Association Between Constraints Encountered by the Farmers in Adoption of Drip Irrigation System and their Selected Independent Variables

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ABSTRACT

Rajasthan has largest geographical area having only 1per cent water resources of country. Due to arid and semi-arid climate i.e. negative moisture index, poor soil quality and traditional agriculture practices, the food security, nutritional security, Irrigation scenario of Rajasthan is characterized by erratic or /sporadic/scanty rainfall, dwindling ground water resources increasing alternative demand of municipal and industrial sector that means less water available for agriculture. In Rajasthan, Water is the most precious natural resource, vitally important for agricultural development and for day-to-day living..In the changing agricultural scenario world over and shift towards precision farming, drip irrigation happens to be the technology capable of providing more efficient utilization of water. The study was conducted in eight selected Gram Panchayat of Jhotwara Panchayat Samiti of Jaipur District of Rajasthan. Two villages were selected from each selected Gram Panchayat of Jhotwara Panchayat Samiti having maximum number of drip irrigation sets. Thus, sixteen villages were selected purposively. Ninety six farmers were selected from sixteen selected villages on the basis of proportional allocation to the size of sample. The seven variables *viz.* socio-economic status, caste, occupation, education level, size of land holding, age and extension participation were identified as the important variables to measure the association between the constraints encountered by the farmers in adoption of drip irrigation system and selected independent variables and following results were found. It was observed that 'socio-economic status', 'caste', and 'education level' were found to be negative and significantly where as 'occupation' and 'extension participation' were positive and significantly associated with the constraints encountered by the farmers in adoption of drip irrigation system while the variables like 'size of land holding' was negative and 'age' was positive but both were non-significantly associated with the constraints encountered by the farmers in adoption of drip irrigation system.

Keywords:

INTRODUCTION

Rajasthan has largest geographical area having only 1 per cent water resources of country. Due to arid and semi-arid climate *i.e.* negative moisture index, poor soil quality and traditional agriculture practices, the food security, nutritional security, sustainability and profita-bility of horticulture production system is still a distant dream in the state. Irrigation scenario of Rajasthan is characterized by erratic or /sporadic/scanty rainfall, dwindling ground water resources increasing alternative demand of municipal and industrial sector that means less water available for agriculture. In Rajasthan, Water is the most precious natural resource, vitally important for agricultural development and for day-to-day living. Intensive agriculture and our growing population are depleting the already available scarce resource i.e. "Water". This is challenging situation and the need of

hour is to conserve 'water' and ensure it's 'efficient use'.In the changing agricultural scenario world over and shift towards precision farming, drip irrigation happens to be the technology capable of providing more efficient utilization of water. Drip irrigation is basically precise and slow application of water in the form of discrete continuous drops, sprayed through mechanical devices caused emitters in to the root zone of the plants drop by drop and hence is economic method of irrigation. Considering the importance and scope of drip irrigation under above background information in the changed agricultural scenario ,it was thought pertinent to investigate various facets of drip irrigation and for the purpose a study on "Constraints in Adoption of Drip Irrigation System among the Farmers in panchayat samiti, Jhotwara, District Jaipur (Rajasthan)" was undertaken with the following specific objectives, to ascertain an association between the constraints encountered by the

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farmers in adoption of drip irrigation system and selected independent variables

METHODOLOGY

The study was conducted in Jaipur district of Rajasthan. District Jaipur was selected purposively for the study. The Jaipur district consists fifteen panchayat samiti, out of which Jhotwara panchayat samiti was selected randomly. Eight gram panchayats were selected randomly from selected Jhotwara panchayat samiti.Two villages were selected from each selected gram panchayat of Jhotwara panchayat samiti having maximum number of drip irrigation sets. Thus, sixteen villages were selected purposively. Ninety six farmers were selected from sixteen selected villages on the basis of proportional allocation to the size of sample.

The independent variables included in the study were selected on the basis of extensive review of literature, personal discussion with research scientist, extension personnel, and experts of drip irrigation system.Seven variables namely, socio-economic status, caste, occupation, education level, size of land holding, age and extension participation were identified as the important variables which might affect the extent of adoption of drip irrigation system due to constraints encountered by the farmers.For the collection of required information about independent variables and other aspects under study an interview schedule was prepared keeping in the mind the objectives and variables of the study. Interview schedule was consisting of the scale tests or devices for measuring the various independent variables under study along with preliminary information of the farmers. The entire interview schedule was subjected to pre-testing and the requisite corrections were incorporated accordingly. Personal interview method was adopted to collect the information from the farmers. The data were collected and subjected to statistical analysis.

RESULTS AND DISCUSSION

To analyze the collected information, appropriate statistical tools and methods were used. The appropriate statistical treatments were used for interpretation of data.The association between constraints in adoption of drip irrigation system and their selected seven independent variables *viz.,* socio-economic status, caste, occupation, education level, size of land holding, age and extension participation was tested with the help of 'correlation coefficient' and the results have been presented in Table 1.

Table 1: Association between constraints encountered by the farmers in adoption of drip irrigation system and their selected independent variables

n=96

Independent variables	Correlation of coefficient
Socio-economic status	-0.221*
Caste	-0.339**
Occupation	0.261*
Education level	-0.334**
Size of land holding	-0.071NS
Age	0.018NS
Extension participation	0.362**

** Significant at 1 per cent level of significance
* Significant at 5 per cent level of significance
 NS = Non-significant

Constraints and socio-economic status

It is evident from the data given in Table 1 that socio-economic status was negatively and significantly associated with the constraints encountered by the farmers in adoption of drip irrigation system at 5 per cent level of significance.The findings study are in conformity with the findings of Raigar (2001) and Shashidara et al (2007).

Constraints and caste

The data given in Table 1 indicate that caste negatively and significantly associated with constraints of farmers in adoption of drip irrigation system at one per cent level of significanceThe findings of this study support the findings of Kumar et al (2012) and Meti (2013).

Constraints and occupation

It is observed from the data given in Table 1 that the occupation of the farmers was positively and significantly associated with the constraints encountered by the farmers in adoption of drip irrigation system at 5 per cent level of significance.The findings of this study support the findings of Meti (2013) and Raigar (2001).

Constraints and education level

It is apparent from the data given in Table 1 that the education level of the farmers was negatively and significantly associated with the constraints encountered by the farmers in adoption of drip irrigation system at one per cent level of significance.The findings study are in conformity with the findings of Jiterwal and Sharma (2007) and Kumar *et al* (2012).

Constraints and size of land holding

The data reported in table 1 reveal that the size of land holding of the farmers was negatively and non-significantly associated with the constraints encountered by the farmers in adoption of drip irrigation system at one per cent level of significance.The findings study are in

conformity with the findings of Raigar (2001) and Shashidara *et al* (2007).

Constraints and age

The data given in Table 1 reveal that the age of the farmers was negatively and non-significantly associated with the constraints encountered by the farmers in adoption of drip irrigation system at one per cent level of significance.The findings study are in conformity with the findings of Kumar *et al* (2012) and Raigar (2001) .

Constraints and extension participation

It is apparent from the data given in Table 1 that the extension participation by the farmers was positively and significantly associated with the constraints encountered by the farmers in adoption of drip irrigation system at 0.01 per cent level of significance. It shows that the farmers with higher level of extension participation perceived more constraint in adoption of drip irrigation system. This might be due to the fact that the farmers participating in extension activities might be discussed about the trainings, demonstrations and guidance on agriculture and perceived more developmental activities in the field of agriculture which created more couseiousnees /alertness about the drip irrigation and might be wanted to in depth study about the drip irrigation system.Findings of the study are conforming to the findings of Jiterwal and Sharma(2007) and Kumar *et al* (2012) .

CONCLUSION

The constraints encountered by the farmers in adoption of drip irrigation system of the farmers was found to be positive and significantly associated with the 'occupation' and 'extension participation' while negatively and significantly associated with the 'socio-economic status', 'caste', and 'education level' whereas 'size of land holding' negative and 'age' positive were found to be non-significantly associated with the constraints encountered by the farmers in adoption of drip irrigation system.

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