



## Research Note

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# Growth and yield performance of aonla varieties under Parbhani conditions

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**ABSTRACT :** The investigation was conducted on the growth and yield performance of aonla varieties under Parbhani conditions at Department of Horticulture, Marathwada Krishi Vidyapeeth, Parbhani during the year 2009-2010. The experiment was laid out in Randomized Block Design (RBD) with four varieties replicated five times. The maximum height of plant was recorded in Krishna (5.27 m) whereas, minimum was recorded in Kanchan (5.04 m). Spread of plant was recorded maximum in Chakaiya (4.83 m and 4.63 m), whereas, minimum was recorded in Kanchan (4.41 m and 4.26 m). Krishna recorded maximum number of primary branches (5.54). The highest yield of fruits per tree was recorded in Kanchan (3459 fruits/tree and 99.79 kg fruits/tree), while, minimum was recorded in NA-7 (1135 fruits/tree and 46.32 kg/tree). On the basis of result obtained in present study, it can be concluded that Kanchan is superior variety under agro-climatic condition of Parbhani.

**KEY WORDS :** Aonla varieties, Growth, Yield

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The aonla (*Emblica officinalis*), also known as Indian gooseberry belonging to family Euphorbiaceae. Aonla fruit is highly nutritive with a great medicine use and the richest source of vit. C. In Marathwada region there is a rare regular plantation of Aonla of known varieties propagated by vegetative methods. In last few years, its cultivation has increased significantly because of hardy nature of plant with low water requirement and also due to increases in awareness among the consumers about its high nutritional and medicinal value. Recently some of the progressive farmers have established such type of garden. However, no systematic work on the performance of the known varieties regarding growth yield and quality aspects has been yet studied so far. Taking into consideration above views, the present study has been under taken to study growth and yield performance of different aonla varieties under Parbhani conditions.

The present investigation was carried out at Department of Horticulture, Marathwada Krishi Vidyapeeth, Parbhani during year 2009-10. The trial was laid out in Randomized Block Design with four varieties replicated five times. Parbhani comes under subtropical region of India. The Parbhani area

receives rainfall mainly from South-West monsoon commencing from second week of June to September. The cold weather commences from the middle of November and attains peak in the month of January with maximum temperature of 31.8<sup>o</sup>C and minimum of 5.8<sup>o</sup>C, relating in normal average of 18.8<sup>o</sup>C summer is hot and dry with maximum temperature range 44.8 in the month of May. The climate in this, characterized by cold and mild winter and hot and dry summer. The orchard was established by procuring uniform Aonla budded of Kanchan, Krishna, Chakaiya and NA-7 at Department of Horticulture, MKV, Parbhani during 2009-10. The trees were planted at spacing 5 m x 5 m. These budded trees were maintained with uniform horticulture practices. The selected cultivars were studied for their growth and yield parameters.

The results obtained from the present investigation are summarized below :

#### Growth parameters:

The average height of plans in all four varieties screened is 5.13 m after 5 years of planting. Data presented in Table 1 showed that the maximum and minimum height was obtained

**Table 1 : Growth parameters of different Aonla varieties**

Tr. No.	Varieties	Plant height (m)	Spread of plant (m)		No. of primary branches
			N-S	E-W	
T <sub>1</sub>	Kanchan	5.04	4.41	4.26	5.06
T <sub>2</sub>	Krishna	5.27	4.68	4.46	5.54
T <sub>3</sub>	Chakaiya	5.07	4.83	4.63	4.54
T <sub>4</sub>	NA-7	5.15	4.53	4.40	5.32
	Mean	5.13	4.61	4.44	5.11
	S.E. +	0.043	0.05	0.06	0.11
	C.D. (P=0.05)	0.13	0.16	0.20	0.34

**Table 2 : Yield parameters of different Aonla varieties**

Treatments	Variety	Weight of fruit (g)	Number of fruits per tree	Yield of fruits (kg/tree)
T <sub>1</sub>	Kanchan	35.46	3459	99.79
T <sub>2</sub>	Krishna	38.77	2468	76.55
T <sub>3</sub>	Chakaiya	37.20	1436	55.16
T <sub>4</sub>	NA-7	42.44	1135	46.32
	Mean	38.47	21.25	69.45
	S.E. ±	1.08	143.79	1.85
	C.D. (P=0.05)	3.33	442.39	5.70

in Krishna (5.27m) and Kanchan (5.04 m), respectively. Similar trend was also recorded in canopy height of the plant by Supe *et al.* (1997) under Rahuri condition in western Maharashtra. As regards to spread of plant, maximum spread of plant (N-S and E-W) was recorded in Chakaiya (4.83 m and 4.63 m) followed by Krishna (4.68 and 4.46 m), respectively. Whereas, minimum spread of plant was recorded in Kanchan (4.41m and 4.26 m), followed by NA-7 (4.53m and 4.14 m), respectively. Similar results were reported by Aulakh *et al.* (1997). In the present investigation maximum number of primary branches were noticed in Krishna (5.54) followed by NA-7 (5.32).

#### Yield parameters:

Data presented in Table 2 showed that the maximum weight of fruit was observed in NA-7 (42.44 g). Whereas, lowest weight of fruit was noticed in Kanchan (35.46 g). Other varieties Krishna (38.77 g) and Chakaiya (37.20 g) were medium in fruit weight. Similar finding in respect of fruit weight of different aonla varieties were also be reported by Supe *et al.* (1997) and Kumar and Singh (2002). In the present investigation the yield in terms of the number of fruits per tree was observed maximum in Kanchan (3459) followed by Krishna

(2468). The minimum number of fruits were noticed in NA-7 (1135) followed by Chakaiya (1436). Whereas, yield in terms of weight of fruits was maximum in Kanchan (99.79 kg). Whereas, NA-7 (46.32 kg) produced significantly lower yield while, Krishna (76.55 kg) and Chakaiya (55.16 kg) were medium yielder. Higher yield in Kanchan and Krishna could be attributed towards maximum spreading habit of growth of these cultivars. NA-7 recorded lowest yield because it is only erect growing having less number of primary branches. Similar trend of results work also reported by Supe *et al.* (1997).

#### REFERENCES

- Aulakh, P.S. Singh, J. and Sur, H.S. (1997). Performance of Aonla (*Emblica officinalis* G.) Cultivars under the rain fed condition in the shivalik foothills of Punjab. *J. Res. Punjab agric. Univ.*, **34**(3):279-82.
- Kumar, S. and Singh, I.S. (2002). Physicochemical studies of various cultivars of aonla fruits. *Prog. Hort. J.*, **34** (1): 102-104.
- Supe, V.S., Shete, M.B., Chavan, U.D. and Kaulgud, S.N. (1997). Physico-chemical analysis of different Aonla (*Emblica officinalis* Geartm) cultivars under Maharashtra Condition. *J. Maharashtra agric. Univ.*, **22** (3) : 310-312.

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