International Journal of Science, Environment and Technology, Vol. 5, No 2, 2016, 438 – 444

ISSN 2278-3687 (O)
2277-663X (P)

EFFECTIVENESS OF MULTIMEDIA MODULES IN KNOWLEDGE GAIN AND RETENTION AMONG DAIRY FARMERS

Dr. T. Vijaya Nirmala[1*], Dr. G.R.K. Sharma[2], Dr. B. Subrahmanyeswari[3] and Dr. J. Suresh[4]

[1]Part Time Teacher & [3]Professor & Head,
Department of Veterinary & AH Extension Education, NTR College of Veterinary Science, S.V. Veterinary University, Gannavaram – 521 102, Andhra Pradesh
[2]Professor & University Head,
Department of Veterinary & AH Extension Education
[4]Professor & Head, Department of Livestock Production & Management, College of Veterinary Science, S.V. Veterinary University, Tirupati – 517 502, Andhra Pradesh, India
E-mail: drnirmala1204@gmail.com (**Corresponding Author*)

Abstract: A total of 90 dairy farmers were selected by means of simple random sampling from Chittoor district in Andhra Pradesh State of India, which constituted the sample for the study. The research design followed in this study was experimental research design. The findings of the study depicted that majority of the respondents had possessed low level of knowledge at pre-exposure, while medium level of knowledge at immediately after exposure and 30 days after exposure to multimedia modules. The mean knowledge score before exposures was 26.12, immediately after exposure was 44.84 and 30 days after exposure was 38.70. The respondents gained considerable knowledge immediately after exposure to the multimedia modules on various dairy farming practices and respondents could able to retain the knowledge even after 30 days of exposure, which has depicted that exposure to multimedia modules at different stages has favorable effect on knowledge gain, retention and empowerment.

Keywords: Dairy farming practices, empowerment, Chittoor.

INTRODUCTION

Livestock sector is an important sub-sector of the agriculture of Indian economy and plays a vital role in the economic development. Livestock has considerable potential for generating additional employment through various sectors and one among them is dairy farming, which is extremely important in the rural economy in a number of states. Dairy sector plays a significant role in supplementing family income and generating employment in the rural areas particularly among the landless, small and marginal farmers and farmwomen, besides providing cheap and nutritious food to millions of people. Hence dairying is considered to be a powerful instrument of social and economic change by the planners and policy makers. India has made significant achievements by attaining the status of world's largest milk

*Received Feb 18, 2016 * Published April 2, 2016 * www.ijset.net*

producer but the fact remains that India's share in the world's milk production is very low despite possessing the world's largest bovine population (Kadian and Gupta, 2006). Although India ranks first in milk production, the productivity of animal is far below the level achieved by developed nations (Bandyopadhyay, 2009). The animal health care needs more attention to minimize economic losses caused by cattle diseases and poor health management practices in order to achieve better productivity. Each year an average of 20-25 per cent of dairy cows are culled due to poor reproductive performance and other health problems (Keown *et.al.,* 2006).

Although ample information is available pertaining to livestock farming and to tackle the animal husbandry management problems, the information is not in a form that can be easily used by farmers. In the light of this situation, multimedia modules are the choice for dissemination of information in an interesting and effective way. Information presented in text is often better recalled and retained when supplemented with pictures (Hooper and Hannafin, 1988). Through multimedia not only text information, but also other types of data like pictures, audio and video clips etc. helps to overcome the illiteracy and facilitate the poor farmers for further learning in rural areas. In addition, it is a solution to the problem of livestock knowledge dissemination in areas where there is no Internet connectivity (Rao, 2012). Multimedia is a powerful education tool for dissemination of information to the farmers on animal husbandry practices (Sharma, 2008). The various facets of multimedia, such as audios, videos and net communications etc are highly powerful tools to educate and motivate the farmers and inculcate interest in animal husbandry and in developing skills (Prathap and Ponnusamy, 2006). Under RKVY scheme several multimedia modules on various aspects of dairy farming were prepared by Sri Venkateswara Veterinary University. The effectiveness of thus prepared multimedia modules on knowledge empowerment among dairy farmers remained untouched. Keeping this in view, the present study has been taken up with the objective to measure the knowledge gained and knowledge retained by the dairy farmers through multimedia modules on dairy farming.

MATERIALS AND METHODS

The study was conducted in purposively selected Chittoor district of Andhra Pradesh by using a pre-test and post-test experimental design. Three mandals namely Ramachandrapuram, Chandragiri and Yerpedu were selected randomly and a total sample size of 90 farmers were selected randomly from the study area.

The multimedia modules were developed based on the prioritized needs of the dairy farmers in an easy, understandable and local language (Telugu) in different formats. Based on farmers' prioritization and experts' suggestions, seven identified multimedia modules such as calf rearing, clean milk production, reproductive management, selection of milch animals, calendar of operations, urea treated paddy straw and milk products preparation were exposed to the dairy farmers. The data was collected through structured interview schedule to assess their knowledge gain and retention.

The knowledge of the respondents was measured on three occasions before exposure, immediately after exposure and thirty days after exposure to multimedia modules.

The knowledge gain and retention was calculated as follows:

1) Knowledge gain = Immediate post test score – Pre test score

2) Knowledge retention = Thirty days post test score – Pre test score

The statistical tools used including frequencies and percentages, arithmetic mean, standard deviation and paired t-test. The data were analysed using SPSS Version 15.

RESULTS AND DISCUSSION

Effectiveness of multimedia modules in terms of knowledge gain and retention

The results in the Table 1 pertains to pre exposure to multimedia modules indicated that majority were with low level of knowledge, followed by medium and high levels of knowledge. While the distribution of respondents based on the immediately after exposure, indicated that majority were in medium category of knowledge gain followed by high and low levels of knowledge gain (Fig.1). With a view to find out the retention ability of respondents on various dairy farming practices after 30 days of exposure to multimedia modules, a subsequent measurement was made with the same knowledge schedule. The results in Table 1 indicate that majority of the respondents belong to medium category, followed by high and low categories of knowledge retention even after 30 days exposure to multimedia modules (Fig.1).

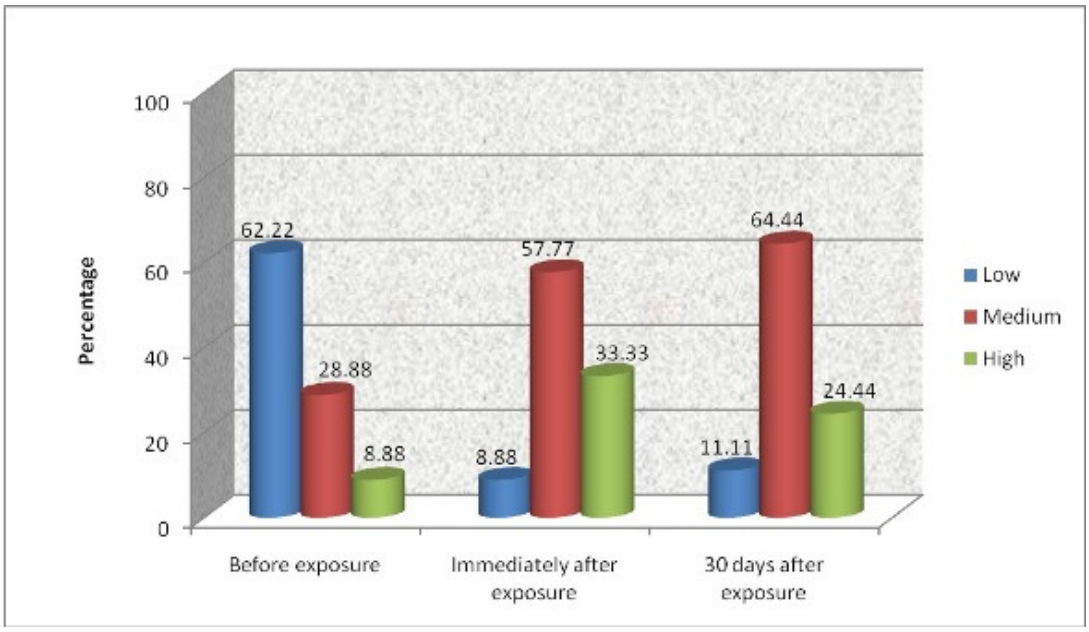

Fig. 1. Distribution of respondents according to their Knowledge gain and Knowledge retention after 30 days

Table 1: Distribution of respondents according to their Knowledge level

S No	Category	Pre exposure	Immediate post exposure	After 30 days of exposure
1	Low	56 (62.22%)	08 (08.88%)	10 (11.11%)
2	Medium	26 (28.88%)	52 (57.77%)	58 (64.44%)
3	High	08 (08.88%)	30 (33.33%)	22 (24.44%)
	Mean	26.12	44.84	38.70
	SD	3.69	4.42	3.28

It could be clearly observed from the Table 2 that before exposure to multimedia modules, mean knowledge scores for calf rearing, clean milk production, reproductive management, selection of milch animals, calendar of operations, urea treated paddy straw and milk products were 3.46, 4.06, 6.33, 4.30, 1.25, 0.08 and 0.34, respectively. The mean knowledge scores immediately after exposure were 7.81, 8.64, 10.32, 5.98, 4.43, 3.32 and 4.37. The mean gain in knowledge scores was 4.35, 4.58, 3.99, 1.68, 3.18, 3.24 and 4.03. In same way the mean knowledge scores after 30 days of exposure to multimedia modules were 6.44, 7.73, 8.87, 5.85, 3.64, 2.13 and 3.02, respectively. The retained knowledge scores were 2.98, 3.67, 2.54, 1.55, 2.39, 2.05 and 2.68.

It was also evident from Table 2 that the difference in means of pre and post test is highly significant with regard to all dairy farming practices like calf rearing (29.11), clean milk

production (26.23), reproductive management (23.28), selection of milch animals (11.61), calendar of operations (20.67), urea treated paddy straw (31.93) and milk products (23.35). Thus, there was gain in knowledge by the respondents after exposure to multimedia modules on various dairy farming practices. This shows that multimedia has played a vital role in giving the knowledge and it is also confirmed that multimedia helps in gaining knowledge. The findings of this study were in conformity with the findings of Sasikala *et.al.* (2012) and Vidya *et.al.* (2010), who found a significant gain in knowledge after the respondents were exposed to multimedia.

A cursory look at Table 2 also shows that the difference in means of pre-test and retention test is highly significant with regard to all dairy farming practices like calf rearing (24.53), clean milk production (26.44), reproductive management (20.93), selection of milch animals (12.39), calendar of operations (19.09), urea treated paddy straw (24.94) and milk products (21.72). This shows that respondents had not only gained the knowledge from multimedia but were able to remember it even after thirty days. The findings of this study were in conformity with the findings of Gouri *et.al.* (2014) and Ashok and Dharmendra (2006), who found a significant retention in knowledge after the respondents were exposed to multimedia.

Table 2: Knowledge gain and retention of respondents pertains to different dairy farming practices through multimedia modules

Different dairy farming practices	Mean knowledge scores			't' value	
	Pre exposure	Immediately after exposure	After 30 days of exposure	knowledge gain	knowledge retention
Calf rearing	3.46	7.81	6.44	29.11**	24.53**
Clean milk production	4.06	8.64	7.73	26.23**	26.44**
Reproductive management	6.33	10.32	8.87	23.28**	20.93**
Selection of milch animals	4.30	5.98	5.85	11.61**	12.39**
Calendar of operations	1.25	4.43	3.64	20.67**	19.09**
Urea treated paddy straw	0.08	3.32	2.13	31.93**	24.94**
Milk products	0.34	4.37	3.02	23.35**	21.72**

** Significant at 1% level of significance

Table 3: Extent of gain and retention of knowledge owing to exposure to multimedia

Test	Average level of knowledge
Pre-test i.e knowledge level before viewing the multimedia	26.12
Post-test i.e knowledge level after viewing the multimedia	44.84
Retention test i.e knowledge level at 30 days after viewing the multimedia	38.70
Pair of observation	't' values
Pre-test and Post-test	33.498**
Post-test and Retention test	13.945**
Pre-test and Retention test	31.539**

** Significant at 0.01 level of probability

Further, the researcher tried also to calculate the significance of the difference in the level of knowledge before and after viewing the multimedia as well as after one month by applying the paired't' test. The data in Table 3 clearly point out that there is a highly significant increase in the level of knowledge of the respondents as a result of viewing the multimedia. On the other hand, the significant value of the 't' test between the post-test and the retention test implies a significant decrease in knowledge level at the time of retention. However, the highly significant increase in the level of knowledge of the respondents at the time of retention over the pre-test indicates that, though there is little loss of knowledge over the post-test, there is a net increased retention of knowledge even after one month of exposure to the multimedia.

CONCLUSION

There was statistically significant gain in knowledge from pre to immediate post exposure mean scores and also retention in knowledge from pre to thirty days post exposure mean scores which can be interpreted that the multimedia modules were highly effective in enhancing the knowledge level of dairy farmers on various dairy farming practices such as calf rearing, clean milk production, reproductive management, selection of milch animals, calendar of operations, urea treated paddy straw and milk products in Chittoor district of Andhra Pradesh.

REFERENCES

[1] Ashok Ambalal Patel and Dharmendra D. Patel. 2006. Education through multimedia among Agricultural Diploma school students: An impact study. International Journal of Education and Development using Information and Communication Technology (IJEDICT). 2(1): 4-10.

[2] Bandyopadhyay A K. 2009. Meeting the requirement of dairy professional. Paper presented at XXXVII Dairy Industry Conference. Indian Dairyman 61(3):129-132.

[3] Gouri G. Yelvattimath, Nithyashree D A and Devendrappa S. 2014. Knowledge gain of the rural women through environment and health programmes. Karnataka Journal of Agricultural Sciences. 27 (1): 67-70.

[4] Hooper S and Hannafin M J.1988. Learning the ROPES of instructional design: Guidelines for emerging interactive technologies. Educational Technology.14-18.

[5] Kadian S and Gupta S. 2006. Effectiveness of Video Compact Disc (VCD) on Dairy Calf Management Practices. Indian Journal of Extension Sciences. 1(1):57-62.

[6] Keown J F, Larson L L and Kononoff P J. 2006. Dairy health management for optimum production and reproductive performance. Neb Guide: Dairy herd management.

[7] Prathap D P and Ponnusamy K A. 2006. Mass media and symbolic adoption behavior of rural women. Studies in media and information literacy education (SIMILE), University of Toronto Press. 6 (4):1-10.

[8] Rao D S. 2012. Knowledge empowerment of shepherds on sheep husbandry practices through Multimedia Modules – An Analysis. Unpublished M.V.Sc. thesis submitted to Sri Venkateswara Veterinary University, Tirupati.

[9] Sasikala V, Kumaravel P, Mathialagan P and Saravanan M. 2012. Effectiveness of Multimedia Compact Disc on dissemination of knowledge among the pig farmers. Tamilnadu Journal of Veterinary & Animal Sciences. 8 (6): 381 - 388.

[10] Sharma G R K. 2008. Active research on needful information on livestock production and management for the development of resource poor farmers through Touch Screen Information Kiosk. State plan funded project, Sri Venkateswara Veterinary University, Tirupati.

[11] Vidya P, Manivannan C and Sudeep Kumar N K. 2010. Effectiveness of an Educational Interactive Video-DVD on Dairy Health Management Practices in Terms of Knowledge Gain among Dairy Farmers. The Online Journal of Rural Research and Policy 5(7):1-17.