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Cryopreservation of Pelargonium species: a comparative study of encapsulation-dehydration and droplet-vitrification protocols

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Résumé en anglais	In order to guarantee safe, long-term conservation of the Agrocampus Ouest - INHP Pelargonium collection, apex cryopreservation studies have been undertaken. An encapsulation-dehydration procedure has been first developed. More recently, studies were undertaken in order to adapt the droplet-vitrification procedure to this genus. For both procedures, protocols were optimized using P. × peltatum 'Balcon Lilas' as model accession. Survival and plant regeneration were obtained with the two newly determined protocols. However, droplet-vitrification gave higher and more reproducible regeneration results. To confirm these results, we carried out experiments in order to compare both protocols applying them to four accessions. Droplet-vitrification gave always better results than encapsulation-dehydration, and permitted to obtain shoot regrowth for each accession. To compare the two protocols, a histo-cytological study was performed on P. × peltatum 'Balcon Lilas' apices. Samples were fixed after each step of both protocols in order to observe the modifications at the cellular level. Important differences were noted concerning starch accumulation and nucleus aspect. The droplet-vitrification was then tested on 28 genotypes representative of the diversity of the genus. Apex survival was obtained for each accession out of the 28 tested. An average of 65% survival rate was obtained ranging from 14.8% for P. × fragans to 90% for P. capitatum and P. × hortorum 'Neurot'. Plants were regenerated for all genotypes, except P. × peltatum 'Papa Crousse'.
URL de la notice	http://okina.univ-angers.fr/publications/ua12168 [11]
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