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Food Science 2021: Survey of Grapevine Yellows Phytoplasma Diseases Flavescence doree and Bois Noir in Commercial Vineyards in Georgia - Zurab Khidesheli - LEPL Scientific Research Center of Agriculture, 0159, Tbilisi, Georgia

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Abstract

In recent years, symptoms of this Phytoplasma diseases have appeared in Georgia. The main goal of the research was to study grapevine yellows phytoplasma diseases (FD and BN) in the east part of Georgia- Kakheti region (villages Kondoli, Napareuli, Tsinandali) and Kartly region (Villages Jigaura and Mukhrani).

5 grapevine cultivars (“Chardonarry”; “Khihkvi”; “Saperavi”;”Cabernet sauvignon”;”Manavi mtsvane”) in commercial vineyards were studied for grapevine yellows phytoplasma diseases FD and BN. Triplex real-time PCR assay with TaqMan minor groove binder probes (TaqMan-MGB) was used for identification of FD and BN infections. Two primers pair and probes (set I and set II) were used for the assessment of spreading of FD and BN diseases.

Study revealed that only one grape variety (Manavi mtsvane) reacted negative with PCR primers and probes as set I and set II. Out of 147 samples FD infection rate varied from 5.55 % to 9.09% in four grapevine cultivars. Cabernet sauvignon was free from BN infection whereas infected rate in other four tested cultivars varied from 3.12 % to 8%. It is noted that “Chardonnay”, ”Crimson Sidles” and “Cabernet Sauvignon” grapevine cultivars mix infection were shown with both FD and BN in the same samples.

The evidence of both FD and BN diseases were confirmed in tested grapevine cultivars using two set of primers and probes.The presence of FD and BN quarantine infection in commercial vineyards requires constant monitoring and preventive measures to avoid the spread of the disease further in Georgian vineyards.

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