Detection and characterisation of grapevine phytoplasmas and vectors by molecular techniques in Turkey and the reactions of common cultivars to those infections

F. Ertunc[1], S. Bayram[1] and G. Soylemezoglu[2]
[1]Ankara University, Faculty of Agriculture, Department of Plant Protection, 06110, Ankara, Turkey; ertunc@agri.ankara.edu.tr.
[2]Ankara University, Faculty of Agriculture, Department of Horticulture, 06110, Ankara, Turkey

The northeastern part of Anatolia peninsula, located between Black sea and Caspian sea region, is the gene source and culture area of the most important varieties of grapevine, *Vitis vinifera* L.. Grape is widely produced in Turkey and suffers yield reduction because of diseases and pests. Flavescence dorée (FD) and bois noir (BN) phytoplasmas cause serious loses in vineyards in Europe. FD phytoplasma is a member of 16SrV phytoplasma group and transmitted by *Scaphoideus titanus* (Ball) with strains in 16SrV-C and 16SrV-D subgroup. Bois noir belong to group 16SrXII and it is transmitted by *Hyalestes obselatus* (Signoret). There is no report on phytoplasma infections in vineyards in Turkey, so a project was started to survey wine and table grape production areas in Marmara, Aegean, Central Anotolia and eastern Anatolia region of Turkey with periodical surveys to collect symptomatic leaves, plants and vector samples. The initial surveys were conducted in mainly grape cultivated areas in July and September 2009 and a total of 167 samples were collected. Main symptoms were chlorosis of veins, or dark colorisation and redness of the leaves. These symptoms were prevalent on wine cultivars as compared to table grape varieties. DNA isolation was made according to Leford *et al*. (Silvae Genet., 47, 5-6. 1998) and Ahrens and Seemüller (Phytopathology, 82, 828-832. 1992) and all of the DNA was subjected to PCR by P1/P7 universal primers. They all were subjected to nested-PCR by group specific primers for the presence of FD and BN phytoplasmas.

In total 1,306 insects were collected during the surveys; belonging to 16 species in 7 families of Hemiptera. *Arboridia* sp. was prevalent in the survey area, as were *Dictyophara europaea and Laodelphax striatellus* which were all reported as potential vectors of grapevine phytoplasma in different countries of the world.