The sanitation of autochthonous grapevine cultivars (Kallmet and Vlosh) from viral infections using *in vitro* techniques

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Abstract

The use of the "pure" plant material constitutes a necessity for development of the contemporary horticulture, determined by the phytosanitary normative. We studied some autochthonous grapevine cultivars (Vlosh and Kallmet) in order to evaluate the phytosanitation state diagnosed with the serological method of DAS-ELISA for the presence of viruses such as: GFLV, GFcV, GLRaV-1, GLRaV-3. The results of the serological testing the cultivars resulted infected with the virus GLRaV-3 (*Grapevine leafroll-associated virus*). In order to improve the grapevine cultivars from the viral infection we applied the *in vitro* technique: *In vitro* meristem tip culture and *in vitro* heat therapy, by going through all its phases such as inoculation, propagation, rooting, and *in vivo* acclimatization. For each of the studies cultivar were isolated 30 meristem tips 0,4-0,6 mm in size which were excised from young 4 -5 cm long shoots of infected plants from the apical stems and after 40 days in the vegetative room we received 18 explants Vlosh and 14 explants Kallmet. Infected plants were put in a growth chamber at 38°C, with a 16 h photoperiod (5000 lux). The new plants were put in the *in vitro* thermotherapy chamber; the Vlosh plants stayed there for 3 months and Kallmet plants 4 months in temperature 38^{0}C in therapeutic treatment. After the adoption *in vivo* acclimatization these plants underwent the sanitation evaluation which proved the phytosanitation purity of the cultivars 3/5 Vlosh grapevine and 2/3 Kallmet grapevine.

Keywords: *meristematic culture, the sanitized in vitro, thermotherapy in vitro. grapevine leafroll-associated virus, Kallmet, Vlosh.*

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