als and organisations to conduct further research necessary to develop the industry to its full potential.

Australia's wealth of floral resources points to a need to go beyond its taxonomic classification and cultivation for aesthetics. It should be noted, however, that whilst our research into an Australian cuisine offers exquisite flavours and wonderful perfumes, many of the targeted species are stunning ornamentals as well as being extremely practical in the kitchen.

The reality is that no matter how vigorously we attempt to avoid change, our Australian culture is being shaped by Australian ecosystems. However much we seek to modify and manipulate our environment, it will always dictate our future directions. If we wish to make a smooth change, it is essential that Australians evolve a culture that considers these factors and helps us to prosper long-term on our continent.

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Propagation of the Olive in Italy and Australia

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INTRODUCTION

Man has propagated the olive (*Olea europaea* L.) since it was first cultivated 5000 years ago. Essentially, the various methods of propagation used have not changed. In the last few years there has been a worldwide revival of this ancient crop. This interest has prompted research to develop specific rootstocks and with the same characteristics deemed desirable in other fruit crop rootstocks, e.g., apple, citrus, and grape.

These rootstocks must be propagated asexually and have the following characteristics: (1) Easily propagated by cutting, (2) Resistant to soil-borne diseases and (3) Able to impart vigour (i.e., drought resistance) or reduce vigour (dwarfism) in the selected cultivar.

Rootstocks can be propagated by ordinary semi-hardwood cuttings in spring, summer, or autumn. The following spring these rooted cuttings can be grafted with the desired cultivar. An alternative is to use a "step-graft" (Editor's note: also known as cutting-graft technique). The principle behind this procedure is to graft the scion cultivar onto a cutting (the rootstock) and then strike this combination at the same time.

PROCEDURE

To perform a step-graft of the olive, a cutting of the desired clonal rootstock is taken from the mother plant. The stock mother plant should be well maintained in a healthy and vigorous condition. The length of the cutting should be 15 to 18 cm with a minimum of four leaves and at least 3 mm in diameter (Fig. 1). The scion to be grafted should consist of two internodes and only two leaves, but must have the same diameter as the stock.

An oblique cut is made in both the rootstock and the scion (as for a whip and tongue graft) and these are then matched as closely as possible. The graft is wrapped and held together with self-adhesive florists tape. After the graft has taken and started to grow this tape will disintegrate.

At all times during this operation the stock and scion must be kept moist.

After a number of cuttings have been grafted, the bases of the rootstocks are dipped into the root-promoting hormone IBA (indolebutyric acid) in powder form at a concentration of 2000 to 3000 ppm. The cuttings are then placed in the propagation medium for callousing.

Rooting can be achieved under mist or in a special box completely enclosed with plastic to maintain high humidity—relative humidity of 95% or greater is best. The step-graft system is widely used in Italy where a heating element is installed at the bottom of each box which maintains the temperature at approximately 22C and the rooting medium consists only of well moistened perlite.

Roots develop in 7 to 8 weeks and it is advisable to water the medium weekly, starting from the third week after sticking, to avoid drying at the base of the cutting.

After the cuttings have developed a sufficient root mass, they are potted on in a mixture of peat moss and coarse sand (1 : 1, v/v) with the pH adjusted to between 6.5 and 7.0. During the hardening-off process the cuttings must be kept in a humid environment (70% to 80% relative humidity) and a temperature range of 15 to 16C until they have established. High temperatures or low humidity are detrimental to the cuttings at this stage.

The timing of this operation should coincide with the beginning of the ripening of the olives, i.e., in Manjimup during the first week of April until the end of June/early July. Reasonable success rates have also been achieved in early spring (September), when the sap has started to move again.

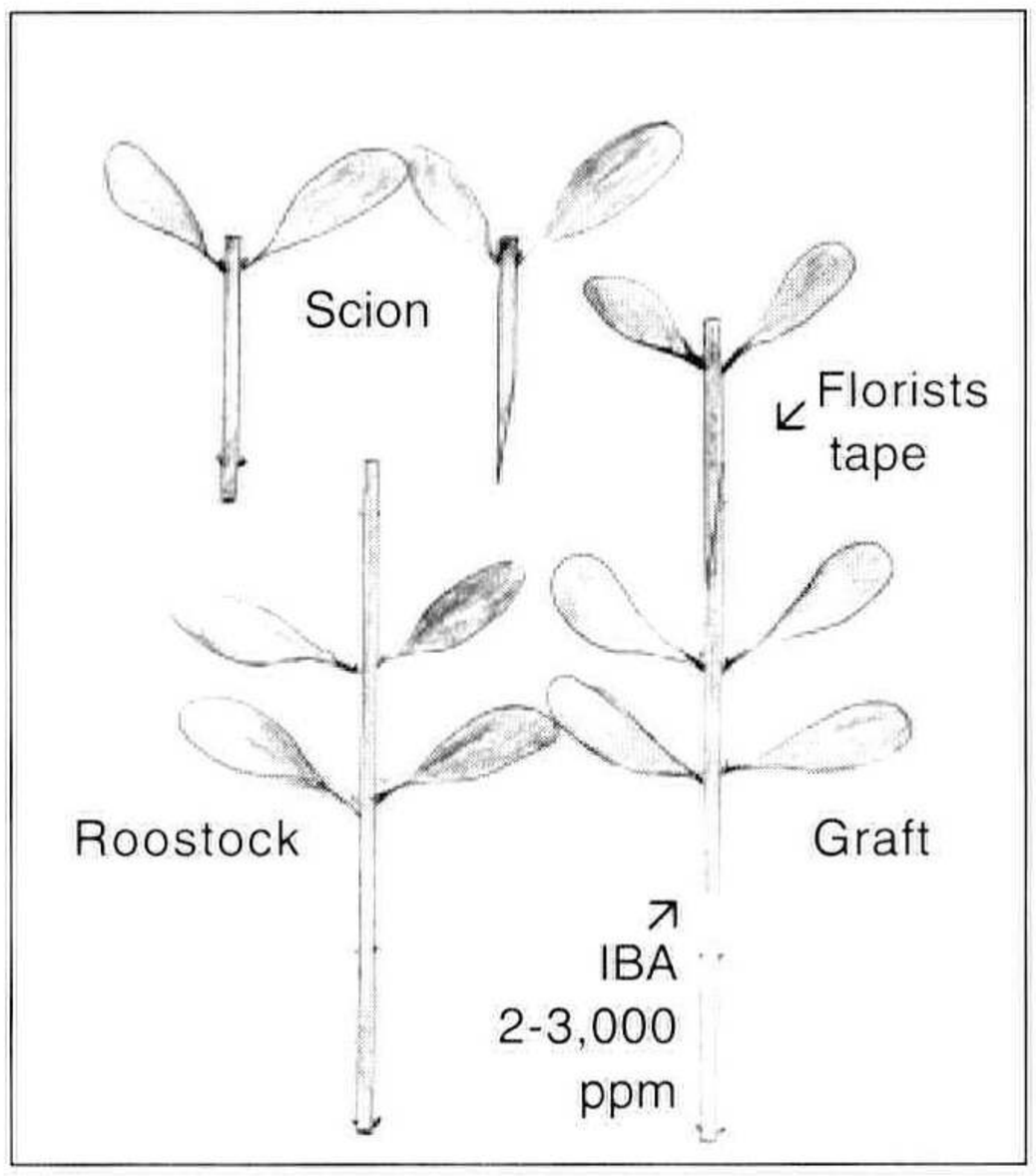

Figure 1. Diagrammatic representation of the mechanics of a step-graft using olive.