

P 38 Cytological Changes of Microspores at Different Gametophytic Stages in Anther Culture of *Capsicum annuum* L.

KIM, Moon-Za* · HONG, Jeong-Pyo

Dept. of Biology, College of Natural Science, Mokwon University

Objectives

This study was carried out to clarify the developmental pathways of pepper microspore at varying developmental stages during anther culture. The purpose of the present investigation is to accumulate cytological data pertaining to microspore embryogenesis, with the goal of establishing an anther/microspore culture protocol.

Materials and Methods

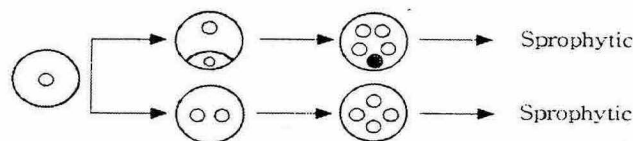
1. Materials: *Capsicum annuum* L. (cultivar. Milyang-jare)
2. methods: Anthers were dissected from flower buds of each size group and cultured in MS medium containing 0.1 mg/L

NAA and 0.1 mg/L kinetin. Microspores were observed cytologically with DAPI stain.

Results and Discussion

1. Pepper was characterized by a strong asynchrony of microspore development within single anthers.
2. The multinucleate grains might originate either by symmetrical or asymmetrical division of uninucleate microspore. However, the majority of embryogenic grains were produced through the divisions of the vegetative nucleus of binucleate microspore.
3. Anther stage optimal for culture was Stage 2 and 3 which contained a large proportion (40-70%) of early-binucleate pollen.

Development from late unicellular microspores



Development from early bicellular microspores

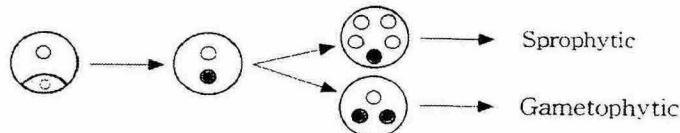


Figure 1. Diagram of sporophytic versus gametophytic development during the first 2 weeks in *Capsicum annuum* L. anther culture.