moved at times, I have been using a mix including 50% horticultural perlite to reduce weight. Be aware though, there may be a problem in doing this, as if the perlite is crushed when setting the cuttings, the mix might become too wet, and the cuttings base might rot.
Experimenting with different mixes will prove valuable, but until you gain some experience, it might be best to stick with the recipe which has given good results over a long time.

Selecting cutting material.
It is important that only clean plant growth, free of defects, is used for cuttings. Once the material is placed in the propagation box, any damaged material will quickly rot and spread infection to other cuttings due to the high moisture and humidity within the closed box.

Soft wood cuttings might be thought of as referring to herbaceous material. I prefer to use the term soft wood cuttings to represent the recently hardened, current season growth of woody shrubs. The opposite to that is hard wood cuttings, referring, in European terms, to the use of material from deciduous plants which are heading to their dormant winter state.
In Australian plants, **hard wood cuttings** would, for me refer to last year's growth, the wood of which has firmed so that if bent would fracture.

In selecting cutting material, the best results in my experience, is gained by using wood which is flexible. To test the suitability of wood, take a piece about 100mm long, and gently bend the tip to the base. The material, when released, should spring back to straight. If it breaks, the wood could be considered too hard, but this should not mean that the material is unsuitable. Personal experience will be the best teacher in this regard. Should the wood remain limp however, it is too soft. In this case you might consider removing the softer tips, and using instead a section of material lower on the stem. The reason for doing this is that soft material often wilts quickly and can cause fungal growth in the propagation house. Commercial growers can of course overcome the problems associated with using soft material by using fog or mist to keep the tips from wilting. Home propagators do not usually have such sophisticated equipment.

Whilst there is no law which says **a cutting should be of a particular size**, it might be best to experiment with cutting length to find the optimum which suits your conditions.

The cuttings are shown at actual size

This picture shows from the left

1. Thryptomene saxicola lateral shoot with heel attached
2. Thryptomene saxicola tip cutting
3. Callistemon subulatus, with short internodes Some leaves have been shortened to reduce moisture loss.
4. Correa "Federation Belle" Note the angled cut at the base of the cutting to expose more cambium layer, and the long internodes, so that the cutting is substantially longer than others.
5. Herbaceous Chrysocephalum apiculatum with the soft tip removed

For plants which have many leaves close together, such as Epacris and Thryptomene, cuttings need only be 30 – 50mm long. With Grevillea, the space between the leaves, known as the internodal length, can be 25 to 100mm, so the cuttings might need to be up to 200mm long. At this time of the year, the shorter you make the cuttings the better, as moisture loss from the stems is reduced. I prefer to use cuttings with 4 – 6 nodes (nodes are where the leaves join the stem, and from which axillary buds develop), so for plants like Correa, the cuttings might be 100mm or more in length, and for Westringia only 50 – 70mm long. The reason I prefer to have 4 nodes or more is that it is usually from the nodes that roots will form, so putting at least 2 nodes into the cutting mix gives a better chance of roots developing. Above the mix, 2 nodes will hold 2 axillary buds which will shoot to produce a better balanced plant, whereas if only 1 node can produce a shoot, the plant might grow lopsided.

Achieving initial success in propagation will surely whet your appetite to go further. Might I suggest that you firstly try some easy plants, such as the daisies,Brachycome multifida, Rhodanthe anthemoides (available as Paper Baby), Chrysocephalum apiculatum, smaller Myrtaceae such as Callistemon and Leptospermum, Correa glabra and C. reflexa, Dampiera diversifolia and D. trigona, Westringia fruticosa forms and W. glabra forms. All of these will root fairly reliably without the use of hormones. The use of hormone treatment will be discussed in a later article.

Where to place your propagation box.

Due to the small size of the box, it will heat up very quickly if placed in the sun, causing the cuttings to wilt. At this time of the year it is best to be shaded even from morning sun. It could be placed under a tree, or on the south side of the house where it gets good even light but no direct sun. As the weather cools, the box can be exposed to morning sun, but never full sun.

The cuttings will be kept warm and moist, and root initiation for these easier to root plants will be fairly rapid at this time. If too much condensation appears on the plastic top, the top can be left ajar for a period to allow some moisture to escape. Beware of slugs and snails which might find their way to the box, and take advantage of a loose lid. With this set up, the cuttings will only need a light spray daily, and a quick inspection to remove any leaves which have turned black due to too much water.

Why not give propagation a try.

In the next article I will discuss the preparation of cuttings in more detail, and offer some tips to help you achieve successful results.