GROWING *EUCALYPTUS* SPECIES IN THE SOUTH OF NEW ZEALAND

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Within the last few years poplar rust has made its presence felt here in New Zealand and has taken its toll. With this happening, the demand has been greater for fast growing trees such as the eucalyptus. Of all the trees, I know of no species other than eucalyptus which grows from the coast to the mountains, desert, swamp, and in all types of soil conditions.

Seed Selection. For the growing of eucalyptus in very cold areas such as we are in (Southland), it is very important that seed be selected from a cold locality; this will give resistance to frost. Seed should only be selected from trees of good form and true to the species.

Seed sowing

Hardy, cold tolerant species. (e.g., *Eucalyptus delegatensis, E. niphophila, E. gunnii, E. coccifera, E. perriniana*, etc.) Seeds of species that are cold tolerant are best sown in seed boxes and stacked outside in a cold, shaded position during the winter; this provides stratification of the seed. Keep turning the stack over and water any boxes that become dry. Remove any trays where the seeds have germinated by early spring and place them under shade frames outside, well protected from heavy frost and birds, but do not over-water or let them become too dry.

Tender and fine seeded species. (e.g., *Eucalyptus ficifolia, E. forrestiana, E. grossa, E. pressiana, E. nicholii*, etc.) Seed is sown very thinly in the spring. Before sowing, mix the seed with Captan dust and firm the seed in. Fine seed must be covered with a very light covering of a sand mixture; the larger the seed the thicker the covering. The sand mixture for covering consists of 2 parts river sand and 1 part peat. Sand alone tends to pack too hard on the seed, whereas the peat alone dries out too readily. Place these boxes on heated benches in the glasshouse and cover with a sheet of black polythene. Within 3 to 7 days the seed should be germinated. Remove the polythene, then water lightly, no more than necessary. Dust with Captan and try to keep the humidity as low as possible, otherwise "damp off" due to fungus diseases will start. As the seedlings develop, remove the boxes to a cold glasshouse with no heating but with good ventilation. When the seedlings reach the four-leaf stage place them outside to harden off, in an area free from frost and birds.

Tubing Up. The mixture used is 2 peat, 3 soil, 1 river sand, 1 coke breeze (screened) plus Osmocote (or Magamp). Seedlings are then pricked out into tubes 5 × 9 cm. This takes place usually in late spring or early summer. Place the tubed seedlings outside in semi-shade until they are established before placing in full sun.

Topdress with superphosphate and dolomite, then spray with Euparen for fungus control and Menazon for insects. This usually gives plants 25 to 40 cm in height when fully grown in tubes. They then can be grown on in containers or open ground. I find it a good policy not to grow eucalyptus in glasshouses or tunnel houses on account of the development of fungus diseases, except for seed germination of some species in early spring to maintain an even growth.

Eucalyptus suited for Southland's Climate. Southland has a rainfall of approximately 110 cm on the coast and 62 cm inland per year and a good number of frosts, sometimes down to −6°C (21°F). But frosts can be very consistent from autumn until late spring, with heavy falls of snow inland in some years.

Eucalyptus species that are growing in Southland are:

E. amygdalina
E. archeri
E. barberi
E. cinerea
E. coccifera
E. cordata
E. crenulata
E. dalrympleana
E. delegatensis
E. fastigiata
E. fraxinoides
E. glaucescens
E. globulus
E. globulus 'Compacta'
E. gunnii
E. johnstonii
E. leucoxylon 'Rosea'
E. macarthuri
E. maidenii
E. morrisbyi
E. nicholii
E. niphophila
E. nitens
E. nitida
E. nova-anglica
E. ovata
E. pauciflora
E. pauciflora var. *nana*
E. perriniana
E. polyanthemos
E. pulchella
E. pulverulenta
E. regnans
E. rodwayi
E. rubida
E. smithii
E. stellulata
E. st. johnii
E. subcrenulata
E. tenuiramis
E. urnigera
E. vernicosa
E. viminalis

DEVELOPING A TREE AND SHRUB PROPAGATION UNIT IN THE "DEEP SOUTH"

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At the beginning of this year we brought out an established nursery at Lorneville, a few kilometres north of the Invercargill city boundary. Because it was obvious that we needed more room for propagating, owing to the increasing demand for trees