Original Research Article

Effectiveness of WhatsApp messages on knowledge gain of sugarcane cultivation practices among the farmers

ABSTRACT

Information and communication technology in agriculture provides solutions to agricultural challenges. The present study was conducted in Athani taluk of Belagavi District in Karnataka state. 'Before-After' without control group experimental design was used to determine the effectiveness of WhatsApp messages on knowledge gain of sugarcane cultivation practices among farmers. WhatsApp messages on "Sugarcane cultivation practices" was the subject matter selected for the study and tested for their effectiveness. WhatsApp messages acted as treatment for the study. 50 Sugarcane growers were selected for the treatment on the basis of random sampling. The effectiveness was studied in terms of knowledge gain for WhatsApp message. The results revealed that highest mean differences 2.50 was observed in case of integrated disease management followed by weed management (2.38), micronutrients and inter cultivation (2.10). The mean knowledge score of WhatsApp message of the respondents before exposure was 20.52 and after exposure it was 50.52, thus there was mean knowledge gain of 30.00. Farming experience, land holding, extension contact, Innovative proneness achievement motivation and Management orientation were found to be positive and significant relationship with knowledge gain. Hence, WhatsApp messages are effective to disseminate the information among the farmers.

Keywords: Effectiveness, Knowledge gain, WhatsApp message and Sugarcane cultivation practices

INTRODUCTION

The technologies developed within the four walls of laboratories and research field, must reach the farmers at the earliest to speed up the process of transfer of technology amongst the farmers. As per the reports of the Extension Division of ICAR, New Delhi, 80 per cent of the technologies generated by the researchers in agricultural sector are either not transferred to the ultimate users or they do not find applicability in farmers' field. Out of remaining 20 per cent of the technologies, around 50 per cent do not impress the farmers due to its effective technology transfer that ranges from language to effective demonstration of using the available tools. The problem in transferring the evolved technology is much more in our country which could perhaps efficiently be countered through the use of advanced communication gadgets. (Deveraj and Chaturvedi, 2003). It is time to harness the full potential of the ICTs to serve the specific needs of poor farming communities. New ICTs can accelerate broad-based rural growth and by increasing awareness, help make it a central pillar of overall development strategy. There is already a concern that the gap between the information rich and information poor is getting wider. Hence, it is incumbent on all of us, the administrators, Non Government Organizations, trainers and scientists, all those who are involved in the task of facilitating the upliftment of the rural communities to provide information access to the last person in the rural areas: "Reaching the Un-reached". Keeping this in view, the present study was conducted with a specific objective is effectiveness of WhatsApp message on knowledge gain of sugarcane cultivation practices.

MATERIALS AND METHODS

The present experimental study was conducted in Athani taluk of Belagavi District in Karnataka state. 'Before-After' without control group experimental design was used to determine the effectiveness of WhatsApp messages on knowledge gain of sugarcane cultivation practices among farmers. WhatsApp messages on "Sugarcane cultivation practices" was the subject matter selected for the study. WhatsApp message acted as treatments for the study. 50 Sugarcane growers were selected for each treatment on the basis of random sampling. This standardized interview schedule was used for final data collection which was done through personal interview technique. Collected data were tabulated and analyzed using mean, ANOVA and statistical tools were used for the study.

RESULTS AND DISCUSSION

The table 1 depicts the gain in knowledge level of sugarcane growers on sugarcane cultivation practices due to WhatsApp message exposure. The paired 't' test was calculated to find out the mean difference before and after the treatments.

1. Soil and land preparation

The table 1 reveals that mean knowledge gain on soil and land preparation was 1.30 after the WhatsApp message exposure. The mean score before the treatment was 1.80 and it was increased to 3.10 after the treatment. The paired 't' value is 10.11 which is significant at 1 per cent level.

2. Planting season and varieties

The table 1 reveals that mean knowledge gain on planting season and varieties was 1.40 after the WhatsApp message exposure. The mean score before the treatment was 1.90 and it was increased to 3.30 after the treatment. The paired 't' value is 20.00 which is significant at 1 per cent level.

3. Seed setts

The table 1 reveals that mean knowledge gain on seed setts was 1.40 after the WhatsApp message exposure. The mean score before the treatment was 1.70 and it was increased to 3.10 after the treatment. The paired 't' value is 14.77 which is significant at 1 per cent level.

4. Organic manure

The table 1 reveals that mean knowledge gain on organic manure was 1.40 after the WhatsApp message exposure. The mean score before the treatment was 1.60 and it was increased to 3.00 after the treatment. The paired 't' value is 8.80 which is significant at 1 per cent level.

5. Chemical fertilizer

The table 1 reveals that mean knowledge gain on chemical fertilizer was 1.50 after the WhatsApp message exposure. The mean score before the treatment was 1.70 and it was

increased to 3.20 after the treatment. The paired ‘t’ value is 15.65 which is significant at 1 per cent level.

6. Green leaf manure

The table 1 reveals that mean knowledge gain on green leaf manure was 1.70 after the WhatsApp message exposure. The mean score before the treatment was 0.80 and it was increased to 2.50 after the treatment. The paired ‘t’ value is 18.58 which is significant at 1 per cent level.

7. Micronutrients

The table 1 reveals that mean knowledge gain on micronutrients was 2.10 after the WhatsApp message exposure. The mean score before the treatment was 0.80 and it was increased to 2.90 after the treatment. The paired ‘t’ value is 17.70 which is significant at 1 per cent level.

8. Irrigation

The table 1 reveals that mean knowledge gain on irrigation was 2.00 after the WhatsApp message exposure. The mean score before the treatment was 1.70 and it was increased to 3.70 after the treatment. The paired ‘t’ value is 15.65 which is significant at 1 per cent level.

9. Inter cultivation

The table 1 reveals that mean knowledge gain on inter cultivation was 2.10 after the WhatsApp message exposure. The mean score before the treatment was 0.70 and it was increased to 2.80 after the treatment. The paired ‘t’ value is 21.00 which is significant at 1 per cent level.

10. Weed management

The table 1 reveals that mean knowledge gain on weed management was 2.30 after the WhatsApp message exposure. The mean score before the treatment was 1.00 and it was increased to 3.30 after the treatment. The paired ‘t’ value is 13.56 which is significant at 1 per cent level.

11. Integrated pest management

The table 1 reveals that mean knowledge gain on integrated pest management was 1.50 after the WhatsApp message exposure. The mean score before the treatment was 3.50 and it was increased to 5.00 after the treatment. The paired 't' value is 6.45 which is significant at 1 per cent level.

12. Integrated disease management

The table 1 reveals that mean knowledge gain on integrated disease management was 2.50 after the WhatsApp message exposure. The mean score before the treatment was 4.00 and it was increased to 6.50 after the treatment. The paired 't' value is 12.22 which is significant at 1 per cent level.

13. Harvesting

The table 1 reveals that mean knowledge gain on harvesting was 1.00 after the WhatsApp message exposure. The mean score before the treatment was 1.30 and it was increased to 2.30 after the treatment. The paired 't' value is 9.04 which is significant at 1 per cent level.

It is observed in Table 1 that highest mean differences 2.50 was observed in case of integrated disease management followed by weed management (2.38), micronutrients and inter cultivation (2.10). The fact that under WhatsApp message treatment the sugarcane cultivation practices focused more on integrated disease management because diseases reduce the yield of sugarcane as a result it reduces the income of the sugarcane growers. And due to more number of diseases infestation in the study area farmers has concentrated on this practice. The crucial factor in cultivation is the weed management or otherwise it will reduce the yield drastically. Hence, the farmers were motivated to get more knowledge on weed management practices to be used. Farmers realized the benefits of inter cultivation in sugarcane as it not only improve soil fertility but also provide additional income. The results are in line with the findings of Dechamma (2015) and Sowjanya (2017).

The data regarding the knowledge gained as a result of exposure to WhatsApp message format are presented in Table 2. The computed 't' value was positive and significant at 0.01 level of significance for gain in knowledge. Hence, it can be concluded that there was a positive and significant difference in the knowledge levels of respondents before and after exposure to the treatments. The mean knowledge score before exposure to WhatsApp message was 22.50 and

after exposure, score was 44.70. Thus there was a mean knowledge gain of 22.20. The WhatsApp message resulted in only 22.20 mean knowledge gain by the respondents. In WhatsApp message respondents were sent need based messages on sugarcane cultivation practices but they might not have shown much interest in understanding the messages by themselves and/or by discussing with their fellow farmers. They might not have opened or even if opened they might have read casually with no conscious effort to acquire knowledge out of it. Messages are often felt uninteresting to the reader and do not hold their attention resulting in impaired learning. Leagans (1961) rightly pointed out that, combination of seeing and hearing was more effective in making impact on people and was usually necessary to promote action. Lack of these effects might be the reason for low knowledge gain by this format. Hence, it is logical to expect enhanced knowledge when video was shown in whole and/or splits.

Relationship between selected socio-economic characters with knowledge gain

It is observed from Table 3 that the variables such as farming experience, land holding extension contact, innovative proneness, achievement motivation and management orientation had positive and significant relationship with knowledge gain at 0.01 per cent level. Whereas, mass media exposure were found to be positive and significant relationship with knowledge gain at 0.05 per cent level. Other variables viz., age, education, extension participation, economic motivation, risk orientation, scientific orientation and cosmopoliteness had a non significant relationship with knowledge gain of the respondents.

Farming experience was found to be positive and significant relationship with knowledge gain. The possible reason might be that farmers are involved in farming activities for a long time, they try to know more about new technologies with interest, thus farming experience has high significance. The findings are in agreement with the findings of Dechamma (2015), Vandana (2016) and Mohanakumar (2018). Land holding was found positively and significantly correlated with knowledge gain. The probable reason for this kind of results may be that farmers with larger holdings will have more opportunities and potentialities to try and adopt large number of technological innovations. As a result, it is quite possible that farmers with larger holdings evince keen interest to know about new farm practices and be more receptive to such ideas, thus

leading to better acquisition of knowledge. Therefore, size of land holdings might have shown positive and significant relationship with knowledge gain. The findings are in agreement with the findings of Dechamma (2015) and Mohanakumar (2018). Extension contact had positive and significant relationship with knowledge gain of sugarcane growers. The above findings could be attributed to the fact that growers with higher level of contact with extension agency are favourably predisposed to acquire more information, skills and other factors relating to enterprises, consequently raising their level of knowledge. The findings are supported by the results of Dechamma (2015). Innovative proneness had positive and significant relationship with knowledge gain. The possible reason might be due to the fact that sugarcane growers had better ability to try new practices and strive hard towards adopting those practices earlier than the others members of the society. The findings are in line with results of Sowjanya (2017). Achievement motivation was found to be significantly related, the reason might be that the interest of the individual to decide and complete the tasks in certain directions, which in turn helps in achieving the desired crop yield and income. These findings are in agreement with the findings of Chandra and Reddy (2004). The knowledge gain of sugarcane growers showed significant association with management orientation. The possible reason might be that because management orientation in the present study has been defined as the degree to which a farmer is oriented towards scientific farm management comprising of planning, production and marketing functions of the farm. It is imperative that scientifically oriented farmers will have a positive attribute towards gaining scientific aspects of cultivation. This might have contributed in the increase in knowledge gain of sugarcane growers. Mass media exposure was found to be positive and significant relationship with knowledge gain of sugarcane growers. The possible reasons might be due to the higher levels of exposure to mass media would facilitate the farmers to develop the habit of gathering more information about new practices through radio, newspaper and other literature related sugarcane cultivation practices. Mass media also provides enormous opportunity for repeated exposure to new technologies and motivating growers. These findings are in line with the results of the studies by Vandana (2016)

CONCLUSION

WhatsApp is a tool of social media which provides the platform to farmers for sharing the knowledge and asking the queries with the scientists. Present research study concludes that WhatsApp is an effective and powerful medium of information dissemination. Thus, we can conclude that WhatsApp messages are effective to disseminate the information among the farmers.

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Table 1: Knowledge gain of farmers on exposure to WhatsApp message on sugarcane cultivation practices

Sl. No	Sugarcane Cultivation Practices	Scores	Treatment						Paired ' t' value
			Before		After		Mean Knowledge gain		
			Mean	SD	Mean	SD	Mean	SD	
1	Soil and land preparation	4	1.80	0.76	3.10	0.71	1.30	-0.05	10.11**
2	Planting season and varieties	5	1.90	0.54	3.30	0.79	1.40	0.24	20.00**
3	Seed setts	5	1.70	0.65	3.10	0.71	1.40	0.06	14.77**
4	Organic manure	4	1.60	0.81	3.00	0.78	1.40	-0.03	8.80**
5	Chemical fertilizer	5	1.70	1.02	3.20	0.61	1.50	-0.41	15.65**
6	Green leaf manure	3	0.80	0.61	2.50	0.51	1.70	-0.10	18.58**
7	Micronutrients	6	0.80	0.88	2.90	0.54	2.10	-0.34	17.70**
8	Irrigation	7	1.70	1.36	3.70	0.91	2.00	-0.45	15.65**
9	Inter cultivation	3	0.70	0.65	2.80	0.40	2.10	-0.24	21.00**
10	Weed management	4	1.00	0.78	3.30	0.91	2.30	0.13	13.56**
11	Integrated pest management	8	3.50	1.04	5.00	1.01	1.50	-0.02	6.45**
12	Integrated disease management	10	4.00	0.90	6.50	0.81	2.50	-0.09	12.22**
13	Harvesting	3	1.30	0.46	2.30	0.65	1.00	0.18	9.04**

** Significant at 1% level, * Significant at 5% level

Table 2. Extent of knowledge gained by respondents after exposure to WhatsApp message format

SI. No	Treatments	Mean knowledge score		Mean Knowledge gain	Paired 't' value
		Before exposure	After exposure		
1	WhatsApp message (n=50)	22.50	44.70	22.20	39.40**

** Significant at 1% level

Table 3. Relationship of socio-economic characteristics with knowledge gain after exposure to WhatsApp messages

Sl. No	Variables	WhatsApp message (T_3)
1	Age	-0.097^{NS}
2	Education	0.114^{NS}
3	Farming experience	0.376**
4	Land holding	0.615**
5	Extension participation	-0.235^{NS}
6	Extension contact	0.443**
7	Mass media exposure	0.321*
8	Innovative proneness	0.601**
9	Achievement motivation	0.373**
10	Economic motivation	0.141^{NS}
11	Risk orientation	0.008^{NS}
12	Management orientation	0.403**
13	Scientific orientation	-0.070^{NS}
14	Cosmopoliteness	-0.174^{NS}

*Significant at the 0.05% level
**Significant at the 0.01% level
NS- Non significant