

Mechanism of Pollen type effects on fertilization and fruit set in almond

Ali Imani

Assistant Professor of Horticultural Research Department, Seed and Plant Improvement Institute, Karaj, Iran

Most commercial almond cultivars are self incompatible, although there have been occasional reports of self compatible individuals. Since seed (kernel) is considered as the main product of almond, therefore, pollination, riable and compatible pollen, and fertilization play an essential role in this process.

In this study, Mechanism of pollen type effects on fertilization and fruit set were studied by following pollen tube growth within pistil under laboratory and orchard conditions. Results indicated that pollen tube growth of compatible pollen was slow within style, while in compatible pollen tube growth was very rapid. Most incompatible pollen tube growth up to half of style, after that, pollen tube growth was inhibited by vallus set in its tip.

Microscopic studies showed that globular embryo with suspensor was found in embryo sac one week after polinttion with comptible pollen, while in the pollination proces with self pollen incompatibles at the same period the embryo cells were remained in their original form in the embryo sac and there was not cellular division. Final fruit set varied from 0% to 31% by pollen source type.