

# INFLUENCE OF CONTROLLED POLLINATION BY BEES ON FRUIT SET IN APPLE

Dragan Radivojević<sup>1</sup>, Nebojša Nedić<sup>1</sup>

<sup>1</sup> University of Belgrade, Faculty of Agriculture, Institute for Fruit and Viticulture, Nemanjina 6, 11080 Belgrade, dragan1970@agrif.bg.ac.rs

## Introduction

During the previous decades the natural populations of honey bee *Apis mellifera carnica* Poll. at the territory of Serbia has been subjected to constant negative influence of man, in the first place through deployment of chemical substances requisite in agriculture, but also due to uncontrolled import of and crossbreeding with the other breed of this bee.

For the purpose of their further breeding, researches upon the metric morphology of certain individual populations of choice at the territory of Republic of Serbia. During three years of research (2004-2006) three selected lines of honey bee from three different localities in Serbia (East-line 1, West – line 2 and South Serbia-line 3) were studied.

## Material and method

The metric morphology examinations have been conducted upon the sample of 50 bees taken from three geographically rather distant sites of the Republic of Serbia. Each bee has been fixated at the 70% ethanol, and then the permanent microscopic preparations have been made of the following body parts: the right forewing, the mandible and the wax mirror.

The preparations have been viewed through the Leica XTL-3400D binocular microscope, and the measurements of lengths and four angles of the forewing, length of the tongue and the cubital index have been conducted by the IL 1009 software package in compliance with the *Ruttner* (1978) methods.

Table 1. Uticaj dužine oprašivanja medonosnom pčelom na parametre rodnosti

Cultivar	Oprašivanje pčelama	BPTG	BPBP	UPTL,%	UPBL,%	UBPP
Fuji	Oprašivanje do punog cvetanja	66.3	46.0	61.6	87.0	67.6
	Oprašivanje sve vreme cvetanja	67.3	59.6	44.0	73.7	45.4
Galaxy	Oprašivanje do punog cvetanja	93.0	50.1	65.0	93.3	74.9
	Oprašivanje sve vreme cvetanja	156.5	98.9	21.1	55.7	29.6

BPTG-broj plodova na 100 terminalnih generativnih pupoljaka; BPBP-broj plodova na 100 bočnih generativnih pupoljaka; UPTL-učešće pojedinačno raspoređenih plodova u ukupnom broju plodova razvijenih sa terminalne pozicije letorasta; UPBL-učešće pojedinačno raspoređenih plodova u ukupnom broju plodova razvijenih sa bočne pozicije letorasta; UBPP-ukupan broj pojedinačnih plodova.

## Conclusion

Kod sorte Fudži skraćivanje oprašivanja nije ispoljilo uticaj na broj zametnutih plodova na 100 terminalnih cvetnih pupoljaka ali je ispoljilo značajan uticaj na broj zametnutih plodova na 100 bočnih cvetnih pupoljaka, odnosno pupoljaka na jednogodišnjem drvetu. Kod sorte Galaksi se skraćivanjem perioda oprašivanja veoma značajno smanjuje ukupan broj zametnutih plodova na 100 cvetnih pupoljaka iz obe kategorije. Kod obe ispitivane sorte je ispoljen veoma značajan uticaj skraćenog oprašivanja na povećanje procentualnog udela plodova formiranih iz centralnog cveta u gronji u ukupnom broj zametnutih plodova. Broj normalno formiranih semenki u plodu je bio sličan kod obe sorte nezavisno od primenjenog tretmana oprašivanja.