

## Phenotypic and RAPD diversity among 80 germplasm accessions of the medicinal plant isabgol (*Plantago ovata*, Plantaginaceae)

N. Singh, R.K. Lal and A.K. Shasany

Central Institute of Medicinal and Aromatic Plants  
(Council of Scientific and Industrial Research), Lucknow, India

Corresponding author: R.K. Lal  
E-mail: rk.lal@cimap.res.in

Genet. Mol. Res. 8 (3): 1273-1284 (2009)

Received May 13, 2009

Accepted August 5, 2009

Published October 27, 2009

**ABSTRACT.** *Plantago ovata*, popularly known as isabgol, has great commercial and medicinal importance due to thin rosy white membranous seed husk. Isabgol seeds and husks have emollient, demulcent and laxative properties. We used both biometric and molecular techniques to assess the genetic variability and relatedness of 80 germplasm accessions of *Plantago* spp (*P. ovata*, *P. lanceolata*, and *P. major*) collected both from India and abroad. The range of D<sup>2</sup> values (2.01-4890.73) indicated a very high degree of divergence among the accessions. Based on the degree of divergence, 80 accessions/genotypes were grouped into seven clusters. Thirty-six accessions were analyzed through RAPD profiling for similarity and genetic distances, using 20 random primers. Intraspecific differences in all three species were smaller [range for *P. ovata* (2-17%), *P. lanceolata* (3-15%), *P. major* (2-11%)] than interspecific

diversity. These highly divergent lines could be used to produce superior hybrids.

**Key words:** *Plantago*; Genetic diversity; Degree of divergence; RAPD markers