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PART 3 RESULTS AND DISCUSSION

ABSTRACT

The aim of this study encompasses a comparison between scalps and male flowers originating from the cultivar 'Grande Naine' (triploid AAA Cavendish dessert banana) by focusing on the initial stadia of somatic embryogenesis.

At the Laboratory of Crop Improvement (K.U.Leuven), a procedure has already been developed for the induction of somatic embryogenesis and initiation of embryogenic cell suspensions based on scalps. The embryogenic response of 'Grande Naine' scalps, however, is very low to non existing. So, we decided to use an alternative somatic explant, namely immature male flowers which were isolated from the male bud.

Both types of explants were placed on different induction media, in different culture containers and were placed under different culture conditions. A precise follow-up of the morphological tendencies of both types of explants was done. The Ma medium (18,1 µM 2,4-D en 7g/l agarose) is from a relative point of view the most efficient medium for the induction of friable, embryogenic complexes on male flowers placed in plastic tubes at 28 ± 2 and this under a 16 hours light/ 8 hours dark regime. After a 3 to 4 months culture on the Ma medium, 0,5 % of the total number of incubated male flowers a showed the desired *in vitro* embryogenic response. Despite the low quantitiy of embryogenic material, it was still possible to transfer it partly to semi-solid medium for proliferation and partly to liquid medium for initiation of an embryogenic cell suspension. Embryogenic cell suspensions are a suitable starting material for cryopreservation and genetic transformation. Besides, male flowers were placed on a conventially used proliferation media. The *de novo* initiation of flower meristems on the explant made it possible to isolate possible embryogenesis competent handscalps. Due to the long induction period for somatic embryogenesis, no somatic embryos have been obtained so far.