

Planting the tree is the easy part. To achieve the desired result in the long term is in fact quite complicated.

It is exciting to visit areas where careful forethought and planning have resulted in a harmonious landscape, where each tree can be appreciated on its own merits but also plays an integral part of the whole vista.

The range of ornamental trees available in Australia is continually increasing. Trees must be selected that reflect the given locality or site, they must seem to "naturally belong" by virtue of their form, texture, and colour. Trees that are aesthetically pleasing in all seasons are much sought after. A tree that is pleasing to the eye for only two to three months during autumn colour will be passed over for a cultivar which also displays lovely summer foliage and good branch structure in winter.

Colour is a very important consideration. The effect obtained by blending a combination of colours in the landscape or the use of one cultivar in a mass planting can be dramatic. Consideration also needs to be given to attributes such as tolerance to soil, and climatic conditions such as drought and heat, resistance to insect and disease attack. Consistent growth rate, good form, suitable root systems, and superior ornamental value are all criteria which should be thoroughly evaluated prior to species/cultivar selection.

Many thousands of dollars are spent each year on the purchase of trees. In Australia, street trees and their maintenance account for a considerable percentage of the public budgets. Correct tree selection from the outset would ensure significant savings by reducing pruning requirements, repairs due to invasive root systems, and replanting due to poor initial selection.

Australians appreciate beautiful trees, and they also have a keen environmental awareness. *The presence of trees in our communities has a tremendous impact on improving the health of the city environment and the quality of life of its residents.* Trees are invaluable in reducing noise levels, especially road noise pollution.

It is an exciting time to be involved in the Australian Horticultural Industry, with so many new plant species being introduced. We need to learn about the attributes and adaptability of any new introductions; cultural information from overseas must be used only as a guide. The performance of each new introduction must be assessed and evaluated under Australian conditions to ensure the delivery of a consistent product.

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## Crape Myrtle Propagation

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*Lagerstroemia indica* (crape myrtle) has been a popular deciduous flowering shrub or small tree in the Southern United States since its introduction from Asia more than 150 years ago. Crape myrtle's popularity has steadily increased, but took a huge leap when Dr. Donald R. Egolf of the United States National Arboretum began releasing new hybrid cultivars. By crossing *L. fauriei* (a small tree from Japan) with *L. indica*, Dr. Egolf produced hybrid cultivars with features which truly make them "a plant for all seasons".

Egolf's new cultivars display several wonderful characteristics throughout the year. In early spring their new leaves are often bronze or garnet tinged. In summer their blossoms are spectacular—sometimes continuing to bloom from late spring until late autumn. Their vibrant autumn foliage ranges in color from yellow to vivid oranges, and reds. As fall changes to winter the beautiful exfoliating bark can be observed, which reveals color extremes from cream to red-brown. This colouration remains vivid throughout the winter months.

Propagation of crape myrtle at Simpson Nurseries is vegetatively by softwood or hardwood cuttings. For a time we grew exclusively *L. indica*, for which only hardwood cuttings were used. Since the introduction of the new cultivars our methods have changed. In 1996 we will be propagating entirely from softwood cuttings. The move from hardwood entirely to softwood has been a gradual one, necessitated in part because the new cultivars are more difficult to propagate from hardwood and require large stock plants.

## PRACTICES AND PROCEDURES

**Softwood.** When using the softwood method of propagation the cuttings can be taken from late May through to Sept., which is late spring through summer in Monticello, Florida (Lat. 30° 31'; Long. 83° 52'). Long shoots of the new seasons growth are taken each morning between 7 and 10 AM. The shoots are placed in a heavily shaded, wind-protected mist area. As the shoots are needed for propagation they are dipped into a 5000 ppm chlorine solution. The very soft tip of the shoot is cut off and discarded, while the remaining shoot is cut into 5- to 8-cm (2- to 3-in.) cuttings. For convenience the leaves are stripped off of the lower 2.5 cm (1 in.) of the cuttings.

The cuttings are held together in a bundle while the bottom 2.5 cm (1 in.) is quick dipped in K-IBA (potassium salt of IBA) at 3000 ppm. The bundles are placed in trays. When the tray is full the cuttings are taken to the mist area where they are stuck in flats filled with peat pots containing our own propagation mix. Our mix consists of pinebark, Canadian peat moss, 6 B Gravel, and perlite (6 : 1 : 1.5 : 1.5, by volume). Incorporated into each cubic metre of mix is 3.55 kg of 18-6-12 Osmocote<sup>®</sup> and 0.59 kg of Micromax<sup>®</sup>.

The mist system is in operation while the cuttings are being stuck. The cuttings are very soft and should not be stressed. We use a mist nozzle called a Parasol nozzle, made by Spray Systems, operated at 552 to 621 kPa (80 to 90 P.S.I.). This system is set to run every 4 min for 4 to 5 sec. The interval and duration are adjusted depending upon weather conditions and the elapsed time since first sticking the cuttings.

Root initiation can begin as early as 7 days, although overall it is normally between 10 to 14 days. The plugs are usually ready to plant in 4 to 6 weeks depending upon the cultivar.

**Hardwood.** Propagating crape myrtle from hardwood cuttings is very different from softwood. At Simpson Nurseries we usually take dormant hardwood cuttings in late Dec. and early Jan. The previous years growth of 1.2 to 1.8 m (4 to 6 ft.) is cut off the stock plants and piled in bundles. The bundles are taken to the propagation building where they are stripped of any side branches. Small bundles of the long shoots are then cut into 13-cm (5-in.) long cuttings using a table saw. These sticks

are then placed into boxes until they can be tied into bundles of approximately 100 sticks. The tops of bundles are painted with spray paint to indicate the color of the flowers and which way is up.

The bundles are then placed in fumigated cypress sawdust and covered with approximately 10 cm (4-in.) of saw dust. The bundles are kept warm and moist through winter until 1 April. The cuttings are then stuck in raised fumigated ground beds. As a reference, our last frost is usually 15 April. The cuttings are rooted and grown in the raised beds until the first winter when they are dug. The plants will be multi-trunked and range in size from 30 to 120 cm (1 to 4 ft.). At this stage they are ready to either sell as a bare-rooted plant or be potted on to grow to a larger size.

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## Propagating Herbaceous Perennial Liners and Plugs

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### INTRODUCTION

Herbaceous perennials or most often just called perennials are frequently planted in private and public gardens, and in the promotional gardens of landscape designers or growers. Perennials provide a unifying design influence between woody plants and annuals. They are even being used to beautify highway rest stops; I recently saw thousands of *Hemerocallis* 'Stella de Oro', the most popular daylily in the U.S.A., planted at a truck stop in Virginia.

In the past, perennials were often field-grown, dug, and sold directly to the consumer. Although field production of perennials continues to expand, container production has increased dramatically. Containerized plants are more marketable. In addition, this production method allows considerable mechanization, facilitates shipping, and circumvents several transplanting problems. Containerization has also resulted in a marked increase in the propagation of smaller plant sizes—liners and plugs—which can be easily produced by specialty propagators and shipped great distances.

Larger perennial nurseries in the U.S.A. routinely propagate and grow more taxa than woody nurseries or bedding plant growers. For example, there are nearly 40,000 registered cultivars of *Hemerocallis*. Some nurseries may carry several hundred cultivars and large specialty growers may grow several thousand.

The method used to propagate a particular perennial depends on the species, the propagation equipment available, and the time-of-the-year. For instance, tissue culture has been a particularly effective method to control disease and to quickly introduce new cultivars, but requires sterile lab facilities and special techniques. Although laboratory propagation can be done any time of the year, not all perennials can be propagated by this technique. In another example, the only effective time to propagate *Paeonia* is by division during the late summer and early fall. Finally, the use of mechanized methods and controlled germination environments has been most frequently used for seed propagation, but not all perennial cultivars taxa can be seed propagated. What this means for the perennial propagator is that they must