

# Management Ability of Potato Growers Regarding Sprinkler Irrigation System in Banaskantha District of Gujarat State

S. G. JOSHI<sup>1</sup> AND R. D. DHANDHUKIA<sup>2</sup>

<sup>1</sup>*Agriculture Officer, College of Agriculture, S.D.A.U., Tharad*

<sup>2</sup>*Assistant Professor, College of Agriculture, N.A.U., Bharuch*

**Abstract:** The purpose of this study was to determine management ability of potato growers regarding sprinkler irrigation system in the villages of Dantiwada and Deesa talukas located in middle part of Banaskantha district. It was evident that more than half of the potato growers had medium level of management ability of sprinkler irrigation system. In case of potato growers of sprinkler irrigation system, independent variables like education, land holding, area under potato with sprinkler irrigation system, annual income, irrigation potentiality, economic motivation, risk orientation and source of information were significantly related while, age and size of family were not found significant.

## INTRODUCTION

Land and water are important natural resources which play an important role in agricultural production. However, due to the scarce conditions of water for irrigation, many parts of the land were unutilized or underutilized. This is mainly due to the fact that the rainfall is irregular and uneven in many parts of country. Gujarat is also facing this situation, shortage of water has become one of the main problems in Gujarat agriculture. Therefore, efficient use of available water has become extremely important which can be done through sprinkler irrigation.

Sprinkler irrigation is still in its infant stage in India and there is a need to make it popular among the farmers. Even though there is a phenomenal growth in the area under sprinkler irrigation, a lot of work is still to be done to explain and convince the farmers, especially those in the dry land area, about the high potentialities of this new system. The main purpose of this study is to get a clear-cut picture of the present situation of the adoption of sprinkler irrigation system in north Gujarat especially in Banaskantha district.

Potato (*solanum tuberosum* L.), is one of the major vegetables crop of the world. In India, potato is one of the most important and vegetables, available through the year in all parts of India because it can be stored for a long

time. This is also an important vegetable crop of Gujarat state. Potato production in India during 2010-11 was 42339000 Metric Tones from 1863000 hectares with an average yield of 22.7 mt/ha (Indian Horticulture Database 2011). Uttar Pradesh, west Bengal, bihar, assam, Punjab, Gujarat and himachal Pradesh are the major potato growing states in the country.

Potato crop has got immense potentiality for the cultivation in Gujarat. The crop is mainly grown in rabi season both under field and riverbed area. The state is very famous for its unique and model cultivation of potato under riverbed condition. In Gujarat, potato will be grown in 528 hectares with production of 11473 metric tons with average yield of 7076 kg/ha (Gujarat State Wide Area Network-2010-11).

North Gujarat particularly Banaskantha district is having good soil as well as climatic condition for potato cultivation, Deesa is the main market for potato produce. The main research station of potato under S.D. Agriculture University is also located at Deesa.

The main idea behind this investigation is

1. To study the management ability of potato growers regarding sprinkler irrigation system.

- To study the relationship between the selected characteristics of potato growers with their management ability regarding sprinkler irrigation system.

**METHODOLOGY**

The Banaskantha districts of the Gujarat state was selected for the study due to having a having remarkable areas under sprinkler irrigation system in potato crop. Among Banaskantha district, Dantiwada and Deesa and from each talukas, six villages were purposively selected. After selecting villages a list of farmers, who had adopters of sprinkler system, was obtained from concerned GSFC/Banks/Irrigation Department of District and Talukas. Form each selected village, 10 farmers were selected randomly making a sample of 120 respondents. An interview schedule was prepared in vernacular language and data were collected by personal interviews.

For measuring the management ability of potato growers about sprinkler irrigation system, the structured schedule was developed. The score assign to these equations according to its important one score was assigned for each correct answer and zero score was assigned for wrong answer. The maximum score ranging from 0 to 18. Than management ability index (MAI) was calculated for each respondents and categorized as low, medium and high management ability by calculating mean and standard deviation. While the relationship between independent and dependent variables were determined with the help of Karl Pearson’s coefficient correlation. The statistical tools used were percentage, mean score and standard deviation.

**RESULT AND DISCUSSION**

**Table 1: Distribution of respondents according to their management ability regarding sprinkler irrigation system**

| N=120 |                                 |        |          |
|-------|---------------------------------|--------|----------|
| S.N.  | Management ability              | Number | Per cent |
| 1     | Low (up to 36 score)            | 18     | 15.00    |
| 2     | Medium (Between 37 to 69 score) | 80     | 66.67    |
| 3     | High (Above 69 score)           | 22     | 18.33    |
| Total |                                 | 120    | 100.00   |

A perusal of the data presented in Table 1 showed that more than half (66.67 %) of the

potato growers were having medium level of management ability of sprinkler irrigation system followed by 18.33 per cent and 15.00 per cent with high and low level of management ability of sprinkler irrigation system. The findings of Sonwane (2010) and Prajapati (2011) have also supported these results.

**Table 2: Relationship between independent variables and their management of sprinkler irrigation system in potato crop.**

| Sr. No. | Independent Variables                              | Correlation Coefficient (r' value) |
|---------|--|------------------------------------|
| 1       | Age  | 0.065                              |
| 2       | Education  | 0.182*                             |
| 3       | Size of family                                     | - 0.077                            |
| 4       | Land holding                                       | 0.192*                             |
| 5       | Area under potato with sprinkler irrigation system | 0.193*                             |
| 6       | Annual income                                      | -0.195*                            |
| 7       | Irrigation potentiality                            | 0.184*                             |
| 8       | Economic motivation                                | 0.192*                             |
| 9       | Risk orientation                                   | 0.206*                             |
| 10      | Source of information                              | 0.185*                             |

\* Significant at 0.05 level of probability

\*\* Significant at 0.01 level of probability

NS Non-Significant

It is clear from the table-2 that the Education had positively significant correlation with management ability, which indicates that education play an important role in influencing the management ability of potato growers regarding sprinkler irrigation system. The possible reason might be that education makes the potato growers knowledgeable which enables them to capture management practices easily and they practice it in the field condition. Size of land holding area under sprinkler irrigation of the potato grower’s had positive and significant correlation with their management ability. This might be due to that farmer with higher land holding may have more availability of funds and resources for the maintenance of sprinkler irrigation system and, more area under sprinkler irrigation system may be more convenient for adoption of management practices. Annual income of the potato growers had negative and significant correlation with their management ability gain in knowledge indicates that as age increased, the knowledge gain decreased and the age is the factor which

determines the zeal, aptitude and hard work required for determining effectiveness in any activity. The old age farmers, generally less risk taking capacity, innovativeness and enthusiastic than the young farmers. Youngster are always seek to have new things and work for excellence in the life. This could be a reason for negative relationship between age of the KFM subscriber farmers and their gain in knowledge of selected agriculture technology. Economic motivation had positive and significant correlation with management ability. This might be reason that potato growers with higher motivation had adopted more practices and worked hard for management of sprinkler irrigation system which resulted in to higher management ability. Risk orientation of the potato growers had positive and significant correlation with their management ability. The probable reason might be that the farmers with higher levels of risk orientation would be much ahead of the other in exploiting the potentiality of sprinkler irrigation system, which resulted in to better management of sprinkler irrigation system. There was positive and significant correlation with their source of information and management ability regarding sprinkler irrigation system.

Thus, it can be inferred that education, land holding, area under potato with sprinkler irrigation system, annual income, irrigation potentiality, economic motivation, risk orientation and sources of information exhibited a positive and significant relationship at 0.01 probability and 0.05 probability respectively.

It could also be observed from table 2 that age had no any relationship with the management ability. Which indicate that age had not played any

signification role in influencing the management ability of potato growers regarding sprinkler irrigation system. Size of family had negative and non-significant correlation with management ability of potato growers regarding sprinklers irrigation systems. The negative association might be due to that in large size family decision for management of sprinkler irrigation system may be taken jointly which demands more time and resulted in low management ability. The findings of Patel (2005) and Prajapati (2011) have also supported these results.

## CONCLUSION

From the above study it can be concluded that more than half of the potato growers were having medium level of management ability of sprinkler irrigation system. The independent variables like, independent variables like education, land holding, area under potato with sprinkler irrigation system, annual income, irrigation potentiality, economic motivation, risk orientation and source of information were significantly related while, age and size of family were not found significant.

## REFERENCES

- Patel, B. D. (2005). A study on adoption of recommended chilli technology in Vadodara district of Gujarat state. M.Sc. (Agri.). Thesis (unpublished), A.A.U., Anand.
- Prajapati, A.C. (2011) A study on managerial ability of potato growers of Banaskanth district. M.Sc.(Agri.). Thesis (Unpublished), S.D.A.U., S.K.Nagar.
- Sonawane, A.D.(2010) Management ability of banana growers regarding drip irrigation system in anand and vadodra district of gujarat state, M.sc (Agri.). Thesis (Unpublished), A.A.U. Anand.