

Fatshedera lizei 'Variegata'
Philodendron sp.
Peperomia sp.
Codiaeum (crotons)
Rhaphidophora aurea [*Scindapsus aureus*]
Ficus elastica 'Decora' (plus other species and varieties)
Cissus (kangaroo vine)
Rhoicissus (grape ivy)

It should be noted that most of the above plants can be propagated by tip cuttings but to obtain the maximum number of cuttings from the minimum amount of stock, propagation by leaf-bud cuttings is practised.

J. WELLS: In one New Zealand nursery I visited I saw leaf-bud scions being placed onto an easily-rooting cuttings, treated with hormone, put into the propagator and rooted. The subject was *Rhododendron* and the idea was to build up stock rapidly.

P. BATES: Was the old bud cut out or rubbed out of the *Rhododendron*?

J. WELLS: Cut out with a slicing action.

P. BATES: On camellias, with leaf-bud cuttings you get beautifully shaped plants.

E. J. MARTIN: In using hormones do you take precautions to avoid getting it on the bud?

R. SCOTT: Yes, I endeavour to keep it limited to the cut surfaces of the cutting.

PROPAGATION OF DAPHNES

B. HAGGO

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In the R.H.S. Dictionary over 35 species of *Daphne*, both evergreen and deciduous are described. I will concentrate my remarks on one of these species; in fact, to a cultivar known as *Daphne odora* 'Rubra.'

Stock Plants — I consider the key to *D. odora* 'Rubra' production is healthy vigorous stock. Selected plants are set out in the best piece of nursery land and grown for two years before being used for cuttings. These stocks are maintained from 5 to 7 years before removal and replacement by fresh plants. Below a soil pH of 6, growth is restricted. Good results are achieved with a pH of between 6 and 6.4. A balanced fertilizer applied in early spring and again after the cuttings are removed (late summer) maintains growth.

A semi-shaded position is ideal but not essential. The shade holds the green colour in the leaf during the hot summer, otherwise yellowing occurs. The shade is particularly valuable if there is delay in taking the cuttings, as yellowish cuttings take longer to root and can defoliate.

Insects which may weaken and damage cutting growth are mealy bug and green aphid. These are controlled by using summer oil and nicotine sulphate. Harder to control is Blast, or bacterial spot (*Pseudonomas synisintae*). Raised black spots on the underside of leaves turn them yellow, causing defoliation. Regular Bordeaux sprays, particularly in the autumn will give good control. The virus known as Cucumber Mosaic is a well-known problem in Daphnes. We find if suspect plants are removed and burnt immediately a healthy line can be maintained.

Cuttings: Timing will depend on fitting in with other subjects being grown. In the Southern Hemisphere, February-March, even through April, for taking cuttings allows wood to be firm and tips to terminate. Tip cuttings only are used, preferably terminated. Stems may be browning but are still green. Lengths are not used because after looking sound the leaves can yellow and defoliate. Cuttings are usually made by women with sharp secateurs. The lower leaves are stripped by hand (not cut). Wounding or hormone treatments have not given sufficiently better results to warrant using.

The rooting medium used is 3 parts Mercer sand and 1 part shredded Hauraki peat. Cuttings are inserted in wooden trays, placed in a glass house pit, using bottom heat of 75° with intermittent misting. Rooting takes about ten weeks. An average tray of 100 cuttings would give:

- 70% strongly-rooted, which are potted
- 10% weak-rooted, which are potted
- 15% not rooted and replaced
- 5% thrown out — rotted or poor leaves.

Over-Wintering: This period we find difficult as the damp cool conditions favour root rots, especially *Pythium*. Potted cuttings are held under polythene frames and kept as dry as practicable. When flowers develop these are removed. On bright, sunny days (September), planting or potting can commence.

R. SCHUURMAN: Is it economical to put unrooted cuttings back into the propagator?

B. HAGGO: If the cutting material is 'in short supply'? Yes. But if we could always be assured of enough we would make extra cuttings to cope with estimated losses.

A. PALMER: Do the cuttings you put back produce a weaker plant?

B. HAGGO: No. Strangely, they come out a stronger plant and the reason seems to be that they are less subject to *Pythium* infection.

GRAFTING TROPICAL HIBISCUS

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Tropical hibiscus are generally from Hawaii, differing vastly from the Fijian varieties in that they tend to have larger flowers, be more frost tender, have a more 'sprawly' growing habit, and will not stand winds of any force. Hence they must be grafted and in turn this produces:

1. A stronger root system which will handle stronger winds.
2. A more vigorous plant, flowering earlier and better, with longer life.
3. A hardier scion variety in reference to frost.
4. A saleable plant in approximately 6 months.
5. A larger quantity when stocks are limited.

Grafting. Spring seems to be a successful time, and plants grafted at this time can be retailed in February (late summer). If grafted in late summer and wintered in a glasshouse they produce good saleable plants for early spring.

Method 1: Grafted onto a growing stock — in a tube — is ideal. The stock must be vigorous, hardy and produce roots very quickly. Some good examples are 'Suva Queen,' 'Simmond's Red', 'Fiji Flame', 'Agnes Gault'. If hardwood cuttings are prepared in late summer and tubed as soon as they are rooted, they produce excellent stock for grafting in the spring. A whip and tongue graft is best, producing a good neat strong union. Cleft grafting is probably practised more often for several reasons: (1) quicker; (2) possible to use machine to cut scions which is easier for unskilled labour.

The scion is prepared with two nodes and of recent growth. The leaves will need reducing in size slightly. If the scion is prepared with leaves left on it is advisable to place the graft under mist; this isn't necessary if the leaves are removed.

Method 2: The scion is grafted directly onto an unrooted, hardwood cutting. Take a cutting of a suitable stock, as described above — 3½" to 4" long, ¼"-½" thick. Cut to a node at the base, and to an internode at the top on an angle. Hibiscus being somewhat susceptible to rot, it must be ensured that a clean cut is made. The scion should be prepared the same as for