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PERFORMANCE ASSESSMENT OF PUDUKKOTTAI LOCAL BRINJAL (*SOLANUM MELONGENA* L.)

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ABSTRACT

The study on Performance assessment of Pudukkottai local Brinjal was conducted during 2017-2018 in and around the villages of Pudukkottai district of Tamil Nadu with an objective to identify the elite genotypes. In Pudukkottai, four genotypes of local brinjal were considered as the best genotypes. Hence, various morphometric and quality characters were observed in all the four genotypes and finally one best performing genotype was selected for further evaluation. In this study, closer study of four selected genotypes which gives medium sized fruits with better yield and cooking quality were undertaken. Four selected genotypes (Sm1, Sm2, Sm3, Sm4) were evaluated based on PPV & FRA descriptor. Morphological characters like Plant height, Plant spread, Plant growth habit, Anthocyanin coloration of stem, Stem pubescence, Leaf length, Leaf width, Leaf spininess, Leaf blade colour, Colour of veins, Intensity of colour of veins, Flower size, Flower colour, Flowering time (Days after sowing), Number of flowers, Fruiting pattern, Fruit length, Fruit width, Fruit shape, Fruit stripes, Fruit shininess, Colour of calyx, Spininess of calyx, fruit yield were recorded for all the selected four genotypes.

The plant height showed a variation ranging from 120.00 to 72.00 cm with mean of 90.00 cm. Plant width showed a variation ranging from 67.80 to 50.00 cm with mean of 56.50 cm. Out of the four genotypes studied for plant growth habit, all are having semi spreading growth habit. Regarding, stem pubescence, Sm2 is having strong stem pubescence.

Leaf characters *viz.*, Leaf length, Leaf width, Leaf spininess, Leaf blade colour, Colour of veins, Intensity of colour of veins exhibited considerable variations .The leaf length showed a variation from 14.80 to16.63 cm with the mean of 15.66. The width showed a variation from 11.80 to 12.30 cm with the mean of 12.14. Genotypes *viz.*, Sm2, Sm3 showed presence of spines in leaves, Sm1, Sm2 showed purple colouration of veins and Sm1 showed strong intensity of vein colouration.

Flower characters like Flower size, Flower colour, Flowering time, Number of flowers per plant were observed. From the observations, Sm1, Sm2 and Sm4 have medium sized flowers. Sm3 have small sized flower. Genotypes Sm1, Sm2 has dark purple coloured flowers. Sm3, Sm4 has light purple colour flowers. Regarding flowering period Sm2 showed an earlier flowering period of less than 65 days. Sm1, Sm3,Sm4 showed medium flowering period of 65 to 75 days. Number of flowers per plant showed a variation from 5.00 to 10.00 with a mean of 7.25.

Variability in fruiting pattern was observed as follows. Fruit diameter (cm), Fruit Length (cm) for the selected brinjal genotypes was observed. The entire genotypes showed solitary fruiting pattern except Sm4. Sm4 is having cluster fruiting pattern. Fruit length showed a variation of 13.00 cm to 5.90 cm with a mean of 8.65 cm. Fruit diameter showed a variation of 13.40 cm to 11.00 cm with a mean of 12.10 cm. Sm1, Sm2, Sm4 showed ovoid shape and Sm3 showed globular shape. Fruit stripes were found in Sm3. Spininess was found more in Sm2. Sm1 showed a higher fruit yield of 41.00 t/ha followed by Sm2 with a yield of 39.50 t/ha. Fruit to seed ratio was found to be more in Sm2, followed by Sm1, Sm3 and Sm4. Similarly, fruit borer incidence was found to be more in Sm4. Sm2 showed lesser fruit borer incidence due to its spininess on fruits.

In a nutshell, based on the yield and in quality aspects, the genotype Sm2 (Sellugudi) was found to be highly promising followed by Sm1 (Aalavayal) and hence Sm2 and Sm1 are recommended for further evaluation.

Key words : Variety, Genotypes, Performance assessment, Evaluation, Screening, Yield, Quality.

Introduction

Brinjal (*Solanum melongena* L.) is one of the most common vegetable grown throughout the country for its purple, green or white pendulous fruit. It is a member of the Solanaceae family and is closely related to Tomato and Potato. Aubergine is the British name for Brinjal and in United States, Australia and Canada, it is known by the name eggplant, because fruits of the earlier cultivars resembled eggs of goose or hen.

Brinjal is an erect annual plant, often spiny, with large, coarsely lobed fuzzy leaves, 10-20 cm long and 5-10 cm broad. The plants usually grow 45 to 60 cm high and bears long to oval shaped, purple or greenish fruits. Flowers are white to purple, with five-lobed corolla and yellow stamens. The fruit is a fleshy berry, containing numerous small, soft seeds (Lohakare *et al*., 2008).

Brinjal is a native of India and Sri Lanka. The ancestors of Brinjal grew wild in south India and were in cultivation in southern and eastern Asian countries since prehistoric times. Although, it has a long and rich history, Brinjal did not always hold the revered place in food culture that it does today. At one time Brinjal had a bitter and inauspicious reputation of being able to cause insanity, leprosy and cancer and it was even believed to be poisonous; and hence was used more as a garden plant than as a food in many parts of the world. But it was only in the 18th century, after the evolution of less bitter varieties, Brinjal lose its bitter taste and bitter reputation to gain its now esteemed place in the cuisines. Today, Italy, Turkey, Egypt, China and Japan are the leading growers of Brinjal. In India, it is a popular vegetable crop of southern states and is also cultivated in certain parts of Maharashtra, Gujarat and Uttar Pradesh (Alam, 1970).

Brinjal is a warm season crop and requires a long warm growing season. But, it can be successfully grown as a rainy season and summer season crop and can be cultivated even at an elevation of 1200 m above MSL. However, the crop is very susceptible to frost and crop growth is severely affected when temperature falls below 17°C. Brinjal can be grown on all types of soils. However, it grows best in loose, friable, well-drained silt loam or clay loam soils rich in organic matter. An early crop gives good yield in light soils. The crop is moderately tolerant to acidic soils and a pH range of 6.0 to 6.8 is considered optimum for its growth and development (Panse and Sukhatme, 1967).

As a native plant, Brinjal is widely used in the South Indian cuisine like *sambhars*, *chutneys*, *curries* and *kootus*. It can be baked, stewed, fried, or added to soups, curries, etc. The Brinjal can also be stuffed with meat, rice or other fillings and then baked. Owing to its versatile nature and wide use it is being used in everyday South Indian food, it is often described as the 'King of Vegetables' in South India.

Nutritionally, Brinjal is low in energy (30 kcal/100g), protein (1.2%) and vitamin C (5 mg/100g), but is a very good source of dietary fibre, potassium, calcium, manganese, copper and thiamin (vitamin B1). High potassium content helps to maintain good hydration and regulate blood pressure. They are also a good source of vitamin B6, Folate, magnesium and niacin (Daunay *et al*., 2001).

Brinjal fruits are a fairly good source of calcium, phosphorus, iron and vitamins particularly B group. Analysis of edible parts of fruits except calyx and stalk (per 100g fresh weight) Protein 1.4 g, Fat 0.3 g, Fibre 1.3 g, Carbohydrates 4 g, Ca 18 g, Mg 16 g, small quantity of Iodine 7 mg per Kg. Low in energy (30 kcal/100g), vitamin C (5 mg/100g), They are also a good source of vitamin B6, Folate, magnesium and niacin (Thamburaj and Singh, 2001).

In addition to featuring a host of vitamins and minerals, Brinjal contains important phyto nutrients, many of which are phenolic compounds that function as antioxidants, the predominant one being chlorogenic acid. Chlorogenic acid is one of the most potent free radical scavengers found in plant tissues and has proven anti-cancerous, antimicrobial and antiviral activities. Brinjal also contains flavonoid namely *nasunin*, which is also a potent antioxidant and free radical scavenger and protects brain cell membranes. *Nasunin* also binds with the excess iron and remove it from the body, by a process known as chelation. Although iron is an essential nutrient, excess of which is harmful as it increases free radical production and increases risk of heart disease and cancer. By chelating iron, *nasunin* lessens free radical formation thereby lowering the risk of heart diseases, cancer and rheumatic arthritis (Tripathi *et al.*, 2014).

Brinjal fruits also contain certain anti nutritional principles namely oxalates. When oxalates become too concentrated in body fluids, they can crystallize and cause health problems. For this reason, it is safe for individuals with kidney or gall bladder problems to avoid eating Brinjal.

In Tamil Nadu, Pudukkottai is one of the districts in which cultivating a traditional variety of Brinjal is in practice. The people are cultivating several elite genotypes of which four were taken for evaluation. The present study was undertaken with the following objectives:

1. To characterize the selected genotypes using the Brinjal descriptor developed by PPV&FRA.
2. To assess the yield and fruit quality of the selected genotypes.
3. To identify an elite genotype for further evaluation.

Materials and Methods

A study on "Characterization and evaluation of selected local varieties of Brinjal (*Solanum melongena* L.)" was conducted at Agricultural College and Research Institute, Tamil Nadu Agricultural University, Kudumiyanmalai, Pudukkottai during 2017-2018. Various morphometric and quality characters were observed in four local varieties. The different materials used and methodologies adopted in this study are briefed hereunder.

Experimental materials and methods

The descriptor developed for (*Solanum melongena* L.) compiled by Protection of Plant Varieties and Farmers' Rights Authority (PPV & FRA) was used in this study for characterizing the selected local varieties from August 2017 to May 2018. The Local varieties were marked and observations were made for morphological, yield and quality parameters (Appendix 1).

Appendix 1 : Locations of the selected genotypes (seedling originated) under study.

Genotypes	Name of the genotypes	Source and location
Sm1	Aalavayal	S. Kumar, S/o. Subbaiah, Aalavayal, Periyaoorani (PO), Pudukkottai D t. Mobile no: 9655914225
Sm2	Sellugudi	R.Nagaraj. S/o. Rajamanikkam Sellugudi, Perunchunai (PO), Pudukkottai D t. Mobile no: 9788837590
Sm3	Thirukattalai	K. Kannan, S/o. Kamatchi Thethampatti, Thiruvarankulam (PO), Pudukkottai D t Mobile no: 9786024096
Sm4	Kudumiyanm-alai	N.Govindaraj, S/o Mr. G. Nagarajan, Kudumiyanmalai (PO), Pudukkottai D t Mobile no: 8763241003

Protection of Plant Varieties and Farmers' Rights Authority (PPV & FRA)

The following observations on plant, fruit and quality characters were recorded from the selected plants based on the Protection of Plant Varieties and Farmers' Rights Authority (PPV & FRA).

Estimation of phenol content

Phenols, the aromatic compounds with hydroxyl groups are widespread in plant kingdom. They occur in all parts of the plants. Phenols are said to offer resistance to diseases and pests in plants. Grains containing high amount of polyphenls are resistance to bird attack. Phenols include an array of compounds like tannins, flavanols etc. Total phenol estimation can be carried out with Folin-Ciocalteau reagent.

Fruit Borer Incidence

The harvested fruits were observed for fruit borer damage. Fruit samples (ten fruits) were randomly selected from each genotypes. The per cent damage was worked out using the following formula.

$$\text{Per cent damage} = \frac{\text{Number of affected fruits}}{\text{Total number of fruits observed}} \times 100$$

Results and Discussion

Brinjal (*Solanum melongena* L.) is a common vegetable crop grown in the sub-tropics and tropics. It is called eggplant in USA and aubergine in Europe. It is essentially a warm weather crop which is grown extensively in India, Bangladesh, Pakistan, China, Japan and the Philippines. It is also grown in Egypt, France, Italy and the United States. Asia is the largest Brinjal producing region which comprises about 90% of the world production area and 87% of the world fruit production. Brinjal is a native of India and has been in cultivation for a long time. Traditional Brinjal varieties cultivation followed in and around the Pudukkottai districts of Tamil Nadu. Some of the varieties are good in fruit quality traits but majority of these are inferior to medium in quality because of extensive variability normally observed under field study. The types differ widely among themselves in bearing, shape, size, maturity and yield and in quality components minerals, vitamins and taste. Such variation offer scope for improvement of Brinjal through clonal selection. Development of high yielding varieties of crops require information about the nature and magnitude of variability present in the available genotypes and selection depends on judicious assessment of available data on phenotypic characters that are connected with yield and quality characters, the results of which are discussed hereunder.

Plant characters

Plant characters like plant height, plant spread, stem anthocyanin colouration, stem pubescence and plant growth habit showed remarkable variation in the

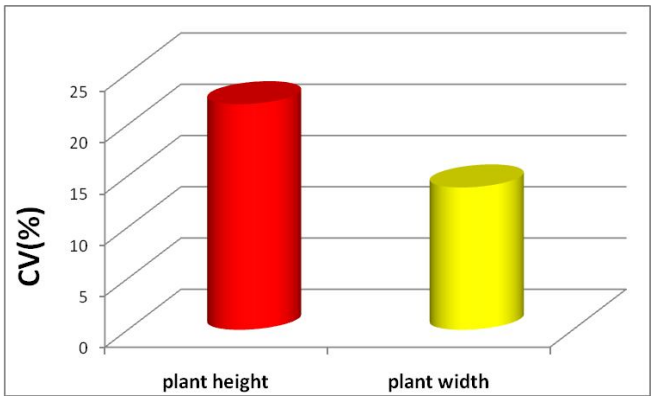


Fig. 1 : Variability in plant characters in selected genotypes of Brinjal.

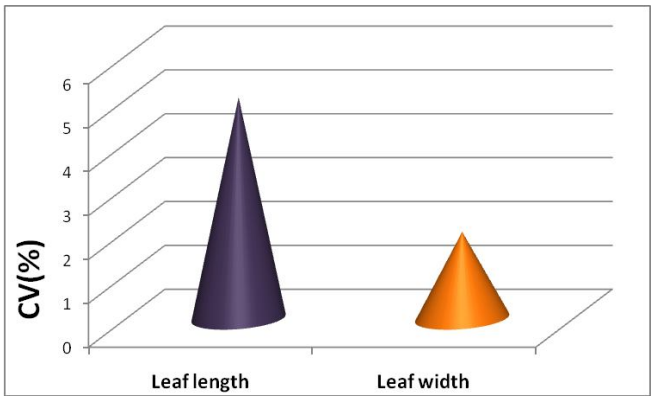


Fig. 2 : Variability in leaf characters in selected genotypes of Brinjal.

genotypes studied, which may be due to plants of heterozygous nature and influence environment in addition. Adding to that, variability for height of plant is also high. It is an important criterion for selection of superior plus plant as higher. Among the genotypes studied, the genotypes, Sm4 and Sm2 have recorded lower plant height than the other genotypes (Fig. 1). More than the plant height, plant spread is another important character

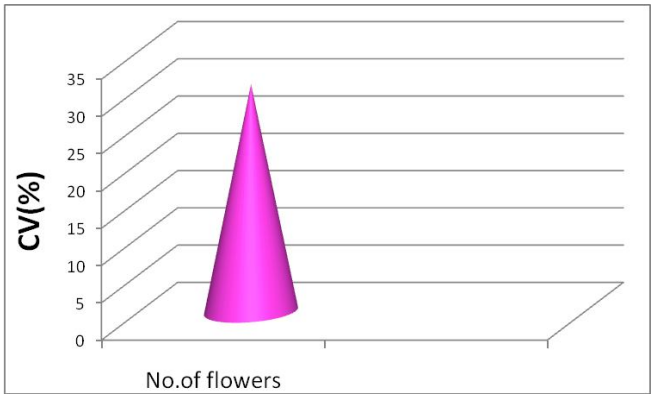


Fig. 3 : Variability in flower characters in selected genotypes of Brinjal.

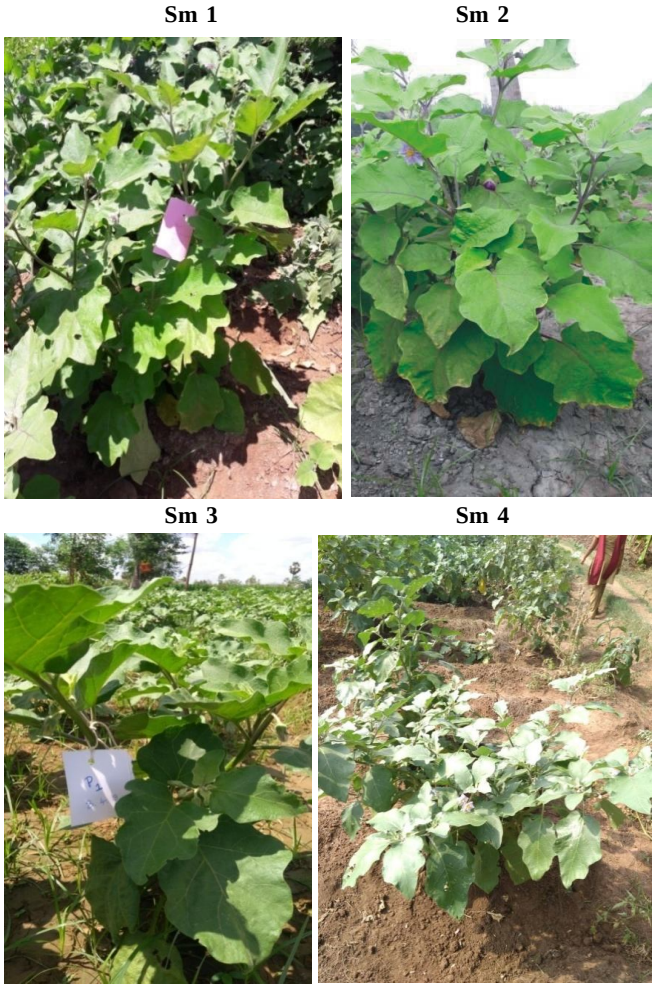


Plate 1 : Identified genotypes.

which has more effect on productivity in brinjal as it supports many side branches, which in turn support secondary and tertiary branches. Sm1and Sm3 having higher plant spread. Higher plant spread gives better support for the main branches and reflects the plants indirectly on bearing more number of fruits leading to higher yield. Lesser the plant height with spreading nature, greater will be the number of fruits per plant due to more primary and secondary branches. Plant growth characters like growth habit, anthocyanin colouration and stem pubescence showed considerable variations. In the present study, various growth habits (spreading, semi spreading and erect) were noticed. Among the genotypes studied Sm1, Sm2, Sm3, Sm4 all are having semi spreading growth habit. The 'semi spreading' canopy shape is a desirable factor for better fruit set and higher yield since most of the areas of canopy is exposed to sunlight which facilitates more photosynthates production. Variability in plant spread was well reported (Bansal and Mehta, 2008; Lohakare *et al.*, 2008). Similarly stem pubescence also important character in plants because it shows resistance against pest resistant. Among the studies Sm2 having strong stem pubescence, Sm3 and Sm4 having medium stem pubescence, Sm1 having weak stem

Table 1 : Mean, Range and CV % for plant height, plant spread of selected genotypes of Brinjal.

Name of genotypes	Plant height (cm)	Plant spread (cm)
Sm1	120.00	67.80
Sm2	98.00	50.00
Sm3	90.00	55.00
Sm4	72.00	53.00
Mean	90.00	56.45
Maximum	120.00	67.80
Minimum	72.00	50.00
SD	19.89	7.84
CV	22.00	13.88

Table 2 : Variability in Plant characters of selected genotypes of Brinjal.

Name of the genotype	Plant growth habit	Stem Anthocyanin colouration	Stem pubescence
Sm1	5	9	3
Sm2	5	9	7
Sm3	5	9	5
Sm4	5	9	5

Plant growth habit: 1-Erect, 5- Semi spread, 7-Spread, 9-Horizontal
Stem Anthocyanin colouration: 1-Absent, 9-Present
Stem pubescence : 3-weak, 5-Medium, and 7 -Strong

Table 3 : Mean, Range and CV % for leaf blade length and leaf blade width of selected genotypes of Brinjal.

Name of the genotypes	Leaf length (cm)	Leaf width (cm)
Sm1	16.63	12.30
Sm2	15.91	12.23
Sm3	14.80	11.80
Sm4	15.30	12.30
Mean	15.66	12.15
Maximum	16.63	12.3
Minimum	14.8	11.8
SE	0.79	0.24
CV	5.04	1.97

pubescence. Similar variation was reported by Thangamani (2003), Nair and Mehta (2007).

Leaf characters

Wide variation was noticed among the genotypes studied in respect of leaf characters (Plate 1a and 1b.). Leaf traits like leaf blade length, leaf blade width, leaf blade colour, leaf spininess and intensity of colour of veins also exhibited considerable variations. Genotypes *viz.*,

Table 4 : Variability in Leaf spininess, Leaf blade colour, Colour of veins, Intensity of colour of veins of the selected genotypes of selected Brinjal genotypes.

Selected genotypes	Leaf spininess	Leaf blade colour	Colour of veins	Intensity of colour of veins
Sm1	1	1	2	7
Sm2	9	1	2	5
Sm3	9	1	1	3
Sm4	1	1	1	3

Leaf Spininess : 1-Absent, 9-Present
Leaf Blade Colour : 1-Green, 2-Purple
Colour of Veins : 1-Green, 2-Purple
Intensity of Colour of Veins : 3-Light, 5-Medium,7-Strong

Table 5 : Variability in Flower size, Flower colour, Flowering time (DAS) for the selected Brinjal genotypes.

Selected genotypes	Flower size	Flower colour	Flowering time (DAS)
Sm1	5	4	70 to 75
Sm2	5	4	65.00
Sm3	3	2	65 to 70
Sm4	5	2	75.00

Flower colour : 4-Dark purple, 2-Light purple
Flower size : 3-Small, 5-Medium, 7-large
Flowering time : < 65-Early, 65-75-Medium, > 75-Late

Table 5a : Variability in No. of Flowers for the selected Brinjal genotypes.

Selected genotypes	No. of Flowers
Sm1	8 to10
Sm2	8.00
Sm3	5.00
Sm4	6.00
Mean	7.25
Minimum	5.00
Maximum	10.00
SD	2.21
CV	30.48

Table 6 : Variability in Fruiting Pattern for the selected Brinjal genotypes.

Selected genotypes	Fruiting Pattern
Sm1	1
Sm2	1
Sm3	1
Sm4	2

Fruiting pattern: 1-solitary, 2-cluster, 3-mixed

Sm1 and Sm2 having higher leaf length whereas Sm3 and Sm4 having lesser leaf length. Regarding the leaf blade width Sm1 and Sm4 is having more leaf blade width

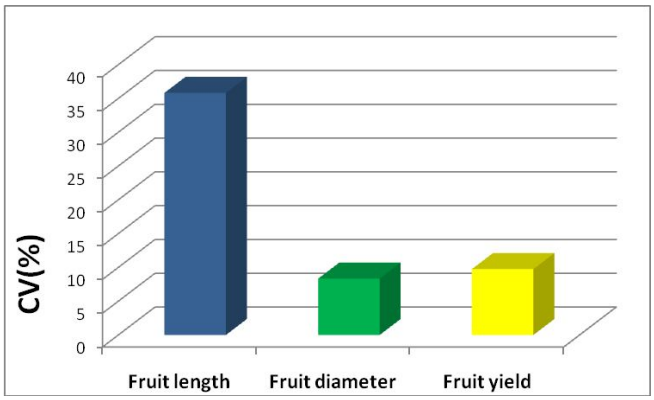


Fig. 4a : Variability in fruit characters in selected genotypes of Brinjal.

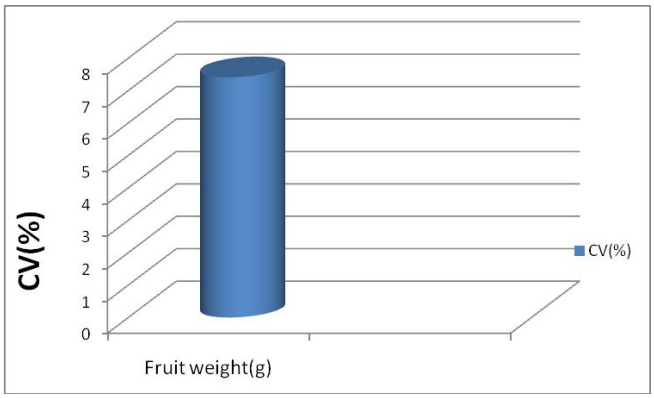


Fig. 4b : Variability in fruit weight of the selected genotypes.

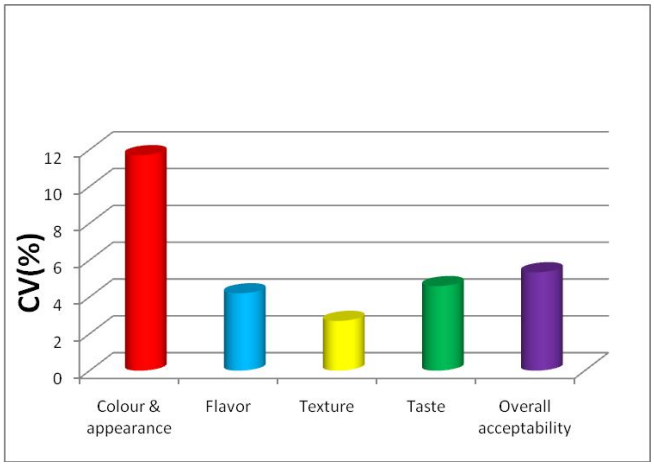


Fig. 5 : Organoleptic evaluation of fruits of selected genotypes of brinjal.

followed by Sm2 and Sm3. These leaf traits might be probably useful to identify a chosen plus genotypes from the rest of the genotypes (Fig. 2). Variability in leaf blade length and leaf blade width has been well documented by Datta and Jana (2010)

Inflorescence characters

Variations were noticed among the genotypes with respect to the No. of flowers, Flower size, Flower colour, Flowering time were noticed. No. of flowers also important character to decide the fruit yield. Among the

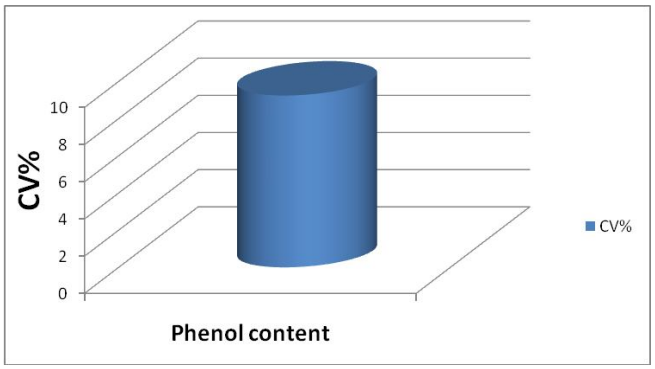


Fig. 6 : Phenol content estimation of selected genotypes of brinjal.

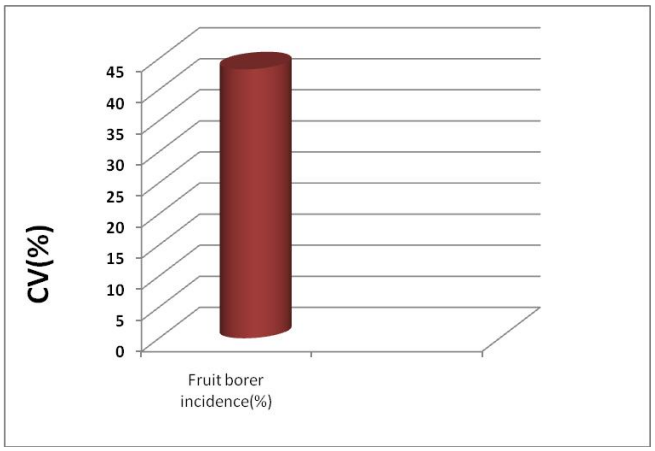


Fig. 7 : Fruit borer incidence of selected genotypes of brinjal.

genotypes Sm1and Sm2 having more no. of flowers than the Sm3 and Sm4 (Fig. 3). Kalda *et al*. (1996) and Sharma and Swaroop (2000) documented research works in inflorescence characters.

Fruit characters

Variations were noticed among the genotypes with respect to Fruit length, fruit diameter and fruiting pattern. Based on the fruit length and dia we can decide the yield in tonnes. Among these genotypes, Sm1 having highest fruit yield than the other genotypes. All the genotypes show solitary fruit bearing habit. Fruit quantitative character like Fruit length and width is the important trait which decides total yield per plant as well as market potential. Regarding fruit shapes, fruit shininess, colour of calyx, spininess of calyx considerable variation was found among the genotypes. Fruit shape of brinjal is one of the desirable characters for consumer preference. Genotypes Sm1, Sm2, Sm4 having ovoid shapes of fruit and Sm3 having the globular shape of fruits. Mostly ovoid shapes are generally preferred in the market. The fruit colour was measured using Munsell colour chart. Sm2 showed darker colour than the others. The average fruit weight contributes more to yield and it will decide the market rate. The average fruit weight is more in Sm2

Table 6a : Variability in Fruit Length (cm) and Fruit diameter (cm) for the selected Brinjal genotypes.

Selected genotypes	Fruit length (cm)	Fruit Diameter (cm)
Sm1	13.00	11.00
Sm2	8.70	13.40
Sm3	5.90	12.30
Sm4	7.10	11.70
Mean	8.65	12.10
Maximum	13.00	13.40
Minimum	5.90	11.00
SD	3.10	1.01
CV	35.83	8.34

variation among the genotypes. Here fruit shininess refers to glossiness of harvestable fruit. Sm2 shows very strong glossiness at harvestable time. These are mostly preferred by consumers because of its attracting colour. Other three genotypes show medium to weak glossiness (Fig. 3a). Similar findings in fruit characters were reported by Senapathi and Senapathi (2006).

Yield characters

In a breeding programme, yield is one of the most important traits by which a genotype or variety will be evaluated. In the case of brinjal, plants with more number of fruits are generally preferred as it has close bearing on total yield. In the present study, wide variation was recorded in number of fruits per plant and yield per plant per season. Genotype *viz*., Sm1 followed by Sm2 recorded higher number of fruits per plant and higher yield per plant per season (Fig. 3a). Nair and Mehta (2007) and Lohakare *et al.* (2008) did similar works in finding the yield charactes of brinjal.

Table 7 : Variability in Fruit shape, Fruit stripes, Fruit shininess, Colour of calyx, Spininess of calyx for the selected Brinjal genotypes.

Selected genotypes	Fruit shape	Fruit stripes	Fruit shininess	Colour of calyx	Spininess of calyx
Sm1	2	9	5	1	5
Sm2	2	1	7	1	7
Sm3	1	9	5	1	3
Sm4	2	9	3	1	3

Fruit shape: 1-globular, 2-ovoid, 3-obovate, 4-pear, 5-club shaped, 6-ellipsoid, 7-cylindrical
Fruit stripes: 1-absent, 9-present
Colour of calyx: 1-green, 2-purple
Fruit shininess: 3-weak, 5-medium, 7-strong
Spininess of calyx: 1-absent, 3-weak, 5-medium, 7-strong

Table 8 : Fruit colour for the selected Brinjal genotypes using Munsell colour chart Hue Value/Chroma.

Selected genotypes	Fruit colour
SM-1	5RP 3/6
SM-2	5RP 3/10
SM-3	5RP 3/4
SM-4	5RP 3/8

Table 9 : Fruit weight for the selected Brinjal genotypes.

Selected genotypes	Fruit weight(g)
SM-1	51.00
SM-2	60.00
SM-3	49.00
SM-4	42.00
Mean	50.50
Maximum	60.00
Minimum	42.00
SD	7.41
CV	14.67

followed by Sm1 (Plate 2). Similar variations were reported by Nair and Mehta (2007) and Bansal and Mehta (2008).

Fruit stripes also show some variation among the genotypes. From these all genotypes Sm1, Sm3 and Sm4 having fruit stripes. Fruit shininess also contributes make

Table 10 : Fruit yield for the selected Brinjal genotypes.

Selected genotypes	Fruit yield (t/ha)
SM-1	41.00
SM-2	39.50
SM-3	36.25
SM-4	37.50
Mean	39.56
Maximum	45.00
Minimum	36.25
SD	3.86
CV	9.75

Seed characters

Seediness and seed colour had considerable variation among the genotypes studied. Genotype Sm2 had lesser seed compare to others. Seed colour varies from light yellow to brown. Among these Sm1 had brownish yellow colour. Similar works were reported by Muniappan *et al.* (2010).

Plate 1a : Leaf blade and lobing in selected genotypes.

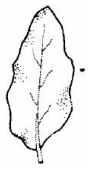
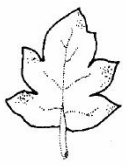
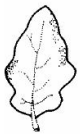
Name of the genotypes	Selected genotypes -leaves	Leaf blade	Lobing
Sm1			Weak
Sm2			Strong
Sm3			Very strong
Sm4			Intermediate

Plate 1b : Leaf blade and tip angle in selected genotypes.

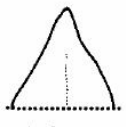
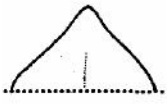
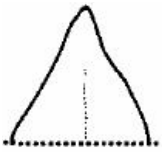
Name of the genotypes	Selected genotypes -leaves	Leaf blade	Tip angle
Sm1			Very acute (<15^0)
Sm2			Acute (45^0)
Sm3			Intermediate (75^0)
Sm4			Acute (45^0)

Plate 2 : Fruit shape in selected genotypes.

Name of the genotypes	Selected genotypes -leaves	Fruit	Shape
Sm1			Ovoid
Sm2			Ovoid
Sm3			Globular
Sm4			Ovoid

Organoleptic evaluation

The acceptance of fruit quality of brinjal can be well judged only after evaluating the Fruits by organoleptic test. To avoid variation or biased nature of individual, organoleptic evaluation was carried out with minimum of 20 individuals. All the characters considered for organoleptic evaluation in the present study showed considerable variation . Genotypes *viz.*, Sm2 followed by Sm1 had higher score for overall quality of fruits (Table 9). This may be due to genetic nature of the genotypes and partly due to the environment (Fig. 4). Ahmad *et al.* (2009) did similar works on organoleptic evaluation.

Phenol content estimation

The phenol content of the brinjal is responsible for its browning. Hence estimation of phenol content is necessary to decide on the good quality brinjal. The phenol content was estimated and it was found to be lower in Sm2 followed by Sm1 (Fig. 5.) Sadhasivam and manickam (1991)did similar works on phenol content estimation.

Fruit borer incidence

The fruit borer incidence of the brinjal was recorded which is being the major reason for yield loss. It was found that Sm2 is having lesser fruit borer incidence followed by Sm1 (Fig. 7).

Table 11 : Organoleptic evaluation of fruits of selected genotypes of Brinjal.

Name of the genotypes	Colour and appearance	Flavour	Texture or firmness	Taste	Overall acceptability
Sm1	7.31	7.00	6.57	6.73	7.00
Sm2	8.22	7.15	6.78	7.00	7.10
Sm3	6.20	6.47	6.68	6.94	6.52
Sm4	6.90	7.00	6.36	6.31	6.36
Mean	7.15	6.90	6.59	6.74	6.74
Maximum	8.22	7.15	6.78	7.00	7.10
Minimum	6.20	6.47	6.36	6.31	6.36
SD	0.84	0.29	0.18	0.31	0.36
CV	11.74	4.20	2.70	4.59	5.34

Table 12 : Estimation of phenol content.

Selected genotypes	Phenol content (mg/100g)
Sm1	54.38
Sm2	48.67
Sm3	56.53
Sm4	60.94
Maximum	60.94
Minimum	48.67
Mean	55.13
SD	5.099
CV	9.24

Table 13 : Estimation of Fruit borer incidence (%).

Selected genotypes	Fruit borer incidence(%)
Sm1	20
Sm2	15
Sm3	35
Sm4	40
Maximum	40
Minimum	15
Mean	27.5
SD	11.90
CV	43.27

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