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## Genetic Diversity of *Tadehagi triquetrum* in Northeast Viet Nam

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### Abstract

*Tadehagi triquetrum* (L.) H. Ohashi, a subshrub native to SE Asia, gained agronomic significance as forage legume because of its therapeutic uses, its capacity to provide crude protein for livestock feeding during dry seasons, and for its good adaptation to depauperate soils. Despite the ever increasing interest in conservation issues of natural resources as potential sources for novel germplasm providing answers to future challenges, little is known about genetic diversity in *T. triquetrum*. Still, information about the genetic diversity of species is essential for sustainable use and efficient conservation of plant genetic resources. *Ex situ* conservation of genetic diversity in gene banks requires a careful balance between the size of collections and the feasibility of maintaining and managing germplasm storage.

The objectives of this study were to analyse the relatedness among accessions collected in Bac Kan province, North Viet Nam in order to create baseline data for future conservation efforts. Genetic diversity was analysed using random amplified polymorphic DNA markers (RAPD) to determine extent of genetic variation between 24 *T. triquetrum* accessions.

Moderate levels of interaccession diversity, represented by 33.3% of polymorphic fragments and an average Jaccard's similarity coefficient of 0.64, were found. UPGMA clustering and Mantel Test did not reveal a correlation between geographic and genetic distances. Regarding the moderate level of differentiation found among accessions, a high incidence of outcrossing along with long distance seed dispersal must be assumed. Three unique markers were found in an outlier accession (accession no. 918) which may contain unique genetic characteristics and therefore should be conserved *ex situ* as a single accession. Of all other clusters, representative sub-samples should be selected or accessions bulked, for gene bank storage. If a wider range of the genetic diversity in Vietnamese *T. triquetrum* is to be explored, further collection missions should cover more extended areas with larger geographical distances.

**Keywords:** Genetic diversity, molecular markers, North Viet Nam, plant genetic resources conservation, RAPD, *Tadehagi triquetrum*