HALF-DIALLEL OF SESAME GRAIN PROTEINS CONTENT

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ABSTRACT

Improvement of proteins is the main objective in sesame breeding programs. The present investigation on *Sesamum indicum* genotypes is to estimate variability and also to obtain genetic information through hybridization on proteins contains. The field experiment was conducted at Mora during cropping season 2011, 2012 and 2013 in randomized complete block design (RCBD) with three replicates. Six promising genotypes were selected and crossed in half diallel system in order to obtain 15 hybrids F_1. Data analysis showed significant ($p<0.05$) genetic variability in the twelve sesame varieties used in this research for proteins contains. Broad sense heritability was high than narrow sense heritability for proteins, indicating preponderance of genetic factors controlling this character. The value of ratio (δ^2GCA/δ^2SCA) was less than one suggesting thus, the preponderance of non-additive genes effects for this trait. It can be utilized for varietal improvement through heterosis breeding. A parental line with the proteins contains (L2Y) which was good general combiner exhibited high positive GCA effects indicated that, the parents possess high frequency of favourable genes for proteins. Cross combinations namely L1B x L2B, L1B x L1Y, L2Dj x L1Y and L2Dj x L2Y were found as good specific combinations for this character. The crosses involving good x good general combiners and showing high SCA effects could be utilized for the purpose of developing high proteins genotypes and obtaining transgressive segregants in early generations.

Keys words: *Sesamum indicum*, half diallel, genetic information, proteins contains.