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Cryopreservation of cherry rootstock Gisela 5 using vitrification procedure

Dj. Ružić, T. Vujović, R. Cerović

<https://doi.org/10.17221/234/2013-HORTSCI>

Citation: Ružić D., Vujović T., Cerović R. (2014): Cryopreservation of cherry rootstock Gisela 5 using vitrification procedure. Hort. Sci. (Prague), 41: 55-63.

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In vitro-grown shoot tips of Gisela 5 (*Prunus cerasus* × *Prunus canescens*) cherry rootstock were tested for regrowth after cryopreservation using vitrification technique. Explants were precultured in the dark at 23°C, in a liquid MS medium with a progressively increasing sucrose concentration (0.3 M for 15 h, then 0.7 M for 5 h), and subsequently loaded in a solution containing 2 M glycerol and 0.4 M sucrose for 20 minutes. Shoot tips were dehydrated at 0°C using either the original PVS2 or modified PVS2 solution (PVS A3 – 22.5% sucrose, 37.5% glycerol, 15% ethylene glycol and 15% DMSO) for 30, 40 and 50 minutes. The survival and regrowth of the cryopreserved shoot tips dehydrated with the original PVS2 solution ranged between 36–54% and 8–17%, respectively. However, the dehydration with the PVS A3 solution resulted in considerably higher survival rates (81–92%), as well as higher regrowth rates (39–56%) after cryopreservation. These results prove the feasibility of the PVS A3-based vitrification technique for a long-term storage of this genotype.

Keywords:

Prunus cerasus × *Prunus canescens*; liquid nitrogen; vitrification solutions

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5-Year Impact Factor: 0.6

SJR (SCImago Journal Rank SCOPUS):

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