

Innovative techniques for pre-multiplication of grapevine clones: the CE.PRE.MA.VI. experience

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The IVV-CNR Unit of Grugliasco (TO) has selected and registered in the National Grapevine Cultivar Catalogue more than 100 clones belonging to 25 cultivars of north-west Italy. The primary sources of these clones are preserved and pre-multiplied by the Grapevine Premultiplication Centre of Piedmont (CEPREMAVI), based in Alba (CN) and managed by Vivalb on behalf of the Region of Piemonte. Premultiplication supplies the commercial nurseries with propagation material of the “basic” category, i.e. selected and virus-free. In the 2013 campaign CEPREMAVI produced more than 37,000 “basic” grafted rootlings.

Healthy primary sources, in accordance with official regulations, are kept individually potted inside a screen-house, where each clone is represented by three plants (on their own roots). Isolation from the soil and from the outside, thanks to a double insect-proof net, safeguards the original sanitary status of the clones from both virus and phytoplasma. The “initial material” collected from the primary sources is then used to establish mother plant vineyards (MPV) suitable for the production of ‘basic’ material. In recent times, due to the spread of phytoplasma diseases (Flavescence dorée and Bois noir), CEPREMAVI has undertaken a new approach in the production of “basic” clonal material, introducing complete isolation from the ground (except for roots) and the outside, also for MPV. The aim is to prevent, at the highest level, the propagated material from any possible virus and phytoplasma infection. The new technique consists of planting the MPV inside insect-proof tunnels provided with a double room entrance and with complete plastic mulching of the ground. Each plant row is isolated from the others. Along the rows a metallic structure is designed to support the net coverage as well as the wire sets to uphold the plant canopy. A plastic pipe runs through the upper part of the tunnels with sprinklers for fungicide and insecticide sprays. Vineyard management (i.e. the entry of workers inside the tunnels) is limited to green pruning and to routine sanitary inspections. During winter the nets are removed from the supports and rolled up on the ground near the rows.

In order to maintain the optimal sanitary status throughout the pre-multiplication steps, the woody propagation materials collected from the covered MPV are processed by hot water treatment at 50°C for 45 min before grafting. In addition, beginning with the 2013-14 campaign, the traditional open-field nursery will be eliminated. After the callusing period, the grafted cuttings will be potted (biodegradable pot) and maintained for about 20 days in a greenhouse, then transferred under a wide tunnel, ground-mulched and covered by an insect-proof net, where they will complete seasonal growth until fall. Thanks to the new technique, CEPREMAVI will be able to produce “basic” propagation material with the maximum degree of protection from virus and phytoplasma infection.