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Study on the status of three grapevine viruses in North-Eastern vineyards of Iran

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ABSTRACT

Grapevines in north-eastern provinces of Iran (North Khorasan, Razavi Khorasan, Semnan and Golestan) were randomly surveyed for presence of *Grapevine fanleaf virus* (GFLV), *Grapevine leafroll associated virus 3* (GLRaV-3) and *Grapevine virus A* (GVA). Symptoms of mosaic, abnormal double nodes, Z shaped, abnormal shoot development and reduced growth were observed in few of the plants. 588 samples of grapevine were tested for presence of three viruses in dormant canes, young leaves, shoot tips and petioles by double antibody sandwich-enzyme linked immunosorbent assay (DAS- ELISA). All three viruses were found to be present in vineyards of north-eastern provinces of Iran. From the 588 samples tested, 78 vines were found to be infected with at least one virus. ELISA tests showed presence of GFLV, GLRaV-3 and GVA in 7%, 6.6% and 3% of samples respectively. In addition, reverse transcription-polymerase chain reaction (RT-PCR) was used to verify ELISA tests for GFLV in vine tissues. RT-PCR using specific primers directed to the GFLV coat protein gene region at the 3′ end of RNA2 amplified DNA of the expected size (321bp). Also the results showed presence of an unexpected 150 bp band in some samples.

These results indicated that RT-PCR as a rapid and sensitive detection method is necessary to confirm healthy plant material.

Key words*:* *Grapevine fanleaf virus* (GFLV), *Grapevine leafroll associated virus 3* (GLRaV-3), *Grapevine virus A* (GVA), ELISA, RT-PCR, north-eastern of Iran.

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