Table 2 : Changes in fresh weight of cut roses under holding solutions.

Treatments	2nd day	3rd day	4th day
T_1	0.21	-0.06	-0.84
T_2	0.40	0.22	-0.45
T_3	0.32	0.26	-0.26
T_4	0.20	0.25	0.40
T_5	0.40	0.25	-1.18
T_6	0.23	0.23	-0.93
Sem±	0.10	0.11	0.24
CD at 5%	NS	NS	0.72

NS = Non significant

solution. 8-HQC along with Alar ® and Sucrose resulted better keeping quality in roses (Metzzer, 1972).

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Characteristics and the yield potential of different pepino accessions

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Abstract : Pepino *Solanum muricatum* is a small herbaceous perennial minor fruit cum vegetable crop with multiple possibilities for consumption. Special features include its high yield potential, easy propagation by stem cuttings, perennial nature, fast growing and high response to intensive cultivation and fertilizer application and above all the habit of flowering and fruit set round the year. As on date 9 promising accessions have been established based on plant and fruit morphology, yield performance and quality traits. These accessions also offered differing preference for different utilities such as dessert fruit, squash etc. *(Key words : Pepino, Solanum muricatum, Fruit morphology, Solanaceae, Minor fruit)*

Pepino *(Solanum muricatum)*, often referred as Melon Pear, is a small herbaceous perennial belonging to Solanaceae. It is sub-tropical, medium to large sized minor fruit species native to Northern Andes, South America. For the first time in India it was introduced at Horticultural Research Station, Ooty during the later parts of 1994.

Pepino is a nutritious vegetable cum fruit crop with multiple possibilities for consumption like green and cooked vegetable, vegetable salads, pachadies, fresh fruit (dessert), fruit salad, delicious fruit juice, squash etc. Pepino fruits are highly juicy and moderately sweet and possesses characteristic pleasing aroma like that of melon fruit. These fruits are rich

n minerals, vitamin C, free amino acids and organic acids. It contained comparatively low starch and low soluble sugars. The other constituents include inositol, lipids, pigments, cellulose, hemi cellulose and pectic substances.

Pepino prefers cooler climate (temperature between 15 and 25°C) and performs well in fertile loamy soil with good drainage. It is easily propagated through stem cuttings. It responds well to high level management and it is a high fertilizer responsive crop. Even the quality parameters showed considerable variation in response to soil fertility, manuring and fertilization. According to Heyes *et al.* (1994) pepino is a potentially useful research tool for investigation. Pluda *et al.* (1993) stated that changes in nutrient composition and salinity have marked influence on fruit quality i.e. fruit quality may be improved by crop management.

Materials and Methods

Since its introduction in 1994 at Horticultural Research Station, Ooty, pepino was multiplied through both open pollinated seeds and stem cuttings. The plants raised from seeds showed variations in leaf and fruit morphology and based on desirable traits and yield potential, 9 accessions were chosen and multiplied thorough vegetative propagation. The yield and quality (fruit and juice) evaluations have shown very interesting results and are presented hereunder.

Results and Discussion

The data on leaf characteristics are presented in Table 1. Accessions SMu-4 and 5 produced trifoliate leaves from the very beginning and the accessions SMu-1, 6, 7, 8 and 9 produced entire leaves in the early stages and tri- or penta-foliate leaves subsequently. The accessions SMu-2 and 3 continued the production of entire leaves for a longer time and latter produced trifoliate leaves. The mean leaf length and bredth also showed variations amongs the accessions; the smallest leaves were observed in SMu-2.

The fruit morphological characteristics (Table 2) exhibited striking variations. The fruit shape varied from nearly round to long oblong. The accessions SMu-4, 6 and 7 are characterized with muricated surface where as others possessed smooth surface. The characteristic violet or purple streaks were absent in accessions SMu-2, 7, 8 and 9. The colour of young fruits varied from marble white to dark green and that of the ripefruits from light yellow to red. Pluda *et al.* (1993) have stated that some clones excel in some agronomic and quality characteristics, sharing some common traits such as erect growth habit, heavy fruit set, good colour, size and accepatable flavour. Fruit yield varied from 48.95 t ha^{-1} in SMu-5 to 68.40 t ha^{-1} in SMu-1. The accession SMu-1 recorded highest yield followed by SMu-7 and SMu-6 and the lowest yield was recorded in SMu-5 indicating the significant variability of fruit yield of different accessions.

Mean fruit weight of pepino varied from 53 g in SMu-4 to 276 g in SMu-1. Maroto *et al.* (1997) reported fruit weights varying from 145-300 g. The striking feature is that under Ooty conditions the fruit

Table 1. Leaf characteristics of pepino accessions

Accession	Leaf Morphology	Leaf lengh (cm	Leaf breadth (cm)
SMu-1	Entire/Trifoliate	14.45	3.88
SMu-2	Entire	8.40	2.30
SMu-3	Entire	12.00	3.03
SMu-4	Trifoliate	12.00	3.13
SMu-5	Trifoliate	14.13	3.53
SMu-6	Entire/Trifoliate	10.65	3.50
SMu-7	Entire/Trifoliate	14.90	4.10
SMu-8	Entire/Trifoliate	15.40	4.50
SMu-9	Entire/Trifoliate	13.50	3.67

Table 2. Fruit characteristics of pepino accessions

Accession No.	Morphology		Colour		Flesh Colour	Mean fruit wt.(g)	Yield (t/ha)
	Shape	Presence of purple streaks	Unripe	Ripe			
SMu-1	Oblong	P	Green	Golden yellow	Yellowish Red	276	68.40
SMu-2	Round	N	Marble white	Golden Yellow	Red	128	50.30
SMu-3	Long oblong	P	Dark green	Golden Yellow	Light yellow	152	55.05
SMu-4	Muricated round	P	Light yellow or marble white	Light yellow	yellow orange	53	53.70
SMu-5	Round/ oblong	P	Light green to Marble white	Red yellow	Reddish yellow	157	48.95
SMu-6	Muricated oblong	P	Green	Yellow	Yellow	95	58.15
SMu-7	Oblong	N	Green	Yellow	Light yellow	157	58.80
SMu-8	Muricated round	N	Green	Reddish	Reddish yellow	145	52.15
SMu-9	Tomato shaped	N	Green	Yellowish red	Yellow orange	140	51.25

Table 3. Fruit and juice quality variations of pepino accessions

Accession No.	Specific gravity	Dry matter content %	EC mS/cm^2	pH	Juice density g/cc	Sugar %	Titrable acidity me/100 ml
SMu-1	0.983	26.87	2.70	6.00	1.028	8.0 - 10.0	13.6
SMu-2	0.890	25.12	2.78	5.89	1.002	7.0 - 8.5	14.0
SMu-3	0.914	24.28	2.92	5.70	1.010	7.5 - 9.0	14.4
SMu-4	0.926	20.12	3.12	5.59	1.019	7.0 - 7.5	18.0
SMu-5	0.910	27.13	2.81	5.97	1.025	9.0 - 11.0	12.8
SMu-6	0.928	26.03	2.76	5.89	1.006	8.0 - 9.0	14.4
SMu-7	0.862	21.16	2.26	5.80	1.014	6.0 - 6.5	16.8
SMu-8	0.892	18.52	2.75	5.95	1.017	6.0 - 6.5	16.4
SMu-9	0.906	19.82	2.71	5.94	1.015	6.5 - 7.2	13.9

ize in all the 9 accessions are grouped under Class as they all weigh more than 50 g and have good shape. Ercan and Akili (1996) classified pepino fruits according to their weight and shade into two classes viz. Class I: Fruits with good appearance and each weighing 50 g each. It is interesting to note that seed set is considerably higher under the Nilgiris climatic conditions. The seed number per fruit varied from few ens to few hundreds. This may be one of the main reasons for the extremely large size of fruits (a maximum weight of 742 g was recorded at Woodhouse farm). Ercan and Akili (1996) reported that hand pollinated plants produced fruits with an average weight of 115.48 containing 8 seeds, compared to control which produced seeds less fruits 73.44 g mean weight. Pluda *et al.* (1993) observed marked fruit quality variations with change in nutrient composition and levels of salinity. According to Heyes *et al.* (1994) pepino is a potential research tool for investigation.

Among the fruit and juice quality parameters (Table 3) dry matter content, electrical conductivity, sugar content and titrable acidity showed considerable variation among the accessions but fruit specific gravity, juice pH and juice density showed little variation. Dry matter content of fruits varied from 18.52 per cent (SMu-8) to 27.13 per cent (SMu-5); EC from 2.26mS/cm^2 (SMu-7) to 3.12 mS/cm^2 (SMu-4); sugar content from 6.0 to 6.5% (SMu-7 and 8) to 9.0 to 11.0% (SMu-5) and titrable acidity from 12.8 me/100ml (SMu-5) to 18.0 me/100 ml (SMu-4). These results are in accordance with the reports of Redgwell and Turner (1986), who have reported an elaborate account of chemical quality parameters.

The visual quality attributes such as size, shape, symmetry, colour of rind, colour of flesh, olfactory, physical traits like firmness and structure and chemical attributes like flavour, sweetness, acidity etc., are conducive for consumer preference. Accordingly the accessions SMu-1 and 5 offer better preference for dessert purposes because of the higher dry matter and sugar content, lower titrable acidity and better shape and eye appealing colour. SMu-1 and 7 were found to have higher preference for squash and vegetable purposes. Thus among the 9 accessions SMu-1 which is almost similar to colossal variety of New Zealand, seems to be the most ideal one and the aaccession SMu-55 may be preferred for dessert purposes.

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Standardisation of hydrophylic polymers on growth and yield of tomato

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Abstract : An experiment was conducted at Horticultural College & Research Institute, Tamil Nadu Agricultural University, Coimbatore to standardise the hydrophylic polymers on growth and yield of tomato. Three commercially available polymers *viz.* TerraCottem (TerraCottem International, Belgium), Polyvinyl alcohol (Aquatrols corp. of America, USA) and Polyacrylamide (Viterras, Germany) were chosen for the study and used as soil conditioners for tomato cv.Co.3. The results indicated that TerraCottem 4.5g plant^{-1} (T_{10}) improved the plant height, branches per plant, root length, root dry weight, fruits per plant, fruit weight, yield per plant and dry matter production. The results were on par with higher doses of respective polymers. *(Key words: Tomato, Hydrophylic, polymers, Standardisation.)*