

Clonal forestry of Eucalyptus – in Europe and South America

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Abstract

Large scale clonal forestry of eucalyptus started in Brazil in the mid eighties. Clonal plantations of *E. grandis* or *E. grandis* hybrids provided significant gains in forest productivity, uniformity and wood quality. The fast growing clones were initially propagated by using macro-cuttings from stumps of harvested commercial plantations. In the early nineties clonal gardens were established and managed in a very specific way aiming at higher amounts of macro-cuttings from smaller areas. By the mid nineties the mini-cutting technology was developed. Efficiency of clonal propagation was then increased because the mini clonal gardens were much smaller and could be located inside the nurseries. Besides, once the mini-cuttings were more juvenile, rooting ability was better and the plant production cycle shorter. This system has been intensively improved in the last ten years and so far is the most used for tropical eucalypt species (rooting rates over 90% can easily be achieved). Next clonal paradigm for tropical eucalyptus in South America will be developing efficient and low cost micro-propagation systems.

Commercial *E. globulus* clonal forestry started in Iberian Peninsula in early nineties, with macro-cuttings from clonal gardens (still the most used method). Since the beginning the challenge was bigger than in South America, because *E. globulus* is a temperate species, traditionally bad rooting. Selection of clones with better rooting ability became then very important and current breeding programs consider this trait as an eliminatory selection criteria. Best performers root 60% to 70% via traditional macro-cutting technology. Mini-cutting technology has been developed also for *E. globulus* in Iberian Peninsula. Some companies already use it in commercial scale and R&D programs are in place to make it more cost effective.