

IN VITRO MULTIPLICATION OF LOCAL CULTIVARS OF BANANA (*MUSA* spp.) THROUGH SHOOT-TIP CULTURE

K. HIRIMBUREGAMA* and N. GAMAGE

Department of Botany, University of Colombo, P.O. Box 1490, Colombo 03.

(Received: 24 February 1995; accepted: 12 January 1996)

Abstract: *In vitro* shoot-tip culture is a suitable alternative to the traditional methods of propagation of banana (*Musa* spp). In the present study, ten banana cultivars of the group AAA, AAB and ABB were tested for *in vitro* multiplication. The study revealed that shoot-tip culture technique can be used for mass propagation of the local cultivars of banana. A variation in multiplication rate was seen not only among different genomic groups but also among cultivars of the same group: highest multiplication was observed in Binkehel (AAA) while the lowest was in Alukehel (ABB) and Suwandel (AAB). Thus, multiplication rate appears to be cultivar dependant. The study also showed that subculturing enhances shoot multiplication, especially after the second subculture.

Key words: *Musa*, banana, micropropagation, shoot-tip culture.

INTRODUCTION

Banana (*Musa* spp.) is a popular fruit in Sri Lanka. Naturally occurring banana hybrids are grouped according to their genome constitutions, as AA, AAA, AB, AAB, ABB and ABBB^{1,2} (genome 'A' from *M. acuminata* and the genome 'B' from *M. balbisiana*). These include 300-500 cultivars spread throughout the world. Tetraploid AAAA cultivars have only been produced through breeding programmes.³ Up to now triploid and tetraploid B cultivars have not been identified.^{1,2,4,5} Twenty nine banana cultivars, including cooking and dessert types, have been reported in Sri Lanka.⁶

Until recently, banana cultivation was restricted to home gardens and to small plots of land. With increasing local demand and potential for export markets, large scale cultivation of banana has become common, especially in Gampaha, Uda Walawe, Embilipitiya, Moneragala and Rambukkana. Since almost all the edible bananas are triploid and seed sterile, suckers have been the traditional planting material. Their poor availability is a constraint for commercial cultivation. *In vitro* shoot-tip culture of banana allows rapid clonal multiplication. The technique for the establishment of banana plants in large quantities from excised shoot tips was first reported by Ma and Shii⁷ and had been later modified by others.⁸⁻¹¹ This technique is successfully used for mass propagation of banana in some countries including China, India, Thailand and Malaysia. In Sri Lanka, this technique had been tested for some cultivars of banana by the Agriculture Department. However, details of the rates of multiplication of local cultivars are not available. The present study reports on the multiplication rates of some important local cultivars of banana through the shoot tip culture technique.

* Corresponding author.