

**PHENOTYPIC VARIATION AND THEIR RELATIONSHIP AMONG
MUSTARD (*Brassica juncea* L.) OF SRI LANKA AND INTERSPECIFIC
HYBRIDIZATION OF SELECTED ACCESSIONS**

S.R.G. Damayanthi¹, M.C.M. Iqbal², P.A. Weerasinghe¹, N. Senanayake¹

¹*Department of Plant Sciences, Faculty of Agriculture, Rajarata University of Sri Lanka, Anuradhapura, Sri Lanka.*

²*Institute of Fundamental studies, Kandy, Sri Lanka.*

Mustard (*Brassica juncea*) is a spice crop grown and largely used in Sri Lanka. A greenhouse study was conducted to explore genetic diversity and their relationship of thirty local mustard accessions at the Institute of Fundamental Studies, Kandy. Thirty eight morphological characters were considered in seedling, flowering and maturity stages of crop growth.

A second study was conducted to determine the success of interspecific hybridization between *Brassica napus* (Canola) and *Brassica juncea* (Mustard) to develop varieties low in erucic acid, which is high in mustard and nutritionally undesirable for heart muscles, and to determine the best method to regenerate F₁ plants.

The morphological data of mustard accessions were analyzed by numerical taxonomic techniques using two complementary procedures, cluster and principal component analysis. Dendrogram placed the accessions into four clusters and the first, second, third and fourth clusters had eleven, eight, five and six accessions respectively. The biplot of the principle component (PC) 1 and 2 indicated that the thirty mustard accessions were distinct and separable though some were closely related.

The inter-specific crosses between *Brassica napus* and *Brassica juncea* were dependent on *Brassica napus* genotype, and the crossability was very successful than their reciprocals. The germination percentage of F₁ seeds was very poor in Petri dishes and on agar medium and the percentage of embryos rescued on Lichter medium were greater than 60.

Key words: Mustard, Canola, Accessions, Morphology, Interspecific hybridization