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CRYOPRESERVATION THROUGH ENCAPSULATION-DEHYDRATION, VITRIFICATION AND ENCAPSULATION-VITRIFICATION OF DATE PALM (*PHOENIX DACTYLIFERA L.*) CV. SAGAI, A COMMERCIALLY VALUABLE CROP

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The cryopreservation of pre-embryonic callus of date palm (*Phoenix dactylifera L.*) cv. Sagai investigated through encapsulation-dehydration, vitrification and encapsulation -vitrification the maximum regrowth (53.33%) of encapsulated cryopreserved (+LN) embryogenic calli was noted when pre-embryos mass was incubated with 0.5 M of sucrose for two days followed by 6 h air dehydration. The greatest survival (80%) of encapsulated cryopreserved embryonic clump was resulted when calli were incubated with 0.3 or 0.7 M of sucrose for two days followed by 4 h of dehydration, or with 0.5 M of sucrose for two days without air dehydration or 2 h of dehydration. After cryopreservation using encapsulation-vitrification protocol, the highest survival rate (86.67%) and the maximum regrowth (46.67%) achieved when the encapsulated-vitrified cryopreserved calli treated with 100% plant vitrification solution 2 (PVS2) at 25˚C for 60 min. After cryopreservation using vitrification protocol, the highest recovery 53.33% attained when the vitrified cryopreserved embryogenic calli treated with PVS2 at 25˚C for 30 min. The maximum (40%) regrowth of vitrified cryopreserved embryogenic calli observed when the vitrified cryopreserved embryogenic calli subjected to PVS2 at 25˚C for 60 min. The results obtained during this study for regrowth after cryopreservation of Sagai were above the minimum expected for a cryopreserved germplasm bank. The regeneration and regrowth were more than 30% in all the methods applied for Sagai.

Biography

FahadAl-Qurainy is the professor, expertise in Department of Botany and Microbiology at King Saud University. He publishes more than 60 articles related to plants.

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