

## Study on Embryogenesis Response of Maize (*Zea mays* L.) Genotypes to Anther Culture

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### Abstract

Haploid plants have an important role in plant breeding programmes and basic researches. In this study, 44 *Zea mays* L.) genotypes were evaluated for their response to embryogenesis via anther culture. Three experiments were conducted for understanding the effects of cold pre-treatments, kind of culture media, and the orientation of anthers on culture media for response to embryogenesis. The results of anther culture showed that embryo-like structures (ELSs) were obtained from genotypes DH5×DH7, ETH-M82, TWC605, SC709, A188, S61, K74/1 and LA12 (sweet corn). Plant regeneration was performed successfully. Analysis of variance for the first experiment showed significant differences between anther culture media and genotypes, but there was no significant difference between two cold pre-treatments (14 and 21 days). In the second experiment, the Yu-pei medium containing 90 g l<sup>-1</sup> was the best media for embryogenesis with 21.82 ELSs /100 cultured anthers. Cultivation of anthers by edges on medium in the third experiment was the best orientation for anther culture.

**Keywords:** Anther culture, Embryo-like structures (ELS), *Zea mays* L., Haploid plant

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