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Commercial Forestry Cuttings in South Africa: A Tale of Two Systems©

Iain M. Thompson
NCT Forestry Co-operative Limited, Forest Technology Services, P.O. Box 1445, Pietermaritzburg, 3200, South Africa
Email: iain.thompson@icfr.ukzn.ac.za

INTRODUCTION

The commercial forestry industry in South Africa has a large positive effect on the country's economy. The forestry industry is one of the larger providers of rural employment in South Africa and workers in the plantation sector number over 75,000. The forest products sector is the fourth largest manufacturing division in the country and the forestry sector, as a whole, provides employment to approximately half a million South Africans, a figure that is expected to increase as South Africa moves deeper into the 21st century (Jones, 1994; Tewari, 2001).

Approximately 1.1% of South Africa's total surface area is made up of commercial plantations, comprised mostly of exotic species and covering an area of over 1.28 million ha. However this area is decreasing, whilst processing capacity continues to grow (Department of Water Affairs and Forestry, 2003; Department of Water Affairs and Forestry, 2007). The continued success of South African forestry thus relies on an increase in production per hectare. Improved silviculture methods, the introduction of alternative species, tree improvement, and site species matching have all been successfully applied to the forestry industry and are all jointly responsible for increasing the competitiveness of the South African forestry industry (Department of Water Affairs and Forestry, 2003; Department of Water Affairs and Forestry, 2007).

The planting of clonal hybrids, particularly interspecific *Eucalyptus* hybrids, has helped increase plantation productivity (Potts and Dungey, 2004). Mass vegetative propagation is an important method to ensure the successful large-scale deployment of superior hybrid clones (Assis et al., 2004). This paper follows two very different techniques of macropropagation utilised in two commercial forestry nurseries: Sunshine Seedlings and Top Crop.

Sunshine Seedlings and Top Crop are both situated in the KwaZulu-Natal midlands on the outskirts of Pietermaritzburg. Both nurseries have large clonal programmes and produce over 1 million *Eucalyptus* cuttings per annum. These cuttings are predominantly *Eucalyptus grandis* × *E. nitens* (G×N) hybrids, but *E. grandis* × *E. urophylla* (G×U) hybrid production is increasing and now represents a significant percentage of total clone sales. Whilst the two nurseries are competitors, they have a "seek and share" mentality and often interact and share information.

STEM MACRO-CUTTINGS AT SUNSHINE SEEDLINGS

The macro-cutting system has worked well at Sunshine Seedlings in the past and continues to produce good quality clones. The macro-hedges are grown outside, at an espacement of 36 stems per m^2 and kept to a height of 30 cm; irrigation by sprinklers is used to supplement natural rainfall. Shoots are harvested from the