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Performance of Coconut Embryo Culture Accessions Introduced at International Coconut Genebank for Latin America and the Caribbean (ICG-LAC)

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The present paper is a partial report for the introduction of eleven accessions of dwarf coconut palm and one accession of giant coconut palm into International Coconut Genebank for Latin America and the Caribbean (ICG-LAC), a partnership between Embrapa Coastal Tablelands (CPATC) and Bioversity International, coordinated by Coconut Genetic Resources Network (COGENT). These accessions, originated from International Coconut Genebank for Asia, India and Oceania (ICG-AIO), situated at Ivory Coast, were introduced in Brazil through zygotic embryos in November 2008. The mature fruits and endosperm cylinders with embryos were submitted at Ivory Coast to a phytosanitary treatment process according to international technical recommendations for safe movement of vegetal germplasm. At CPATC Laboratory for plant tissue culture the embryos were excised and inoculated in Y3 culture medium. The first evaluation occurred after nine days of inoculation, and was verified that 1.38% of the embryos were contaminated by fungi and 15.30% by bacteria. After 12 months was observed variation of *in vitro* development within and among accessions and high percentage of non germinated and oxidated embryos. The normal germination percentage varied from 3.33% to 33.3% for, respectively, Niu Leka Dwarf and Malayan Green Dwarf accessions. The non germinated embryos percentage varied from 18.47% to 47.72% for Tahitian Red Dwarf and Sri Lanka Green Dwarf accessions, respectively. After 12 months, the contamination was higher for Niu Leka Dwarf (70%). The percentage of non germinated and oxidated embryos varied from 18.47% to 47.72% (Tahitian Red Dwarf and Sri Lanka Green Dwarf, respectively). The great number of collected cylinders with exposed embryos (not protected by endosperm) and cracked endosperm, in addition to the long storage time (7 to 11 days) from collection to inoculation, favored bacteria proliferation. The non uniform stage of fruits/embryos maturation contributed for high variation of *in vitro* development.

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In vitro Cold Storage of Sour Cherry (*Prunus cerasus* L.) Shoots is Affected by Carbon Source and Nitrogen Concentration

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In vitro cold storage of fruit crop germplasm is a useful tool in the preservation of heritage or commercial cultivars. Shoot cultures of sour cherry (*Prunus cerasus* L.) cultivars Dolgozdannaya, Moya Radost and Zukovskaya, were cold stored at 4 °C in either five-section tissue culture bags or in 150 ml glass jars. Carbon sources 3% sucrose, 2% or 3% mannitol, or 2% sucrose + 2% mannitol were tested in Murashige and Skoog (MS) medium with or without plant growth regulators (PGRs). Nitrate nitrogen at 100%, 50% or 25% of the normal MS concentration was also tested. Shoot cultures of the three cherry cultivars could be stored for over 30 months at 4 °C and remained in excellent condition in some treatments. There was significant variation in the storage duration with interactions of the cultivar, treatment, and container. Sucrose was the best carbon source for all three genotypes and allowed storage for up to 36 months. Shoots stored on 2% or 3% mannitol survived for only 6 to 12 months while the combination of 2% mannitol and 2% sucrose extended storage to 30 months for two of the three genotypes. The addition of abscisic acid to 3% sucrose MS medium significantly decreased storage length. Fifty-seven accessions of sour cherry germplasm were stored in tissue culture bags on 3% sucrose MS medium without PGRs and remained in good condition for 13 to 30 months. The 68 accessions of the *in vitro Prunus cerasus* germplasm collection are now stored in tissue culture bags with MS medium, 0.5 mg/l BAP, 0.1 mg/l IBA, and 3% sucrose.

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Establishment for *in vitro* Propagation and Conservation Protocols of Mangaba Tree Native of Brazil

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The mangaba tree (*Hancornia speciosa* Gomes) is a native plant found in different regions of Brazil, which has great importance because of its fruitto produce pulp for use in the juices and ice creams marketing. This study aimed to apply the tissue culture techniques for asexual propagation and conservation of mangaba native populations of northeastern of Brazil. For *in vitro* propagation were studied the sealing bottles, explant types, culture medium and growth regulators for induction of *in vitro* rhizogenesis. For *in vitro* conservation the effect of mannitol and abscisic acid in interaction with different types of explants and sealing of vials were studied. After the work was possible to say that the best sealing types were PVC film and parafilm® to the establishment stage, parafilm® for the first and second subculture and PVC film just for the second subculture. The best explants for the first subculture were the median and basal nodal segments. There was no significant effect of the explants in the second subculture. The ideal subculture interval was 50 days. For rooting, at 60 and 90 days of *in vitro* culture, was a higher numerical value for the number of roots in the presence of 400 and 600·L^{-1} of indol butyric acid. In the presence of mannitol the length of the shoots showed minor values of the control, but after 90 days was observed toxic effect of mannitol in the explants. The abscisic acid at 0.5·L^{-1} presented better results for *in vitro* conservation of mangaba microcutting cultured in the vials sealed with aluminum paper.

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In vitro Propagation of *Colutea gifana*, a Rare and Endangered Plant Species of Iran

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In vitro methods provide a variety of tools to supplement traditional methods for collecting, propagating and preserving endangered plant species. In this study, an efficient protocol was developed for *in vitro* propagation of *Colutea gifana* a rare and endangered plant species with limited reproductive capacity that grows in a very narrow area of Iran. Single nodes explants were used for a series of experiments to select appropriate disinfection method and growth regulators for establishment, proliferation and rooting stages. Explants showed the highest establishment percent after 15 min treatment with 2% Sodium hypochlorite (NaOCl) cultured in MS medium plus 2.2 µM 6-benzylaminopurine (BAP) and 1 µM indole-3-butyric acid (IBA). BA was more effective cytokinin in comparison to Thidiazuron (TDZ) and Kinitin in proliferation stage. *In vitro* rooting of proliferated shoots were induced in half-strength MS medium with both tested auxins i.e. IBA and α-naphthaleneacetic acid (NAA). Eighty percent of the plantlets were successfully acclimatized to *ex vitro* conditions, exhibiting normal development. These plantlets can be used to replenish declining populations in the wild to conserve *C.gifana* from extinction and also for further studies about this species.

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Screening the *in vitro* Morphogenetic Reaction of Different Explants at Round Pepper (*Capsicum annuum* L.)

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