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BOOK OF ABSTRACTS

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Grapevine yellows in the Republic of Macedonia: molecular identification of stolbur phytoplasma strains in grapevine and weeds

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During the period from 2006 to 2010, a survey for presence of Bois noir (BN) phytoplasmas on *Vitis vinifera* L. and wild spontaneous vegetation (*Clematis vitalba* L., *Solanum nigrum* L., *Amaranthus retroflexus* L. and *Convolvulus arvensis* L.) was conducted. The aims of this study were: i) to check the presence of BN phytoplasmas on grapevines and wild vegetation in investigated vineyards in the Eastern part of Macedonia, and ii) to molecularly characterize and compare the isolates from grapevine with those from weeds.

A total of 485 grapevine samples were collected from all Macedonian regions where grapevine is cultivated and tested by PCR. In the same vineyards, some weeds with suspected symptomatology were collected. The samples were analyzed by conventional PCR with the following primers that amplify phytoplasma rDNA: P1/P7 in direct PCR, 16r758f/M23Sr and R16(I)F1R1 in nested-PCR (Angelini *et al.*, 2001). Stolbur specific primer pairs, STOL4f/r and STOL11f2/r1, that specifically amplified a 1,7 kb and a 0,9 kb DNA fragment, respectively, were used (Rott *et al.*, 2007). Positive samples were characterized by restriction fragment length polymorphic (RFLP) analysis, using a combination of three primer-enzyme combinations (*Taq*I, *Tru*9I, *Hpa*II) (Duduk *et al.*, 2004).

In all regions, most frequently affected cultivars were "Vranec" and "Chardonnay" (Seruga *et al.*, 2003). Within the period of five investigative years, 254 grapevine samples (52 %) were PCR positive to stolbur phytoplasma, confirmed with specific primers. RFLP analyses on non-ribosomal amplicons from 50 selected grapevine samples confirmed that stol4 type-B was present.

Concerning weeds, 10 bindweed samples out of 21 were detected as primary host plants of stolbur phytoplasma. RFLP analyses on non-ribosomal amplicons with *Taq*I and *Hpa*II enzymes showed that stol4 type-B strain was present also in bindweed. On the contrary, solanum (five plants) and amaranthus (seven plants) were always negative to PCR tests.

Key words: Vitis vinifera, *Bois noir, solanum, amaranthus, convolvulus.*

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