

Identification of superior brinjal parents based on qualitative and quantitative traits

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Abstract

Brinjal (*Solanum melongena* L.) is the second most important vegetable in Bangladesh. For maintaining a healthy germplasm and improvement of brinjal, it is important to document or characterize the existing local genotypes, landraces, cultivars or farmers' variety. Keeping in view the vast opportunity for improvement of brinjal local genotypes, the study was conducted at Regional Agricultural Research Station, Bangladesh Agricultural Research Institute, Ishwardi, Pabna during 2017-18 to identify the important traits of brinjal accessions. The experiment involved thirty five brinjal germplasm with BARI Brinjal-6 (as check). Variations among brinjal accessions were observed in different qualitative characteristics. Upright, intermediate to prostrate plant growth were observed. Leaf blade lobing was found weak, intermediate to strong and very acute, acute to intermediate in leaf blade tip angle were observed. Variations were found in number of prickles and leaf hair. Among the accessions different flower colour were observed like pale violet, light violet and bluish violet. Plant growth habit was upright for 20 accessions, intermediate for 5 accessions (17.94%) and strong for 11 accessions (30.56%). Leaf blade lobing was weak for 4 accessions (11.11%), intermediate for 12 accessions (33.33%) and strong for 17 accessions (47.22%) and very strong for 3 accessions (8.33%). Fruit curvature was straight for 26 accessions (72.22%), slightly curved for 2 accessions (5.56%), and curved for 5 accessions (13.89%) and snake shaped for 3 accessions (8.33%). Fruit colour was green for 13 accessions (36.11%), milk white for 5 accessions (13.89%), scarlet red for 2 accessions (5.56%), lilac grey for 3 accessions (8.33%), purple for 8 accessions (22.22%), purple black for 3 accessions (8.33%) and black for 2 accessions (5.56%). Variations among brinjal accessions were observed in respect of days to first flowering, days to first edible fruiting stage, plant height, and number of fruits per plant, fruit weight (g), fruit weight per plant (kg) and 100-seed weight. The first flower initiation was noticed in SM Ish-017 (82 days). The highest fruit weight per fruit (266.38 g per fruit) was recorded from SM Ish-001 and the lowest fruit weight (77.65 g per fruit) from SM Ish-014. The highest fruit weight per plant (5.38 kg) was recorded from SM Ish-015 followed by SM Ish-025 (5.05 kg) SM Ish-010 (4.98 kg) SM Ish-027 (4.95 kg) and the lowest fruit weight per plant (2.09 kg) from SM Ish-032. These selected genotypes may be considered as promising accessions. Promising genotypes can be used as parents in future hybridization programs to develop superior types with high yield.