Analiza ultrastructurala a plantelor de Vitis vinifera cv. Feteasca neagra regenerate prin cultura in vitro a explantelor infectate cu virusurile rasucirii frunzelor si scurt-nodarii

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In vitro culture of entire or fragmented meristem explants having 0.2 mm, 0.5 mm and 1 mm size and prelevated from the apical bud of vinifera genotype Feteasca Neagra, was applied in order to eliminate viruses causing grapevine leafroll and fanleaf. As far as ultrastructural studies continue to hold a special place in defining the virus-host plant relationship, and some modifications of the cell organites may have a diagnostic value, the regenerated plant selection was made by using ultramicroscopic analysis. The plants regenerated from fragmented meristematic explants having a dimension of 1 mm presented all the cells as having thick cytoplasm with a grainy aspect, but also cells presenting blade-like shapes developing as myelinic shapes, multivesicle shapes and lots of endoplasmic reticule contours. Both 80% - 90% of the plants regenerated from entire meristematic explants of 0.2 mm size prelevated from the apical meristem as well as from the 1st and the 2nd axillary bud of the mother plants infected by the leafroll virus, and 50%-80% of the plants prelevated from the apical meristem and only from the 1st axilary bud of the mother plants infected by the fanleaf virus showed normal ultrastructural aspects characteristic for the virus-free plants.
The plants regenerated from meristematic tissues representing the apical pitch and a leaf primordial (0.5 mm size) isolated from the apex and the 1st axillary bud, when fragmented, they showed quite high percentage of virus-free plants: 20% - 40% for the fanleaf virus and 30% - 60% for the virus determining leafroll, depending on the genotype. The efficiency of the method increases by more than 20% when the explants are isolated at the level of the apex. Plant regeneration from leaf explants by direct adventive organogenesis (without differentiation of callus tissue generating genetic variability) induced the obtention of virus-free plants in a rate of 11.11% - 25% when using leaf explants of 0.5 and 1 mm, not fragmented. When fragmentation is applied, the efficiency of the method is neatly higher, determining a percentage of virus-free plants of 100% for the virus causing leafroll.