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

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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.

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