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Research Article

Performance of Certain Mango Varieties and Hybrids under Nalgonda District of Telangana

K. Kaladhar Babu[1*], B. Ramesh Babu[2] and N.B.V.Chalapathi Rao[3]

[1]Sri Konda Laxman Telangana State Horticulture University, Telangana
[2]Horticulture Research Station, VR Gudem, Andhra Pradesh, India
[3]Horticulture Research Station, Ambajipeta, Andhra Pradesh, India
*Corresponding Author E-mail: kaladharbabu98@gmail.com
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ABSTRACT

A study was conducted to evaluate the performance of twenty two mango varieties and hybrids from 2003-2007 at Arid Horticulture Research Station, Kondamallepally, Nalgonda district of Telangana. Critical examination of the data revealed that variety Vanaraj exhibited the highest cumulative yield (89.6 kg / tree) over these years. The data revealed that the highest average fruit weight was recorded in Imampasand (581.5 g) and highest average TSS (20.33%) was recorded in Alampur Baneshan.

Key words*: Mango, Varieties, Hybrids, Evaluation, Fruit yield.*

INTRODUCTION

Mango (*Mangifera indica L.*) is a popular fruit and is referred as "King of fruits" in India. It is occupying an area of 2,516 thousand hectares with a production of 18,431 MT and its share in total fruit production is 20.7% (Anonymous, 2014). Mango is the fifth most important fruit in different continents *viz*., Asia, Africa, Australia, North America (Litz, 1997) .Mango can be grown from alluvial soils to lateritic soils except in deep black cotton soils having poor drainage. In India, there are 1000 varieties of Mangoes and are adaptable to different climatic conditions and yield varies from place to place. The Mango fruit is delicious and nutritive. In India, it is cultivated in Andhra Pradesh, Uttar Pradesh, Bihar, Karnataka, Maharashtra, West Bengal and Gujarat. The flowering behaviour, sex expression, yield and fruit quality of mango are influenced by climate, cultivar, rootstock and tree physiology (Reddy *et al.*, 2003; Padhiar *et al.*,2011; Parmar *et al.*, 2012; Singh *et al*., 2012, 2013; Kumar *et al* ,.2014). The area of mango is increasing every year due to various Government schemes in India. It is felt necessary to identify suitable varieties and hybrids for this region and the present evaluation of 22 mango varieties and hybrids were taken up.

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MATERIALS AND METHODS

The present study was conducted at Arid Horticulture Research Station, Konda Mallepally, Nalgonda district during the period of 2002 to 2007. 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. The soils are calcareous shallow red chalka type. The trail was conducted in non replicated model with 15 varieties and 7 hybrids with 10 plants in a row with a spacing of 12 x 12 meters. The plants were planted in the month of August, 1998. The varieties planted are Dashehari, Banaganapalli, Alampur Baneshan, Imampasand, Totapuri, Kesari, Vanaraj, Mahmooda Vikarabad, Royal special, Suvarnarekha, Chinnarasam, Cherukurasam, Peddarasam, Tellagulabi and the hybrids are A.U.Rumani, Amrapali, Manjeera, Mallika, Neeleshan, Neeluddin, Hybrid-10 and Hybrid-13. The data on fruit yield and quality were recorded from 2003-2007 and the cumulative yield data, average fruit weight and average Total Soluble Solids (TSS) were collected.

RESULTS AND DISCUSSION

Perusal of the data (Table.1) revealed that the cumulative fruit yield over five years ranged from 29.2 kg/tree to 89.6 kg/tree. The variety Vanraj recorded the highest cumulative fruit yield (89.6 kg/tree) followed by Neeleshan (88.5 kg/tree), Suvarnarekha (82.8 kg/tree), Banganpalli (78.8 kg/tree), Totapuri (73.5 kg/tree), Imampasand (67.5 kg/tree), Kesari (67.2 kg/tree), A.U.Rumani (66.7 kg/tree), Mehmooda vikarabad (66.4 kg/tree), Chinnarasam (65.5 kg/tree), Manjeera (58.6 kg/tree), Mallika (57.9 kg/tree), Amrapali (56.6 kg/tree), Hybrid -10 (56.9 kg/tree), Hybrid -13 (54.6 kg/tree) and the least was recorded in Tellagulabi (29.2 kg /tree). The highest yield in vanaraj may be due to its adaptability to prevailing climatic conditions. The same was reported in Gujarat where the cultivars Kesar, Totapuri and Mallika were prolific bearers where as under Punjab conditions Mallika and Dashehari were relatively more productive mango varieties (Gunjate *et al*.,2009; Chandana *et al*., 2005). Similar results were reported by Rao and Rao (2007) where the variety Totapuri and Hybrid Neeleshan have exhibited best performance under closer spacings.

Perusal of data (Table .2) revealed that the average fruit weight ranged from 186 g to 581.5 g and highest was recorded in Imampasand (581.5g) followed by Totapuri (387 g).The Total soluble solids in fruits ranged from 11.96% to 20.33% and highest TSS was recorded in Alampur Baneshan (20.33%) followed by Mahmooda vikarabad (19.16%). The Total soluble solids is dependent on climate and therefore variation in TSS is exhibited. Similar variation in Total Soluble Solids was reported in Dashehari and Langra in the plateau of Madhya Pradesh (Singh *et al*., 2013).

Table. 1: Cumulative Yield of Mango Varieties and Hybrids (2003-2007)

S. No	Name of the Variety / Hybrid	Average yield (kg/tree)					Cumulative fruit yield (kg/Tree) (2003-2007)
		2003	2004	2005	2006	2007	
1	Manjeera	10.8	12.1	11.4	6.3	18.0	58.6
2	Mallika	8.2	12.6	13.8	7.6	15.6	57.9
3	Neeleshan	12.0	20.4	18.1	13.0	25.0	88.5
4	Neeluddin	7.4	8.2	9.4	8.2	14.0	47.2
5	Hybrid-10	10.0	11.1	10.6	10.4	14.8	56.9
6	Hybrid-13	10.4	9.6	12.8	6.0	15.8	54.6
7	Dasheri	5.7	8.4	10.2	8.7	16.3	49.4
8	Banganpalli	11.2	17.3	14.2	15.5	20.6	78.8
9	Alampurbaneshan	8.4	10.4	11.3	14.2	17.7	62.0
10	Imampasand	10.2	9.8	13.4	15.2	18.9	67.5

11	Totapuri	11.4	12.3	15.6	19.5	14.7	73.5
12	Kesari	7.2	11.6	10.5	17.1	20.1	67.2
13	Vanraj	6.8	7.5	11.7	29.1	34.5	89.6
14	A.U.Rumani	6.2	8.6	10.6	18.5	22.8	66.7
15	Mahemooda Vikarabad	5.4	9.6	8.4	20.5	22.5	66.4
16	Amrapali	3.2	5.4	7.2	17.2	23.7	56.6
17	Royal Special	8.1	7.8	10.3	7.1	11.0	44.3
18	Suvarnarekha	15.8	13.6	19.4	15.6	17.5	82.8
19	Chinnarasam	9.1	10.2	12.1	13.9	20.3	65.5
20	Cherukurasam	6.4	9.4	11.6	8.1	10.5	46.0
21	Peddarasam	5.8	6.1	8.2	7.6	9.3	37.0
22	Tellagulabi	3.6	5.1	6.4	5.3	8.8	29.2

Table.2. Average fruit weight and average TSS in Mango Varieties / Hybrids (2003-2007)

S. No	Name of the Variety / Hybrid	Average fruit weight (g)	Average TSS (%)
1	Manjeera	186.0	18.0
2	Mallika	330.5	18.3
3	Neeleshan	386.5	11.9
4	Neeluddin	236.0	17.7
5	Hybrid-10	255.0	15.6
6	Hybrid-13	214.0	16.7
7	Dasheri	195.5	18.6
8	Banganpalli	412.0	14.3
9	Alampurbaneshan	414.0	20.3
10	Imampasand	581.5	19.7
11	Totapuri	387.0	14.0
12	Kesari	286.0	18.5
13	Vanraj	250.5	14.1
14	A.U.Rumani	351.0	18.1
15	Mahemooda Vikarabad	249.0	19.2
16	Amrapali	296.0	16.7
17	Royal Special	195.0	14.1
18	Suvarnarekha	363.5	17.2
19	Chinnarasam	245.0	14.7
20	Cherukurasam	225.0	16.5
21	Peddarasam	275.0	15.0
22	Tellagulabi	220.0	14.0

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