

## Original Research Article

# Constraints Perceived by the Papaya Growers in Adoption of Improved Papaya Production Technology in Begusarai District of Bihar, India

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## ABSTRACT

The study was conducted in Begusarai district of Bihar to find out the constraints perceived by the papaya growers in adoption of improved papaya production technology. A total number of 60 papaya growers was constitute as the sample for the present study. For collection of relevant data, a personal interview schedule was specially structured and prepared in order to get the desire response of farmers in face to face situation. The result of the analysis indicated that majority (66.67 %) of respondents had came under medium constraints category, whereas the 18.33 per cent respondents was felled in high constraints category and remaining 15.00 per cent respondent had low constraints in papaya cultivation. The findings also revealed that the appearance of different types of diseases has got the first rank and top most constraint indicating its mean score of 2.43, while "do not know fertilizer calculation" got the second rank and its mean score of 2.37, followed by the area of "appearance of different types of insect and pest" which received the 3rd rank during the course of study having its mean score of 2.28.

### Keywords

Constraints,  
Papaya growers,  
Production  
technology

## Introduction

Agriculture is the backbone of Indian economy, which dictates the livelihood system of millions of people in general and farmer in particular. India has achieved self-sufficiency in food grain production but not in fruit production. In recent years, greater attention is being paid to horticulture for better utilization and development of waste lands, which are not suitable for economic cultivation of field crops. Papaya (*Carica papaya*) fruit is very popular with the farmers in general because it requires less area per plant, comes to fruiting in a year, easy to cultivate and provides more income per hectare. The importance of papaya to agricultural and the world's economy is demonstrated by its wide distribution. It has

long been known and cultivated in the home garden by the people of tropics and sub-tropics, because it adapts to diverse soil and climatic condition and gives quick returns. It has emerged from the status of a home garden crop to that of commercial orchards in many tropical countries. It is one of the highest producer of fruits per ha. The production of papaya is increasing in the Begusarai district but productivity was low and mostly orchards are damaged by heavy infestation of insect, pest and diseases, high post harvest losses, poor management of the orchards, unavailability of quality planting of improved varieties and some other constraints. Therefore, to increase the farm income, it is essential to identify the major

constraints in production and marketing of papaya crop and to suggest appropriate constraint management measures. This paper examines the problems faced by farmers from their own point of view.

### **Materials and Methods**

Begusarai district of Bihar state has been identified as a locale of present research enterprise in view of its importance in terms of area and total production of papaya crop in the state. Out of 18 blocks in Begusarai district, five blocks which had maximum area under papaya cultivation, was selected. Out of these five blocks, two villages from each block, having maximum area under papaya was selected. So in all ten villages was selected as sample villages for this study. Six papaya growers were taken from each of the selected village. Thus a total number of 60 papaya growers was constitute as the sample for the present study. For collection of relevant data, a personal interview schedule was specially structured and prepared in order to get the desire response of farmers in face to face situation. The constraints as perceived by respondents were scored on three point continuum i.e. 3, 2 and 1 on the basis of magnitude of the problem. The responses were recorded and converted into frequency, percentage, standard deviation, mean score and constraints were ranked accordingly.

### **Results and Discussion**

The results of the present study as well as relevant discussions have been presented under following sub heads:

#### **Overall constraints of papaya growers**

An attempt was made to ascertain from the respondents, the constraints encountered by them in the adoption of recommended

package of practices of papaya and also their suggestions to overcome them. During the interview, the respondents were asked to enumerate the constraints faced by them in the adoption of recommended package of practices of papaya and to give their suggestions. As many as fourteen constraints in connection with practices of papaya cultivation were identified. The scores of constraints in cultivation of papaya growers ranged from 23 to 32, with an average of 28.03 and standard deviation of 2.62. On the basis of their scores, the papaya farmers were classified into three categories as low (< 25.41), medium (25.41 to 30.65), high (> 30.65). Data are presented in the table -1.

Table-1 revealed that a majority (66.67 %) of respondents had come under medium constraints category, whereas the 18.33 per cent respondents was felled in high constraints category whereas remaining 15.00 per cent respondent had low constraints in papaya cultivation.

#### **Constraints faced by papaya growers in adoption of recommended practices in papaya cultivation**

The papaya growers gave their responses as high, medium and low in each constraint. The constraints expressed by the respondents were tabulated and presented in Table -2 with frequencies and percentages were assigned based on their magnitude.

The data from the Table-2 indicates that, 50.00 per cent of the papaya growers had more important and 45.00 per cent of the papaya growers had important constraint in "appearance of different types of diseases of papaya" followed by 45.00 per cent of the papaya growers had more important and 51.67 per cent of the papaya growers had important constraint in "do not know fertilizer calculation" and 36.67 per cent of

the papaya growers had more important and 50.00 per cent of the papaya growers had important constraint in "lack of technical knowledge with respect to use of pesticides" in papaya cultivation. It is observed that, 35.00 per cent of the papaya growers had more important and 58.33 per cent of the papaya growers had important constraint in "appearance of different types of insect and pest of papaya" followed by 30.00 per cent of the papaya growers had more important and 60.00 per cent of the papaya growers had important constraint in "lack of proper marketing channel due to which respondents are not getting good return," 25.00 per cent of the papaya growers had more important and 65.00 per cent of the papaya growers had important of constraint in "lack of government support," 25.00 per cent of the papaya growers had more important and 60.00 per cent of the papaya growers had important constraint in "high input cost requires for papaya cultivation" and 18.33 per cent of the papaya growers had more important and 65.00 per cent of the papaya growers had important constraint in "non availability of labours at the critical times" in papaya cultivation.

Also it is observed that, 55.00 per cent of the papaya growers had important and 31.67 per cent of the papaya growers had less important constraint in "lack of extension service" followed by 55.00 per cent of the papaya growers had important and 28.33 per cent of the papaya growers had less important constraint in "non availability of papaya experts or consultants within the districts", 53.33 per cent of the papaya growers had important and 43.33 per cent of the papaya growers had less important constraint in "non availability of fertilizers in time" in papaya cultivation and 46.67 per cent of the papaya growers had important and 40.00 per cent of the papaya growers had less important constraint in "drainage facility" in papaya cultivation. It is also indicated that 51.67 per cent of the papaya growers had less important and 48.33 per cent of the papaya growers had important constraint in "Papaya fruits are harvested by other people" followed by 45.00 per cent of the papaya growers had less important and 43.33 per cent of the papaya growers had important constraint in proper male and female ratio in papaya cultivation.

**Table.4** Distribution of papaya growers according to their suggestion

(n=60)			
S.No	Problems	f	%
1	Virus resistant variety should be developed	58	96.67
2	Provide financial support for papaya cultivation	57	95
3	Supply of planting materials at a subsidised rate by the Department of Horticulture	52	86.67
4	Plant protection chemicals at subsidized rates	48	80
5	Establishment of co-operative market for papaya growers	42	70

**Table.1** Distribution of papaya growers according to overall constraints

S.No	Categories	f	%
1	low ( < 25.41 )	9	15
2	Medium ( 25.41 to 30.65)	40	66.67
3	High ( > 30.65 )	11	18.33
	Total	60	100

Mean = 28.03, S.D = 2.62

**Table.2** Constraints faced by papaya growers in adoption of recommended practices in papaya cultivation

S. No.	Constraints	Degree of importance ( N = 60 )					
		More important		Important		Less important	
		F	%	f	%	f	%
1	Non availability of labours at the critical times	11	18.33	39	65	10	16.67
2	Papaya cultivation requires drainage facility.	8	13.33	28	46.67	24	40
3	Papaya cultivation requires proper male and female ratio.	7	11.67	26	43.33	27	45
4	High input cost requires for papaya cultivation	15	25	36	60	9	15
5	Do not know fertilizer calculation	27	45	30	50	3	5
6	Non availability of fertilizers in time.	2	3.34	32	53.33	26	43.33
7	Papaya fruits are harvested by other people.	0	0	29	48.33	31	51.67
8	Appearance of different types of insect and pest.	21	35	35	58.33	4	6.67
9	Appearance of different types of diseases.	30	50	27	45	3	5
10	Lack of technical knowledge with respect to use of pesticides	22	36.67	31	51.67	7	11.67
11	Non availability of papaya experts or consultants within the districts	10	16.67	33	55	17	28.33
12	There is lack of proper marketing channel due to which respondents are not getting good return.	18	30	36	60	6	10
13	Lack of government support.	15	25	39	65	6	10
14	Lack of extension service	8	13.33	33	55	19	31.67

**Table.3** Constraints (in rank-wise) faced by papaya growers in papaya cultivation

S.No	Statements	Mean score	Rank
1	Non availability of labours at the critical times	2.02	VIII
2	Papaya cultivation requires drainage facility.	1.73	XI
3	Papaya cultivation requires proper male and female ratio.	1.68	XII
4	High input cost requires for papaya cultivation	2.1	VII
5	Do not know fertilizer calculation	2.37	II
6	Non availability of fertilizers in time.	1.57	XIII
7	Papaya fruits are harvested by other people.	1.5	XIV
8	Appearance of different types of insect and pest.	2.28	III
9	Appearance of different types of diseases.	2.43	I
10	Lack of technical knowledge with respect to use of pesticides	2.25	IV
11	Non availability of papaya experts/consultants within the districts	1.9	IX
12	There is lack of proper marketing channel due to which respondents are not getting good return.	2.2	V
13	Lack of government support.	2.17	VI
14	Lack of extension service	1.82	X

**Constraints (in rank-wise) faced by papaya growers in papaya cultivation**

There are different fourteen constraints identified which are classified into more important, important and less important etc. scoring was done as 3, 2 and 1 respectively. Rank of constraints had decided on basis of mean score. The results are presented in Table-3.

On perusal of the table-3, it can be observed that the appearance of different types of diseases has got the first rank and top most constraint indicating its mean score of 2.43, while "do not know fertilizer calculation" got the second rank and its mean score of 2.37, followed by the area of "appearance of different types of insect and pest" which received the 3rd rank during the course of study having its mean score of 2.28. The "lack of technical knowledge with respect to use of pesticides" was observed as the 4th rank and its mean score of 2.25, "There is lack of proper marketing channel due to which respondents are not getting good return" (5th rank) and its mean score of 2.20 followed by lack of government support (6th

rank) and its mean score of 2.17, high input cost requires for papaya cultivation (7th rank) and its score of 2.10, non availability of labours at the critical times (8th rank) and its mean score of 2.02, non availability of papaya experts/consultants within the districts (9th rank) its mean score of 1.90. The other important constraints like lack of extension service (10th rank), papaya cultivation requires drainage facility (11th rank), papaya cultivation requires proper male and female ratio (12th rank), non availability of fertilizers in time (13th rank) and papaya fruits are harvested by other people (14th rank) indicating mean score 1.82, 1.73, 1.68, 1.57 and 1.50 respectively.

The lack of awareness about schemes implemented for the promotion of papaya cultivation and lack of contact with extension officers of Horticulture development department might have favoured this adverse situation.

**Suggestions given by papaya growers to improve papaya production technology**

It is clear from the table-4 that majority of

respondents (96.67%) suggested to virus resistant variety should be developed. The other suggestions were provide financial support for papaya cultivation (81.67%). Whereas 86.67, 80.00 and 70.00 per cent of respondents suggested supply of planting materials at the subsidized rate by the Department of Horticulture, plant protection chemicals at subsidized rates and establishment of cooperative market for papaya growers, respectively.

Papaya being commercial and highly remunerative crop requires proper care during various crop growth stages. The constraints expressed by the respondents should be tackled by the concerned departments without much delay, otherwise crop growth will be affected and leads to reduction in yield. Easy availability of finance, policy support for entrepreneurs, organizing effective training programmes, promoting cooperatives and improving marketing system will also help to overcome the constraints.

The study concluded that majority (66.67 %) of respondents had come under medium constraints category, whereas the 18.33 per cent respondents was felled in high constraints category and remaining 15.00 per cent respondent had low constraints in papaya cultivation. The appearance of different types of diseases has got the first rank and top most constraint while "do not know fertilizer calculation" got the second rank followed by the area of "appearance of different types of insect and pest" which received the 3rd rank during the course of study. A majority of respondents (96.67%) suggested to virus resistant variety should be developed. The other suggestions were provide financial support for papaya cultivation (95.00%). Whereas 86.67 per cent of respondents were suggest supply of planting materials at the subsidized rate by the Department of Horticulture.

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