

Short Communication

Evaluation of Different Cultivars of Aonla (*Emblica officinalis* Gaertn.) in Semi-arid Regions of Rajasthan

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Aonla or Indian gooseberry (*Emblica officinalis* Gaertn.) is one of the most important indigenous fruits in India. It is a hardy tree and can successfully be grown in variable agro-climatic and soil conditions. The aonla fruit is one of the richest source of vitamin C after Barbados Cherry (*Malpighia glabra* L.). It contains 500 to 1500 mg ascorbic acid 100^{-1} g of pulp. This fruit is valued high in indigenous medicines in India.

A cultivar which give better performance on one locality, may not necessarily behave in a similar way under different agro-climatic conditions. Since aonla is a recent introduction in the arid and semi-arid regions, not much information is available on the varietal suitability for these areas. Considering this in view six cultivars of aonla, were evaluated for vegetative growth, yield and fruit quality in this region.

Performance of six cultivars of aonla viz., Chakaiya, Krishna, Kanchan, NA-6, NA-7 and NA-10 planted during 1992 were evaluated at SKN College of Agriculture, Jobner. The experiment was laid out in randomized block design with four replications having four trees per replication.

The cultural practices were maintained uniformly in all the cultivars.

After 5 years, bearing started. At harvesting stem girth (15 cm above ground level), plant height, plant spread were recorded. Three pickings were done for harvesting and yield was recorded. A random sample of about 500 g fully developed fruits was collected from each replication for physico-chemical analysis. TSS was recorded with the help of "Zeiss" hand refractometer. Acidity and ascorbic acid were determined following Ranganna (1977). Two years pooled data (1999-2000 and 2000-2001) were statistically analyzed according to the methods suggested by Panse and Sukhatme (1985).

Maximum plant height (4.12 m) and plant spread (29.09 m^2) were attained by cultivar Kanchan while maximum stem girth (49.37 cm) was attained by cultivar NA-10 as compared to minimum (2.92 m, 18.50 m^2 , and 27.00 cm, respectively) by cultivar Chakaiya (Table 1).

Cultivar Chakaiya produced most sour fruits with maximum acidity (2.22%) as compared to minimum (1.52%) in the fruits of Kanchan. Highest ascorbic acid (672.50 mg 100^{-1} g pulp) was also recorded in the fruits of Chakaiya as compared to

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Table 1. Physico-chemical characteristics of different cultivars of aonla (*Emblica officinalis* G.)

Cultivars	Plant height (m)	Plant spread (m ²)	Stem girth (cm)	Fruit weight (g)	Acidity (%)	Ascorbic acid (mg 100 ⁻¹ g pulp)	TSS (%)	Yield (kg plant ⁻¹)
Chakaiya	2.92	18.50	27.00	30.00	2.22	672.50	10.57	30.75
Krishna	3.47	23.16	40.75	35.50	2.10	555.00	13.57	38.00
Kanchan	4.12	29.09	46.75	22.50	1.52	505.00	12.20	44.25
NA-6	3.18	24.68	39.12	31.75	1.87	418.75	11.55	34.75
NA-7	3.42	26.88	42.50	33.00	2.15	492.50	10.72	54.75
NA-10	3.08	20.98	49.37	33.00	1.97	655.00	9.67	37.75
SEm _t	0.12	1.02	1.52	1.48	0.07	16.13	0.40	1.99
CD at 5%	0.35	2.95	4.41	4.47	0.22	48.62	1.22	5.99

minimum (418.75 mg 100⁻¹ g pulp) in the fruits of cultivar NA-6. Fruits of cultivar Krishna exhibited maximum TSS (13.57%) as compared to lowest (9.67%) in the fruits of cultivar NA-10 (Table 1).

Cultivars significantly differed in yield and fruit weight. Cultivar Krishna produced the fruits of maximum size with 35.50 g as compared to 22.50 g in Kanchan (Table 1). However, fruit yield was highest in cultivar NA-7 (54.75 kg plant⁻¹) followed by Kanchan (44.25 kg plant⁻¹) and was minimum in cultivar Chakaiya (30.75 kg plant⁻¹).

The variations in vegetative growth, yield and physico-chemical characteristics of fruits are mainly due to genotypic variation of the cultivars (Mahajan and Dhillon, 2000). Singh *et al.* (1993) also recorded the significant variation in growth characters, yield and physico-chemical characteristics of fruits with different aonla cultivars.

Considering the overall performance, profuse bearing and heavy yield with quality

fruits, the cultivar NA-7 and Kanchan were found suitable for commercial cultivation in the region.

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