Farmer's Attitude towards Adoption of Recommended Technology to Increase Productivity under Dry Land Area

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ABSTRACT

Dry land refers to the region that is marked by scattered and scarce rainfall and also the absence of assured irrigation. The improved dry land technology mainly involves the adoption of new technology such as high yielding varieties, balanced doses of fertilizers adoptions, new method of tillage and other cultural practices. Present study was conducted. The study was conducted to find out the farmer's attitude towards adoption of recommended technology to increase productivity under selected dry land area. Total of 150 farmers were randomly selected from C. D. Block Chaka in Allahabad district of Uttar Pradesh. Out of 36 villages in Chaka block, five villages were selected purposively on the basis of the highest percentage area under dry land farm technology. Thirty farmers were selected randomly from each of the five villages in equal proportion from each category (low, medium and high) of households. Results revealed that the reasons for non adoption of recommended technology under dry land farming are lack of crop rotation technique, lack of mulching technique, lack of adequate information, and lack of technical know-how followed by irrigation and drainage, risk bearing capacity and lack of enthusiasm.

Key words: *Dry land ;Assured irrigation; Adoption; High yielding varieties; Farmer's attitude;*

The dry land/rain-fed areas are habited mostly by the rural poor, who have negligible resources at their disposal and their land holding too are very small. About 70 per cent of the cultivated area comes under dry land agriculture and contributes 42 per cent of total food grain, almost all coarse grain 75 per cent of pulses and oilseed. Un-irrigated areas in our country are categorized by low unstable crop yields. The crop-wise analysis shows that 80 per cent of the area under gram, maize and cotton spreads over dry land and for wheat only 35 per cent area in the country is rain-fed. It is estimated that by the end of the 20th century about 50 per cent of the cultivated area will continue to be under dry land agriculture. Thus it is clear that the dry land agriculture could contribute significantly in increasing production.

The improved dry land technology mainly involves the use of new technology such as HYV, fertilizers, pesticides and new method of tillage and other cultural practices. *Pandey and Kumar (2000)* pointed out that dry land areas suffer from certain problems such as soil moisture, unawareness of agricultural practices, lack of HYV suitable for dry land condition, lack of proper production technology, inadequate and untimely availability of agricultural inputs, poor socio- economic conditions, lack of institutional credit facilities, risk component, marketing management and other personal factors like socio-economic and educational level. *Singh and Chauhan (1999), Khalge and Wakle (1998) and Padma, Bhave and Reddy (1997)* also found similar results. So it's clear that the dry land agriculture have tremendous potential for increasing farm production.

In view of the importance of dry land farming in country's economy, the present study was undertaken to analyse the farmer's attitude towards adoption of recommended technology to increase productivity under selected dry land area.

METHODOLOGY

The study was conducted in C D block Chaka in district Allahabad of U.P. to investigate farmer's attitude towards adoption of recommended technology to increase productivity selected crops under dry land area. Out of 36 villages in Chaka block, five villages were selected purposively for the study on the basis of the highest percentage area under dry land farm technology.

Thirty farmers were selected randomly from each of the five villages in equal proportion from each category (low, medium and high) of households. Thus, total sample of one hundred fifty respondents were selected for the present study. Farmer's opinion regarding adoption of recommended technology (i.e. recommended varieties, seed rate, time of sowing and methods of sowing) were taken for gram, arhar, wheat and paddy. Attitude of the farmers were taken for improved farm practices like recommended variety, seed rate, time and method of sowing, fertilizers application, intercultural and plant protection measures. The obtained results were analyzed using mean value in the form of percentage.

RESULTS AND DISCUSSION

Results of the opinion survey regarding adoption of recommended technology to increase productivity for selected crops under dry land area indicates that farmers in general have shown negative attitude towards the adoption of recommended technology. The reasons for non adoption of recommended technology under selected area are shown in Table 1. All the responses were converted into standard score of percentage.

Recommended Varieties: It is evident from Table: 1 that 40 per cent of the selected farmers did not adopted the recommended variety of gram due to unawareness followed by paddy (37.77%), arhar (37.16%) and wheat (32.00%) growers. 24.45 per cent of the paddy growers considered that the recommended variety were not available at the sowing time followed by wheat (23.85%), gram (19.26%) and arhar (18.24%). Also, farmers believed that the recommended variety were not available on time (late available) for paddy (20%) arhar (13.51%), wheat (10%) and gram (6.67%). Small percentage of farmers believed that the recommended variety was not suitable (paddy- 6.67%; wheat- 6.15%) to the dry land conditions while 21.49 per cent of gram growers considered the recommended variety to be costly followed by arhar (20.27%) and wheat (15.38%) growers. Less than 15 per cent of the selected crop growers considered that the recommended technology is not required.

Recommended Seed Rate: Seed rate of recommended variety is a major component of the recommended technology. Table: 1 shows that 31.25 per cent of wheat growers were unaware of the recommended seed rate followed by 28per cent for

Table 1. Farmers opinion on causes of non adoption of recommendation technology.

Reason for non adoption	Gram	Arhar	Wheat	Paddy
Recommended Varieties				
Unawareness	40.00	37.16	32.31	37.77
Recommended variety not available	19.26	18.24	23.85	24.45
Late available	6.67	13.51	10.00	20.00
Not suitable	5.18	2.70	6.15	6.67
High cost	21.49	20.27	15.38	-
Technology not needed	7.40	8.12	12.31	11.11
Recommended Seed Rate				
Unawareness	21.87	23.36	31.25	28.00
Non availability in time	4.84	12.40	12.50	12.66
Recommended quantity considered uneconomical	15.63	15.33	16.67	13.33
Recommended seed rate considered less than desired	18.75	16.79	14.58	12.00
Impractical in particular field condition	16.41	18.25	13.19	14.67
Seed being costly	12.50)	13.87	11.81	19.34
Recommended Time Sowing				
Unawareness	12.38	15.17	21.56	21.65
Adverse weather	22.13	20.54	25.48	22.68
Recommended time considered not appropriate	18.59	6.96	9.80	15.47
Engaged in other farm operation	46.90	47.33	43.16	40.20
Recommended Method of Sowing				
Unawareness	8.21	8.97	11.19	14.28
Complexity	13.44	11.04	6.99	10.00
More time consuming	23.13	24.13	23.78	17.15
Expensive	32.84	31.03	33.56	32.14

*All responses in percentage

paddy, 23 per cent for arhar and 21.87 per cent gram growers. Approximately 13 per cent of selected crops growers pointed out that appropriate quantities of improved seed were not available at the time of sowing. Due to unawareness about improved cultural practices of selected crops approximately 15 per cent of the farmers believed that recommended quantity of seed rate as uneconomical and. 18.75 per cent of gram growers considered that the recommended seed rate less than desired while 18.25 per cent of arhar growers believed that recommended seed rate being impractical in particular field condition. Also 14 per cent of selected crops growers feel that improved seed being costly as compared to local variety i.e. the improved seeds would take additional preparation and resources so that at the time of their sowing field condition will not be suitable for cultivation of improved seeds

Recommended Time Sowing: Table 1 shows that 40-47 per cent of selected crops growers did not adopted the recommended time of sowing due to engagement in other farm operations. 20-25 per cent of the farmers pointed out that adverse weather conditions restricted them to other farming system instead to recommendation. Unawareness was also a reason for non adoption of recommended sowing time as indicated by 10-20 per cent of the selected crop growers. A sufficient (18.59%) number of gram growers considered that the recommendation was not appropriate to their condition and need followed by 16.96 per cent, 15.47 per cent and 9.8 per cent of arhar, paddy and wheat growers respectively.

Recommended Method of Sowing: Table: 1 revealed that farmers considered the recommended method of sowing being expensive as the main reason for its non adoption in selected crops under dry land conditions as indicated by gram (32.84%), wheat (33.56%), paddy (32.14%) and arhar (31.03%) growers. Also, the selected crop growers considered the recommended method of sowing being labour intensive (22%-26%) and more time consuming (17%-24%) while 7%-13% of selected crop growers considered these methods to be complex as the reasons behind its non adoption. It is clear from the result that complexity, expensive nature and labour consuming character of recommended method inhibited the adoption of recommended method of sowing.

Recommended doses of fertilizers: Opinion of the farmers was taken regarding the non adoption of the recommended doses of fertilizers (Table 2). Figure 1 reveals that the high cost of fertilizers was the prominent reason (rank I) for the non adoption of recommended doses of fertilizers in the selected crops. Need of strong capital was next reason (rank II), followed by unawareness (rank III) and farmers wrong notion about the use of fertilizers which lead to damage the crops in dry land condition. Non availability of fertilizers at the time of sowing was another reason (IV rank) pointed out by the selected crop growers. Further, the selected crop growers think that in dry land area consumption recommended doses are high compared to other regions (V rank). Due to non availability of fertilizers and its high price there was a fear of heavy loss (rank VI) they get low cost benefit ratio (rank VII) for selected crop growers under dry land area. Due to these fear factors the selected crop growers did not adopted the recommended doses of fertilizers in dry land areas.

Moreover, the selected crop growers in dry land areas were asked to give their opinion regarding the various constraints behind the non adoption of recommended technology. The analysis of the findings are presented in table 3 which revealed that majority (72.66%) of selected crop growers were opinion that lack of mulching technique was the major constraint in dry land farming followed by lack of crop rotation technique(72.44%), lack of alternatives & risk bearing capacity(72.22%), lack of irrigation & drainage system (72%). Other important constraints pointed out by the selected crop growers under dry land area are poor linking with agricultural center, (70.88%) followed by lack of adequate information (70%), lack of technique

Table 2. Farmers opinion on causes of non adoption recommended doses of fertilizers.

Reason for non adoption	Gram (n=150)	Arhar (n=150)	Wheat (n=150)	Paddy (n=150)	Total (n=600)	Rank
Unawareness	13.33	12.66	14.00	16.66	14.16	III
High price	23.34	20.66)	22.00)	32.00)	24.50	I
Non availability of fertilizer	12.66	8.67	10.00	10.66	10.50	IV
Recommended doses fertilizer	7.34	12.67	10.00	11.33	10.33	V
High strong of capital	26.67	23.34	22.67	15.33	22.51	II
Low cost benefit ratio	10.00	8.67	10.66	6.00	8.33	VII
Fear of heavy losses /unsuitability of dry land	6.66	13.33	10.67	8.02	9.67	VI

Table 3: Distribution of respondents according to their opinion regarding constraints of dry land farming.

	Score value of respondents according to their opinion									Total	%
	High (n=21)			Medium (n=46)			Low (n=83)				
	SA* 3	A** 2	DA+ 1	SA* 3	A** 2	DA+ 1	SA* 3	A** 2	DA+ 1		
Lack of technical know how	6 (18)	10 (20)	5 (5)	15 (45)	23 (46)	8 (8)	23 (69)	43 (86)	17 (17)	314	69.77
Lack of adequate information	8 (24)	11 (22)	2 (2)	12 (36)	27 (54)	7 (7)	20 (60)	49 (98)	14 (14)	317	70.45
Lack of enthusiasm	5 (15)	12 (24)	4 (4)	13 (39)	24 (48)	9 (9)	18 (54)	50 (100)	15 (15)	308	68.44
Poor linking with agriculture center	7 (21)	11 (22)	3 (3)	14 (42)	25 (50)	7 (7)	19 (57)	53 (106)	11 (11)	319	70.88
Lack of alternatives & risk bearing capacity	5 (5)	12 (24)	4 (30)	10 (30)	30 (60)	7 (7)	21 (63)	52 (104)	10 (10)	316	72.22
Lack of irrigation & drainage	6 (18)	12 (24)	3 (3)	16 (48)	26 (52)	4 (4)	22 (66)	48 (96)	13 (13)	324	72.00
Lack of mulching technique	5 (15)	15 (30)	1 (1)	12 (36)	29 (58)	5 (5)	25 (75)	49 (98)	9 (9)	327	72.66
Lack of crop rotation technique	6 (18)	13 (26)	2 (2)	11 (33)	31 (62)	4 (4)	24 (72)	47 (94)	12 (12)	326	72.44

* = Strongly Agree; ** = Agree; + + = Disagree

know- how (69.77%) and lack of enthusiasm (68.44%) respectively. On the basis of above data it can be said that majority of respondents in low household category pointed out that the lack of mulching technique while majority of respondents in high household category considered lack of technical know how as major constraints in dry land farming. Similarly majority of respondents in medium household category considered lack of crop rotation technique as constraint in dry land farming.

CONCLUSION

The majority of dry land farmers belonged to poor socio-economic status and has low level of risk orientation under dry land farming. The major reasons of non adoption of recommended technology were perceived as unawareness, not availability of HYV seed at sowing time, high cost of improved seeds, unawareness about recommended seed rate, method and time of seed sowing etc. High price of fertilizer, strong need of capital, unawareness and non availability of fertilizers at sowing time in selected crops were pointed out as the other reasons of non adoption of recommended technology followed by lack of mulching technique, crop rotation technique and lack of alternative risk bearing capacity, irrigation and drainage system etc. as major constraints.

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