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| **Bibliography** | Lebot, V.; Hartati, S.; Hue, N.T.; Viet, N.V.; Nghia, N.H.; Okpul, T.; Pardales, J.; Prana, M.S.; Prana, T.K.; Thongjiem, M.; Krieke, C.M.; Van Eck, H.J.; Yap, T.C.; Ivancic, A. (2010) Characterizing taro using isozymes and morpho-agronomic descriptors, In: The Global Diversity of Taro: Ethnobotany and Conservation, eds R.V. Ramanatha., P.J. Matthews, P.B. Eyzaguirre and D. Hunter, 39-55, Biodiversity International, Rome, Italy |
| **Associated conference** |  |
| **Abstract / Content summary** | According to the FAO, in 2008 more than 1.6#million hectares of taro [Colocasia esculenta (L.) Schott] were being cultivated, producing 11.7#million tonnes of corms (FAOSTAT 2010). Several problems limit taro development: often irregular corm, threat of leaf blight disease caused by the fungus Phytophthora colocasiae, and viruses that affect yields. The success of taro improvement depends strongly on its genetic resources, and the breeding process is much easier when adequate and appropriate genetic resources are available. Although taro is a vegetatively propagated species, it is highly polymorphic. Growing areas are characterized by a wide range of environments and a great
diversity of cultivars. Each cultivar is adapted to speci!c environmental conditions and generally it is cultivated to satisfy distinct and particular uses.
Taro morphological variability is one of the main reasons for different botanical classi!cations, but little is known of the genetic diversity of the species. Purseglove’s (1979) system of systematization includes one species with two botanical varieties: C. esculenta var. esculenta (named dasheen) and C. esculenta var. antiquorum (named eddoe), with the main difference between the two being the length of the sterile appendix of the spadix. The sterile tip of the spadix of antiquorum is usually much longer than that of esculenta. However, the differences in this character are far from obvious because of rare "owering of most plants. The relevance of this taxonomic system has not been demonstrated yet.
Present breeding programmes are in most cases national. International cooperation among breeders and the procedure of germplasm exchange are yet to be fully established. There is no international breeding centre for taro, nor is there a large international germplasm collection. The Taro Network for Southeast Asia and Oceania (TANSAO), a 4-year project (1998–2001), was established to enhance the competitive position of taro in traditional cropping systems of the region. Cultivars were selected for desired agronomic characteristics, exchanged between participating countries (Indonesia, Malaysia, Papua New Guinea, the Philippines, Thailand, Vanuatu and Vietnam) and evaluated in diverse agroecological environments. In 1998–99 TANSAO, supported by the International Cooperation with Developing Countries
programme (INCO-DC) of the European Union, conducted an ecogeographic survey of the genetic variation existing in the region and systematically characterized national collections. This paper presents the extent of morpho-agronomic variation measured in cultivars, within and between seven countries of Southeast Asia and Oceania. It also analyzes the isozyme variation in taro and its relevance for the management of genetic resources. An intraspeci!c classi!cation of C.!esculenta is proposed to assist breeders in the selection of core subsets that could be used directly for genetic improvement. [Introduction] |
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