## Abstract

An unilocular ovary is often observed in the Fabaceae family. *Thermopsis turcica* Kit Tan, Vural & Küçüködük is an endemic, rare plant species in Turkey that is distinguished by its multi-carpellary apocarpous ovaries. No research has been conducted on the crossing of *Thermopsis turcica* with other species to date. *Vicia faba* L. (fababean) (2n = 12), which is one of the oldest crops used for human and animal consumption, and *Thermopsis turcica* (2n = 18) were selected to explore the possibility of increasing yield in edible crops by intergeneric crossing. When *Thermopsis turcica* was used as a male parent, pollen germination and pollen tube growth appeared to be normal and globular embryo formation was observed, but hybrid seeds aborted due to postfertilization barriers. In contrast, in all crosses in which *Thermopsis turcica* was used as a maternal parent, an embryo was not obtained, and viability of the pistil did not exceed ten days after pollination. Also, in the samples left to free pollination, pistils died in a few days after anthers were removed just before pre-anthesis. Inability to obtain viable seeds by hybridization of *Vicia faba* and *Thermopsis turcica* should not be considered as a demonstration of complete incompatibility of the species in intergeneric crosses. The present report constitutes the first study on this issue.

Keywords: Embryo, intergeneric hybridization, pollen, Thermopsis turcica, Vicia faba