

STUDY OF AWARENESS ABOUT IRRIGATION SYSTEM AMONG THE FARMERS

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Abstract : *The present study was carried out at Department of Environment Management, Chhatrapati Shahu Institute of Business Education and Research, Kolhapur with the focused on understanding the irrigation system practiced by farmers in Kolhapur and Solapur district, present study also tried to cover the views of farmers regarding the importance of water and irrigation in agricultural activities. Total two hundred respondents were selected randomly from Kolhapur and Solapur district. Present study indicates that, many farmers are lacking the awareness about proper irrigation in agriculture while few active farmers also think and adopted water budgeting which play very important role in proper irrigation.*

Index Terms - Irrigation, Farmers, Agricultural Activities, Water.

I. INTRODUCTION

Irrigation is essentially the artificial application of water to overcome deficiencies in rainfall for growing crops (Cantor, 1967). Irrigation is a basic determinant of agriculture because its inadequacies are the most powerful constraints on the increase of agricultural production. In traditional agriculture, irrigation was recognized for its protective role of insurance against the vagaries of rainfall & drought. But now, adoption of high yielding varieties, chemical fertilization & multiple cropping highly used controlled irrigation for increasing productivity.

Irrigation systems are often designed to maximize efficiencies & minimize labour & capital requirements. There are three broad classes of irrigation system: 1. Pressurized distribution 2. Gravity flow distribution 3. Drainage flow distribution. Water is nature's free gift to the human race. (W.K. Berry 2016). Devendra S. (2013) concluded that, the novel approach to design irrigation system is the use of plant water stress analysis. While Hitendra (2009) mentioned the acoustic method has been used to measure water content of soil on the fact that travel time of sound wave is different in dry & wet soil. C. Choudhari (2011) observed that, the traditional method that is used for irrigation, such as overhead sprinkler and flood type is not that much efficient. As well as in Irrigation system soil parameters such as pH, humidity, moisture and temperature are measured for getting high yield. (Sonali S. Gainwar and Dinesh V. 2015).

To make irrigation system simpler, the complexities involved in irrigation are tackled with automation system said by R. Subhalakshmi in 2016.

II. RESEARCH METHODOLOGY

2.1 Location of Sampling and Sampling Method:

Study Area

Study area for this project is Solapur and Kolhapur. The study was carried out in these two districts.

2.2 Location of Sampling:

- 1) Solapur
- 2) Kolhapur

2.3 Methods of Sampling:

Survey Method is used for collection of data from selected farmers.

- 1) Primary data: - This project, primary data were selected from two hundred respondents. With the help of questionnaire primary data will be collect from the farmers.
- 2) Secondary Data: - Secondary data were collected from previous reports on irrigation projects, websites etc.

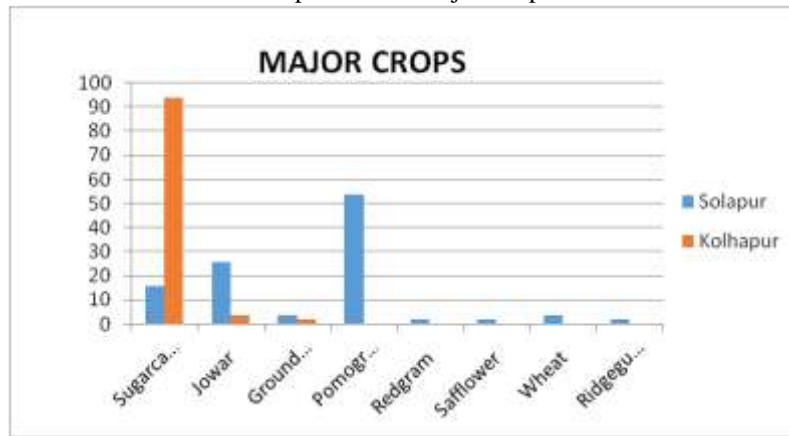
III. RESULTS AND DISCUSSION

This section shows the graphical representation of collected data. In presented all graphs, the values represented on Y axis are in parentage.

3.1 Major Crops:

Different crops are produced in selected areas. In Solapur region farmers have taken following major crops i.e. Sugarcane (16%), Jowar (26%), Groundnut (4%), Pomegranate (54%), Red gram (2%), Safflower (2%), Wheat (4%), Ridge guard (2%) where as in Kolhapur the farmer prefer Sugarcane (94%), Jowar (4%), Groungnut (2%) as major crops.

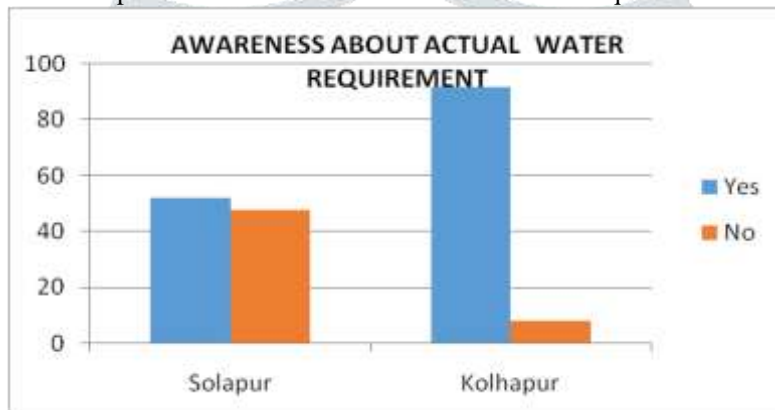
Graph No-3.1: Major Crops



3.2 Awareness about Actual Water Requirement:

About 52% and 92% farmers had knowledge about actual requirement of water to crop while 48% and 8% did not have knowledge about actual requirement of water to crop from Solapur and Kolhapur respectively.

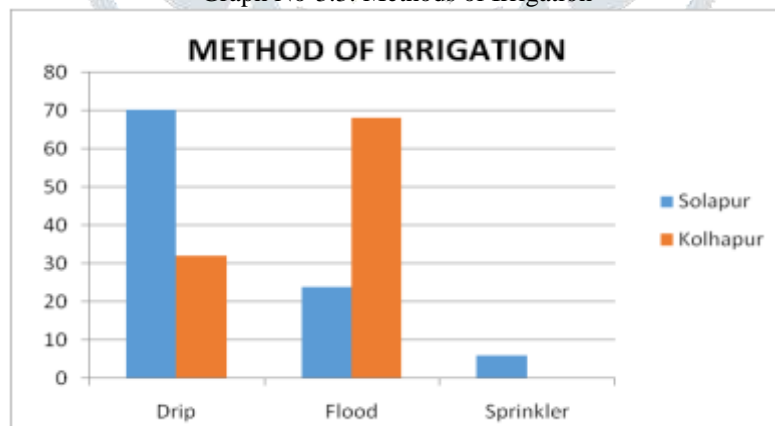
Graph No-3.2: Awareness about Actual Water Requirement



3.3 Methods of Irrigation:

Methods of irrigation used among the respondents were found in different proportions. In Solapur region maximum (70%) farmers used drip irrigation system, remaining flood (24%), and sprinkler (6%), from Kolhapur drip and flood were 32% and 68% respectively.

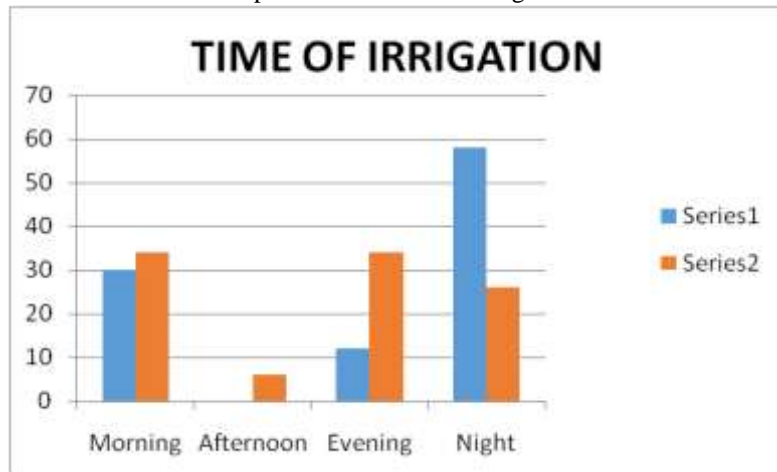
Graph No-3.3: Methods of Irrigation



3.4 Time of Irrigation:

The respondents from studied areas prefer time for providing irrigation to crops at different times according to their convenience. In Solapur the farmers prefer to irrigate at morning is 30%, night (58%), evening (12%), while in Kolhapur 34% farmers prefer to irrigate at morning, 6% at afternoon, 34% at evening and at night was 26%.

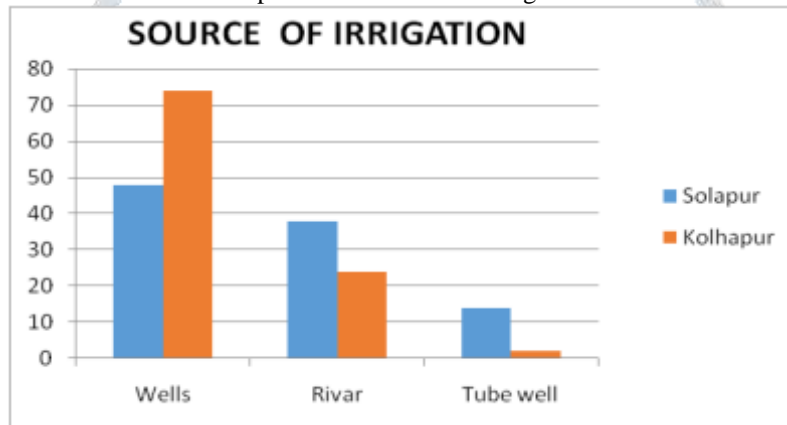
Graph No-3.4: Times of Irrigation



3.5 Source of Irrigation:

Sources of irrigation distribution in Solapur were wells (48%), river (38%), tube well (14%) and Kolhapur were wells (74%), river (24%) and tube well (2 %) respectively.

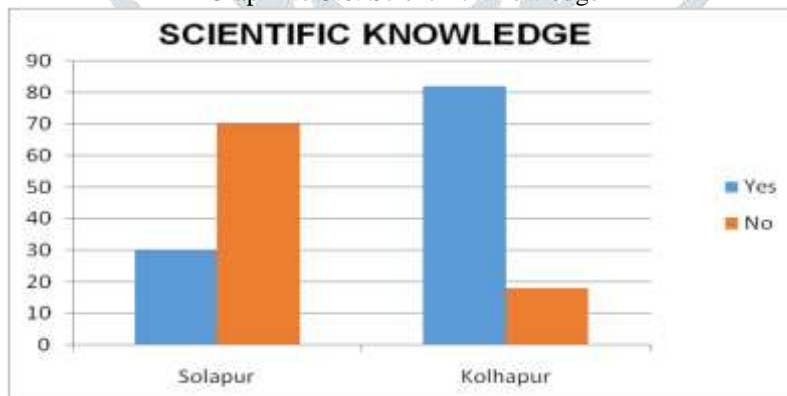
Graph No-3.5: Source of Irrigation



3.6 Scientific Knowledge:

There are about 30% and 82% respondents have scientific knowledge about irrigation in Solapur and Kolhapur respectively.

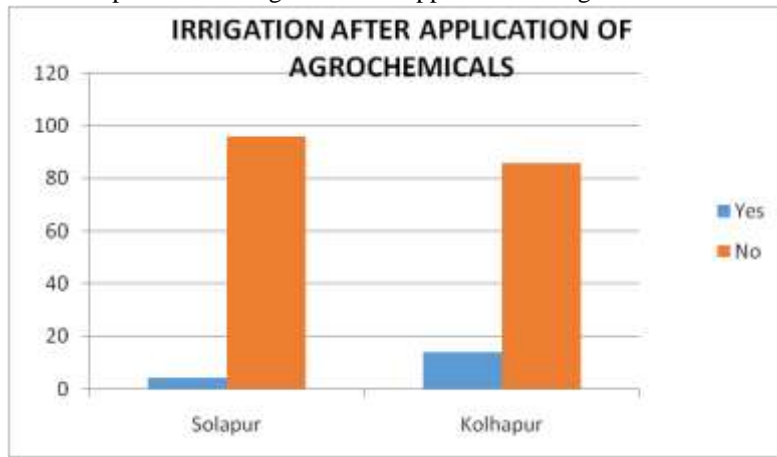
Graph No-3.6: Scientific Knowledge



3.7 Irrigation after Application of Agrochemicals:

Only 4% respondents in Solapur region were used to give irrigation after application of agrochemicals while near about 96% respondents does not give irrigation after application of agrochemicals where as in Kolhapur district it was 14% and 86% respectively.

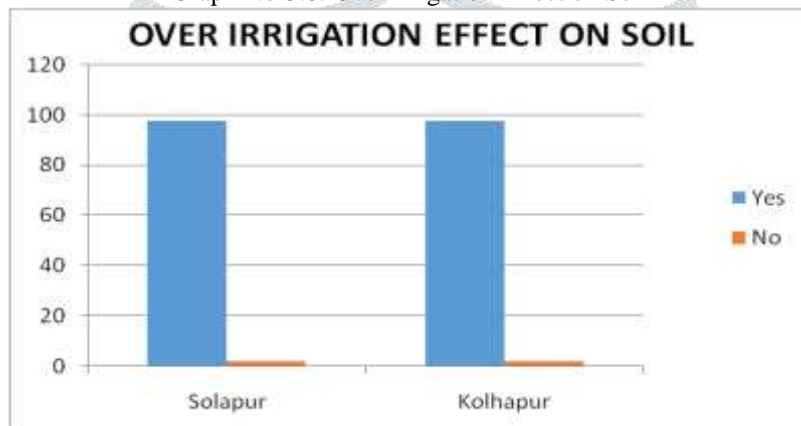
Graph No-3.7: Irrigation after Application of Agrochemicals



3.8 Over Irrigation Effect on Soil:

About 98% respondents from both Solapur and Kolhapur think that over irrigation affects the quality of soil and crop.

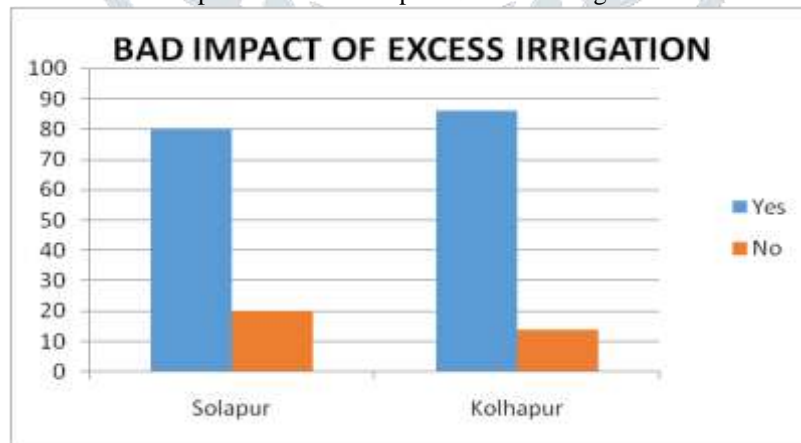
Graph No-3.8: Over Irrigation Effect on Soil



3.9 Bad Impact of Excess Irrigation:

The awareness about the bad impacts of excess irrigation on environment among the respondents from Solapur and Kolhapur were 80% and 86%, whereas 20% and 14% farmers does not aware in studied regions respectively.

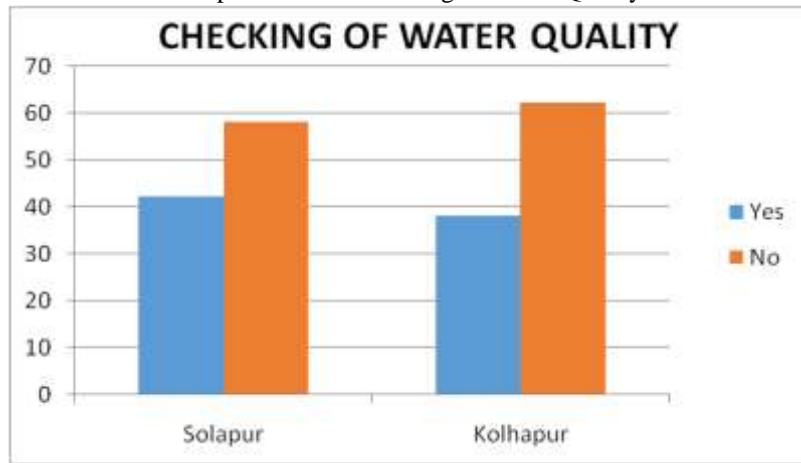
Graph No-3.9: Bad Impact of Excess Irrigation



3.10 Checking of Water Quality:

Among the respondents both from Solapur and Kolhapur, 42% and 38% feels that checking of water quality is essential for irrigation while remaining 58% and 62% from Solapur and Kolhapur respectively does not feels about it.

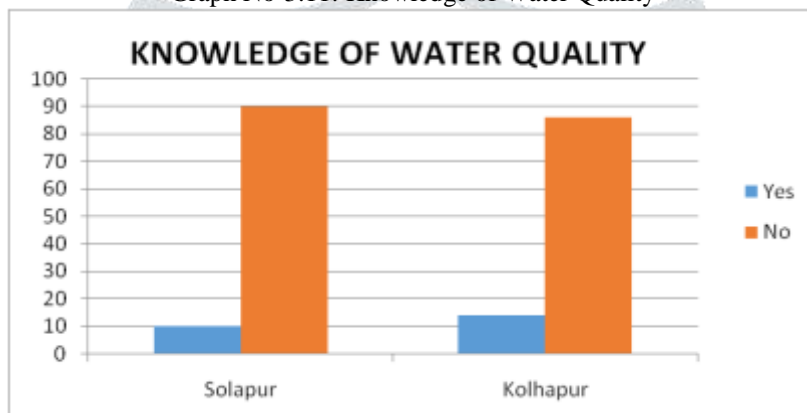
Graph No-3.10: Checking of Water Quality



3.11 Knowledge of Water Quality:

Only 10% respondents from Solapur and 14% respondents from Kolhapur knew about quality of water used for irrigation.

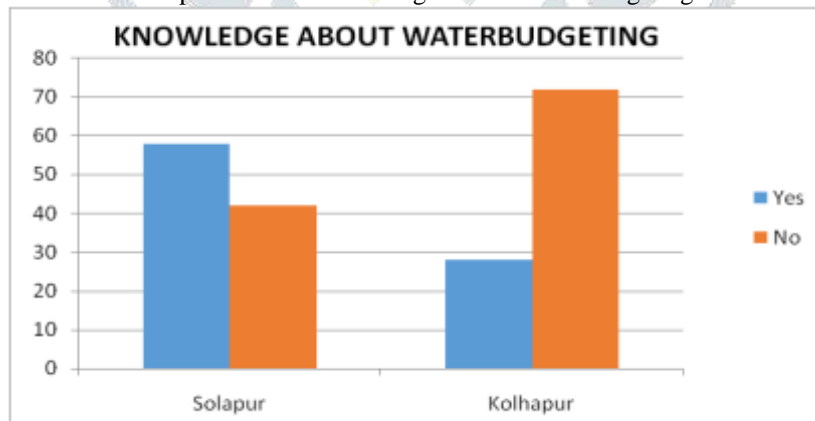
Graph No-3.11: Knowledge of Water Quality



3.12 Knowledge about Water Budgeting:

The knowledge about water budgeting among the respondents from Solapur and Kolhapur were about 58% and 28% but the farmers from Kolhapur are less aware about water budgeting as compared to farmers in Solapur.

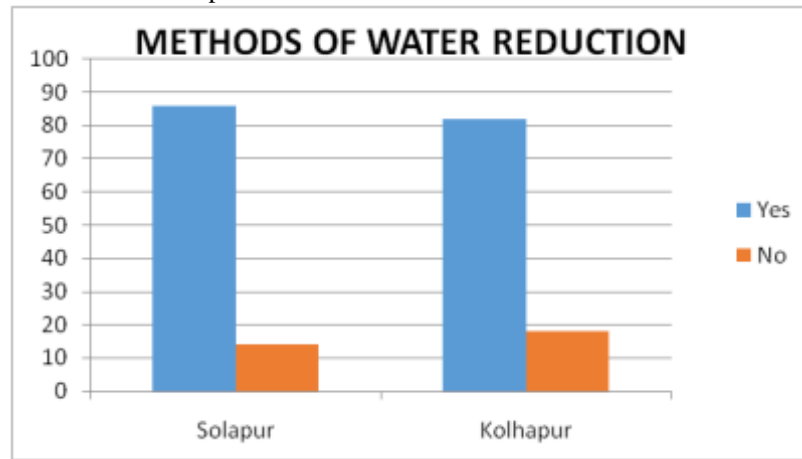
Graph No-3.12: Knowledge about Water Budgeting



3.13 Methods of Water Reduction:

Maximum (86%) respondents from Solapur and 82% respondents from Kolhapur district applied methods of reducing irrigation water.

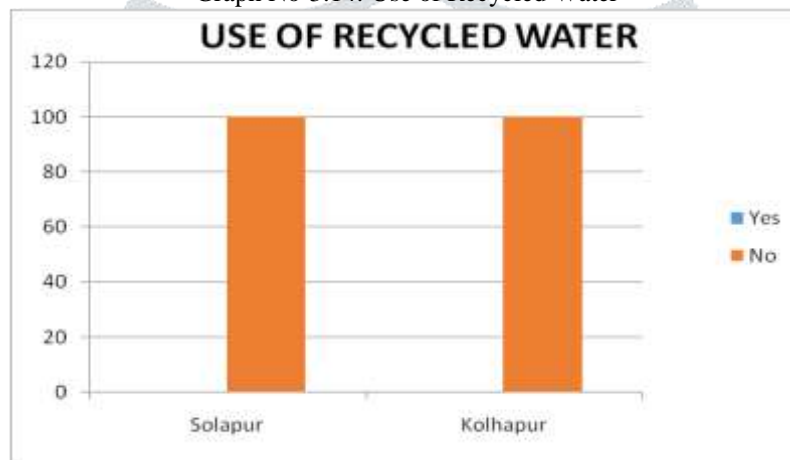
Graph No-3.13: Methods of Water Reduction



3.14 Use of Recycled Water:

In present study it was found that not a single respondent from the respondents used recycled water for irrigation in both Solapur and Kolhapur districts.

Graph No-3.14: Use of Recycled Water



IV. CONCLUSIONS

The data was collected from the Kolhapur and Solapur districts of Maharashtra regarding irrigation practices. From this data, it was observed that major crops in these two districts are Sugarcane, Jawar, Groundnut, Pomegranate, Red Gram, Wheat etc. Many farmers did not have knowledge about actual water requirement of crops. The data from two districts were compared and it was observed that farmers from Solapur district were more aware about water budgeting than farmers from Kolhapur. Use of flood irrigation is more in the field of sugarcane in Kolhapur region. The farmers have faced problems in systematic irrigation like improper supply of electricity, breaking of pipelines, blocking of drip and failure of system. The crops grown into two districts vary from each other according to availability of water for irrigation. With the help of this data it is concluded that farmers of Solapur are more careful about irrigation as compared to Kolhapur.

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