ABSTRACT
VIII. ABSTRACT

Thirteen well identifiable, highly polymorphic microsatellite marker loci in the ‘western’ form of *M. rosenbergii* genome have been developed. The utility of a codominant marker such as microsatellites for accurately assessing the occurrence of heterozygote genotypes in species with an outbreeding mode of reproduction is clear. High levels of intraspecific variation, which were detected in study, make these SSR markers suitable for studies of population differentiation of the species. This factor is essential for establishing the criteria for conservation of populations of a species under *in situ* and *ex situ* conditions. The microsatellite technique opens new perspective for studying the structure of closely related populations, population samples over a reduced geographic scale and less isolated populations. It is also a unique tool for tracking pedigrees in breeding programmes and marker – assisted selection. Availability of such data could be very useful for stock management, selective breeding programme and sustainable use of wild resources. Individual species with a high level of genetic variation have greater prospects in terms of higher growth rate, developmental stability, viability, fecundity and resistance to environmental stress and disease. Therefore Knowledge of the genetic background of a species and its population structure is essential for success in any breeding management and conservation program. The data generated in this study provide useful information on the genetic variation and differentiation in two major wild populations of *M. rosenbergii* from southern peninsular India. This information can be applied for future genetic improvement by selective breeding, and to design suitable management guidelines for these genetic materials.