

Evaluating the Morpho-Agronomic Characteristics of Two Locally-Developed F1 Brinjal Hybrids with an Imported and Market-Leading Variety

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Annual demand for brinjal (*Solanum melongena* L.) hybrids exceeds the local supply along with a huge vacuum in the continuous seed production. The lack of knowledge on the morpho-agronomy of local F1 hybrids may be one of the reasons why the locally-bred hybrids are less popular compared to the imported hybrids. This experiment was carried out to evaluate the major morpho-agronomic characteristics of two local brinjal F1 hybrids namely, 'EGH-79 (V2)' and 'HORDI Lena Iri 1 (V3)' against that of the market-leading variety 'Raveena (V1)' in a field trial. The final germination percentage (GP) and mean germination time (MGT) were recorded for a representative set of seeds of all three varieties. Agronomic data on plant height (PH), leaf blade length and width (LL and LW, respectively), leaf area (LA), number of branches (NB), canopy diameter (CD), plant dry weight (DW), number of flowers (NF), number of fruits (NP), fruit yield (FY), average fruit weight (WF), fruit length and width (FL and FW, respectively), browning time (BT), and keeping quality (KQ) were recorded at the vegetative (S1), 50% flowering (S2), 50% fruiting (S3), and full maturity (S4) stages. Morphological measurements included leaf lobbing pattern, flower/ inflorescence angle, stem color, fruit and flower color, shape, and size. V3 showed the highest PH, LL, LW, LA, NB, CD, DW, NF, NP, FY, WF, FL, and FW at all sampling stages and the lowest BT at S3 and S4 ($P < 0.05$). Physiological data that included net photosynthesis, stomatal conductance, and intrinsic water-use efficiency supported the agronomic data while morphological measurements showed minor differences between the varieties. Results concluded that V3 was the best competitor for V1. However, V3 showed poor seed germination (i.e. 48% GP and MGT 18 days) and KQ characters compared to V2 and/ or V1 and that warrants further research.

Keywords: Brinjal, F1 hybrids, Germination, Morpho-agronomic traits, Yield

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