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THE STRUCTURE OF VEGETATIVE ORGANS IN ESSENTIAL OIL ROSE UNDER STANDARD CULTURE CONDITIONS AND CONSERVATION IN VITRO

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Creating of essential oil rose gene bank *in vitro* makes it possible to preserve and efficiently propagate valuable cultivars. We optimized clonal micropropagation and conservation *in vitro* for some essential oil rose cultivars: 'Festivalnaya', 'Raduga', 'Lany', 'Michurinka', 'Iskra' and 'Kooperatorka'. Meristems were introduced *in vitro*, regenerants were cultured on MS medium with 0.1 mg/l NAA, 0.5 mg/l GA_3, 0.5-1.5 mg/l BAP in the growth chamber at 25±1 °C under 16-h photoperiod with light intensity 37.5 µmol $m^{-2}s^{-1}$. Conservation was carried out on ½ MS medium contained 0.2-0.4 g/l CCC and 60 g/l sucrose at 4±1°C, 16-h photoperiod with light intensity 1.25-3.75 µmol $m^{-2}s^{-1}$. To determine some structural features of vegetative organs, microshoots were collected after 9 months of the culture *in vitro* and after 36 months of storage in the gene bank. It was found that cultured *in vitro* essential oil rose plants produced 2-3 microshoots per explant. Their height was 2.4-5.6 cm and each microshoot carried 6-9 ternate leaves. Leaf blades were 79-121 µm thick, hypostomatous, bifacial, with differentiated mesophyll (palisade index 0.37-0.50). Covering tissues composed of thin cuticle and single layer epidermis. Stomatal apparatus were of anomocyt type with 71-102 stomata/mm^2. The average shoot height under conservation was 1.5-3.2 cm and no more than two microshoots per explant formed. The part of simple, large (0.9 × 1.1 cm) leaves was 30-50% and ternate leaves were also noticed. Leaf blade thickness was 80-110 µm, palisade index – 0.37-0.41. There were up to 265 stomata per 1 mm^2 of abaxial leaf surface. Thus, regenerants of six essential oil rose cultivars were capable to produce morphologically and anatomically normal vegetative structures with the ability to active assimilating activity that indicates their high morphogenic capacity in various culture conditions. This study was funded by research grant N 14-50-00079 of the Russian Science Foundation.

Keywords: essential oil rose cultivars, anatomy of leaves, culture, gene bank, *in vitro*