

Evaluation of Canker Tolerant Acid Lime Selections in Southern Zone of Telangana

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ABSTRACT

Six selections of Canker tolerant Acid lime (*Citrus aurantifolia* L.) were evaluated for number of fruits, fruit weight and fruit yield from 2006-2008 at Arid Horticulture Research Station, Kondamallepally, Nalgonda district of Telangana. The selections tested are Selection - 1, Selection - 21, Selection - 25, Tenali Selection, Petlur Local and Thirupathi Local. Critical examination of the data revealed that the Selection - 1 has recorded highest number of fruits (735), highest fruit weight (32.5g) and highest cumulative yield (25.8 kg/tree) over three years and the least was recorded in Thirupathi Local with average number of fruits (109), average fruit weight (28.0 g) and average fruit yield of 3.87 kg/tree. Canker disease severity on 0-5 scale was recorded nil in Selection - 1, Selection - 21 and Selection - 25.

Key words: Acid Lime, Selection, Evaluation, Fruit yield.

INTRODUCTION

Acid lime (*Citrus aurantifolia* L.) belongs to family Rutaceae which is a commercially important citrus crop grown across different states of the country. India is the largest producer of acid lime in the world, (Chadha, 2002). It is more popular for its uses in preparation of refreshing juice, making of pickles and in seasoning foods which are very popular not only in India but also in other parts of the world. Fruits are small, round to oval,

maturing irregularly throughout the year greenish yellow in colour and thin skinned. Core is solid at maturity and juice is highly acidic. Canker disease in acid lime was wide spread causing considerable loss by affecting leaves, twigs and fruits. Management of canker disease with chemicals and cultural methods were not effective. Using host resistance for management of any disease will be more economical for the farmers.

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The present study of multi location testing of selections tolerant to canker disease was undertaken to identify varieties suitable for this area.

MATERIALS AND METHODS

The present study was conducted at, Arid Horticulture Research Station, Konda Mallepally, Nalgonda district during the period of 2006 to 2008. The Station falls under southern zone of Telangana (Latitude 17.0586693 and Longitude 17.265585) with average rainfall of 560 mm with mean temperatures of 17°C minimum and 40°C maximum. The soils are calcareous shallow red chalka type. The trial was conducted in non replicated model with 6 selections with 10 plants in each row with a spacing of 6x6 meters. Recommended package of practices were followed to grow the trees. The selections *viz.*, Selection -1, Selection -21, Selection – 25, Tenali Selection, Petlur Local and Tirupathi Local were supplied by Citrus research station, petlur, Nellore district of Andhrapradesh. These selections were planted during 1999-2000. The data on number of fruits per tree, fruit weight and fruit yield were recorded from 2006-2008 and the cumulative yield data was collected.

RESULTS AND DISCUSSION

Perusal of the data (Table.1) revealed that the cumulative fruit yield over three years ranged from 3.9 kg/tree to 61.5 kg/tree. The Selection -1 has recorded the highest cumulative fruit yield (61.5 kg/tree) followed by Tenali Selection (60.7 kg/tree), Selection -21 (60.3 kg/tree), Selection -25 (52.0 kg/tree), Petlur Local (5.5kg/ plant) and the least was recorded in Tirupathi Local (3.9kg/tree). Such variation in yield among different clones exist due to heterozygosity in acid lime (Singh, 2012).

After careful examination of the data recorded in (Table.2), it was observed that Selection -1 has recorded highest average number of fruits (735) and average fruit weight (32.5g) over three years and the lowest average number of fruits (109) and lowest average fruit weight was recorded in Thirupathi Local (28.5g).

After perusal of the data recorded in (Table.3), it was observed that the disease severity absent in Selection-1, Selection -21 and Selection -25 on leaves, twigs and fruits whereas, the disease severity on 0-5 scale was observed (1) on leaves and fruits in Tenali selection and the severity (1) was observed on leaves and twigs in Petlur Local and Thirupathi Local.

Table 1: Cumulative fruit Yield of Acid lime selections (2006-2008)

S. No	Name of the Selection	Average fruit yield (kg/tree)			Cumulative fruit yield (kg/Tree) (2006-2008)
		2006	2007	2008	
1	Selection -1	12.5	23.2	25.8	61.5
2	Selection -21	11.2	24.8	24.3	60.3
3	Selection -25	10.5	19.5	22.0	52.0
4	Tenali selection	15.6	22.5	22.6	60.7
5	Petlur Local	-	-	5.5	5.5
6	Tirupathi Local	-	-	3.9	3.9

Table 2 : Average number of Fruits and Average Fruit weight in Acid Lime Selections (2006-2008)

S.No	Name of the Selection	Average number of fruits /tree	Average Fruit weight (g)
1	Selection -1	735	32.5
2	Selection -21	648	30.5
3	Selection -25	688	31.2
4	Tenali selection	697	29.6
5	Petlur Local	128	28.5
6	Tirupathi Local	109	28.0

Table 3 : Canker severity on 0-5 scale (%infection on leaves, twigs and fruits) in Acid Lime Selections (2006-2008)

S.No	Name of the Selection	Disease severity 0-5 scale		
		On leaves	Twigs	Fruits
1	Selection -1	0	0	0
2	Selection -21	0	0	0
3	Selection -25	0	0	0
4	Tenali selection	1	0	1
5	Petlur Local	1	1	0
6	Tirupathi Local	1	1	0

CONCLUSION

From this study, it can be concluded that the Selection -1 may be recommended for cultivation under the calcareous soils of southern zone of Telangana.

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