Assessment of germplasm resources in Indian mustard

SHWETA, RANJEET AND OM PRAKASH

Regional Research Station, Saini, KAUSHAMBI (U.P.) INDIA

The experimental material comprising of one hundred (including three checks Varuna, Rohini and Maya) germplasm accessions of Indian mustard (*Brassica juncea* L.) were sown in augumented block design during *Rabi* 2008-09 at Regional Research Station, Saini, Kaushambi of C.S.A. University of Agriculture and Technology. In the present study, an attempt has been made to identify the genetically diverse germplasm and further utilization in the crop improvement to develop broad based cultivars. Result shows that variation in plant growth was prominently seen among the accessions as indicated by range of variability, mean performance and coefficient of variation.

INTRODUCTION

Oilseeds constitute major part in agricultural crops next to the food grains in our country. Among major oilseed crops of the world, the oleiferous *Brassicae*, comprising rapeseed-mustard, occupies third position in production after soybean and cotton seed. In India, rapeseed-mustard ranks second after groundnut in terms of area and production. Among the various oleiferous *Brassicae* grown in the country, Indian mustard is the predominant crop occuping near 90% of the total area amongst other six cultivated species of *Brassicae* group. Inspite of various utilities and a sizeable area under oilseed crops, Indian mustard has low yield potential. The low yielding ability can be considerably increase by use of high yielding varieties/hybrid which in turn serve as potential donors for various quantitative and qualitative traits. The identification, classification and documentations of species and cultivars help in studying of genetic and breeding behaviors of plants. Efficient utilization of germplasm would benefit programmes aimed at producing new improved cultivars from adapted germplasm by providing potential sources of different traits. In the present study, an attempt has been made to identify the genetically diverse germplasm and further utilization in the crop improvement to develop broad based cultivars.

MATERIALS AND METHODS

The experimental material comprising one hundred (including three checks Varuna, Rohini and Maya) germplasm accessions of Indian mustard (*Brassica juncea* L.) were sown in augumented block design during *Rabi* 2008-09 at Regional Research Station, Saini, Kaushambi of Chandra Shekhar Azad University of Agriculture and Technology, Kanpur. Each accession was grown in two rows of 5m length with row to row distance of 30cm and plant to plant distance of 15-20cm was maintained by thinning. Plot basis observations were recorded on days to 50% flowering and days to maturity whereas plant height (cm), number of primary branches per plant, number of secondary branches per plant, length of main raceme (cm), number of siliquae on main raceme, number of seeds per siliqua, 1000 seed weight (g), seed yield per plant (g) and oil content (%) were observed on the basis of 5 randomly selected plants at appropriate growth stage of crop. Due care was taken while selecting 5 plants *i.e.* plants were taken from the part of the row where population was optimum. Variation in plant growth was prominently seen among the accessions. 1000 seeds were counted from the bulk yield of five plants and weighed by electronic balance. For oil content, the seeds were sun dried for 12 hours and one gram seeds were taken for estimation of oil content (%) by the help of instrument NMR (Nuclear magnetic resonance) spectro 4000. Range of variability, mean performance and coefficient of variation were computed using standard statistical methods (Gomez and Gomez, 1984).

RESULTS AND DISCUSSION

In the present study variation in plant growth was prominently seen among the accessions as indicated by range of variability, mean performance and coefficient of variation present in Table 1. The days to 50% flowering ranged from 38 days to 105 days (mean: 54.1 days) whereas values for days to maturity ranged from 116 days