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Factors Affecting the Constraints in Inorganic and Organic Fertilizers use in Paddy Cultivation

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ABSTRACT

The study was conducted in Milkipur block of Faizabad district selected purposively on 100 respondents selected through proportionate random sampling technique on the basis of holding size possessed by the paddy growers. The respondents were contacted personally for data collection. The results of the study depicted that the maximum percentage of respondents were found in age group at 37-62 years (60%), literate (73%) and belonged to backward caste (38%). The joint families were observed maximum having 5 to 12 members (55%) in their families. The land holding below one ha was observed with maximum farmers (68%). The maximum i.e. 38 per cent and 37 per cent respondents residing in pucca and mixed type houses, respectively and the agriculture was observed dominant as main occupation with 61 per cent respondent. The maximum (36%) respondents were found participated in one organization, while 33 per cent did not take participation at all in any organization. The maximum (42%) respondents were found earning the annual income of Rs. 20001 to 40000 and majority of respondents (67%) were observed in medium category (7 to 31 scores) of materials possession.' The radio was main communication media (64%) with the paddy growers. Maximum respondents were found in medium levels of scientific orientation, economic motivation, risk orientation and value orientations with 53 per cent, 44 per cent, 72 per cent and 51 per cent, respectively. The variables like, holding size, social participation and Income, material possession and formal extension contact were found to have significant and negative relationship with constraints in balance use of inorganic fertilizers, while scientific orientation was found significantly and positively correlated. The variables like income, and material possession were found to have significant and negative correlation with constraints in organic fertilizers use, while one variable i. e., scientific orientation was found significant and positive relationship. Thus, it may be said that the above variables needs to be intervened for making further strategy regarding fertilizers use.

The productivity increases witnesed in the last fifty years have come from several compounding factors including personal, social, economical, communication, psychological, prudent management of high potential land maintenance and supplementation at soil fertility through a number of integrated practices and mix of technologies that have generously utilize the advance in cutting edge of science. An effort in this direction has been made to study the factor affecting the constraints in inorganic and organic fertilizer use in paddy cultivation with following objectives: -

- To study the socio- economic profile of the respondents.
- To see the correlation of independent variables with constrained in balanced use of fertilizers in paddy crop.

METHODOLOGY

The study was conducted in Milkipur block of Faizabad district selected purposively. A total of 100 respondents were selected through proportionate random sampling technique on the basis of holding size possessed by the paddy growers. The semi structured schedule was developed keeping in view the objectives and variables to be studied. The respondents were contacted personally for data collection. The analysis of

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data was done with the use of correlation coefficient to see the relationship of independent variables with constraints in balanced use of fertilizers and percentage, mean and standard deviation was also used for drawing the inferences. The seriousness of constraints was assessed on five point continuum by using the word like very much, much undecided not so much and not at all. These word uses weighted with 4, 3, 2, 1, 0 scores respectively.

RESULTS AND DISCUSSION

Data in table-l A indicates that majority of the respondents (60 %) fall in the age category of 37-62 years of age followed by 21 per cent in 63 and above 19 per cent in upto 36 years of age category respectively. Thus, it may be stated that the maximum respondents were found in the age category of 37-62 years of age.

Data in table-l B reveals that the literacy percentage of respondents was observed to be 73 per cent and remaining 27 per cent respondents were found illiterate. Further, the educational standard of literate respondents in descending order were found as 24.0 per cent, 16 per cent, 12 per cent, 9 per cent, 4 per cent, 4 per cent, 3 per cent and 1 per cent to the levels of primary, junior, high school, intermediate, can sign, undergraduate, postgraduate and above and can read and write, respectively. It may be said that the literacy percentage is quite good.

Data in table-1 C indicates that the maximum 38 per cent respondents belonged to backward caste followed by general caste (36 %) and scheduled caste (26 %), respectively. It may be said that the backward caste and general caste, both are dominating castes at approximately equal levels.

Table-1 D indicates that 55 per cent respondents engaged in paddy cultivation were observed residing in single family system. Remaining 45 per cent respondents were observed in joint family system. Hence, it shows that single family system is dominantly prevailing in the study area.

It is evident from the Table-1 E, that 59 per cent respondents families were observed such who had 5 to 12 members followed by 23 per cent families upto 4 members and 18 per cent respondents families were found having 13 and above members in their families. The average size of family was observed to be 8.74 members. The range between minimum and maximum number of family member was recorded from 2 to 24. The average number of family members might be due to dominantly of single family system in the area.

The Table-1 F indicates that the maximum (68 %) respondents were found in the land holding category i.e. marginal farmers (below 1.0 ha) followed by 18 per cent in the category of small farmers (1.0 to 2.0 ha), 9 per cent in medium category (2.0 to 3.0 ha) and 5 per cent in large category (3.0 ha and above) of farmers, respectively. The average land holding of the respondents was found to be 0.977 ha. Hence, it may be concluded that mostly land holding has become marginalized in the study area.

It is apparent from the data given in Table-1 G that 38 per cent respondents were found having their houses of pucca type, followed by 37 per cent, 23 per cent and 2 per cent were residing in mixed, kuccha and hut type of houses respectively. It may be concluded that the maximum respondents residing in pucca (38 %) and mixed (37 %) type of houses have their standard of living better.

It is clear form the Table-1 H that in case of occupation, the agriculture was found as main occupation of majority of the farmers (61 per cent) followed by agriculture labour (16 per cent), service (15 per cent), business (4 per cent), caste based occupation (3 per cent) and agro-based enterprises (l per cent) respectively. Thus, it may be concluded that the agriculture is dominant occupation of the respondents in the study area. Almost similar finding was observed by Yadav (2006).

A cursory glance over the data depicted in the Table-l I indicates that out of 100 respondents, 33 per cent did not take participation at all in any organization, while 36 per cent respondents participated in one organization, 21 per cent in two organizations and 10 per cents in more than two organizations, respectively. Thus, it may be stated that social participation of the respondents was considerably good.

It is obvious form the Table-1 J that 42 per cent respondents were form those families whose annual income was found in the category of (Rs. 20001-40000) followed by other categories viz., 20 per cent (Rs. upto 20000), 16 per cent (Rs 40,000 to 60000), 11 per cent (Rs. 80001 to 100000) 6 per cent (Rs 60001 to 80000) and 5 per cent above to 100000. Thus, it may be conducted that the economic condition of the farmers was found considerable good almost similar findings was observed by Singh (2006).

The over all material possession was categorized into three main categories on the basis of scores as low (up to 6), medium (7 to 31) and high (32 and above). The data given in Table-1K revealed that highest number of

respondents (67%) were observed in the medium category (7 to 31 scores) of materials possession followed by high (22%) and low (11%) (32 and above) and (up to 6) categories, respectively. Thus, it can be concluded that the materials possession of respondents was appreciably better. The mean of scores for materials possession was observed to be 18.93 with a minimum 4 and maximum 57 scores. Hence it can be said that over all materials possession of the respondents were considerable very good.

The data furnished in Table-1L pertains to extent of contact of respondents with different information sources as used by them for receiving general informations as well as about various practices of paddy crop production. Information sources were categorized in three categories namely formal sources, informal sources and mass media to find out the extent of contact of respondents.

It can be concluded that informal sources of information seemed to be most important as generally utilized by most of the respondents. The formal and mass media information sources were also utilized by the respondents with considerable extent. The overall mean of sources was found to be 1.989 which may be considered as fair contact with information sources.

It is clear from the Table 1 M that 5.3 per cent of the respondents were found having medium level followed by low (34 %) and high (13 %) levels of scientific orientation respectively. The mean of scores for scientific orientation was observed to be 24.39 with a range of minimum 20 and maximum 28. Hence, it can be inferred that most of respondents (53 %) had medium level of scientific orientation.

It is clear from the Table-l N that the maximum number of respondents (44%) were found having medium level of economic motivation, 25 per cent and 21 per cent respondents were such who had high level and low level of economic motivation, respectively. The average mean of scores for economic motivation was observed to be 22.57 with a range of minimum 19 and maximum 27. Hence, it can be concluded that most of the respondents were having medium level of economic motivation. It can be said that the economic motivation of the respondents was found considerable good. Almost similar findings was observed by Mishra (2005).

It is apparent from Table-1O that 72 per cent of the respondents were found having medium level followed by 14 per cent and 14 per cent who had low and high levels of risk orientation, respectively. The mean of scores for risk orientation was observed to be 23.99 with a range of minimum 19 and maximum 27. Hence, it can be concluded that the respondents have good interest to bear the risk to improved farm practices.

It could be seen from the Table-lP that the maximum 51 per cent respondents had medium level of value orientations while 25 per cent and 24 per cent respondents were found in the categories of low and high levels of value orientations respectively. The average of scores was observed to be 37.32. It can be said that much variation was not observed in the percentage of respondent having low and high levels of value orientations.

Table 1. Socio economic profile of the farmers.

Sl.No.	Categories	Respondents (%)
A.	**Age (year)**	
1.	Up to 36 years	19.00
2.	37-62 years	60.00
3.	63 and above	21.00
	Mean = 49.63, S.D.= 13.61, Mini = 20, Maxi = 75	
B.	**Educational level**	
a.	Illiterate	27.00
b.	Literate	73.00
1.	Can sign	04.00
2.	Can read and write	01.00
3.	Primary	24.00
4.	Junior	16.00
5.	High school	12.00
6.	Intermediate	09.00
7.	Undergraduate	04.00
8.	Postgraduate & above	03.00
C.	**Caste composition**	
1.	General caste	36.00
2.	Back ward caste	38.00
3.	Scheduled caste	26.00
D.	**Family type**	
1.	Single	55.00
2.	Joint	45.00
E.	**Family size**	
1.	Up to 4 members	23.00
2.	5 to 12 members	59.00

3.	13 and above members	18.00
	Mean = 8.74, S.D.= 4.25, Min= 2, Max.= 24	
F.	**Land holdings**	
1.	Marginal (below 1.0 ha)	68.00
2.	Small (1.0 to 2.0 ha)	18.00
3.	Medium (2.0 to 3.0 ha)	9.00
4.	Large (3.0 ha and above)	5.00
	Mean = 0.977, Min= 0.10, Max.= 7.50	
G.	**Housing pattern**	
1.	Hut	02.00
2.	Kuccha	23.00
3.	Mixed	37.00
4.	Pucca	38.00
H.	**Occupation**	
1.	Agril. Labour	16.00
2.	Agriculture	61.00
3.	Service	15.00
4.	Cast based occupation	3.00
5.	Business	4.00
6.	Agro-based enterprises	1.00
I.	**Social participation**	
1.	No. participants	33.00
2.	Member of one organization	36.00
3.	Member of two organizations	21.00
4.	Member of more than two organizations	10.00
J.	**Annual income of the family**	
1.	Upto 20,000	20.00
2.	20,001 to 40,000	42.00
3.	40,001 to 60,000	16.00
4.	60,001 to 80,000	6.00
5.	80,001 to 1,00,000	11.00
6.	Above to 1,00,000	5.00
	Mean= 45100, Min= 14000, Max = 200000	
K.	**Material possession**	
1.	Low (up to 6)	11.00
2.	Medium (7 to 31)	67.00
3.	High (32 and above)	22.00
	Mean = 18.93, S.D.= 12.92, Min.=4, Max= 57	
L.	**Extension contact**	
a.	Formal sources average	0.67
b.	Informal sources average	3.832
c.	Mass media exposure average	1.458
d.	Overall average	1.989
M.	**Scientific orientation**	
1.	Low (up to 23)	34.00
2.	Medium (24 and 26)	53.00
3.	High (27 and above)	13.00
	Mean=24.39, S.D.= 1.847, Range Min.=20, Max= 28	
N.	**Economic motivation**	
1.	Low (up to 21)	21.00
2.	Medium (22 and 23)	44.00
3.	High (24 and above)	25.00
	Mean=22.57, S.D.= 1.603, Range Min.=19, Max=27	
O.	**Risk orientation**	
1.	Low (up to 22)	14.00
2.	Medium (23-26)	72.00
3.	High (26 and above)	14.00
	Mean = 23.99, S.D.= 1.586, Min.=19, Max= 27	
P.	**Value orientations**	
1.	Low (up to 35)	25.00
2.	Medium (36-39)	51.00
3.	High (40 and above)	24.00
	Mean = 37.32, S.D.= 2.817, Min.=30, Max= 43	

It is clear form the values of correlation coefficient as reported in Table-2 that six variables were found having the significant relationship with constraints in inorganic fertilizers use. Out of these five variables i.e. income, material possession, formal extension contact, holding size and social participation had significant and negative association with constraints in inorganic fertilizers use means that the value of these variables increased the seriousness of constraints would decrease. And only one variables i.e. scientific orientation was found significantly and positively correlated with constraints in inorganic fertilizers use. It means that the value of scientific orientation increases the seriousness of constraints also increases. The variables like, age, education level, caste, housing pattern, occupation, informal, extension contact, economic motivation and risk orientation were found non significantly and negatively associated with constraints in inorganic fertilizers use,

while three variables viz., family type, family size and value orientations, were found non-significantly and positively correlated with constraints in inorganic fertilizers use.

Further incase of organic fertilizers the values of correlation coefficients as reported in Table-2 that out of 20 variables the three variables were found having the significant relationship with constraints in organic fertilizes use. Among three variables the two variables viz., income and material possession had moderate significant and negative correlation with constraints in organic fertilizers use means that the value of these variables increase the seriousness of constraints would decrease and only one variable namely scientific orientation had moderate significant and positive correlation with constraints in organic fertilizers use. It means that the value of scientific orientation increased the seriousness of constraints also increases.

Table 2. Correlation coefficient (r) between different variables and constraints inorganic and organic fertilizers use

Sl. No.	Variables	Correlation coefficients (r)	
		Inorganic	Organic
1.	Age	-0.087	-0.159
2.	Education	-0.024	0.052
3.	Caste	-0.122	-0.102
4.	Family type	0.031	-0.034
5.	Family size	0.004	-0.007
6.	Housing pattern	-0.031	-0.078
7.	Holding size	-0.269**	-0.177
8.	Occupation	-0.018	-0.122
9.	Social participation	-0.329**	0.007
10.	Income	-0.210*	-0.206*
11.	Communication media possession	-0.183	-0.162
12.	Material possession	-0.239*	-0.203*
13.	Formal extension contact	-0.228*	-0.067
14.	Informal extension contact	-0.073	0.163
15.	Mass media exposure	-0.132	-0.035
16.	Extension contact	-0.182	0.034
17.	Scientific orientation	0.236*	0.211*
18.	Economic motivation	-0.144	0.035
19.	Risk orientation	-0.058	0.042
20.	Value orientations	0.021	-0.042

The variables like, age, caste, family type, family size, housing pattern, holding size occupation, formal extension contact, and value orientation had non significant and negative correlation with constraints in organic fertilizer use and education, social participation, overall extension contact, economic motivation and risk orientation had non significant and positive correlation with constraints in organic fertilizers use.

This led to the conclusion that out of 20 variables, 5 variables explained negative (holding size, social participation, income, material possession and formal extension contact) influence over constraints in inorganic fertilizers use means that the above variables level is increased the seriousness of constraints in inorganic fertilizers use would decrease and the variables scientific orientation' level is increased the constraints is also increased.

CONCLUSION

Also, it can be said that income and material possession had direct negative influence over constraints in organic fertilizers use, means that the above variables level is increased the seriousness of constraints in organic fertilizers use is also decreased. And, the one variable i.e. scientific orientations level is increased, the level of constraints in organic fertilizers is also increased.

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