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TECHNO-ECONOMIC CONSTRAINTS PERCEIVED BY PULSE GROWERS OF TAL LAND IN BIHAR

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ABSTRACT

The study was conducted in two block of Patna district of Bihar namely Barh and Mokama consisting of 60 farmers from each block as sample drown from six villages i.e. three villages from each block comprises a total of 120 samples of pulse growing farmers . It was observed that major constraints faced by farmers were the non availability of improved variety of seed at the time of sowing followed by Low price and .lack of proper knowledge of package and practices, insect pest and diseases management etc in almost all selected villages under study.

Key words : *Pulses, cropping pattern, tal area, technological and socio-economic constraints.*

Pulses in India is considered as poor man's protein. The area under pulses in India was 23 million hectares with an annual production of 15 million tons (2003-04) would be expected to increase up to 24.28 million hectare in the year 2013-14 with production of 22.40 million tonnes. However productivity would be from 635Kg/ha to 765Kg/ha over the mentioned period under study (DES, 2009-10). The net availability of pulses has came down from 60 gm/day/person in 1951 to 43 gm/day/person (Indian Council of Medical Research recommends 65 gm/day/capita) Therefore there is need to identify the gaps in the production and consumption present strategy to increase the area under pulses and also to develop the location specific suitable new varieties of seeds to minimises these gap of requirement and availability of pulses in the countries. Decline in area of chickpea was mainly due to insecure harvest of crop in isolated pockets due to social factor.

In Bihar, pulse crops got major setback as area under pulses has been continuously declining till 2009. Among pulse crop grown in Bihar Lentil is the only pulse crop whose cropped area has been increased by the year of 2010, and production is still higher than the national average (991kg/ha). In addition to this, there is a huge variability in area and production of major pulses during 2000-2009, however the productivity during the same period was more stable showed that there is an ample scope to increase the production potential of major pulses in the state if adequate policy measures are taken Decline in area of chickpea was mainly due to insecure harvest of crop in isolated pockets..

To identify the problem and opportunity, this study has been planned with main aimed to identifying the technical and socio-economic constrains faced by the farmers in tal area which is bowl of pulse production in Bihar.

RESEARCH METHODOLOGY

The study was conducted in three blocks having highest area under pulses in Patna district of Bihar. Two villages from each block consisting of 20 pulse growers from each village were selected randomly. Thus, the data were collected from 120farmers through a semi-structured interview schedule by using personal interview technique. Thereafter data were compiled, tabulated, analysed and interpreted as per objectives of the study. Aspect-wise constraints of pulse grower's were worked out. The constraints were categorized into two categories namely, socioeconomic constraints, & technological constraints. The frequency of constraints was measured on a three point continuum scale. Weight of 3. 2 and 1 were given for most important, important and least important constraint, respectively. In the next stage rank assigned to each reason by each individual were converted into per cent position by using the formula

$$\text{Percent position} = 100\ (R_{ij} - 0.5) / N_J$$

Where, R_{ij} stands for rank given for the I^{th} factor (i= 1, 2….5) by the j^{th} individual (j = 1, 2……., n) N_j stands for number of factors ranked by j^{th} individual. Then, the scores for each problem were summed over the number of respondents who ranked that factor. In this way, total scores assessed for each of the factors and mean scores were calculated by dividing the total score by the number of respondents who gave ranks. Finally overall ranking of the factors were assessed by

Table-1 : Social profile of sample villages.

S. No.	Parameter	Number	Percentage
1.	**Education**		
(a)	Primary	4	3.33
(b)	Secondary	33	27.50
(c)	Higher Secondary	41	34.17
(d)	Under Graduate	42	35.00
2.	**Land holding**		
(a)	Marginal (<1.0 ha)	23	19.17
(b)	Small (1.0 – 2.0 ha)	77	64.17
(c)	Medium (> 2.0 ha)	20	16.67
3.	**Age group (years)**		
(a)	35	25	20.83
(b)	36-50	52	43.33
(c)	50	43	35.83
4.	**Occupation**		
(a)	Agriculture	105	87.50
(b)	Subsidiary	15	12.50
5.	Area under pulses cultivation (ha)	1.27	39.56

(**Source :** Compiled by the Authors)

Table-2 : Relative Importance of Pulse crop to total cropped area in study district.

Cropping pattern				
Crop	**Marginal**	**Small**	**Medium**	**Overall**
Kharif				
Pigeonpea	0.06 (3.17)	0.14 (5.11)	0.46 (7.08)	0.18 (5.61)
Rabi				
Lentil	0.37 (19.58)	0.51 (18.61)	1.15 (17.69)	1.19 (18.38)
Chickpea	0.26 (13.76)	0.33 (12.04)	0.51 (7.85)	0.7 (10.90)
Summer				
Moong	0.09 (4.76)	0.14 (5.11)	0.25 (3.85)	0.3 (4.63)
Total	0.78 (41.27)	1.12 (40.88)	2.37 (36.46)	1.27 (39.56)
Gross Cropped Area	1.89 (100.00)	2.74 (100.00)	6.50 (100.00)	6.46 (100.00)

(**Source :** Compiled by the Authors)

assigning rank 1, 2, 3… etc., in the descending order of the mean scores.

RESULTS AND DISCUSSION

Social profile of sample villages : The data on **Descriptive statistics** of sample villages under study in Table-1 indicated that out of 120 respondents only 4 percent of them were educated up to primary level 35 percent of the respondents were undergraduate where as 27.50 percent were having secondary education and out of 120 farmers 41 farmers (34 percent) were having higher secondary education. This study also revealed that agriculture constituted the primary occupation of 88 percent of respondents. Size group analysis indicated that 64. Percent of the respondents were small farmers having 1-2 hectares of land followed by marginal (19.17) and Medium farmers (16.67). The percentage area under pulses cultivation was accounted for more than 40 percent of gross cropped area. Among pulses area under Lentil was accounted18.38 percent followed by chick pea (11 percent) However area under pigeon pea was only 7 percent of total area under pulse crop was observed during the survey , it may be concluded on the basis of above findings that Rabi pulses was main crop grown by the farmers. Age -wise respondents revealed that about 43 percent of respondent were of up to 36 to 50 year only 20 percent were of less than 35 year. It may be said that rural youth were not interested in farming which is a need of the hours.

Table-3 : Major constraints in pulse cultivation perceived by the sample farmers.

S. No.	Constraints	Garrett Score	Rank
1.	**Socio-economic constraints**		
(a)	Low Price.	69.8	I
(b)	High cost of inputs.	65.4	II
(c)	Non availability of credits in time.	60.9	III
(d)	High cost of labour.	44.4	IV
(e)	Lack of subsidy for inputs	36.4	V
(f)	Labour scarcity	28.3	VI
2.	**Technological Constraints**		
(a)	Lack of proper knowledge about improved varieties, seed, rate, spacing and sowing	66.6	I
(b)	Lack of knowledge about insect pest and diseases management	62.0	II
(c)	Lack of knowledge about seed treatment	53.6	III
(d)	Lack of knowledge about weed management	38.9	IV
(e)	Lack of knowledge about fertilizer application	29.8	V

(**Source :** Compiled by the Authors)

Table-4 : Category wise Constraints in pulse cultivation perceived by the sample farmers.

S. No.	Categories of constraints	Garrett Score	Rank
2	Technological Constraints	67.33	I
3	Socio-economic constraints	65.36	II

(**Source :** Compiled by the Authors).

It may be observed that the relative importance of pulse crop to the total cropped area (Kharif, Rabi and summer) was accounted nearly about 40 percent in the selected Villages under study. Size group analysis revealed that marginal farmers accounted highest percent of area under pulses to the total cropped area accounting 41 percent followed by small farmers (40 percent) and medium farmers in tal area., due to the fact that pulse crop being less capital intensive may be cultivated extensively to cover all the land under cultivation particularly by the marginal farmers as they do not have other alternative crop to grow in Rabi season. From the observation of cropping pattern of sample farmers among pulses Rabi pulses were occupied major area followed by the kharif pulse and summer pulse. It may be inferred that district Patna is dominated by crop of lentil and chickpea in Rabi followed by kharief crop (pigeon pea) across each size group of farms. It clearly indicated that pulse crop has been dominating in the cropping pattern of tal land under study.

Constraints in pulse cultivation

Socio-economic constraints : Table-3 revealed the major constraints perceived by the farmers related to their socioeconomic conditions were, low profit, high cost of inputs followed by the non availability of credit in time& high cost of labour were the major constraints. These were ranked I, IL III&IV with an overall garrets score obtained for same were 69.8, 65.4, 60.9& 44.4 respectively. The other constraints mentioned under socioeconomic constraints were the scarcity of labours (28.3) and lack of subsidy for inputs (36.4).

Technological constraints : An analysis of the data under technological constraints in depicted in table 3 indicated that lack of knowledge about seed rate, spacing, sowing date was ranked I on the basis of mean percent score (66.6) whereas lack of knowledge about seed treatment and lack of knowledge about insect pest and disease management were ranked II and III with an overall score of 62.0 and 54.0 respectively.

In table-4, the major constraints faced by the sample farmers were summarised into four major constraints as Socioeconomic, Technological constraints, Institutional constraints & infrastructural constraints on basis of mean score of three major constrains of each categories perceived by the farmers respectively. Mean Score obtained from the used technique were found maximum for the infrastructural constraints followed by socioeconomic constraints, technological constraints and institutional constraints ranked as I,II,III&IV respectively and their garret score was 67.33,65.36,60.73,& 50.00 as indicated in table4. Based on the above findings it may

be concluded that there're several constraints faced by the farmers in cultivation of pulses in tal area of Patna districts of Bihar. The major constraints identified were non availability of HYV seeds, non availability of plant protection chemicals at the time of sowing, low price of produce, lack of subsidy for inputs, lack of knowledge about seed rate, seed, treatment, weed management dosage and method of application of suitable package and practice available so far area specific technology for pulse cultivation is concerned the similar constraints have also been reported by Yadav *et al.* (2002)

CONCLUSION

Based on the above findings it may be concluded that major constraints faced by the farmers in cultivation of pulses in tal area of Patna districts of Bihar were non availability of HYV seeds, non availability of plant protection chemicals at the time of sowing, low price of produce, lack of subsidy for inputs, lack of knowledge about seed rate, seed, treatment, weed management dosage and method of application of suitable package and practice available so far area specific technology for pulse cultivation. Therefore, Strategy to improve the condition feedback of study may be provided to different departments involved in the agriculture development activities, to strengthen the research-extension farmer linkage by providing credible input on time to the farmers. There is a need to extend the knowledge regarding plant protection measure and availability of improved seed suitable for tal area. The technology should be targeted in those identified areas as cost effective as/less costly than the competitive crop so that the farmers could get the net returns equivalent to that they get from the competitive crops. Only then, the farmers will go for cultivation of pulses. To increase area and production of pulses, region specific approaches for package and practices should be adopted in the overall framework of system as well as protection measure need to be developed and distributed to the pulse dominated area.

IMPLICATIONS AND RECOMMENDATIONS

Farmer should replace their own seed with improved varieties for getting higher productivity.

In order to reduce the cost, method of sowing &harvesting need to be changed.

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