Study of Selection Response and Variability in Germplasm Lines of Niger [(*Guizotia abyssinica* (L. f.) Cass.] in High Altitude and Tribal Zone of Andhra Pradesh

G Vinay Kumar, M Sujatha, Rajani Bisen, H D Pushpa, G Ramarao and D Ramesh
Department of Genetic and Plant Breeding, Agricultural College, Bapatla- 522101.

ABSTRACT

An experiment was conducted with 300 germplasm lines during *kharif,* 2021 at Regional Agricultural Research Station, Chintapalle, Andhra Pradesh state. The germplasm lines are received from ICAR-IIOR, Hyderabad representing both Indian and exotic lines. Each line was sown in two rows of 4 m length with 30 cm x 10 cm spacing. All the 300 niger germplasm lines distributed over 10 blocks along with four check varieties in each block.(i.e., 30 lines and four checks in each block). These lines were evaluated for seed yield per plot (g) and yield component characteristics viz., days to 50% flowering, days to maturity, plant height, number of primary branches, number of capitula, number of seeds per capitulum, 1000 seed weight, harvest index and oil content (%). This experiment was aimed to study the selection response and variability for yield and its yield attributing traits of germplasm lines and also to identify the lines with high yield and oil content to be use in further crop improvement programmes using different breeding methods. Analysis of variance showed significant differences among the germplasm lines and also germplasm lines v/s checks. A wide range of variability was recorded for all yield attributing components. The high phenotypic and genotypic coefficient of variation was recorded for traits number of primary branches, number of capsules per plant, harvest index and seed yield (kg/ha). High heritability combined with high genetic advance was observed for plant height, number of capsule per plant, 1000 seed weight (g), Harvest index and seed yield per plot (g). High heritability with moderate genetic advance was observed for days to maturity and harvest index. While high heritability with low genetic advance was observed for days to 50% flowering, Days to maturity and oil content (%).

Keywords: *GCV, Genetic advance Niger, PCV and Variability.*