

## How to Commercially Graft Grevilleas for Profit or Preservation

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The genus *Grevillea* contains 251 described species, 247 of which occur throughout most of Australia; two of these species overlap into Papua New Guinea and a further five overlap into nearby islands. Within Australia, the only areas without grevilleas are central western N.S.W., part of Tasmania and the near Great Australian Bight between Adelaide and east of Esperance (Wrigley and Fagg, 1989).

Certain *Grevillea* species are at risk due to a restricted distribution. This may have occurred naturally due to soil type or through habitat destruction by livestock and development, or the spread of non-endemic diseases such as *Phytophthora cinnamomi*.

The disease problem can be circumvented through use of *Grevillea robusta* as a rootstock. Grafting allows large-scale production of rare species.

### REASONS FOR GRAFTING

There are several reasons for grafting grevilleas:

- 1) To allow a species to be grown in an environment in which it will not grow on its own roots. This is best achieved by grafting it onto an adaptable rootstock such as *G. robusta*. For example, this rootstock would be used for growing species from arid areas in more tropical coastal locations.
- 2) To allow species with a low tolerance of root rot pathogens to be grown in infected soils on a more tolerant rootstock.
- 3) To create unnatural shapes for landscape use such as weeping standards, standards, mini-standards, "ball on a stick" and mounded type plants.
- 4) To allow for the relatively quick vegetative multiplication of rare species, thereby increasing the chance of preserving the species.
- 5) To allow commercial production of larger numbers of plants than is possible by approach grafting. It is now possible to offer a reliable supply of the forms listed in 3 above.

### MATERIALS AND METHODS

Emphasis is placed on scion stock plant, rootstock and grafted plant nutrition. This is achieved through the use of foliar sprays and slow-release fertilisers.

Scion material is selected for a specific stage of growth, leaves clipped and then surface sterilised in sodium hypochlorite (100 ppm). Scalpels are used to give a clean cut on whip grafts to achieve the greatest chance of graft success. Grafts are wrapped with two layers of Novix IIR lab film and the rest of the scion wrapped with a single layer of the film to prevent desiccation.

Grafts are placed in a fog house because the post graft environment is just as important as the above factors for success. Relative humidity is maintained at a minimum of 76%. Temperature fluctuations do not seem to have any effect, even though daytime maximum may exceed 40°C.

## RESULTS AND CONCLUSIONS

Through the above mentioned methods of preparation, grafting and environmental control, it has become possible to economically produce reasonably large numbers of high-quality grafted plants (Table 1)

**Table 1.** List of successfully grafted *Grevillea* species <sup>1</sup>

<i>G angulata</i>	<i>G glauca</i>	<i>G phanerophlebia</i>
<i>G asteriscosa</i>	<i>G goodii</i> subsp <i>decora</i>	<i>G pilosa</i>
<i>G bipinnatifida</i>	<i>G granulosa</i>	<i>G pilosa</i> subsp <i>dissecta</i>
<i>G bedggoodiana</i>	<i>G infundibularis</i>	<i>G pinifolia</i>
<i>G bracteosa</i>	<i>G insignis</i>	<i>G repens</i>
<i>G deflexa</i>	<i>G intricata</i>	<i>G rivularis</i>
<i>G drummondii</i>	<i>G johnsonii</i> x <i>G longistyla</i>	<i>G rudis</i>
<i>G. dryandri</i>	<i>G johnsonii</i>	<i>G scortichini</i>
<i>G erinacea</i>	<i>G lavandulacea</i>	<i>G shiresii</i>
<i>G eryngioides</i>	<i>G leucopterys</i>	<i>G thyrsoides</i>
<i>G floripendula</i>	<i>G nudiflora</i>	<i>G tripartita</i>
<i>G formosa</i>	<i>G paradoxa</i>	<i>G wickhamii</i>
<i>G fulgens</i>	<i>G pectinata</i>	<i>G wilsonii</i>

<sup>1</sup> Bot Ed Note: also see Elliot, W R , and D L Jones 1990 Encyclopedia of Australian plants suitable for cultivation, Vol 5, pp 14, 15, for more information on grafting of *Grevillea* spp and cultivars

These methods will also be employed to help preserve rare species through production of plants with increased vigor on tolerant rootstocks. This allows production of a large amount of high-quality scion material for further grafting.

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## LITERATURE CITED

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