

Technological gap- An emerging issues in transfer of custard apple production technology

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ABSTRACT

The study was conducted in Purandar Tahsil of Pune district, in all 15 villages on random basis were selected on the basis of more acres under plantation. From each village, 9 respondents were selected on the same criteria hence in all 135 respondents were interviewed. It was found that about 75 per cent of the custard apple cultivators were in between the age of 34 to 55 years. 62 per cent of them were Secondary educated. About 60 per cent had low level of social participation. Their orchard size was 0.29 to 0.94 ha. (88.00 per cent), 74 per cent of them earned Rs. 1 lakh to 2 lakh per annum earning from custard apple cultivation. Disease management (64 per cent), pest management (63 per cent), fertilizer management (63 per cent), selection of planting material (61 per cent) training and pruning management (61 per cent), weed management (50 per cent). The reasons for existence of technological gap was scarcity of irrigation water during Bahar treatment period (91 per cent), lack of knowledge about recommended chemical fertilizer dose (90 per cent) and unavailability of disease pest and drought resistant variety (85 per cent). The study emerged with the major implications that to promote the respondent cultivars for establishing the processing units and markets on co-operative basis.

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INTRODUCTION

The custard apple mostly consumed as table fruit, is grown in India over a vast area. It is a very delicious fruit belonging to the family Anonaceae, which is also known as, sitaphal, serifera, sugar apple and sweet sop. It is predominantly grown in Andrapradesh, Tamilnadu, Assam, Orissa and Maharashtra. It contains Vitamin C. its pulp is used in ice-cream and preparation of Shrikhand, custard apple powder, milk product, jam etc. Its immature fruits, seeds, leaves and roots are of considerable medicinal values both in Ayurvedic and Unani system of medicinal value both in tropical and subtropical region in the country and abroad the world. The average yield of custard apple is of 80 to 100 fruits per plant. Very less study has been conducted on custard apple production technology in particular. The present study is mainly focused on studying socio-economic profile of custard apple cultivators, to find out the technological gap in custard apple production technology, to ascertain the reasons for existence of technological gap in cultivation practices adopted by custard apple cultivators, to identify the constraints faced by them in production and marketing of the produce of custard apple. Now-a-days, custard apple is one of the most

important fruit crops in Purandhar Taluka of Pune district. This is because extension-cum resource gap for developing strategy to overcome this gap, it is essential to have an analysis of constraints of rating area are identified and appropriate solutions to overcome these constraints are formulated the production per unit area can be increased. In view of this the present investigation was carried out on custard apple production technology with the following specific objectives : to study the profile of custard apple cultivars, to study the extent of technological gap in custard apple production technology and to study the post harvest technology followed by the custard apple cultivars and to identify the constraints and suggestion made by the custard apple cultivars.

METHODOLOGY

There are 96 villages in Purander Tahsil. On the basis of area under custard apple orchard, only 15 villages were selected on random sample and from each selected village the list of custard apple growers was prepared and from each selected village 9 custard apple growers were selected randomly on the basis of area under custard apple plantation with the condition that the cultivartors should have an experience of 5 years harvesting from his

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plantation. Hence, from Purander Tahsil 15 villages, 135 respondents were selected for the study purpose. The data were collected personally with the help of well constructed and pre tested interview schedule from the respondents. The collected data were tabulated and analyzed with the help of appropriate statistical methods and the results are presented as under;

RESULTS AND DISCUSSION

The findings of the present study as well as relevant discussion have been presented in Table 1, 2, 3 and 4.

Profile of custard apple cultivators:

The findings pertaining to a profile of custard apple cultivars are presented in Table 1.

It is clear from Table 1 that majority of the custard apple cultivators were educated up to Secondary Education, were in middle age group, had medium family size and had medium size of land holding and majority of them had low level of social participation, medium level of sources of information. Respondents had custard apple orchards on an area of 0.29 to 0.94 ha. had annual income between Rs. 100001 to 200000/-. Supporting findings were made by Dhakane (2005) and Hinge (1996) in grape and tomato production.

It is observed from Table 2 there was that high technological gap in storage (98.51 per cent), followed by selection of variety (97.65 per cent), disease management (63.82 per cent), pest management (63.21 per cent), fertilizer management (60.86 per cent), training and pruning (60.18 per cent), weed management (50.00 per cent), pit filling (46.29 per cent), irrigation management (33.70 per cent), pit size (32.22 per cent), selection of soil (21.48 per cent), Bahar treatment (17.03 per cent), packaging (16.89 per cent) and grading (2.59 per cent). Similar findings are supported by Howal (2008) on pomegranate cultivation.

Post harvest technology followed by the custard apple cultivars:

Post harvest technology followed by the custard apple cultivators for getting better returns are grading, packaging, storage and marketing of produce. It was observed that farmers followed the grading practices to the extent of about 97.41 per cent for better prices while in case of practice like storage, there was very negligible or no adoption by the respondents because there were no storage facilities in the sample area for storage of the produce.

From Table 3 it is observed that a majority of the respondents of custard apple cultivation faced the problem

Table 1: Distribution of the respondents by their selected profile attributes

Sr. No.	Particulars	No. of respondent (N=135)	Percentage
1. Age			
	Young (up to 33 years)	17	12.60
	Middle (34 to 55 years)	102	74.55
	Old (56 and above years)	16	11.55
2. Education			
	Illiterate (no education)	10	7.40
	Primary (up to 4 th Std.)	18	13.30
	Secondary (5 th to 10 th Std.)	84	62.25
	Higher Secondary (11 th and 12 th Std.)	12	8.15
	Senior College	11	8.89
3. Social participation			
	Low (up to 4 scores)	81	60.00
	Medium (5 to 12 scores)	47	34.82
	High (13 and above scores)	7	5.18
4. Sources of information			
	Low (up to 4 scores)	21	15.56
	Medium (5 to 12 scores)	100	74.10
	High (13 and above scores)	14	10.34
5. Experience of custard apple cultivation			
	Low (up to 4 years)	21	15.56
	Medium (5 to 12 years)	100	74.10
	High (13 years and above)	14	10.34
6. Area under custard apple cultivation			
	Small (up to 0.28 ha.)	5	3.70
	Medium (0.29 -0.94 ha)	119	88.15
	Large (0.95 ha and above)	11	8.15
7. Annual income			
	Up to 100000/-	20	14.80
	Rs.100001 to 200000/-	76	56.31
	Rs.200001 to 300000/-	20	14.82
	Rs. 300001 to 500000/-	14	10.37
	Rs. 500001 and above	5	3.70
8. Annual income from cultivation of custard apple orchards			
	Up to Rs.50000/-	25	18.52
	Rs.50001 to 100000/-	80	59.28
	Rs.100001 to 150000/-	17	12.58
	Rs.150001 to 200000/-	07	5.18
	Rs. 200001 and above	06	4.44

about lack of knowledge about black fruit disease management practices (85.94 per cent), fluctuations in prices of fruit produce (86.69 per cent), lack of knowledge

Table 2 : Extent of technological gap in individual practice of custard apple production technology

Sr. No.	Particular of practice	Standard score	Extent of adoption in percentage	Gap (percentage)	Rank
1.	Storage	2	1.49	98.51	I
2.	Selection of variety	12	2.35	97.65	II
3.	Disease management	6	36.18	63.82	III
4.	Pest management	26	36.79	63.21	IV
5.	Fertilizer management	6	37.17	62.83	V
6.	Selection of planting material	6	39.14	60.86	VI
7.	Training and pruning	4	39.82	60.18	VII
8.	Weed management	4	50.00	50.00	VIII
9.	Pit filling	2	53.71	46.29	IX
10.	Irrigation management	4	66.3	33.70	X
11.	Size of pit	2	67.78	32.22	XI
12.	Selection of soil	4	78.52	21.48	XII
13.	Bahar treatment	8	82.97	17.03	XIII
14.	Packaging	6	83.11	16.89	XIV
15.	Average production	2	83.34	16.66	XV
16.	Spacing	6	92.88	7.22	XVI
17.	Grading	2	97.41	2.59	XVII
18.	Propagation	2	98.52	1.48	XVIII
19.	Harvesting	2	99.63	0.37	XIX
20.	Preparatory tillage	4	99.82	0.18	XX
21.	Planting time	2	100	0.00	XXI
	Total	135	55.62	44.38	

about application of plant protection measures (51.87 per cent), constraints in availability of healthy seedlings from disease free nurseries (57.25 per cent), lack of knowledge about micro nutrient (90.40 per cent) and high commission charges by the middleman (88.92 per cent). The other major problems expressed by the respondents were plant protection measures (56.31 per cent), scarcity of water

during Bahar treatment period (91.14 per cent), lack of technical knowledge about training, pruning and Bahar treatment (42.18 per cent), lack of availability of disease, pest and drought resistant varieties (79.28 per cent) lack of skilled labour for pruning and harvesting operation (58.53 per cent) and absence of electricity supply *i.e.* load shading (100 per cent).

Table 3: Constraints faced by the respondent in adoption of custard apple production technology

Sr. No.	Constraints	No. of respondents (N=135)	Percentage
1.	Lack of knowledge about black fruit disease management practices	89	85.94
2.	More fluctuation in prices of fruits produce	117	86.69
3.	Lack of knowledge about application of plant protection measures	70	51.87
4.	Constraints in availability of healthy seedlings from disease free nurseries	77	57.25
5.	Constraints in fertilizer and micro nutrient application	122	90.40
6.	High commission charges by the middle man	120	88.92
7.	Scarcity of water during Bahar treatment period	123	91.14
8.	High cost of plant protection	76	56.31
9.	Lack of skilled labour for training and pruning operations	69	58.53
10.	Lack of availability of disease, pest and drought resistant varieties	107	79.28
11.	Absence of electricity supply	135	100.00

Table 4: Suggestions made by the respondent custard apple cultivators

Sr. No.	Suggestions	No. of respondents (N=135)	Percentage
1.	Organization of result for demonstrations of the control of black fruit disease	119	88.17
2.	Regulated prices for fruits and provision for subsidies	129	95.58
3.	Availability of planting samplings in the government disease free nursery	95	70.39
4.	Provision of crop insurance for custard apple orchards	110	81.51
5.	Marketing and processing units may be started on co-operative basis	101	74.84
6.	Fertilizers and plant protection measures should be made available at subsidized rate.	120	88.92
7.	Technical guidance about application of plant protection measures may be arranged	104	77.06
8.	Disease, pest and drought resistant varieties should be evolved	108	80.02
9.	Timely guidance about Bahar treatment and recommended spacing	115	85.21
10.	University should develop improved variety	131	97.07
11.	Time of load shading may be reduced	135	100

Table 4 reveals that a majority (88.17 per cent) of the respondents were in need of organizing the demonstrations on the control of fruit disease, regulated

prices for fruits and provision for subsidies (95.58 per cent), provision of crop insurance for custard apple orchards (81.51 per cent), technical guidance about application of plant protection measures may be arranged (77.06 per cent), availability of planting saplings in the government disease free nursery (70.39 per cent), marketing and processing units may be started on the co-operative basis (74.84 per cent). Majority of the custard apple cultivators also suggested about availability of fertilizers and plant protection measures at subsidized rate (88.92 per cent), availability of disease, pest and drought resistant varieties should be evolved (80.02 per cent), timely guidance about bahar treatment and recommended spacing (85.21 per cent), university should develop improved variety (97.07 per cent), time of load shading may be reduced (100 per cent).

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