Faculty of Agriculture
Goce Delcev University - Stip

2nd INTERNATIONAL MEETING AGRISCIENCE & PRACTICE (ASP 2019)

BOOK OF ABSTRACTS

12th April 2019
Stip, Republic of North Macedonia

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2nd INTERNATIONAL MEETING AGRISCIENCE & PRACTICE
ASP 2019

Organized by

FACULTY OF AGRICULTURE
GOCE DELCEV UNIVERSITY - STIP, REPUBLIC OF NORTH MACEDONIA
12 April 2019, Stip, Republic of North Macedonia

In the past twelve years the educational, research and applicative activities of the Faculty of Agriculture – Stip, Goce Delcev University – Stip, contributed to the development of agricultural sector in the country and abroad.

The Faculty of Agriculture organizes the 2nd International Meeting Agriscience & Practice (ASP 2019), giving an opportunity to the participants for presentation and discussion of original scientific and practical results in different fields of agriculture.

The 2nd International Meeting Agriscience & Practice (ASP 2019) is organized with intention to bring together all agricultural stakeholders for sharing their knowledge, experience and obstacles. One of the main aims is to link research and field work in agricultural sector in the country and abroad, giving it an international dimension.

The main goal of the Meeting is to connect and promote scientific achievements and practical knowledge presented in different thematic areas.

We are pleased to welcome you at the Faculty of Agriculture and we wish you active participation in the Meeting.

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PLANT PROTECTION

ONE STEP REAL-TIME POLYMERASE CHAIN REACTION USING FOR THE DETECTION OF *PLUM POX POTYVIRUS*

Cvetanka Kulukovska[1*], Emilija Arsov[2], Sasa Mitrev[2]

[1]Goce Delcev University – Stip, Faculty of Agriculture, Republic of Macedonia, MsC student
[2]Goce Delcev University – Stip, Faculty of Agriculture, Department for Plant and Environmental protection, Republic of North Macedonia
**Corresponding author: Cvetanka.Kulukovska@biosistemigrupa.com*

Abstract

Plant viruses are group of pathogens that cause important loses in different fruit production and they have great economic importance. They are obligate parasite forms and for their replication they used plant cells. One of the most important virus on the fruit is *Prunus* species, and the one that causes great economic losses is *Plum pox virus* (PPV), causal agent of Sharka disease. *Plum pox potyvirus* (PPV) is a filamentous virus that can be a part of phloem tissue in fruit-production species of *Prunus*, including apricots, peaches and plums. Since its discovery, Sharka has been considered as a calamity in plum orchards. In highly susceptible plum varieties presented in Macedonia, such as Požegača and Stenlej, PPV causes a premature fruit drop and reduces fruit quality, which leads to total yield loss. The same symptoms and loses are obviously in the peach and cherry garden. Eight PPV strains (PPV-M, PPV-D, PPV-EA, PPV-C, PPV-Rec, PPV-W, PPV-T and PPV-CR) have been recognized so far. Three major strains (PPV-M, PPV-D and PPV-Rec) are the most widely dispersed and occur frequently in many European countries. Other strains are of minor importance due to their limited host preferences or geographic distribution. In our research, plum hosts from several variety of plums were included in laboratory test analyses, such as plant parts (phloem, buds, flowers, leaves and fruits) and parts of them in different periods of the year (spring, summer and winter period 2017/18). The presence or absence of symptoms were considered for comparison. DAS-ELISA and Real Time PCR molecular techniques are included to confirm the presence and concentration of PPV in different plant material (leaves, stem, flower and fruit). By usage of DAS-ELISA tests, and a universal set of antibodies (BIOREBA), has proved the presence of virus of plum pox in all examined samples, especially from samples collected in spring, and in winter and early spring season, the virus status is on lower level. Testing found high concentrations of viral antigens in plant samples (OD 1.485 - 1.556, for 30 min). Results analysis from One step Real Time RT-PCR, show specific product for PPV that generate specific FAM-labeled amplification curve, and the Ct of the amplification curve is lower to 35 for positive samples. Total number of 10 DAS-ELISA positive samples (plum leaves), were confirmed with Real Time PCR with amplification curve with Ct≤35.

Key words: *Plum pox virus*; Sharka disease; DAS-ELISA, RT-PCR, PPV-M and PPV-D

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