# WHY GRAFT?

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"Grafting is the technique of joining two plants or parts of plants together in such a manner that they will unite and continue their growth as an integrated individual."

The operation requires skill and expertise which essentially comes in two parts:

1) The Carpentry aspects, which are specifically manual and

2) The Husbandry aspects which are concerned with the knowledge and ability to prepare the rootstocks prior to grafting and to give subsequent aftercare.

These operations, however, are inevitably costly despite available skills, training to improve speed and efficiency, and the availability of knowledge which will ensure adequate productivity. This system of propagation is expensive. It is not, therefore, surprising that so much of modern research programmes are concerned with looking for alternative methods of plant propagation so that plants may be produced both more simply and cheaply.

On occasions, however, grafting cannot be avoided or, alternatively, it may be used as a positive technique. These notes have thus been produced to provide a brief summary of the reasons why plants may still be grafted on the nursery, and hence the title, "Why Graft?"

Thus, despite the complexity of the technique, grafting is still used as a tool of plant propagation and the following constitute some of the major reasons for its continued use:

a) To propagate vegetatively a plant which is not easily or conveniently propagated by any other conventional method.

b) To obtain the benefits of a particular rootstock.

1) *Pest and disease resistance*; e.g. the Malling-Merton series of apple rootstocks with their resistance to wooly aphid and the mazzard F12/1, with its resistance to bacterial canker.

2) *Toleration of particular or changeable soil conditions*; e.g. *Rhododendron* 'Cunningham's White', which will withstand higher pH than the traditional *R. ponticum*; and *Rosa* × *noisettiana* 'Manettii', with its ability to withstand a wide range of soil moisture deficit and pC ranges.

3) *Control of vigour*, e.g. the clonal fruit tree rootstocks: the E.M. and M.M. series, the various quince rootstocks, and 'Colt', 'Pixie', etc.

c) *Changing the cultivar of established plants*, e.g. family trees, pollinating branches, stem building, framework grafting, etc.

d) *Hastening the development of seedling selections*; this technique appears to overcome juvenility and induce earlier flowering, thus accelerating breeding programmes for plants with long periods of juvenility.

e) *Repair of ornamental/amenity subjects*, e.g. bridge grafts to repair bark ringing; crotch strengthening, etc.

f) *As a tool in plant study and especially as a technique in virus indexing.*

All these reasons for grafting may decline in importance with time as plant breeders screen plants for other than purely ornamental characters, but that day is still in the future. However, one day all bush roses will be grown on their own roots, and clonal tree selections will be selected for their rootability and life may be easier!

In conclusion, there is one certainty when grafting plants — that the resultant crop must warrant the expense and that this is recouped in its selling price.

## IDEAS FROM THE NURSERY PRACTICE FIELD PRODUCTION UNIT

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### INTRODUCTION

The aim of the unit is to be basically self-perpetuating, enabling students to gain an insight to field production of fruit and ornamental subjects. We have no glasshouse on site. It is an *old* site, with many years of horticultural use behind it comprising 0.557 ha, or so, total land, with approximately 60m² of seed beds, and 800m² of layer beds, and seven cropping plots averaging 440m² each.

Where possible, the propagating material — (i.e. cuttings, bud sticks, or grafting scions) comes from stockplants lined out as "hedges" in between plots.