

# Zygotic embryo culture to produce planting stock of the rattan *Calamus thwaitesii*

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## Summary

The rattan resources of Sri Lanka show signs of becoming depleted. Repopulation of their natural habitats is urgently required. As a step towards producing planting stock, and in view of the difficulties caused by recalcitrant germination in *Calamus thwaitesii*, a large-diameter species of rattan, tissue culture methods were investigated. Embryos of mature and immature fruits were cultured in 12 treatments in three basal media: WPM (Lloyd and McCown, 1981); MS (Murashige and Skoog, 1962); and HOH (the high concentration range of mineral components, sucrose, growth factors and amino acids of a broad-spectrum experiment by De Fossard, 1976), either without hormones or with 6-benzylaminopurine (BAP) and  $\alpha$ -naphthalene acetic acid (NAA), each at 5 mg/litre, to induce germination. Immature embryos gave a germination of 77.8%, considered to be high, in HOH and MS without hormones. This method can be recommended to overcome the slow, recalcitrant natural germination of the seeds. For callus induction from immature embryos, WPM, supplemented with NAA and 2,4-dichlorophenoxyacetic acid (2,4-D), each at 0, 5, 50 and 100 mg/litre, together with 2-4D at 5 or 50 mg/litre, induced callus which survived for a longer period. In attempts to regenerate plantlets, by transfer to hormone-free medium followed by supplementation with BAP, only anomalous organogenetic redifferentiation in callus was obtained. Modifications of hormones and nutrients will therefore have to be investigated, to induce consistent normal plant regeneration from callus.