O.46 - Phytoplasma diseases in Canadian vineyards

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Phytoplasma are non culturable wall-less prokaryotes belonging to the class mollicutes that are transmitted by phloem-feeding insects, mostly leafhoppers. Phytoplasmas have been associated with grapevine yellows and have been detected in grapevine worldwide. A phytoplasma disease survey was performed in 2006 and 2007 in vineyards from British Columbia, Ontario and Québec to detect and identify phytoplasma present in Canadian vineyards. Grapevines and insects from an average of 20 vineyards in BC and ON and 5 vineyards in QC were sampled and tested for the presence of phytoplasma using nested PCR. Phytoplasma belonging to group 16SrI (Aster Yellow group (AY)) was found in vineyards from the three provinces. Percentages of grapevines infected with phytoplasma were 1.2% and 1.7% in 2007, in BC and ON, respectively and 6.1% and 0.9% in 2008, in ON and QC respectively. Phytoplasma DNA was detected in *Erythroneura comes*, *Latalus* sp. and *Scaphoideus titanus* in ON, in *Erythroneura tricincta*, and *Erythroneura vitis* in QC, and in *Ceratagalia humilis*, *Colladonus germinatus*, *C. torneellus*, *Endria inimica*, *Exitianus exitiosus*, *Gyponana hasta*, *Hecalus viridis*, *Macrosteles quadrilineatus*, *Neokolla confluens*, *Psammotettix lividellus* and *Scaphytopius acutus* in BC. The most numerous cicadellid species in ON and QC vineyards were *Erythroneura* sp showing a population infected at 2.6% with phytoplasma. In BC, cicadellids that phytoplasma was most commonly isolated from were *M. quadrilineatus* and *N. confluens* which populations were infected with phytoplasma at 10.3% and 8.5% respectively. DNA sequencing showed that phytoplasma found in insects and grapevines sampled in BC, ON and QC vineyards belong to 16SrI-A or 16SrI-B.