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Short Communication

Evaluation of wild melon (*Cucumis melo* subsp. *agrestis*) genotypes for growth, yield and quality traits

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Wild melon (*Cucumis melo* subsp. *agrestis*) belongs to the family Cucurbitaceae with chromosome number 2n=24. It is one of the traditional vegetable crop that can be exploited in marginal lands of North Karnataka with minimum practice of crop production. Although it is under exploited cucurbit, it has attained high value and occupied a prime place in rural cuisine because of its pleasant flavour with attractive colours. It is also called as kachari in Hindi, shinde in Marathi, chibdin in Konkani, gumi in Assamese and mekkekayi in Kannada. Wild melon is a native to Africa and presently listed as endangered species. It is an ideal summer crop mainly grown for fresh vegetable as well as for pickling purpose. Fruits are varying in size, small to big fruits along with smooth tender skin, white flesh usually with little sweetness and odour. In view of current trend of expanding the cultivation of wild melon crop for their delicious fruits, identification of promising genotypes having high yield, earliness, better quality and resistance to pest and diseases would help the farmers in improving their economic status to the some extent. In Karnataka, the crop is cultivated under limited area using mostly local varieties which are low in productivity. Towards this end, as a first step, there is a need for collection of local genotypes and evaluate them for their adoptability to particular locations especially to non-traditional area, northern dry zone of Karnataka.

The field experiment on evaluation studies in wild melon was conducted at the Vegetable Science Research Block, University of Horticultural Sciences, Bagalkot, Karnataka. The experiment was laid out in a randomized block design with 24 genotypes replicated twice. All the genotypes in each replication were represented by a plot of single row of 10 m length with 10 plants per replication. The seeds were sown at distance of 2 m between the rows and 1 m between the plants within the row. A dosage of N, P_2O_5 and K_2O @ 100:75:50 kg/ha was applied in the form of urea, single super phosphate and muriate of potash, respectively. Twenty days after sowing, the plants were thinned to retain one plant per hill. The weed flora of the experimental area was hand weeded thrice at 20, 40 and 60 DAS. First watering was given with rose can after sowing and the pits were daily watered in the same way till the seedlings emerged. Statistical significance of variation due to genotypes was tested by comparing the calculated values to Table 'F' values at 5% level and 1% level of significance.

The genotypes of wild melon differ significantly for various traits of economic importance, and the details of each trait are presented in Table 1. The maximum vine length was recorded in G-18 genotype (124.33 cm) followed by G-21 (121.33 cm) and G-23 (120.17); whereas the genotype G-2 recorded least vine length (42.33 cm). Maximum leaf area was recorded in G-18 (57.48 cm²) followed by G-21(53.07 cm²) and it was minimum for G-3 (29.31 cm²). Further, the number of primary branches per plant counted highest for G-18 (4.33) followed by G-21 (3.67) and the least in G-7 (2.67). Greater the vine length, greater will be the number of primary branches, number of leaves of plant. This may be due to diversion of higher amount of metabolites for exhibiting high vegetative vigour. These findings are in conformity with the results of Eifediyi et al. (2009) in cucumber, Ganiger et al. (2014) and Shruti et al. (2015) in oriental pickling melon.

Significant differences were also observed among the genotypes for yield parameters. Maximum number of fruits/plant was counted in T -18 (8.17) followed by G-9 (7.34); whereas it was minimum in G-11(2.00). Average fruit weight was observed highest G-18 (93.91 g) followed by G-9 (75.35 g). In general, the number of

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Table 1: Growth, yield and quality traits in wild melon

Genotype	Vine Length (cm)	Leaf area (cm^2)	No. of primary branches	No. of fruits/ vine	Average fruit weight (g)	Yield (g/vine)	No. of seeds/ fruit	Fruit length (cm)	Fruit breadth (cm)	Flesh thickness (mm)	Cavity size (cm^2)	TSS (°Brix)
G-1	65.17	33.37	3.50	4.67	29.26	194.17	117.17	4.13	4.00	5.83	10.39	4.08
G-2	42.33	26.68	3.00	3.50	34.80	93.83	93.67	3.53	3.23	4.17	9.60	4.63
G-3	63.33	29.31	3.67	4.17	34.00	145.33	101.83	5.13	4.10	4.00	8.71	4.40
G-4	75.17	39.93	3.67	2.83	47.28	129.67	111.33	6.17	3.70	4.33	14.14	5.88
G-5	69.17	39.12	3.33	4.00	42.20	176.50	104.83	4.20	4.00	6.83	11.01	4.60
G-6	64.33	41.05	3.67	4.00	46.53	178.33	178.50	6.55	3.72	7.67	13.54	5.17
G-7	117.67	45.60	2.67	3.50	47.12	129.17	181.67	5.47	3.88	7.00	14.48	6.60
G-8	107.83	63.98	3.67	3.17	67.39	222.67	168.17	6.12	4.20	8.00	17.69	5.83
G-9	110.17	52.50	2.67	7.34	75.35	343.33	168.33	8.77	4.87	7.17	26.32	5.40
G-10	74.50	38.44	3.50	4.50	30.18	122.17	107.83	3.93	3.65	5.00	10.52	6.50
G-11	77.17	38.41	3.33	2.00	15.92	70.50	116.17	4.57	3.40	4.50	10.26	5.85
G-12	102.83	45.83	3.00	2.50	31.32	180.83	153.83	7.20	4.38	6.33	19.68	4.72
G-13	82.67	33.16	2.67	2.67	44.28	99.33	114.50	4.90	3.57	5.50	12.75	4.67
G-14	58.00	32.05	2.67	2.83	46.38	92.83	210.50	4.87	3.33	4.17	10.97	4.78
G-15	60.00	35.64	3.17	6.17	23.14	192.33	125.00	3.47	3.38	3.00	10.18	5.33
G-16	85.83	37.62	4.00	3.67	22.46	87.67	105.67	3.80	3.37	3.50	9.81	7.37
G-17	108.67	35.31	4.17	4.83	62.17	150.67	140.83	4.65	3.12	5.67	13.37	5.50
G-18	124.33	57.48	4.33	8.17	93.91	357.83	177.17	5.68	3.62	5.50	15.76	3.65
G-19	90.67	46.88	3.33	5.00	32.19	76.50	155.83	5.50	3.91	4.00	12.15	6.05
G-20	101.17	51.88	3.33	5.50	74.31	149.33	160.50	5.98	4.65	5.50	16.70	5.13
G-21	121.33	53.07	3.67	6.00	59.75	297.83	195.00	6.58	5.58	5.00	18.33	-
G-22	100.00	44.88	3.00	7.34	22.05	112.67	112.33	3.10	4.40	5.33	7.81	6.82
G-23	120.17	49.98	3.17	6.17	26.78	200.67	128.83	4.22	3.97	5.00	10.23	6.13
G-24	104.33	46.12	3.67	4.83	63.43	254.33	174.17	6.17	4.98	4.50	19.44	5.57
Mean	88.62	42.43	3.37	4.56	44.68	169.10	141.82	5.20	3.96	5.31	13.49	5.42
Range	42.33-124.33	26.68-63.98	2.67-4.33	2.00-8.17	15.92-93.91	70.50-357.83	93.67-210.50	3.10-8.77	3.12-5.58	3.00-8.00	7.81-26.32	3.65-7.37
SEm±	11.30	3.76	0.32	0.43	5.25	12.45	19.26	0.54	0.41	0.71	2.86	0.61
CD @ 5%	33.06	10.99	0.95	1.27	15.36	36.41	56.36	1.05	1.20	2.08	8.38	1.78

fruits per plant inversely related to the size of the fruit weight. G-18 significantly produced higher fruit yield per plant (357.83 g) followed by G-9 (343.33 g). The genotypes G-11(70.50 g) had lower fruit yield per plant. These results indicated that higher the growth attributes significantly influenced for better translocation of photosynthates from source to sinks resulting in higher yield in such genotypes. Similar observations were made by Ganiger et al. (2014) and Shruti et al. (2015) in oriental pickling melon. The genotypes differed significantly with respect to fruit characters like fruit length, fruit breadth, cavity size and TSS. In the present study, highest fruit length was measured for genotype G-9 (8.77 cm) followed by G-12 (7.20 cm), and it was least in G-22 (3.10 cm). With respect to fruit breadth, it was found maximum in the genotype G-22 (5.58 cm) followed by G-24 (4.98 cm) and minimum in G-17 (3.12 cm). Flesh thickness was recorded highest in G-8 (8.00 cm) followed by G- 6 (7.67 cm), while lowest was recorded in G-15 (3.00 cm). Among all 24 genotypes, cavity size was maximum in G-9 (26.32 cm^2) followed by G-12 (19.68 cm^2) and minimum in G-22 (7.81cm^2). The genotype G-16 registered with high TSS content (7.37 °Brix) followed by G-23 (6.13 °Brix) and lowest content in G-18 (3.65 °Brix). It could be concluded that among the 24 wild melon genotypes tested for their performance under northern dry zone of Karnataka, the genotypes *viz.* G-18, G-9 and G-12 were found better with respect to their yield potential, fruit characters and quality parameters.

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