Evaluation of Korean Sesame germplasm under Sri Lankan Climatic Conditions for the Variety Improvement

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Abstract

Germplasm evaluation is a part of the methodology of the plant breeding programmes to select adaptive and high yielding genotypes. Evaluation of sesame germplasm is essential task as it is important to find out special plant characteristics for the variety improvement. Therefore, this study carried out to evaluate Korean sesame germplasm under Sri Lankan climatic conditions to improve varieties by enrich of available seasame geane pool. The 16 accessions were received from Korea were evaluated in research field at Grain Legume and Oil Crop Research and Development Centre, Angunakolapelessa during Maha season 2018/19. Accessions were evaluated in row method according to the randomized complete block design with 5 replicates. Each accession was planted in 5m length row with two boarders. Random plant selection method was followed for the experiment. The data was analyzed using ANOVA and means were separated using DMRT. As agronomic characteristics, seed germination percentage, plant quality parameters with yield reated other characteristics and yield were measured along with the check variety Uma. The evaluation revealed that seed germination was more than 80% in Korean genotypes under tested Sri Lankan condition as well as variety Uma. Days taken to 50% flowering were less than 30 days of every accession while Uma was taken 30-35 days. All accessions had number of 5 capsules per plant while Uma had 4 capsules per plant. Significantly, the highest 1000 seed weight was recorded from the accession Yu- Pung (Brown) as 3.4g, however the value was not significantly different from variety Uma. Recorded yield from all accessions were significantly lower than the check variety Uma. Desired agronomic characteristics such as not brancing growth pattern, not dehiscent seed, early maturity and consumer preferred seed coat colours were recorded in contrast to those of the check variety. According to the statistical analysis, 5 accessions (Si-Ji, Ye- An, Yu- Pung (White), Geon- Baek, Baek- Soel) were selected to conduct yield trials.

Keywords: Agronomic characteristics, Evaluation, Exotic Germplasm, Seed germination, Sesame

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