

Evaluation of varietal performance for yield and yield contributing attributes of local brinjal (*Solanum melongena*L.) germplasm collections

ABSTRACT

Brinjal is the second most important vegetable crop after Tomato in relation to its total production. Better production from any crop can only be achieved from a better variety. But in most cases the producers especially the rural farmers are not aware about the selection of high yielding varieties. Without any justification they just buy those seeds are easily available in nearby shops resulting harvest a poor yield with very unsatisfactory return. In this regard five different brinjal (*Solanum melongena* L.) germplasm collections were evaluated for their major yield and yield contributing attributes along with total chlorophyll content as physiological parameter. The study was conducted in rain shelter 10, at the Faculty of Sustainable Agriculture, Universiti Malaysia Sabah, arranged in Complete Randomized Design (CRD) with five replications. Research findings revealed significant variations for all the measured parameters among different brinjal cultivars. Round purple brinjal (V1=Mte2) had the highest fruit weight (238.60g; which is about 88.14% increased fruit weight over V4), followed by long red purple brinjal (V2=H117) with 167.50g (about 83.10% increased fruit weight over V4), long green brinjal (V3=H249) with 119.70g (about 76.36% increased fruit weight over V4) and the lowest fruit weight (28.30g) was found in brinjal variety V4 (Telunjuk), respectively. On the other hand red purple brinjal (V2) was the longest (24.23 cm) in size with 5.60 cm in diameter, but the highest fruit diameter (12.24 cm) was recorded in V3 brinjal. Long red purple brinjal (V2) showed the shortest days to 50% flowering with 49 days compared to Kermit brinjal (V5) which took the longest 61 days to 50% flowering. The highest total leaf chlorophyll content was detected in V5 (51.02 nmol/mg) while the lowest (44.06 nmol/mg) was in V3. From the correlation analysis significant correlation were detected among days to 1st flowering and days to 50% flowering; plant height and fruit diameter, while significant but negative correlation was seen among numbers of leaves and fruit diameter; plant height and fruit weight with chlorophyll content. From the cluster analysis primarily; V1, V2, and V3 were grouped into one cluster while V4 and V5 into another clusters, while in secondary clustering V1 alone in one group, V2 and V3 in 2nd group and finally V4 and V5 were in third groups which indicated a significant diversity among cultivars. On an average; considering varietal performance for yield and yield contributing attributes of five (5) different brinjal cultivars, it was revealed that the fruits of V1 gained the highest weight, while the fruits of V2 had the highest length and the fruits of V3 gained the highest diameter. Regarding earliness; variety V2 was the earliest among all 5 varieties, which is one of the desirable characteristics for any crops; especially in vegetables.