Bulletin UASVM, Horticulture 65(1)/2008
pISSN 1843-5254; eISSN 1843-5394

# NON-TRANSMISSION OF *PLUM POX VIRUS* D AND REC STRAINS THROUGH SEEDS IN PLUM

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**Key words:** PPV-D, PPV-Rec, serological and molecular analyses, vertical transmission, plum

SUMMARY

The vertical transmission of *Plum pox virus* (PPV) from infected mother plants to their progeny has been investigated for many years with controversial reports. The first investigations about PPV transmission through seeds were based only on biological tests: *Szirmai* (1961) recorded seed transmission in apricot, *Savulescu and Macovei* (1965) and *Coman and Cociu* (1976) in plum and peach, while *Jordovic* (1963) were not able to detect PPV in plum seedlings. Despite of serological and molecular diagnosis development, reports about vertical transmission of PPV revealed different results. *Nemeth and Kolber* (1982) detected in apricot seedlings a low transmission rate of PPV while *Shimanski et al.* (1988) in plum and apricot, *Eynard et al.* (1991) and *Triolo et al.* (1993) in apricot found no transmission of PPV in seedlings from infected seeds. *Pasquini* (1998, 2000) obtained negative results regarding vertical transmission on 12 apricot cvs. infected with D strain and six peach cvs. infected with M strain. The same results were obtained by *Myrta et al.* in apricot and plum (1998) and *Glasa et al*. in plum and myrobolan (1999). *Slovakova et al.* (2002) reported the transmission of PPV in a few seedlings from infected seeds using DAS-ELISA. Recently study of *Milusheva et al.* (2008) showed non-transmission through seeds of PPV-M strain in plum and PPV-Rec strain in apricot.

Our study regarding the vertical transmission of D and Rec strains of PPV started with identification of plum trees with generalized infection of *Plum pox virus*, and then were identified the trees with PPV-D and PPV-Rec strains by serological and molecular analyses. PPV strain determination was serologically achieved by TAS-ELISA using specific monoclonal antibodies. Molecular strain typing was done by RT-PCR targeting three genomic regions corresponding to (Cter)CP, (Cter)NIb/(Nter)CP and CI. The HAS 3/5 (9/8) cv. was identified infected with D strain and Oneida 10/20 cv. with Rec strain. Seeds from these cultivars were collected after ripening and stratified in sandy. Seedlings obtained from collected seeds were maintained in isolated room in greenhouse, for two years. No seedlings showed symptoms of PPV during two years of experimental period. In all 76 seedlings from stratified seeds (49 from PPV-D infected plum tree and 27 from PPV-Rec infected plum tree) DAS-ELISA and IC-RT-PCR did not detect PPV, although were performed periodically analyses in these two years. In conclusion, in our study there is no evidence of vertical transmission of D and Rec strains of PPV in plum.

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