

**B-36 : FORMATION OF MERISTEMATIC GLOBULES FROM  
IN VITRO GROWN BUDS OF *Musa* (BANANA AND PLANTAINS) :  
ARE THESE SOMATIC PROEMBRYOS?**

*K Hirimburegama, E de Langhe\**, Dept. of Botany, University of Colombo,  
\*Lab of Crop Physiology & Tropical Crop Husbandry,  
Catholic University of Leuven, Belgium.

Identification of the structures 'Proembryo' and 'Embryo' is important in studies on somatic embryogenesis. Therefore, characteristic features of these two structures should be identified and clarified in such a study.

The main objective of this study was to identify and characterize the meristematic globules developed from *in vitro* proliferating buds of *Musa*, ABB, cv. Bluggoe. Initially a critical review was done on zygotic and somatic embryogenesis in plants related to *Musa*.

The uppermost part of *in vitro* grown buds of *Musa*, ABB, cv. Bluggoe was the explant. The explants, cultured on basic Murashige and Skoog, 1962 (MS) medium supplemented with 2,4-D ( $10^{-6}$  M) and BAP ( $10^{-6}$  M) with 3% sugar, produced globules from about 2 weeks after inoculation. Histological studies were carried out on these globules and also at various stages of their development.

It was found that globules with a diameter of about 2 mm or less, had only non differentiated and differentiating cells. Thus they were termed as 'meristematic globules'. They showed the characteristic features of a proembryo (e.g. absence of an epidermis and vascular strands in the structures and, dense cytoplasm, a large nucleus, a prominent nucleolus and small number of vacuoles in the individual cells. Upon transfer to two successive liquid media, each meristematic globule developed into an embryo (a structure with a shoot and a root apex connected by procambial strands). The meristematic globules were confirmed as 'proembryos' as they finally developed into embryos.