Research in the generative reproduction of sweet and sour cherry is of interdisciplinary importance and is, besides basic research, increasingly recognized as a basic in genetics, breeding, physiology and biotechnology of cherries. Activities belonging to the stated fields of scientific research have been conducted in the following institutions: Fruit Research Institute, Čačak, Faculty of Agriculture, University of Belgrade and Faculty of Agriculture, University of Novi Sad. This research is based on several techniques and methods used to determine:

a) Flowering phenology (Fig. 1, 2 and 3)
b) Pollen quality (Fig. 4 and 5)
c) Monitoring the pollen tube growth in pistil - dynamic of pollen tube growth through certain pistil parts (Fig. 6, 7 and 8) - appereance of incompatibility (Fig. 9 and 10) - identification, inherence and interactions of incompatibility alleles (Fig. 10 and 11)
d) Cytoembryology - stage of ovule development, embryo sac an early embryogenesis (Fig. 12) - ovule viability and embryo sac (Fig. 13, 14 and 15)
e) Pollen-pistil interaction in the ovary - control of pollen tube growth (Fig. 16 and 17)
f) Initial and final fruit set (Fig. 18 and 19)

The paper reviews some of the most important research activities in the field of pollination and fertilization of sweet and sour cherry. In reference list we listed titles of some important papers relating to the research of pollination and fertilization of cherries.

A more precise defining of factors relevant in the pollination and fertilization helps to assess the factors crucial to cultivar fertility. In practical terms, studies on these processes could serve to develop and test prediction models concerning the impact of environmental factors such as temperature (climate change) on cherry production.

On the basis of these research we have offered a recommendation a lot of sweet and sour cherry cultivars for their cultivation in orchards whereby the most effective polliination and fertilization can be ensured as well as good fruit-set and satisfactory fruit yields.

References

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