

## Benchmarking clonal forestry for blue gum industry adoption

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*International experts from Chile, Brazil, South Africa, Portugal and Uruguay visited Australia to review clonal forestry for blue gum (Eucalyptus globulus). Companies in Chile, Iberia and Uruguay are using cuttings in their deployment programs for E. globulus, while Australian companies continue to grow plants from true seed collected in orchards.*

The Southern Tree Breeding Association (STBA) and State Forests of NSW hosted workshops and field tours at Mount Gambier and Grafton, with support from the Cooperative Research Centre for Sustainable Production Forestry and AusIndustry's Innovation Access Program.

The workshops provided an opportunity for plantation forestry companies to update on the potential benefits of clonal forestry, and to participate in an action plan for commercial uptake of this technology by nurseries producing blue gum plants. Cloning of blue gums by vegetative cuttings is a simple process similar to propagating varieties of other species like grapes, sugarcane, strawberries or flowers.

Dr Tony McRae, General Manager STBA, commented that clones have the potential to deliver more genetic gain than deployment programs based on family forestry. He said, however, that there are still some issues with

clonal forestry, which need to be addressed before it will be widely adopted in Australia.

Producing clones from vegetative cuttings is much easier and cost effective for tropical and subtropical eucalypts such as *E. grandis* and its hybrids. In Brazil and South Africa clonal forestry is widespread for these species. Despite successes overseas, Dr McRae acknowledged it is still difficult to get temperate species of eucalypts like *E. globulus* and *E. nitens* to produce roots from cuttings. For clonal selection to be effective, individual genotypes need to be replicated and tested in several plots.

This means fewer genotypes can be tested in the breeding program for the same unit cost, resulting in a reduction in selection pressure. Dr McRae observed that clonal propagation systems are labour and capital intensive, and the cost to produce plants is higher, up to four-fold. Overseas forestry companies are usually vertically integrated and the increased cost of plants is absorbed by the business as benefits are realised during processing.

If clonal forestry is to be successful for the blue gum industry in Australia, Dr McRae believed the industry must have a coordinated approach in benchmarking and developing the propagation technology.

"Promoting clones simply for marketing advantage without appropriate testing will hinder adoption and may result in failures," he said. "It is also important that breeding programs are modified to accommodate clonal systems. Some countries have focussed too much on clonal technologies and have neglected their breeding programs."

A number of Australian companies have already invested heavily in clonal propagation research and their experiences were shared with the group. A framework strategy for further evaluation and adoption of blue gum cloning technology is under development by industry partners.



Teotonio de Assis (Aracruz Celulose S.A. Brazil), Dr Tony McRae (STBA) and Dr Brad Potts (CRC-SPF) at the clonal workshop.

### Supporters of the Clonal Workshop