International Scholars Journals

International Journal of Agricultural Extension and Rural Development ISSN 3254-5428 Vol. 8 (3), pp. 001-006, March, 2020. Available online at www.internationalscholarsjournals.org © International Scholars Journals

Full Length Research Paper

The role of television in the enhancement of farmers' agricultural knowledge

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Accepted 11 October, 2019

The purpose of this study was to evaluate the role of television as an educational tool to the enhancement of farmers' knowledge. This study was a randomized subject, pretest-posttest design among farmers who were working and residing in Kohgiluyeh va Buyer Ahmad province, Iran. The subjects of the study included 161 farmers who were selected randomly from rural areas. After determining the educational goals of the study, a questionnaire was designed as pre and post test. Based on educational contents, one TV program was produced with emphasis on fighting against agricultural pests, and correct method of using agricultural poisons. Participants responded to the pre and post test before and after broadcasting the television program through the provincial broadcast center. Almost all farmers in this study were male (90.1%) and married (80%) with mean age of 41.65 ±14.69 years. The finding of the study showed that educational intervention through a TV program resulted in a significant knowledge enhancement from 3.73 to 6.26 (p<0.001). Mass media offer effective channels for communicating agricultural messages, which can increase knowledge and influence behavior of audience members.

Key words: Agriculture, knowledge, media, television.

INTRODUCTION

There is no doubt that information and communication technologies have influenced educational circumstances more than any other categories (Asnafi, 2008). Many researchers and educators have tested the understanding of farmers and other clients toward the delivery of educational information (Gamon et al., 1992; Caldwell and Richardson, 1995; Laughlin and Schmidt, 1995; Trede and Whitaker, 1998; Suvedi et al., 1999; Akar-Vural, 2010; Faiola, 2010). The outcomes of their studies indicate that different media and methods are used by extension educators to communicate new and emerging technologies to farmers.

Transferring new findings and technologies to rural farmers remain a promising strategy for increasing agricultural productivity. The new idea must reach farmers' farms and homes through effective extension the and mass media channels, so that they can adopt new technologies and put them into use (Ekoja, 2003). Using the mass media has caused an increase in the knowledge level and the output of educational system in recent decades. It seems the main reason for the popularity of television lies in its simplicity for the audiences. Since people intend to choose the easiest way for learning the simplest way can be found in television educational programs (Buren, 2000). Ekoja (2003) stated that the information sources in different topics of agriculture for the farmers are radio and television, the propagation publication, daily farm newspapers, agriculture exhibitions, practical education, and consultation services, respectively. According to Jenkins' research (2003) in North California, newsletters are the most important information source in the agricultural sector. Among the media, utilizing scientific conferences, computer and other new media are the least preferred; so, few of the farmers use them. Arokoyo (2003) also showed that video, radio and television are the major sources of information for the farmers in

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Nigeria, and print media also have a specific situation in transferring agricultural information as well. Among the mass media, regarding informal education, radio and television have a specific situation. Due to the vast use, the media are among the best educational and cultural instruments.

The success of agricultural development programmes in developing countries largely depends on the nature and extent of use of mass media in mobilization of people for development. The planners in developing countries realize that the development of agriculture could be hastened with the effective use of mass media (Salleh, 2010). Radio and television has been acclaimed to be the most effective media for diffusing the scientific knowledge to the masses. In a country like Iran, where literacy level in rural areas is low, the choice of communication media is of vital importance. In this regard, the television and radio are significant, as they transfer modern agricultural technology to literate and illiterate farmers alike, even in interior areas, within a short time (Nazari and Hasbullah, 2008).

Based on their educational requirements different countries can take advantage of radio and television in terms of informal education. On the other hand, the lack of specific research in this field, as well as the obligation and commitment of Iran to the World Session of Information Society (WSIS, 2005), which aims at applying information and communication technology in all parts and areas including villages and agricultural affairs, makes conducting this study inevitable.

Television is acknowledged as the most important medium for communicating with the rural populations of developing countries (FAO, 2001). The purpose of this current study was to determine the effect of television on the enhancement of farmers' agricultural knowledge and it attempts to investigate the impact of television on promoting farmers' knowledge; so that in future programming, a more appropriate situation for agriculture development is specified to these to public media.

METHODOLOGY

This study was a randomized subject, pretest-posttest design among farmers who were working and residing in Kohgiluyeh va Buyer Ahmad province, Iran. This province is located in the South-West of Iran. The province covers an area of 15,563 square kilometers, and in 2006 had a population of 634,299 of whom 52% of them live in rural area. The rural residences mainly work in agriculture sector. Three towns were chosen randomly from the province, and three villages were selected randomly from each town. Study population was all farmers of Kohgiluyeh va Buyer Ahmad province among whom 161 people (using statistic formula) were selected randomly from villages in the three towns. Farmers were chosen randomly based on the annual census taken by the agricultural organization in province.

At the first step, educational movie produced with various items including performer, experts, reports, educational rhythmic songs and short drama performances. The contents of this program turned into fighting against agricultural pests, and correct method of using agricultural poisons. This topic was an educational priority of the region based on prior studies. The research tool (questionnaire) was designed based on TV program content and its validity and reliability confirmed before intervention. Data were collected using a structured questionnaire in Persian language which was completed by a trained interviewer before and after intervention as pre- test and post -test. One week after the completion of the pre-test, a TV program regarding the fighting against agricultural pests was broadcasted through the local television centre of the Kohgiluyeh va Buyer Ahmad province. It was shown at 18:30 that was assumed to be the most appropriate time for people to watch television. One week after the broadcast of the TV program, post-test was completed. The data were analyzed using Statistical Package for Social Sciences (SPSS) version 15. The level of significance for all statistics was set at $p<0.05$. Descriptive and inferential statistical analysis was used to provide information about respondents', agricultural knowledge regarding fighting against agricultural pests and correct methods of using agricultural poisons and demographic characteristics of respondents as well as sources of their information.

RESULTS AND DISCUSSION

Among the participants there were 91.1% men and 9.9% women. Eighty one percent of the farmers in this study were married. Among the respondents, 61 farmers (23%) were illiterate and most of the participants (61.49%) had 6 to 10 members in their family (Table 1).

Regarding possessing mass media, 96.27% of the population had a television set, 94.40% had a radio, 39.13% had a fixed line telephone, 20.49% had a cell phone, 5.59% had a computer and 4.34% possessed a video (Table 2).

One week after the broadcasting of the program a post test was carried out. It turned out that 86.95% (140 farmers) of the participants had the opportunity to watch the movie. Those who were not able to do so for any reason were excluded from the sample (13.05%).

In order to evaluate the efficacy of television to enhancement of farmers' knowledge regarding the selected topic, a pre and post-test was conducted which included 10 question about fighting against agricultural pests and the correct method of using agricultural poisons. The effect of television was used to improve respondents' information evaluated in Kohgiluyeh va Boyer Ahmad province and these findings were found.

Table 3 illustrated the level of knowledge of farmers regarding 10 questions before and after the intervention, which showed that the level of their knowledge had increased significantly ($P<0.05$).

As the result showed, the number of the correct answers had increased during the post test. Chi- square test employed in order to test the hypothesis which stated:

H_1: There is a significant difference between the level of farmers' knowledge before and after exposure to the television program.

The result indicated that the hypothesis was accepted

Table 1. Demographic profile of Respondents by sex, marital status, education level.

Characteristics	Kohgiluyeh va Buyer Ahmad	
Sex	**N**	**%**
Mal	145	90.1
Female	16	9.9
Total	161	100
Marital status		
Single	15	9.3
Married	129	80.1
Divorced	6	3.7
Widowed	11	6.8
Total	161	100
Education		
Illiterate	37	23
Elementary	57	35.4
Secondary	36	22.4
High school	24	14.9
Degree	7	4.3
Total	161	100

Table 2. Distribution of respondents by access to Media at home.

Media	Respondents	
	f	**%**
TV	155	96.27
Radio	152	94.40
Fixed phone	63	39.13
Hand phone	33	20.49
Computer	9	5.59
Video	7	4.34
Others	12	7.45

Table 3. Chi-square test of correct response of TV viewer (Kohgiluyeh va Buyer Ahmad) in pre and post-test by questions.

Item	Correct response				²	df	P value
	Pre test		Post test				
	No.	%	No.	%			
Q1	37	25.5	94	66.7	16.78	1	0.001*
Q2	38	27	91	64.5	24.49	1	0.001*
Q3	42	29.8	93	66	4.23	1	0.04*
Q4	60	42.9	101	72.1	31.42	1	0.001*
Q5	63	44.7	92	65.2	50.08	1	0.001*
Q6	54	38.3	97	68.8	35.12	1	0.001*
Q7	68	48.2	77	54.6	25.32	1	0.001*
Q8	67	47.5	82	58.2	23.02	1	0.001*
Q9	58	41.1	98	69.5	22.24	1	0.001*
Q10	37	26.2	58	41.1	33.05	1	0.001*

*. Indicated statistical significant at $p<0.05$.

Table 4. T-test for change in knowledge level from pretest to posttest.

Media	n	Pre test		Post test		t	p
		M	SD	M	SD		
TV	140	3.73	2.11	6.26	I.67	19.63	0.000*

*. Indicated statistical significant at p<0.05.

and the farmers' knowledge improved significantly after watching "Khoda Ghovat Keshavarz" program through television in Kohgiluyeh va Boyer Ahmed province. Al-Namlah (1998) reports that level of farmers' knowledge increased in all the farming process due to the effect of watching television program. However the increase of farmers' knowledge has different degree of strength.

The mean of knowledge score had increased from 3.73 during the pre test to 6.26 in post test out of 10 for the TV program. The result of the t-test showed that there was a significance difference between the result of the pre test and post test (P<0.001), (Table 4). These results also supported the hypothesis which confirmed positive effect of television to improve farmers' knowledge.

This study showed correlation between the farmers' knowledge level and educational level, age, family dimension, and monthly income of farmers. These results confirmed the findings of the earlier studies indicating that educational level, age, family dimension, and monthly income of farmers' were correlated with their level of knowledge (Al-Namlah, 1998; Abdulrahman, 1998; Sadighiand Roosta, 2002; Sarwar, 2005; Chizari and Dinpanah, 2005; Kolawole and Laogun, 2005; Hashemi et al., 2008; Kumar et al., 2009; Tesfaye, 2010).

Most of the participants (68.3%) believed that producing suitable agricultural programs in accordance with the language and culture of the region could be very effective. The results of the study showed that producing and broadcasting local agricultural programs are good and efficient ways of producing them. The use of the local language in these programs would be effective in the degree as long as the program satisfies farmer needs.

The results showed that the most appropriate time for broadcasting the programs was between 6 to 8 pm, according to the respondents' views. Most of the respondents (86.86%) believed that the duration of the program (20 min) was enough, and if it were increased, the audience would be less interested in following the program.

The objective of the study was to assess the level of knowledge improvement among farmers who watched the agricultural TV program. The results demonstrated a significant increase in the level of awareness among farmers, from 3.73 to 6.26, which emphasized the effectiveness of TV to upgrade farmers' knowledge level, thus the usefulness of television to transfer agricultural knowledge to farmers.

Similarly Al- Namlah (1998) and Kim (2010) report the positive effect of television to spread farmers' knowledge in all farming process. The efficacy of TV to increase health and political information is also well established (Cohen, 1963; Chang, 1991; Pavlik et al., 1993; Kingdom, 1995; Alkalay, 1996; Kinnucan et al., 1997; McDivitt, 1997; Davis, 1998; Freels et al., 1999; Reger et al., 1999; Verbeke, 1999; Jenkins, 1999; Verbeke, 2000; Brodie et al., 2001; Chew et al., 2002; Walle et al., 2002).

Broadcast media have the ability to disseminate information to large audiences efficiently and television can be a particularly important channel (Movius et al., 2007). Nazari et al. (2009) report that educational intervention through television is effective and results in heightening the public awareness regarding environmental health. A low level of education and an elder age are two crucial characteristics of the majority of farmers in Iran. Since these two characteristics are rather big barriers for farmers to develop their situations, it is extremely important for policy makers to address these issues in the future.

Conclusion

Mass media offer effective channels for communicating agricultural messages, which can increase knowledge and influence behavior of audience members. Broadcast media have the ability to disseminate information to large audiences efficiently; and television can be a particularly important channel.

Media scholars are usually more interested in producing programs that are of high commercial value. Most often, the few agricultural programs are not timed to suit the farmers. Consequently, most farmers are constrained to rely on third parties for agricultural information, which may often be biased. Considering the fact that rural people are great part of the population of a country, it seems indispensable to set up a particular TV network for this group to meet their needs. It is also suggested that producers include appealing and appropriate TV items such as, shows contests, comic plays, and etc. in their programs under the supervision of the experts in agricultural organization.

ACKNOWLEDGMENT

The author is grateful to Islamic Republic Broadcasting of Yasouj Center and Agricultural Organization of Kohgilouyeh va Boyer Ahmad Province for their valuable

cooperation as well as all farmers who participated in the study.

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