



Constraints Perceived by Tribal Farmers in Adoption of Improved Production Technologies of Rapeseed-Mustard in Ranchi District

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ABSTRACT

Oilseeds constitute a major portion of human diet. In developing countries, most of the farmers have small landholdings, limited resources and excess family labour. This makes technological up-gradation in agriculture more imperative. The present study was undertaken to get insight into the constraints faced by tribal farmers in adoption of improved production technologies of rapeseed-mustard, which strictly control their adoption behaviour. Study was conducted in purposively selected Nagri and Ormanjhi blocks of Ranchi District. Four villages were randomly selected from each of these two blocks. Twenty five tribal farmers from each village were selected randomly consisting of the total sample of 100 respondents. The data were collected from each respondent through pre-tested structured interview schedule and appropriate statistical procedures were employed to analyze the data. Constraints were grouped into six categories, namely, ecological, technological, infrastructural, extension-related, economic and socio-cultural. The study concluded that undulated topography and gravelly soil equipped with poor fertility, dearth of short duration varieties of rice suitable for up and mid land and dearth of less water requiring varieties, lack of soil testing facility, inadequate technical know-how among farmers about improved practices, high cost of inputs and free grazing of cattle were experienced to be important constraints which hampered the adoption of improved rapeseed-mustard production technologies.

Key Words: Adoption, Constraints, Farmers, Technologies, Tribal.

INTRODUCTION

India being the land of multitudinous culture and people is a repository of about 645 tribal communities. Among all states and union territories, Jharkhand ranks 6th in tribal population (Anon, 2001). The tribal population of Jharkhand is 7.08 million constituting 26.30 per cent of the total population of the state. Oilseed crops play second important role in Jharkhand agricultural economy next to food grains in terms of area and production. Rapeseed-mustard, soybean, groundnut

and sunflower account for a major chunk of the output. In Jharkhand, rapeseed and mustard are produced mainly under rainfed and resource-scarce conditions. The contribution of rapeseed-mustard cultivation to the livelihood security of the small and marginal tribal farmers is substantial in the state. The tribal farmers grow this crop by use of their age-old practices mainly as a mixed crop. There are numerous constraints that lead to low-adoption of improved practices of rapeseed-mustard. Keeping in view the above facts, the present study was

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conducted to find out the major constraints which hinder the adoption of recommended package of practices of rapeseed-mustard.

MATERIALS AND METHODS

The study was conducted in purposively selected Ranchi district of Jharkhand, during the year 2016-17, as the rapeseed-mustard production technologies were popularized in the villages of selected blocks of the district under BAU-DRMR project and also the easy accessibility for a student researcher. In order to select the villages two blocks, namely Ormanjhi and Nagri were purposively selected. Two villages from each of two blocks were selected randomly. Likewise from all four villages namely, Rukka and Getalsud in Ormanjhi block and Panchdiha and Chipra in Nagri block, a sample of 100 tribal respondents was selected for data collection. The constraints were conceptualized as impediments or obstacles faced in adopting the recommended package of practices of rapeseed-mustard as per the guidelines of BAU-DRMR project. In order to measure the constraints, a schedule was developed by enlisting all the possible constraints being faced by the farmers in adoption of recommended package of practices of Rapeseed-Mustard. The constraints were grouped into six categories, namely, ecological, technological, extension-related, infrastructural, economic and socio-cultural. Each category was further divided into several relevant items. The total score obtained by the respondents for each statement was calculated and percentage was obtained. On the basis of percentage, rank was assigned to different items under various categories groups of constraints. Thereafter, data were tabulated, analyzed and inferences were drawn in light of the objective.

RESULTS AND DISCUSSION

Ecological constraints

The data (Table 1) indicated that the respondents were confronted with undulated topography, gravelly soil equipped with poor fertility was perceived as the most important ecological constraint followed

by very low and unpredicted rainfall during winter months (18%) and low water holding capacity of soil (7%) in adoption of improved rapeseed-mustard production technologies. Since the area comes under Chotanagpur plateau, it has undulated topography and there is problem of low water holding capacity. Fertility status of soil is poor due to heavy erosion in upland soils.

Technological constraints

It was noticed that a very few varieties suitable for late sown conditions and less water requiring was perceived as the most important technological impediment in adoption of improved rapeseed-mustard production technologies (38%) followed by high fertilizer requirement by HYVs (35%), dearth of short duration varieties of rice suitable for up and mid land to have next crop of mustard (22%), low efficacy of plant protection chemicals (14%) were also perceived as important technological constraints in the way of adoption of improved rapeseed-mustard production technologies. In the adopted villages farmers usually take rapeseed-mustard after harvesting of long duration rice varieties, which hinders timely sowing of rapeseed-mustard.

Infrastructural constraints

Majority of the respondents perceived lack of soil testing facility as the most important infrastructural constraint in adoption of improved rapeseed-mustard production technologies, followed by unavailability of quality inputs at proper time and price (39%), lack of timely availability of institutional credit facility (33%), lack of adequate irrigation facility (26%) and lack of improved agricultural implements and tools were assigned 2nd, 3rd, 4th and 5th rank respectively.

These findings were similar to those of Singh *et al* (2013) who found that constraints faced by tribal respondents were because of agricultural department did not provide proper guidance when required and much difficulty in purchasing agricultural inputs from market and cooperative

Constraints Perceived by Tribal Farmers

Table 1. Different constraints perceived by the respondents in adoption of improved rapeseed-mustard production technologies. N=100

Sr . No.	Constraint	Percentage	Rank
A	Ecological constraints		
1.	Undulated topography, gravelly soil equipped with poor fertility	89	I
2.	Very low and unpredicted rainfall during winter months	18	II
3.	Low water holding capacity of soil	7	III
B	Technological constraints		
4.	A very few varieties suitable for late sown conditions and dearth of less water requiring varieties	38	I
5.	High fertilizer requirement by HYVs	35	II
6.	Dearth of short duration varieties of rice suitable for up and mid land	22	III
7.	Low efficacy of plant protection chemicals	14	IV
C	Infrastructural constraints		
8.	Lack of soil testing facility	58	I
9.	Unavailability of quality inputs at proper time and price	39	II
10.	Lack of timely availability of institutional credit facility	33	III
11.	Lack of adequate irrigation facility	26	IV
12.	Lack of improved agricultural implements and tools	15	V
D	Extension-related		
13.	Inadequate technical know-how about improved practices	57	I
14.	Inadequate advice/guidance and low credibility of the change agents	31	II
15.	Lack of adequate and updated information	23	III
16.	Unconvincing results of demonstrations	15	IV
E	Economical constraints		
17.	High cost of inputs	56	I
18.	Lack of capital	30	II
19.	Low price of the produce	22	III
F	Socio-cultural constraints		
20.	Free grazing of cattle during winter season	72	I
21.	Oil is less used in local people's food habit	29	II
22.	Superstitions and taboos in the way of adoption of new technologies	19	III
23.	Lack of innovativeness among farmers	11	IV

societies, credit facilities and service provided by bank was not timely and there had been a tendency of delay in credit disbursals, insufficient supply of electricity for cultivation of crop, etc.

Extension-related constraints

All the listed extension-related constraints were faced by the respondents. Inadequate technical know-how about improved practices (57%) was assigned the first rank among extension-related constraints followed by inadequate advice/guidance and low credibility of the change agents (31%) due to their irregular visit, lack of adequate and up dated information (23%) due to poor coverage of mass media of communication, unconvincing results of demonstrations (15%) due to poorly organized demonstrations, The prime reason of facing these constraints was due to large number of vacant positions (more than 50%) of grassroot level extension workers in agriculture department and technical staff working in the field is not available when needed and is not devoted to the professional work.

Economic constraints

Majority of the respondents were confronted with the constraint of lack of capital and as such it was rated as the most important constraint in adoption of improved rapeseed-mustard technologies followed by high cost of inputs and low price of the produce.

These findings were in accordance with Singh *et al* (2013) who reported that high cost of inputs, lack of capital and poor purchasing power of the farmers were the major constraints in adoption of recommended technologies for various crops. Majority of tribal farmers are small and marginal with scattered and fragmented land holdings and they come under below poverty line so thus find it difficult to purchase HYVs of seed and other technologically advanced inputs

Socio-cultural constraints

A perusal of Table 1 made it clear that free grazing of cattle during winter season was the major

socio-cultural constraint in adoption of improved rapeseed-mustard production technologies followed by less use of oil in the local people's food habit, superstitions and taboos in the way of adoption of new technologies and lack of innovativeness among farmers were perceived as second, third and fourth important socio-cultural impediments, respectively in adoption of rapeseed-mustard production technologies..

CONCLUSION

The findings lead to conclude that a number of constraints were found to be hindering the adoption of improved rapeseed-mustard production technologies by the farmers. Undulated topography, gravelly soil equipped with poor fertility, dearth of short duration varieties of rice suitable for up and mid land and dearth of less water requiring varieties, lack of soil testing facility, inadequate technical know-how about improved practices, high cost of inputs and free grazing of cattle were perceived to be important constraints which hampered the adoption of improved rapeseed-mustard production technologies.

Therefore, it is suggested to intensify the extension efforts to increase the knowledge level and adoption of recommended rapeseed-mustard technologies. Apart from this, credit facility should be provided at proper time and most required inputs should be supplied at proper time. There is an inevitable need to focus the technological constraints, particularly to evolve suitable technologies to overcome the limitations.

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