

## Genetic diversity studies in soybean [*Glycine max* (L.) Merrill] based on morphological characters

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From the genetic diversity studies based on 12 morphological characters of 50 soybean genotypes it could be inferred that, the traits seeds per plant and seed yield per plant contributed maximum to the genetic diversity. The clustering pattern revealed that there was no correlation between the geographical diversity and genetic diversity. The clusters IX (JS 90-29 and IC18277) and X (IC93656) were the distant clusters and clusters III (IC 39873 and IC 93751) and VIII (IC 34057 and IC 18736) were the nearest clusters. The clusters IX and I possessed the high mean values for many of the traits studied. With respect to seed yield per plant the clusters IX, VI and I were the superior clusters. The entries viz., JS 90-29 and IC18277 of IX cluster and IC93656 of X cluster can be used in crossing programme for development of good recombinants for seed yield.

Key words : Soybean, Diversity, Cluster, Dendrogram

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### INTRODUCTION

Soybean [*Glycine max* (L.) Merrill] with its varied uses is known as a wonder crop among the legumes. It is cultivated primarily for oil and protein. The yield of soybean is higher than that of other pulse crops. Because of its richness in oil, protein and therapeutic components, soybean becomes the raw material for various industries. The information on genetic diversity, which helps in choosing parents for generation of new varieties, needs continuous evaluation of germplasm for useful characters, which in earlier days was solely based on the available morphological data. Morphological traits/markers reflect not only on the genetic composition of the cultivar, but also the interaction of the genotype with the environment in which it is expressed. Therefore, under present investigation, effort was made to understand the quantum and nature of genetic variability present in a set of 50

elite soybean accessions.

### RESEARCH METHODOLOGY

The experiment was conducted during Rabi 2009-10. Fifty soybean genotypes were maintained in the Department of Pulses, Millet Breeding Station, Centre for Plant Breeding and Genetics, Tamil Nadu Agriculture University, Coimbatore were utilized for analysing morphological diversity. The list of accessions taken for study is appended in Table 1. Morphological characters viz., days to 50% flowering, plant height, number of primary branches per plant, number of pod clusters per plant, number of pods per cluster, number of pods per plant, number of seeds per pod, number of seeds per plant, hundred seed weight, seed yield per plant, days to maturity and harvest index were recorded on five randomly selected plants for different characters on each genotype