International Journal of Chemical Studies

P-ISSN: 2349–8528
E-ISSN: 2321–4902
IJCS 2018; 6(6): 1588-1590
© 2018 IJCS
Received: 03-09-2018
Accepted: 04-10-2018

Shweta Kumari
M.Sc. (Ag) Deptt. of Extension Education, RPCAU, Pusa, Samastipur, Bihar, India

Satya Prakash
Assistant Professor, Deptt. of Extension Education, RPCAU, Pusa, Samastipur, Bihar, India

Shreya Anand
M.Sc. (Ag) Deptt. of Extension Education, RPCAU, Pusa, Samastipur, Bihar, India

Awdhesh Kumar
M.Sc. (Ag) Deptt. of SMCA, RPCAU, Pusa, Samastipur, Bihar, India

Avinash Kumar
M.Sc. (Ag) Deptt. of Extension Education, RPCAU, Pusa, Samastipur, Bihar, India

Correspondence
Shweta Kumari
M.Sc. (Ag) Deptt. of Extension Education, RPCAU, Pusa, Samastipur, Bihar, India

Knowledge of users towards the weather forecasting information

Shweta Kumari, Satya Prakash, Shreya Anand, Awdhesh Kumar and Avinash Kumar

Abstract
Agriculture is the backbone of Indian economy. Compared to various other sectors of economy, agriculture is unique, whose output is largely dependent on weather conditions. The degree of success of agriculture production and its economics is determined to a significant extent by how well weather conditions corresponding to the optimal requirements of the crop are best exploited to raise the crops. Also, how effectively adverse weather conditions, which cause moisture, thermal, wind, radiation and biotic stress impeding growth and development of crop are managed to minimize their adversity. Further to this, it also depends on management aspects of preventing the crops from severe weather conditions. The objective of the study was to explore the level of knowledge of users towards weather forecasting information. The study was conducted in Marwan and Saraiya block of Muzaffarpur district of Bihar. One village was selected from each block i.e. Bhagwatpur and Ballysaraiya. 30 farmers were selected from each village so total numbers of farmers were 60 for study purpose. The study concluded that farmer had medium level of knowledge about weather forecasting information.

Keywords: Knowledge level, weather forecasting, advisory services

Introduction
Agriculture is the backbone of Indian economy. Compared to various other sectors of economy, agriculture is unique, whose output is largely dependent on weather conditions. The degree of success of agriculture production and its economics is determined to a significant extent by how well weather conditions corresponding to the optimal requirements of the crop are best exploited to raise the crops. Also, how effectively adverse weather conditions, which cause moisture, thermal, wind, radiation and biotic stress impeding growth and development of crop are managed to minimize their adversity. Further to this, it also depends on management aspects of preventing the crops from severe weather conditions.

Ideally, technical progress in agriculture should reduce overall dependence on weather and climate. But the link between yield and weather or climate does not seem to be decreasing. The effects of meteorological conditions are most pronounced on high yielding varieties of crop with increased sensitivities to environmental conditions, requiring maximum optimization of water, air, thermal and nutritional conditions. The biological potential of the plants manifests itself best in favorable conditions and is severely reduced when conditions are adverse. This results in large fluctuations in annual crop yields whose scale exceeds the increase in yields from the growth in agriculture. For this reason, the information is increasing. Using information on the effect of weather and climatic factors on agricultural productivity in an educated manner can not only reduce damage, but can also make it possible to obtain additional yield without significant financial outlays. Thus, the weather forecast based agro-advisories assumes considerable importance for agricultural activities.

For effective planning and management of agricultural practices such as selection of cultivar, sowing, need-based application of fertilizer, pesticides, insecticides, efficient irrigation and harvest, weather forecasts in all temporal ranges are desirable. Weather forecast in short and medium ranges greatly contribute towards making short-term adjustments in daily agricultural operations which minimize losses resulting from adverse weather conditions and improve yield and quantity and quality of agricultural productions.

Weather forecasting

Weather forecasting is the prediction of what the atmosphere will be like in a particular place by using technology and scientific knowledge to make weather observations. In other words, it's a way of predicting things like cloud cover, rain, snow, wind speed, and temperature before they happen.

Once a human-only endeavour based mainly upon changes in barometric pressure, current weather conditions, and sky condition, weather forecasting now relies on computer based models that take many atmospheric factors into account. Human input is still required to pick the best possible forecast model to base forecast upon, which involves pattern recognition skills, teleconnections, knowledge of model biases. In accuracy of forecasting is due to the chaotic nature of the atmosphere, the massive computational power required to solve the equation that describe the atmosphere, the error involved in measuring the initial conditions, and an incomplete understanding of atmospheric processes. Hence, forecasts become less accurate as the difference between current time and the time for which the forecast is being made (the range of the forecast) increases. The use of ensembles and model consensus help narrow the error and pick the most likely outcome.

Agromet Advisory Services

The sources of weather and climate-related risks in agriculture are numerous and diverse: limited water resources, drought, desertification, land degradation, erosion, hail, flooding, early frosts and many more. Effective weather and climate information and advisory services can inform the decision-making of farmers and improve their management of related agricultural risks. Such services can help develop sustainable and economically viable agricultural systems, improve production and quality, reduce losses and risks, decrease costs, increase efficiency in the use of water, labour and energy, conserve natural resources, and decrease pollution by agricultural chemicals or other agents that contribute to the degradation of the environment. Thus, the importance of the Agromet Advisory Services that have now been established at district levels in India.

These Services meet the real-time needs of farmers and contribute to weather-based crop and livestock management strategies and operations dedicated to enhancing crop production and food security. They can make a tremendous difference in agricultural production by assisting farmers in taking the advantage of benevolent weather and in minimizing the adverse impact of malevolent weather. Keeping in this view objective for the study purpose was selected.

Objective of study

- To explore the level of knowledge of users towards the weather forecasting information.

Research methodology

The study was conducted in Marwan and Saraiya block of Muzaffarpur district of Bihar. One village was selected from each block i.e. Bhagwatpur and Bally Saraiya. 30 respondents were selected from each village so total numbers of respondents were 60 for study purpose. Two variables for the study were knowledge and attitude. The variables were measured strictly under the set rule and procedure, with schedule developed for the study. An interview schedule was prepared and face to face interview was carried out with farmers. Appropriate statistical tests were used for data analysis.

To explore the level of knowledge of users towards the weather forecasting information Knowledge level

To assess the level of knowledge on weather and weather forecast advisory services, a knowledge test was specially designed for the purpose, which constituted of 17 questions with correct answers getting score of 2 and incorrect answer getting a score of 1, the knowledge test was administrated to the samples of study, the data thus got were analysed and the results are presented in table 1. In order to finalize the level of knowledge scores, the scores obtained on all the 17 questions were added and the percentage was calculated using the following formula.

$$\text{Knowledge index} = \frac{\text{Obtained knowledge score}}{\text{highest obtainable score}} \times 100$$

The knowledge score of all the 60 respondents were put in a frequency table and their mean and S.D was computed. The frequency distribution is given in table 1.

Results and discussion

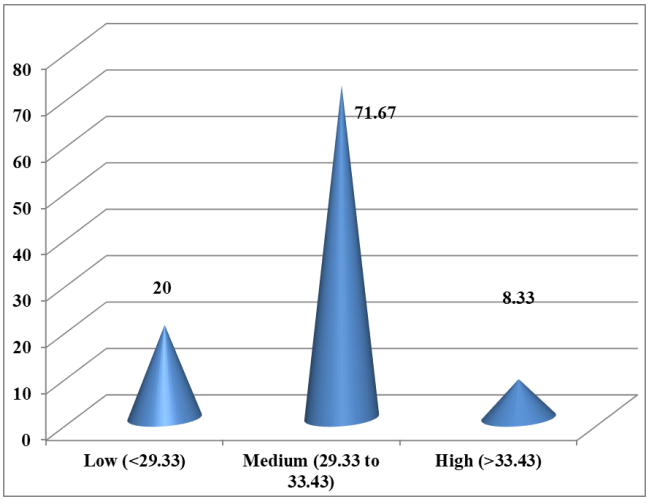
Table 1: Distribution of Percentage on the basis of knowledge level of the farmers about weather forecasting information

S. No.	Category	Farmers (n=60)	
		Frequency	Percentage
1.	Low (<29.33)	12	20.0
2.	Medium (29.33 to 33.43)	43	71.67
3.	High (>33.43)	5	8.33
	Total	60	100

Mean = 31.33, SD=2.10

It is clear from the table 1 that 71.67 percent of respondents had medium level of knowledge and 20.0 percent of respondents had low level of knowledge. Only 8.33 percent of respondents had high level of knowledge.

Thus, the table 1 indicates that majority of respondents 71.67 percent were having medium level of knowledge about weather forecasting information, as they possess few important weather forecast advisory services and using regularly.



Knowledge of various components of weather forecasting information of respondents

Level of knowledge was measured by using a knowledge test consisting of 17 questions. An attempt was made here to compute frequencies of correct answers.

The table 2 revealed that the overall percentage of knowledge of respondents about weather forecasting advisory services were 92.16, whereas 100 percent respondents had knowledge about the importance and changing of monsoon time. Majority of the respondents having knowledge about weather forecasting advisory services were between 90-100 percent regarding R.P.C.A.U bulletin, major crop, sources of weather forecast, most important climatic factor which affect crop production, maximum rainfall but in case of instruments for measuring of rainfall and temperature only 15 percent of respondents were having knowledge.

Table 2: Distribution of Percentage of various components of knowledge towards weather forecasting information

S. No.	Components of knowledge of Weather Forecasting information	Farmers (n=60)	
		f	%
1.	Whether the weather forecasting advisory services is important for farmers?	60	100.0
2.	Are you sowing your crop and choose the varieties according to changing in climate?	48	80.0
3.	Do you have any information about the bad effect about the use of pesticides and insecticides in our environment?	37	61.67
4.	Do you know the instruments for measuring of rainfall and temperature?	9	15.0
5.	Are you aware about R.P.C.A.U Bulletin?	54	90.0
6.	Have you seen any change in monsoon timing?	60	100.0
7.	Are you are satisfied with AAS bulletin, are you willing to pay for it?	34	56.67
8.	R.P.C.A.U Bulletin provide weather forecast?	55	91.67
9.	Do you know the major crop of your area?	57	95.0
10.	Do you know the different sources of weather forecast?	56	93.33
11.	Do you know the frequency of forecast which you use?	53	88.33
12.	Do you know the coverage of forecast used by you?	51	85.0
13.	Do you know about climatic factor which affects crop production in your area?	56	93.33
14.	Do you know about the maximum rainfall which takes place in your area?	59	98.33
15.	Do you know in these months which factor is most important which affect the crop Production?	56	93.33
16.	Do you know how much percentage of weather forecasting benefit is being received by agriculture?	59	98.33
17.	Do you know in these months which factor is most important which affect the crop Production?	57	95.0
	Overall % knowledge		92.16

Conclusion

- With respect to knowledge level of weather forecast information 71.67 percent of respondents had medium level of knowledge and 20.0 percent of respondents had low level of knowledge. Only 8.33 percent of respondents had high level of knowledge.
- With respect to knowledge of various components of weather forecasting advisory services it was found that 100 percent respondents were aware about change of monsoon timing but with respect to the instruments for measuring of rainfall and temperature only 15.0 percent of respondents were aware. Majority of respondents were aware about the general information on weather and weather forecasting information.

References

1. King DNT, Skipper A, Tawhai WB. Māori environmental knowledge of local weather and climate change in Aotearoa–New Zealand. Climatic Change. 2008; 90(4):385.
2. Kumar V. Indigenous technical knowledge in agriculture (Indigenous Knowledge), 2009.
3. Nyong A, Adesina F, Elasha BO. The value of indigenous knowledge in climate change mitigation and adaptation strategies in the African Sahel. Mitigation and Adaptation strategies for global Change. 2007; 12(5):787-797.
4. Orlove B, Roncoli C, Kabugo M, Majugu A. Indigenous climate knowledge in southern Uganda: the multiple components of a dynamic regional system. Climatic Change. 2010; 100(2):243-265.
5. Rautela P. Indigenous technical knowledge inputs for effective disaster management in the fragile Himalayan ecosystem. Disaster Prevention and Management: An International Journal. 2005; 14(2):233-241.
6. Selvaraju R, Balasubramanian TN, Huda AKS, George DA. Farm decision making using climate information: characterizing the decision profiles of southern Indian crop farmers. Outlook on agriculture. 2005; 34(1):23-31.
7. Stamm KR, Clark F, Eblacas PR. Mass communication and public understanding of environmental problems: the case of global warming. Public understanding of science. 2000; 9(3):219-238.
8. Vogel C, O'Brien K. Who can eat information? Examining the effectiveness of seasonal climate forecasts and regional climate-risk management strategies. Climate Research. 2006; 33(1):111-122.
9. Wheeler S, Zuo A, Bjornlund H. Farmers' climate change beliefs and adaptation strategies for a water scarce future in Australia. Global Environmental Change. 2013; 23(2):537-547.