



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High Efficiency Somatic Embryogenesis from Immature Zygotic Embryos of Grapevine: The Effect of Genotype, Media, 2,4-D, and Incubation Conditions

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Abstract: Immature zygotic embryos of 41 B grape rootstock (*V. vinifera* L. cv. 'Chasselas' x *V. berlandieri*) and Yalova İncisi (*V. vinifera* L.) were cultured on MS, NN, and B5 media supplemented with 0.5, 1, 2, and 4 mg l⁻¹ 2,4-D at 16/8 h light/dark photoperiod and complete darkness. For 41 B rootstock, the highest somatic embryo formation was obtained from dark condition on B5 media containing 0.5 and 1 mg l⁻¹ 2,4-D with the rates of 30% and 28.9%, respectively. Yalova İncisi zygotic embryos produced 5% somatic embryos only at 16/8 h light/dark photoperiod of MS supplemented with 1 mg l⁻¹ 2,4-D, and also in 16/8 h light/dark photoperiod and complete darkness somatic embryos were produced at the rates of 6.3% and 2.3%, respectively, in cultures of NN containing 0.5 mg l⁻¹ 2,4-D. After 8 months of culture, 559 embryos at torpedo stage were identified on B5 + 1 mg l⁻¹ 2,4-D + dark cultures of 41 B and 912 embryos at torpedo stage were identified on NN + 0.5 mg l⁻¹ 2,4-D + light cultures of Yalova İncisi. The highest germination and plantlet conversion rates were obtained from 41 B on free NN medium (58% and 75%, respectively) and from Yalova İncisi on free MS medium (77.4% and 45%, respectively). Of the regenerated somatic plantlets, 91.9% were successfully transferred to soil.

Key Words: Grapevine, zygotic embryo, somatic embryo, regeneration

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