Adoption of dry land crop (Pearl millet) production technology by the farmers in Barmer district

■ **Pradeep Pagaria, S.L. Kantwa and Shyam Das**

SUMMARY : The present study was conducted in Chohtan and Sedva tehsil from Barmer district, six village from each tehsil were selected randomly and from each village fifteen Bajra growers were selected. Thus a sample of 180 respondents was made. Majority of respondents (50 %) had medium adoption level regarding dryland crop production technology. The personal and socio-economic characterstics such as education, land holding, annual income, sources of information and economic motivation had positive and significant relationship with adoption of dryland crop production technology. The major constraints regarding adoption of dryland crop production technology were higher seed cost, scientific method of cultivation, non availability of seeds at proper time, non availability of plant protection appliances, lack of knowledge of plant protection etc.

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BACKGROUND AND OBJECTIVES

Pearlmillet (*Pennisetum typhoideum*) is an important low value cereal crop grown in rainfed areas of country. The Indian hot arid zone is spread over 0.32 m km^2 area and 65% of it is in the western district of Rajasthan. The climate induces frequent droughts, making arable cropping difficult and uncertain. Rajasthan has cultivated area of almost 20 million hectares but due to some unavoidable circumstances on 20% of the total cultivated area is irrigated. The economy of state is mostly depended on agriculture and 22.5 per cent of state's GDP comes from agriculture. The Rajasthan is largest producer of pearlmillet in India. In Rajasthan it was grown on 5206162 ha with average productivity of 825

kg ha^{-1} while in Barmer district it was grown on 1011401 ha with average productivity of 130 kg ha^{-1} (*Kharif* 2008-09). The yield of pearlmillet crop is adversely affected by traditional cultivation. This a good sign as bajra is scanty rainfall crop and it provides grain for humans and fodder for animals.The specific objectives of the study are given below -

– To study the impact of dry land crop production technology by the farmer.

– To find out the relationship of personal and socio economic characteristics with adoption of dry land crop production technology.

– To identify the constraints faced by the respondent in adoption of dry land crop

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production technology.

RESOURCES AND METHODS

The present study was conducted in Chohtan and Sedva tehsil of Barmer district of arid region. Barmer district was purposively selected forpresent investigation because it is one of the second largest district under dry land condition, From each tehsil six villages and from each village fifteen respondents were selected randomly who were growing dry land crops. Thus 180 respondents growing dry land crop constituted the sample for study. The data were collected by specially designed interview schedule. In order to facilitate the analysis and interpretation of data statisticaly tools like mean, frequency, percentage, standard deviation and correlation coefficient were used. For apprising the level of adoption, three paired scale was used *i.e.* fully adopted, partially adopted and not adopted practices. Score two was assigned for fully adopted practices, score one was assigned for partially adopted practices and score zero was assigned for no adoption of practices in the basis of total score obtained, the respondents were further categorized in to three categories *i.e.* low (score upto 40), medium (score 41 to 60) and higher (score 61 and above).

OBSERVATIONS AND ANALYSIS

The result obtained from the present investigation has been discussed below :

Adoption level of dry land crop (Bajra) production technology:

It could be observed that from Table 1 that majority of the respondent (50%) had medium level of adoption, (21.11 %) per cent of the respondent had high level of adoption and (28.88 %) per cent of the respondent had low level of adoption regarding dryland crop (Bajra) production technology by the bajra growers.

Table 1 : Distribution of the respondent according to level of overall adoption of recommended dryland crop production technology

Sr. No.	Level of knowledge	Frequency	Percentage
1.	Low (upto 40)	52	28.88
2.	Medium (41 to 60)	90	50.00
3.	High (above 61)	38	21.12
	Total	180	

Relationship of personal characteristics of crop production with adoption of recommended dry land crop production technology:

It is observed from the Table 2 that education, land holding, annual income, source of information and economic motivation had shown positive and significant relationship with adoption of recommended dry land crop production technology. This shows that if education, land holding, annual income, source of information and economic motivation are leveled adoption will also increase. The reason behind it might be that low level educated person can't understand the technology quickly and easily.

Table 2 : Relationship of personal characteristics of crop production with adoption of recommended dry land crop production technology

Sr. No.	Independent variables	Correlation co-efficiency 'r'
1.	Farm experience	-0.142
2.	Education	0.356**
3.	Land holding	0.306**
4.	Annual income	0.306**
5.	Social participation	0.104
6.	Sources of information	0.466**
7.	Economic motivation	0.449**
8.	Risk preference	0.003

* and ** indicate significance of values at P=0.05 and 0.01, respectively

The high land holder cultivated different crops in their different piece of land in such case, the risk of failure of one crop could be covered by another one.

With an increase in the annual income of the respondent farmer, adoption of the recommended dry land crop production technology increased and *vice versa*.

The reason behind it might be that the rich farmer were always prepared to take risk to invest in a new practices, person using more sources of information in more extent could make their information and knowledge rich, which resulted in more adoption of recommended dry land crop production technology. Respondents were becoming more aware and trieded to maximize their profit by motivating to earn more and increase their income by adopting modern technology on their farms.

Constraints in adoption of recommended dry land crop production technology:

Table 3 indicates the constraints faced by the farmer in adoption of dry land crop production technology. Cent

Table 3 : Constraints in adoption of recommended dry land crop (Bajra) production technology

Sr. No.	Constraints	Frequency	Percentage
1.	Higher seed cost	37	20.55
2.	Scientific method of cultivation	83	46.11
3.	Non availability of seeds at proper time	23	12.77
4.	Non availability of plant protection appliances	19	10.55
5.	Lack of knowledge of plant protection	18	10.00
		180	

per cent of the respondent expressed the constraints such as high cost of seeds non availablity of seeds at proper time, non availability of the labour at proper time and high cost of wages of labour and the insecticides and pesticides were also too costly. Further higher seed cost (20.55 %), Scientific method of cultivation (46.11 %), non availability of seeds at proper time (12.77 %), non availability of plant protection appliances (10.55 %) and lack of knowledge of plant protection (10 %) were some of constraints faced by the crop grower. Desai and Girase (2000); Bhagwat (2003); Athwale (2008); Sawant (2006) and Katke and Deshmukh (2012) have also worked on contribution knowledge and adoption of crop production technology by the farmers in India.

Conclusion :

From the above finding it could be concluded that majority of farmer had medium level of dry land crop production technology. Most of the respondents had medium adoption level with regard to dry land crop production technology. Hence, more number of training programmes should be arranged with demonstration and frequent field visit by the concerned extension experts to enhance the level of adoption of dry land crop production technology practices by the farmer. The respondent expressed the constraints such as Higher seed cost, Scientific method of cultivation, Non-availability of seeds at proper time, Non availability of plant protection appliances, Lack of knowledge of plant protection. Therefore, to overcome all these constraints, it is suggested that these inputs be made available on subsidized rate, at proper time and at local places to the farmer.

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