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agric@tubitak.gov.tr

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In situ Haploid Embryo Induction in Cucumber (Cucumis sativus L.) After Pollination By Irradiated Pollen

Gülat ÇAĞLAR
KSÜ Ziraat Fakültesi, Bahçe Bitkileri Bölümü, Kahramanmaraş-TÜRKİYE
Kazım ABAK
Çukurova Üniversitesi, Ziraat Fakültesi, Bahçe Bitkileri Bölümü, Adana-TÜRKİYE

Abstract: In this study the effects of irradiation doses, maternal genotypes and season on fruit set, seed production and parthenogenetic embryo induction after pollination by irradiated pollen in cucumber were investigated. Qamar F1, Seraset F1, Dere and Çengelköy cultivars were pollinated throughout the years with the use of pollen exposed to gamma irradiation at 300, 450 and 600 Gy. The irradiation doses did not affect fruit set or seed production. Hybrid genotypes set more fruits than open pollinated ones. Qamar F1 cultivar had the highest seed production. The highest seed production were realised in June. A 300-Gy dose led the highest haploid embryo induction for two successive years. It appeared that the higher the irradiation doses the lower the haploid induction. The hot period between April and October was found to be the best season for haploid embryo induction. The highest haploid induction, however, was obtained in June or July. Most of the embryos were found in the globular stage. Of the total embryos obtained only 25-35% was the solid ones. In all genotypes the white-solid embryos that could be turned into plantlets were mostly obtained between April and October.

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