Available online at www.ijpab.com

ISSN: 2320 – 7051
Int. J. Pure App. Biosci. **1 (2):** 59-61 (2013)

Research Article

Studies on the performance of Aonla varieties under shallow calcareous chalka soils in southern Telangana zone of Andhra Pradesh

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Received: 9.03.2013 | Revised: 16.04.2013 | Accepted: 22.04.2013

ABSTRACT

Evaluation of nine varieties of Aonla (Emblica officinalis Gaertn) was conducted to find suitable variety in shallow calcareous chalka soils of southern Telangana region of Andhra Pradesh. The selected varieties were viz., Kanchan, Krishna, Chekiya, Francis, Narendra –7, Narendra-10, Narendra-6, Anand-2 and Local variety. The study was conducted from 2000- 2008 at Arid Horticulture Research Station, Kondamallepally, Nalgonda district of Andhra Pradesh. Among the different varieties, Narendra-7 has recorded maximum cumulative fruit yield of 302.8 kg/tree followed by Narendra-10 with 255.4 kg/tree. The average fruit weight was also recorded maximum in Narendra-7 (40.1g) followed by Narendra-10 (38.2g). T

Keywords: *Aonla, Fruit yield, Rainfed, Chalka soils*

INTRODUCTION

The Aonla (*Emblica officinalis* Gaertn) is the highly drought resistant crop comes up well in marginal soils under rainfed conditions with minimum management practices. The fruits are rich in vitamin C having good nutraceutical and medicinal properties. Hence the fruits are used in ayurvedic medicines. It has good demand in food industry for preparation of health based preserved products like candy, jam, squash, pickle, supari and RTS (Parvathi and Anbu, 1997); Jain et al.2007. It is considered as a health and vitality restorer (Ravindran, 2007). As Aonla is drought resistant and hardy crop, it is felt necessary to identify suitable Aonla varieties to the southern Telangana region of Andhra Pradesh.

MATERIALS AND METHODS

The present study was conducted at Dr.YSR Horticulture University, Arid Horticulture Research Station, Konda Mallepally, Nalgonda district during the period of 2000 to 2008. The Station falls under southern Telangana zone of Andhra Pradesh (Latitude 17.0586693 and Longitude 17.265585) with average rainfall of 560 mm with mean temperatures of 17ºC minimum and 40ºC maximum.

Cite this article: Kaladhar Babu, K., Ramesh Babu, B. and Chalapathi Rao, N.B.V., Studies on the performance of Aonla varieties under shallow calcareous chalka soils in southern Telangana zone of Andhra Pradesh, *Int. J. Pure App. Biosci.* **1(2):** 59-61 (2013).

The soils are shallow calcareous chalka type. The trail was non replicated where eight plants in each row were planted with spacing of 8 x 8m. The selected varieties were *viz*., Kanchan, Krishna, Chekiya, Francis, Narendra –7, Narendra-10, Narendra-6, Anand-2 and Local variety. Uniform cultural practices are given to all the plants maintained under rainfed conditions. The data on fruit yield was recorded from 2000-2008 and the cumulative yield data was collected.

RESULTS AND DISCUSSION

Among the nine varieties of Aonla (Table 1) the fruit yield increased year wise (11.5, 26.2, 31.6, 45.8, 46.6, 28.1, 52.48. 60.5 kg/tree) with maximum cumulative yield of 302.8 kg/tree followed by Narendra-10 (6.4, 15.8, 21.4, 21.8, 28.2, 27.5, 63.7, 70.6 kg) with maximum cumulative yield of 255.4 during 2001-2008. The average fruit weight was also recorded maximum in Narendra-7 with 40.1g followed by Narendra-10 with 38.2g and remaining varieties Chekiya (24.0g), Francis (24.0g), Krishna (23.4g), Anand-2 (22.6g), Kanchan (21.6g) and lowest fruit weight was recorded in Local (18.2g).

The maximum cumulative yield of 302.8 kg/tree and average fruit weight of 40.1 g was recorded in Narendra-7 might be due to the adaptability of this variety to local climatic conditions and also its potentiality in efficiency of more nutrient absorption. The same was reported to have good yield potentiality (Singh *et al*. 1994 and Bhavani Shankar *et al*. 1999).

Table 1: Yield performance of Aonla varieties (2001-08)

S.No.	Variety	Average fruit yield (kg/Tree)								Cumulative yield (2000 to 2008) (Kg/tree)
		2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	
1.	**Local**	4.6	12.4	14.2	12.2	14.8	15.2	28.5	20.8	122.7
2.	**Kanchan**	7.4	15.7	16.8	16.4	20.4	23.5	37.6	44.6	182.4
3.	**Krishna**	6.9	14.3	19.4	15.6	21.8	19.4	34.2	50.0	181.6
4.	**Chekiya**	9.5	19.1	22.3	19.6	20.0	25.2	43.6	58.5	217.8
5.	**Francis**	5.8	16.5	18.2	12.5	13.4	21.0	34.1	51.2	172.7
6.	**Narendra-7**	11.5	26.2	31.6	45.8	46.6	28.12	52.48	60.5	302.8
7.	**Narendra-10**	6.4	15.8	21.4	21.8	28.2	27.5	63.7	70.6	255.4
8.	**Narendra-6**	5.2	14.3	17.2	30.2	24.8	18.0	34.4	38.0	182.1
9.	**Anand-2**	2.0	5.5	12.9	17.4	19.3	10.24	18.36	25.5	111.2

Table 2: Average Fruit Weight (g) of Aonla varieties

S.No	Name of the Variety	Average Fruit weight(g)
1	**Local**	18.2
2	**Kanchan**	21.6
3	**Krishna**	23.4
4	**Chekiya**	24.0
5	**Francis**	24.0
6	**Narendra-7**	40.1
7	**Narendra-10**	38.2
8	**Narendra-6**	37.4
9	**Anand-2**	22.6

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