**Investigation of Synthetic seed Production of *Crocus sativus* L.**

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*Crocus sativus* L. known as saffron, is one of the major medicinal and aromatic plant used for its dry red stigmas. *C. sativus* is triplod male sterile plant and it is propagated by daughter corms. Additionally tissue culture is an significant alternative for clonal propagation of this important geophyte. Somatic embryogenesis and synthetic seed are efficient method to preserve genetic resources via the multiplication and clonal production of valuable plants.

In this study, *C. sativus* corms were cultured on MS medium including 2 mg/l 2,4-D +1 mg/l BA, 3% sucrose, 4% gelrite to obtain somatic embryo. To increase the somatic embryo germination, somatic embryos were encapsulated with Na-Alginate including MS, B5, WPM, OM medium with or without 1 mg/l BA. Efficient germination was observed at encapsulated somatic embryos including B5+1 mg/l BA.

**Key words:** Saffron, Na-Alginate, Encapsulation, Germination,