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Studies on genetic fidelity of cryopreserved calliof date palm cultivars (*Phoenix dactylifera*) from Saudi Arabia

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It is important to conserve the genetic diversity of date palm for genetic research and to develop breeding programs. However, conventional methods for conservation of genetic resources, example seed storage are not suitable for date palm because its seeds are highly heterozygous and therefore they do not reproduce true-to-type. Some in vitro culture techniques have been established for date palm including organogenesis, somatic embryogenesis and embryo rescue-plant regeneration. The offshoots of date palm cultivars were collected from three locations Riyadh, Al-Qasim and Al-hasa regions. More than ten cultivars were selected. Among these we are able to cryopreserved 4 cultivars. Callus induction was achieved on higher concentrations of auxins (mainly 2, 4-D and NAA) and lower concentrations of cytokinin (2ip and BA). Subsequently somatic embryogenesis and plant regeneration was achieved on low level of auxin and cytokinin. The calli were cryopreserved by encapsulation and drying method in liquid nitrogen. After cryopreservation the calli were evaluated for genetic stability by molecular tools.

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