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Induction of Embryos from Isolated Microspores of *Capsicum annuum* L.

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Objectives

This study was carried out to induce embryos from isolated microspores of *Capsicum annuum* L.

Materials and Methods

1. Materials: *Capsicum annuum* L.
2. Methods: Anthers were isolated from approximately 30 buds and stored for 3 days at 32°C in preculture medium. After pretreatment, anthers were blended at high speed for 20s in washing medium. The microspore suspension was passed through a sieve with mesh size 75 and 38 μm . The suspension was centrifuged at 500 rpm for 10 min, the supernatant was removed and washing medium was added to the pellet. This procedure was repeated twice. The last pellet was resuspended in induction medium. The microspores were then plated at a density of 70,000-100,000 spores/ml in 60 \times 15 mm plates at 3 mL suspension/plate. The plates were sealed with Parafilm and

incubated at 25-27°C in the dark until embryos were appeared. Normal embryos were transferred to solid growth regulator free B5 medium and maintained at 16 h photoperiod.

Results and Discussion

Globular and heart-shaped embryos were observed from 3 weeks after culture. Normal embryos subcultured to basal B5 medium developed into plantlets. Culture medium had a significant effect on the induction of embryos. Embryos were obtained only in the ML medium. For embryo induction and development, anther pretreatment was more effective than microspore pretreatment.

As far as we know, this is the first report of success in obtaining embryos and plants from isolated microspores of pepper. Although the culture conditions have to be optimized further, this promising microspore culture system can be used for genetic transformation, selection for dominant and recessive traits as well as for the production of homozygous doubled haploid plants.

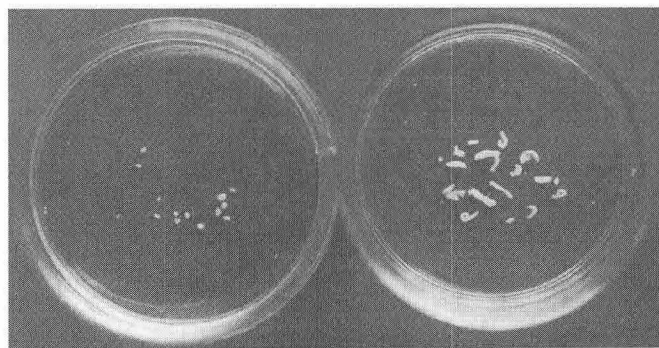


Figure 1. Culture plates of embryos generated from isolated microspores in ML medium with (left) and without hormone (right).