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# **Czech J. Ger Plant Breed.**

**P.C.:**

# **Analysis of genetic diversity in sesamum (*Sesamum indicum*) based on some physiological characters**

Czech J. Genet. Plant Breeding  
72-78

Genetic diversity among 30 sesamum genotypes, collected from different regions of India, was studied using measurements of leaf area index (LAI) obtained 30, 45, 60 and 75 days after sowing (DAS), crop growth rate (CGR) estimated between the above mentioned measurements (i.e. 30 to 45 DAS and 60 to 75 DAS), peak flowering, duration of flowering, duration from peak flowering to maturity and oil yield per plant. The genetic distance was calculated using Euclidean distance was calculated using the data, and, independently

Manhattan plots D2 statistics were used to identify the most important characters after dimensionality was reduced by principal component analysis (PCA) and pivotal condensation. The cluster pattern obtained by D2 analysis was compared closely with the dendrogram from the Euclidean distance clustering. In general, the distribution pattern of genotypes in different clusters indicated that genetic divergence was due to geographical differentiation. It was evident that a certain degree of genotypic divergence resulted from the geographic origin of the cultivars. Duration from peak flowering to maturity contributed most to the observed diversity, followed by days to maturity at flowering, duration of flowering, LAI at 60 DAS and 75 DAS, oil yield per hectare, and LAI at 60 DAS. Therefore, an emphasis should be laid on these characters in the selection of genotypes for further breeding programme.

### **Keywords:**

D2 analysis; Euclidean distance clustering; genotypic diversity; physiological characters; *Sesamum indicum* L.

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