



## EFFECTIVENESS OF THE “WEB-ENABLED INTERACTIVE INFORMATION DELIVERY SYSTEM” (WIIDS) IN TERMS OF KNOWLEDGE GAIN AMONG THE DAIRY STAKEHOLDERS IN HARYANA STATE

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### ABSTRACT

Modern day dairy farming operates in a complex and dynamic environment subject to a number of social, economic and environmental factors. To improve dairy sector knowledge and information about important farm technologies, methods and practices need to be imparted to the farmers at the right time. Information and communication technology (ICT) in dairy farming is an emerging field, focusing on the enhancement of agricultural and rural development in many countries. It has many potential applications in bringing new information services to rural areas where farmers are the end-users. To meet the information needs of dairy stakeholders this study was undertaken in Karnal and Hisar Districts of Haryana state which was selected purposively, on account of presence & availability of a large number of Dairy stakeholders. Effectiveness of “Web-enabled Interactive Information Delivery System” (WIIDS) was done from 120 dairy stakeholders. Highest knowledge gain in Karnal was found in health care management aspect (8.98) followed by feeding and nutrition (5.33). In Hisar district highest mean knowledge gain was found in feeding and nutrition (4.63) aspect followed by general care & management (3.88) and breeding and reproduction (3.79).

**KEY WORDS:** Dairy stakeholders, web module, knowledge test, effectiveness, and management

### INTRODUCTION

ICTs in dairy farming facilitate easier communication of innovation to farming community, provide better access to information, and enhance production utilization of knowledge. The most commonly available ICT tools in Indian context are: Radio, Television, Telephone, Mobile, Computer, Multimedia, CD-ROM, Video Conferencing, Expert System, Geographical Information System (GIS), Internet *etc.* ICT has many potential applications in agricultural extension. It can bring new information services to rural areas where farmers are the end-users, as it will have much greater control than before over current information channels (Raksha, 2014). Access to information and improved communication is a crucial requirement for sustainable dairy development. There is a concern that the gap between the ‘Information – rich’ and ‘Information – poor’ is getting wider. The challenge is not only to improve the accessibility of communication technology to the rural population, but also to improve its relevance to local development (Subash, 2009).

The development of new information delivery infrastructure will be required for considerable planning and efforts. These information systems will deliver; however, there is very little idea about how these systems will be assembled or what they will cost. Much of the technology required to support these systems exists; however, it is disjoint and significant efforts in integration will be necessary to yield a working end- to-end system. In

view of all these afore - said discussions, it is expected that this proposed project will take care of the specific needs of the desirous stakeholders, while providing them a kind of platform for seeking information through “Web-enabled Interactive Information Delivery System” (WIIDS).

### MATERIALS & METHODS

#### Study area

Haryana state was selected, purposively. Out of 21 districts in the State, Karnal and Hisar Districts were selected, purposively, on account of presence & availability of a large number of Dairy stakeholders. Different stakeholders namely, Dairy Farmers, Dairy Entrepreneurs, Dairy Experts, Facilitators engaged in Dairy/ Livestock Development Programme at the field-level, “Would-be” Dairy Farmers and/or Dairy Entrepreneurs. Hence, a total of 120 respondents from two districts were contacted, randomly, for the purpose of data collection, which was done through a semi-structured ‘interview-schedule’. The dairy information system was developed and administered at the field-level among the 120 dairy stakeholders from the study area. After selecting the respondents for treatment (Web-Enabled Interactive Information Delivery System), their initial knowledge level regarding improved dairy management practices which includes breeding, feeding, general management and health care practices and other data regarding socio-

personal-economic variables were collected. Then, the respondents were exposed to treatment to know the effectiveness of the system. The difference between post and pre exposure knowledge test scores was construed as knowledge gained by the respondents with regard to innovations /technologies. The effectiveness of developed dairy information system was validated in terms of: knowledge gain (post-pre exposure); it’s all over perception; content component, etc; problems/constraints in using the internet services; suggestions for the improvement of the dairy information system; and strategies for effective utilization at the field-level as a tool for transfer of technologies.

**Data analysis**

To convert the obtained data into meaningful findings statistical tools like, Frequency, Percentage, Arithmetic Mean, Cumulative Square Root Frequency and t-test was used with the help of computer software, namely MS-Excel Spread Sheet and SPSS.

**RESULTS & DISCUSSION**

**Effectiveness of WIIDS in terms of knowledge gain among the respondents of Karnal District (R<sub>1</sub>)**

Effectiveness of the WIIDS was measured in terms of knowledge gain before and after the exposure to the WIIDS. It was measured in different categories as mentioned below

**Breeding and reproduction**

The analysis of 60 dairy stakeholders from Karnal district indicates that before exposing to the WIIDS dairy stakeholders were having knowledge level of 15.77 and it increased to 19.67 after they got exposed and learned about WIIDS. Mean knowledge gain was about 3.92 and Percent of knowledge gain was 17.81 per cent. Knowledge gained by the dairy stakeholders regarding Artificial Insemination (A.I), diagnosis of pregnant animals by veterinarian and treatment of anoestrus etc.

**General care and management**

It was observed from the Table 1 that mean knowledge score of dairy stakeholders in the study area regarding general care and management of dairy animals was changed from 5.12 to 8.43. Mean knowledge gain was about 3.47 and Percent of knowledge gain was 23.11. ‘t’ test value is showing 18.76. General care and management aspects includes Dry period antibiotic therapy, major diseases, calf mortality, colostrums feeding, feeding of calves, deworming and appropriate housing and bedding. Dry period antibiotic therapy was practiced by none of the farmers in the study area before exposing to WIIDS. . This is in agreement with Tiwari *et al.* (2007).

**Feeding and nutrition**

The study revealed that knowledge regarding feed and nutrition management has changed from 21.45 to 26.78. Mean knowledge gain was about 5.33 and Percent of knowledge gain was 27.46. Common feeding practices like taking the animals for grazing, fodder collection, chaffing and storage of fodder etc. was practiced by respondents but modern practices like special feeding for pregnant animals, feed more green fodder in the last quarter of gestation and concentrated feed etc. were started practicing when they exposed to WIIDS. Similar findings were also reported by Toppo *et al.* ( 2004).

**Health care and management**

Knowledge about health care and management was increased from 14.48 to 23.47 and mean knowledge score was about 8.98. Highest knowledge gain was found in health care aspect as it was one of the ‘most needed’ information in the study area.

**Fodder production and management**

It could be understood that WIIDS is effective in terms of knowledge gain in modern practices in fodder production, awareness about High yielding varieties, silage making etc. in study area. These results are in conformity with the results of Subash, (2009).

**TABLE 1:** Effectiveness of WIIDS in terms of knowledge gain among the respondents of Karnal District (R<sub>1</sub>) (n<sub>1</sub>=60)

Sl. No.	Parameters	Mean Knowledge score		Mean knowledge gain	Percent of knowledge gain	‘t’ value
		Before exposure	After exposure			
1	Breeding and reproduction	15.77	19.67	3.92	17.81	12.01
2	General care & management	5.12	8.43	3.47	23.11	18.76
3	Feeding and nutrition	21.45	26.78	5.33	27.46	17.31
4	Health care management	14.48	23.47	8.98	29.94	23.51
5	Fodder production & management	18.03	21.50	3.47	23.11	19.76
	Overall knowledge	74.85	99.85	25.17	24.286	

*Note: Figures in parentheses indicate percentage*

**Effectiveness of WIIDS in terms of knowledge gain among the respondents of Hisar District (R<sub>2</sub>)**

The effectiveness of dairy information system was also assessed in the Hisar district and found suitable. From the Table 2 could be envisaged the mean knowledge gain among the dairy stakeholders pertaining to various aspects of modern dairy management practices. Highest mean knowledge gain was found in feeding and nutrition (4.63) aspect as it was one of the ‘most needed’ information in the study area. Similar observations were also reported by Sharma *et al* (2007), Sharma and Singh (2008) and Meena *et al* (2009). Overall knowledge gain was increased from

83.96 to 100.09 with regard to Breeding and reproduction, General care & management, Feeding and nutrition, Health-care management and Fodder production & management. Further, mean knowledge gain regarding general care & management (3.88), breeding and reproduction (3.79). Similar observations were reported by Sharma (2005), and fodder production & management (1.21) were found in the decreasing order. It could be understood that developed dairy information system is effective in terms of knowledge gain in study area. These results are also in conformity with the results of Subash (2009).

**TABLE 2:** Effectiveness of WIIDS in terms of knowledge gain among the respondents of Hisar District (R<sub>2</sub>) (n<sub>2</sub>=60)

Sl. No.	Parameters	Mean Knowledge score		Mean knowledge gain	Percent of knowledge gain	't' value
		Before exposure	After exposure			
1	Breeding and reproduction	18.23	22.02	3.79	17.21	11.63
2	General management	14.13	18.02	3.88	17.65	11.61
3	Feeding and nutrition	20.18	24.82	4.63	15.68	21.74
4	Health-care management	13.20	15.70	2.50	17.23	15.66
5	Fodder production & management	18.22	19.53	1.21	13.17	12.67
	Overall knowledge	83.96	100.09	16.01	16.18	

Note: Figures in parentheses indicate percentage

## CONCLUSION

Information and communication technology (ICT) in dairy farming is an emerging field focusing on the enhancement of resource in agriculture and rural development in many countries. The developed WIIDS increased overall percent knowledge gain was about 24.286 in case of respondents from Karnal district and 16.18 from Hisar district. The WIIDS not only helped the respondents in gaining knowledge but also made them to apply the gained knowledge in their field to get the highest returns from dairy farming. Therefore it is necessary to reach the information about the WIIDS for increasing the existing level of knowledge of dairy farmers about improved animal husbandry practices through more number of training programmes, demonstrations, field days, exhibitions, camps, radio/TV talks should be organized to increase the know-how of the farmers.

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