



Impact of Mission Organic Value Chain Development Scheme on Yield of Aromatic Black Rice

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ABSTRACT

The present study was carried out during 2020-21 in 18 villages of Thoubal and Bishnupur districts of Manipur to analyze the impact of Mission Organic Value Chain Development Scheme on crop yield and income of aromatic black rice growers. One hundred and eighty respondents were interviewed using a pre tested interview schedule. An increase of 5.21 and 5.24 per cent was observed in respect of grain yield and straw yield, respectively after registering of aromatic black rice growers to MOVCDs. There was a significant increase in the gross income (25.07%) and net income (41.47%) of aromatic black rice growers after joining the MOVCDs. In respect of production problems, scarcity of organic manure and inadequate financial assistance provided for off-farm inputs (biofertilizers, biopesticides and neem cake) were accorded first and second ranks by the aromatic black rice growers. With respect to the marketing problems, inaccessible to organic produce outlets was assigned first rank by the aromatic black rice growers, followed by lack of access to reliable market information, regulation and distribution channels (Rank II) was assigned the second rank by the aromatic black rice growers.

Key Words: MOVCDs, Crop yield, Net income, Problems, Suggestions.

INTRODUCTION

The Mission Organic Value Chain Development for North Eastern Region (MOVCD-NER) is a Centrally sponsored scheme established by the Ministry of Agriculture and Farmers Welfare. It was implemented for promoting organic cultivation practices among farmers and value chain creation in the North Eastern States. Phase I was implemented from 2017-18 to 2019-2020 covering 2000 ha. The scheme was implemented by Manipur Organic Mission Agency (MOMA) in Manipur aiming at promotion and production of certified organic commodities focusing on export-oriented crops viz., Black Aromatic Rice, Ginger, Tamenglong Orange, King Chilli, Kachai Lemon and Pineapple. The MOMA is conducting various production and extension activities, such as providing training on organic cultivation and identification of farmer cluster groups through which the organic practices, the information and technical know-how is expected to be tickled down (Reddy, 2018).

The black aromatic black rice is a native to the north-eastern region of India. The black colour of the grain which give the crop a distinct feature is primarily due to its anthocyanin content. Various studies have reported that the aromatic black rice have superior nutritional values such as higher contents of minerals, proteins, high antioxidants, and perceived to have various health benefits. It is high time to know the impact of MOVCDs on the crop yield and income of the beneficiary farmers, hence this study was undertaken with the objective to analyse the impact of MOVCDs on crop yield and income of aromatic black rice growers and document the problems faced by the aromatic black rice growers.

MATERIALS AND METHODS

The study was carried out during 2020-21 in all the talukas of Thoubal and Bishnupur districts of Manipur, where the first phase of Mission was implemented from 2017-2018 to 2019-20 (phase

1). Lilong, Thoubal, and Kakching from Thoubal districts and Nambol, Bishnupur, and Moirang from Bishnupur district were selected for the research study. Three villages from each of the sampled six talukas were randomly selected for the study. From each of the selected 18 villages, ten beneficiaries aromatic black rice growers were randomly selected for the study. Thus, the total number of beneficiary aromatic black rice growers sampled for the research study was 180. All the beneficiary farmers had obtained the benefits/incentives from MOVCDs since the inception of the scheme. The grain and straw yield obtained by the aromatic black rice growers before joining the scheme was also documented to compare the crop yield obtained before and after joining the MOVCDs to know the impact of MOVCS on crop yield. The respondents were asked to mention the problems and suggestion for effective implementation of MOVCDs.

RESULTS AND DISCUSSION

Impact of MOVCDs on crop yield

The aromatic black rice growers had obtained a slight increase in the grain yield (11.50 q/acre) after registering under MOVCDs, as compared to the grain obtained by them before they joined MOVCDs (27.25q/ha) (Table 1). There was an increase of 5.21 per cent in grain yield after registering to MOVCDs. The black rice growers could harvest a slight increase in the straw yield (6.67 t/ha) after registering to MOVCDs when compared with the straw yield before registering to MOVCDs (6.32t/ha) (Table 1). There was an increase of 5.24 per cent in straw yield after the aromatic black rice growers registering to MOVCDs. The student 't' test value indicated that there was a non-significant increase in both grain yield (0.69) and straw yield (0.71) by the respondents before and after registering to MOVCDs.

Impact of MOVCDs on gross income of aromatic black rice growers

The gross income from the grain yield earned by the aromatic black rice growers after registering

to MOVCDs (Rs.1,66,750/ha) was much higher than the gross income obtained from grain yield before registering to MOVCDs (Rs. 1,22,625/ha) (Table 1). There was an increase of 26.46 per cent of gross income obtained from grain yield after the respondents registering for MOVCDs. The student 't' test value (2.09) indicated a significant increase in the gross increase obtained from grain yield before and after registering for MOVCDs by aromatic black rice growers. A slight increase in the gross income from straw yield of aromatic black rice growers after registering to MOVCDs (Rs.11,680/ha) as compared to before registering to MOVCDs (Rs.11,070/ha) was observed. There was an increase of 5.22 per cent in gross income obtained from straw yield by the aromatic black rice growers after registering to MOVCDs, however the 't' value was non-significant increase in the gross income obtained from straw yield of the aromatic black rice growers when compared to before and after registering to MOVCDs.

The data (Table 1) further revealed that there was a substantial increase in the total gross income of aromatic black rice growers after registering to MOVCDs (Rs.1,78,430/ha) as compared to the total gross income of the respondents before registering to MOVCDs (Rs. 1,33,695/ha). There was an increase of total gross income of the aromatic black rice growers by 33.46 per cent. A significant difference was observed between the total gross income obtained by the aromatic black rice growers before and after registering to MOVCDs. which tallied for a 35.98 per cent change. As expected, the results of the t-test indicated a significant difference. Significant increase in respect of total gross income is because the aromatic black rice growers used to sell their produce at Rs. 4500/q in the local market before registering to MOVCDs. The beneficiary aromatic black rice growers are selling the organic aromatic black rice to MOVCDs at a premium price of Rs.5800/q, hence there was a significant increase in the total gross income of aromatic black rice growers. Similar findings were reported by Jagadeesh *et al* (2020).

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Table 1. Impact of MOVCDs on crop yield and income of aromatic black rice growers

Sl. No.	Particulars	Aromatic black rice growers		Percentage increase	't' value
		Before MOVCDs	After MOVCDs		
1	Productivity (yield/ha)				
a	Grain yield (q/acre)	27.25	28.75	5.50	0.99 ^{NS}
b	Straw (t/ha)	6.32	6.67	5.53	1.01 ^{NS}
2	Gross income (yield x price of produce) (Rs/ha)				
a	Grain (Rs/ha)	1,22,625	1,66,750	35.98	1.88*
b	Straw (Rs./ha)	11,070	11,680	5.51	1.03 ^{NS}
c	Total	1,33,695	1,78,430	33.46	2.85*
3	Net income (Gross income-cost of cultivation) (Rs/ha)				
Total		73,695	1,25,930	70.87	2.68**

Note: NS= non-significant; *= Significant at 5%; **= Significant at 1%; Cost of cultivation before and after MOVCDs is Rs. 60,000/ha and Rs. 52,500/ha, respectively; Price of aromatic black rice grain before and after MOVCDs is Rs. 4500/q and Rs.5800/q, respectively; Price of straw is 1750/t.

Impact of MOVCDs on net income of aromatic black rice growers

A perusal of data (Table 1) reveals that the aromatic black rice growers obtained a higher net income after registering for MOVCDs (Rs.1,25,930/ha) as compared to their net income before registering to MOVCDs (Rs. 73,695/ha) and the percentage increase in the net income works out to be 70.87. The student 't' test value revealed that there exists highly significant difference in the net income of the aromatic black rice growers before and after registering to MOVCDs.

It is evident from the results of the research study there is an increase in crop yield and income of the aromatic black rice growers could be attributed to the impact of MOVCDs.

Problems faced by aromatic black rice growers in Mission Organic Value Chain Development Scheme

In respect of production problems, scarcity of organic manure and inadequate financial assistance provided for off-farm inputs (biofertilizers,

biopesticides and neem cake) were accorded first and second ranks by the aromatic black rice growers (Table 2). While, lack of credit facilities to invest on organic agriculture and allied activities, untimely disbursement of direct fund transfer after verification of on-farm input production units created by beneficiaries, scarcity of labour, erratic onset of monsoon rain, inadequate financial assistance provided for establishing on-farm input production units (liquid manure tanks, compost tanks, botanical extracts etc.), lack of knowledge on pests and disease control, and no reliable package of practices for organic farming were accorded III, IV, V, VI, VIII, VIII and IX ranks, respectively by the aromatic black rice growers.

With respect to the marketing problems, inaccessible to organic produce outlets was assigned first rank by the aromatic black rice growers, followed by lack of access to reliable market information, regulation and distribution channels (II rank), inadequate institutional support for marketing the produce (III rank) and irregular

Table 2. Problems faced by aromatic black rice growers in MOVCDs. (n=180)

Sr. No.	Problems	Aromatic black rice growers		
		No.	%	Rank
A.	Production problems			
1	Scarcity of organic manure	56	31.11	I
2	Inadequate financial assistance provided for off-farm inputs (biofertilizers, biopesticides and neem cake.	43	23.89	II
3	Lack of credit facilities to invest on organic agriculture and allied activities	42	23.33	III
4	Untimely disbursement of direct fund transfer after verification of on-farm input production units created by beneficiaries	37	20.56	IV
5	Scarcity of labour	34	18.88	V
6	Erratic onset of monsoon rain	36	20.00	VI
7	Inadequate financial assistance provided for establishing on-farm input production units (liquid manure tanks, compost tanks, botanical extracts etc.)	25	13.89	VII
8	Lack of knowledge on pests and disease control	23	12.78	VIII
9	No reliable package of practices for organic farming	13	7.22	IX
B.	Marketing problems			
1	Inaccessible to organic produce outlets	52	28.89	I
2	Lack of access to reliable market information, regulation and distribution channels	48	26.67	II
3	Inadequate institutional support for marketing the produce	44	24.44	III
4	Irregular collection of organic produces from farmgate	37	20.56	IV

collection of organic produces from farmgate (IV rank) were the other marketing problems faced by aromatic black rice growers in the order of importance. The authorities of MOVCDs should address the production and marketing problems faced by aromatic black rice growers for the effective implementation of MOVCDs.

Suggestions of aromatic black rice growers for the effective implementation of Mission Organic Value Chain Development Scheme

Accessibility to organic produce outlets (Rank I), access to reliable market information, regulation and distribution channels (Rank II), adequate institutional support needed for marketing the produce (Rank III), and regular and timely collection of organic produces from farmgate (Rank IV) were the suggestions which were assigned the

first four ranks by the aromatic black rice growers for the effective implementation of MOVCDs (Table 3), while the suggestions namely, provision of adequate financial assistance provided for off-farm inputs (biofertilizers, biopesticides and neem cake (Rank V), provision of credit facilities to invest on organic agriculture and allied activities (Rank VI), timely disbursement of direct fund transfer after verification of on-farm input production units created by beneficiaries (Rank VII), inadequate financial assistance provided for establishing on-farm input production units (liquid manure tanks, compost tanks, botanical extracts etc.) (Rank VIII) and accessibility of extension workers for obtaining technical know-how on control of pests and disease control (Rank IX) were the suggestions which were assigned the last five ranks by the aromatic

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Table 3: Suggestions of aromatic black rice growers for effective implementation of MOVCDs. (n=180)

Sr. No.	Suggestions	Aromatic black rice growers		
		No.	%	Rank
1	Accessibility to organic produce outlets	52	28.89	I
2	Access to reliable market information, regulation and distribution channels	48	26.67	II
3	Adequate institutional support needed for marketing the produce	44	24.44	III
4	Regular and timely collection of organic produces from farmgate	37	20.56	IV
5	Provision of adequate financial assistance provided for off-farm inputs (biofertilizers, biopesticides and neem cake.	43	23.89	V
6	Provision of credit facilities to invest on organic agriculture and allied activities	42	23.33	VI
7	Timely disbursement of direct fund transfer after verification of on-farm input production units created by beneficiaries	37	20.56	VII
8	Inadequate financial assistance provided for establishing on-farm input production units (liquid manure tanks, compost tanks, botanical extracts etc.)	25	13.89	VIII
9	Accessibility of extension workers for obtaining technical know-how on control of pests and disease control	23	12.78	IX

black rice growers for the effective implementation of MOVCDs. The suggestions put forth by the aromatic black rice growers needs to be considered by the policy makers and authorities of MOVCDs for the effective implementation of MOVCDs.

CONCLUSION

The study results has revealed that there is an increase in the grain and straw yield by five per cent and also there was a significant increase in the gross income (25.07%) and net income (41.47%) of aromatic black rice growers after joining the MOVCDs. Provision of adequate financial assistance provided for off-farm inputs and on farm input production units, adequate and timely availability of credit and timely disbursement of direct fund transfer by the authorities of MOVCDs will help the aromatic black rice growers to increase the adoption level of organic farming practices

leading to enhanced crop yield. Accessibility to organic produce outlets, access to reliable market information, regulation and distribution channels, adequate institutional support needed for marketing the produce and regular and timely collection of organic produces from farmgate by the MOVCD authorities for getting good marketing facilities, besides receiving good price for the organic rice grain.

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