Vitis sp.: Somatic embryos obtained on medium inducing calcareous chlorosis

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A b s t r a c t : Somatic embryogenesis is one of the techniques used to screen for plants resistant to calcareous chlorosis. In the Plant Breeding Laboratory in Orsay, Lebrun and Branchard (1987) have obtained somatic embryos for different genotypes. Also, Chiadmi and Branchard (1985) defined ferric and bicarbonic ions which are able to induce a resistance to calcareous chlorosis.

Anthers of diverse grapevine rootstocks, susceptible (Riparia Gloire, Rupestris du Lot, 3309 Couderc) and resistant (Fercal, 41 B) to calcareous chlorosis were cultivated in chlorosis inducing medium with increasing concentration of ferric sulfat and of potassium bicarbonate (from 50 to 1000 mg/l). For each replicate, 30 sterilized flowers were dissected and stamens were cultivated in an Erlenmeyer flask and maintained at 28-30 °C ± 1 °C on a rotary shaker in the dark for one month.

At present, the results observed in chlorosis medium indicate an important stamen necrose at high concentration. However, callus appearance is delayed when low concentrations are used. The first somatic embryos have appeared and have begun regenerating.

Grapevine shoot formation *in vitro*

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A b s t r a c t : In studies on *in vitro* propagation of *Vitis vinifera* L. (cvs Chardonnay, Pinot white, Sultanina, Plavac mali and Plavac mali sivi, a spontaneous variant), shoot explants, 1-2 mm long, were grown on media with different types and concentrations of growth regulators, macronutrients and carbohydrates.

Excised buds from canes, collected in March and held in water and in a controlled laboratory environment, were the source of explants. Very successful surface sterilization of buds was achieved with 1.5 % Izosan (chlorine product, Pliva, Zagreb) and 0.01 % Tween 20 for 15 min, and rinsed in sterile distilled water (3 x 5 min).

Two basal media with macronutrients according to Murashige and Skoog (MS), full and half strength, and Lloyd and McCown (WPM) supplemented with 2 % sucrose, 0.8 % Difco Bacto agar and (mgl^{-1}): 1 thiamine : HCl, 0.5 pyridoxine : HCl, 2 glycine, 100 myo-inositol were tested. Cytokinin BA and auxins IAA and NAA in different concentrations and combinations were studied. The full strength MS medium with 1 mgl^{-1} BA and 0.3 mgl^{-1} IAA gave the best results in establishing multiple shoot cultures.

Effects of cultivar and time length in culture on multiplication rate, leaf shape deviation and vitrification was analysed.