

Dissemination of Agricultural Technologies through Interactive Multimedia Compact Disc (IMCD): An Innovative Approach

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Abstract: Farming community in India is normally endowed with fragmented land holdings, containing marginal and small sectors to the maximum, the affordability, accessibility and possibility to travel a long distance and to hunt the information is seldom possible. As the traditional agriculture is transforming into hi-tech agriculture, the need for updated information is also essential for agricultural production and productivity, eventually giving a lucrative yield and income to the farming community. Improved communication and information access are directly related to social and economic development. Considering its prime importance, newness and demand from the farmers, the Farmer Friendly IMCD on 'Integrated Pest Management Practices of Coconut Eriophyid Mite' was developed with the combination of audio, video, visuals, etc., The study was conducted in Coimbatore district of Tamil Nadu (India) with the sample size of 99 farmers. Effectiveness of IMCD was assessed through three treatments, namely IMCD as a self-learning tool, IMCD through LCD projection as a group learning tool (with interaction) and IMCD through LCD projection as a group learning tool (without interaction). The result indicated that self-learning module resulted in maximum mean knowledge gain followed by others. Further the study result indicated that farmers had positive opinion regarding the utility of IMCD as a tool to solve farmers' problem. Our New Agricultural Policy emphasizes commercialization, value-addition and export of agricultural commodities, besides globalization. In order to achieve this, combination of traditional extension approach, modern information technology blend with integrated approach is required.

Keywords: Interactive Multimedia, Knowledge Gain, Farm Technology Transfer, Farmers Perception, Model

Introduction:

Access to information and improved communication is a crucial requirement for sustainable agricultural development. Modern communication technologies when applied to conditions in rural areas can help improve communication, increase participation, disseminate information and share knowledge and skills. However, it is observed that the rural populations still have difficulty in accessing crucial information in order to make timely decisions. There is a concern that the gap between the information rich and information poor is getting wider. It is essential that information availability is demand driven rather than supply driven. The challenges are not only to improve the accessibility of communication technology to the rural population but also to improve socio-economic status and its relevance to local development (Balit *et al.*, 1997).

Multimedia an Emerging Tool in Farm sector:

Multimedia is a woven combination of text, graphic, art, sound, animation and video elements. When you allow an end user - the viewers of a multimedia project to control what elements are delivered and when, it is interactive multimedia. Aeron (1998) indicated that, if you are stimulated with audio, you will gain about 20 per cent retention rate, that of audio visual is up to 30 per cent, and in an interactive multimedia presentation, where you are really involved, the retention is as high as 60 per cent.

Computer multimedia will offer learners more complete and individual control over their learning. The main reason behind recommending the use of computer based multimedia system for farmers is to facilitate interactivity and better understanding between individual learners and the subject matter. Multimedia tools are ideally suited to demonstrate complex and dynamic process that cannot be explained easily with conventional media and methods.

Objectives of the Study:

1. To develop a farmer friendly Interactive Multimedia Compact Disc (IMCD) on selected farm

- technology.
2. To test the effectiveness of the developed IMCD in terms of knowledge gain.
 3. To assess the perception of the respondents about the feasibility of the module as a tool for transfer of technology and propose strategies for its promotion among farmer groups.

Methodology: Development of IMCD

Among the different software, available Microsoft Office 2000 Power Point was selected specifically for the study purpose. This software possesses number of unique features such as simple operation, create highly interactive multimedia presentation viz., possibility to add sound, video clippings, photo, picture, animation etc., play movies directly with in the power point, create simple hyperlinks, convert the presentation into web pages, pack and wizard have the advanced facility to compress and save our presentation across the multiple disc. *Tamil* language has been adopted for preparing the IMCD.

The major criterion considered for the selection of farm technology was that it should be new and need based one. Accordingly, “Integrated packages for the Management of Coconut Eriophyid Mite” was selected. IMCD’s prime aim is to transfer the advanced and complex technologies to the farmers in a simple presentation. Hence, for every slide / page of the IMCD, background voice was given. Varieties of pictures related to pest-affected nuts, trees, pest stages, nature of damage and yield losses were inserted while preparing IMCD. Three video clippings were inserted in IMCD such as symptoms and nature of eriophyid damage, application of nutrient and fertilizer for controlling of eriophyid mite and methods of application of Tamil Nadu Agricultural University (TNAU) Agro biocide chemical through root feeding. Finally all the interested text, pictures, photos; video clippings are hyper linked with the different action buttons for better usability with interactivity.

Study area and Sample Size

The study was conducted in Thondamuthur block of Coimbatore district of Tamil Nadu, India considering the maximum number of farmers possessing Personal Computers (PC) with Compact Disc drives and highest area under coconut cultivation. The block comprises 19 revenue villages. Out of 19 villages, three revenue villages viz., Madampatti, Thaliyur and Alandurai were selected. A sample size of 99 respondents including computer owned coconut growers (33) and coconut growers not owning computer (66) comprising 33 from each village were fixed with the statistician for the study. Inbuilt Interactive Question was developed for identifying the knowledge gain of the respondents.

Effectiveness of IMCD in terms of Knowledge Gain

The knowledge levels of the subjects before and immediately after exposure were assessed to find out the knowledge gain. The maximum attainable knowledge score was 20. The results of the three treatments are presented in Table 1.

Table 1. Mean knowledge gain due to exposure of treatments
(n=33 per treatment)

| Sl. No | Treatments | Mean knowledge gain | | Mean knowledge gain | Per cent of knowledge gain | 't' value |
|--------|---|---------------------|----------------------------|---------------------|----------------------------|-----------|
| | | Before exposure | Immediately after exposure | | | |
| 1 | Self learning -T _{K1} (Computer monitor) | 2.42 | 14.81 | 12.39 | 61.96 | 28.30 ** |
| 2 | Group learning through LCD projector - T _{K2} (with interaction) | 1.84 | 12.57 | 10.92 | 53.63 | 26.30 ** |
| 3 | Group learning through LCD projector - T _{K3} (without interaction) | 1.81 | 9.78 | 7.96 | 39.84 | 25.83 ** |

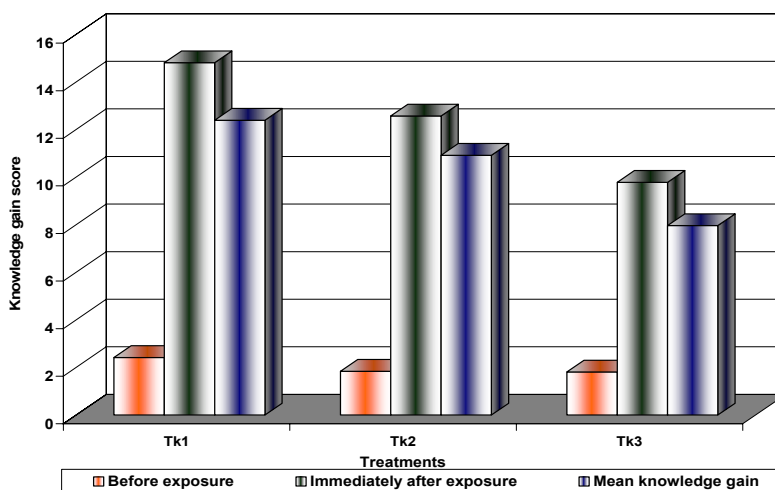
** Significant at 0.01 level

It could be seen from Table 1 that all the three treatments namely IMCD through self learning (T_{K1}), IMCD through LCD projector with interaction (T_{K2}) and IMCD through LCD projector without interaction (T_{K3}) had highly significant ‘t’ values. This indicates that all the three treatments were effective in terms of imparting knowledge to the subjects.

The mean knowledge gain with regard to IMCD through computer monitor (Tk1 - Self learning module) was maximum with a score of 12.39 which indicated 61.96 per cent of knowledge gain. This was followed by IMCD through LCD projector + with interaction (Tk2) (10.92) and IMCD through LCD projector + without interaction (Tk3) (7.96) which accounted for 53.63 per cent and 39.84 per cent knowledge gain respectively.

From the results, it could be observed that all the three selected treatments were effective in communicating the information related to integrated pest management practices of coconut eriophyid mite with considerable variation in their effectiveness and henceforth the hypothesis that there would be no gain in knowledge due to the exposure to treatments was rejected.

Fig. 1. Mean knowledge gain due to exposure to the treatments



Farmers Perception about the IMCD

Perception is the process, by which one can be able to see, hear and understand things. Hence, it is assumed that greater the perception of IMCD as perceived by its viewers in terms of satisfaction derived from the various components of IMCD, greater would be the viewers' exposure and post exposure activities. On the basis of perception index score, the farmers were categorised into three groups viz., highly satisfied, satisfied and not satisfied. The detail of percentage distribution of the respondents under each category is furnished in Table 2.

Table 2. Distribution of respondents according to their level of Perception

| Sl. No | Category | No. | Per cent |
|--------|------------------|-----|----------|
| 1. | Highly satisfied | 62 | 62.60 |
| 2. | Satisfied | 23 | 23.30 |
| 3. | Not satisfied | 14 | 14.10 |
| Total | | 99 | 100.00 |

It could be exonerated from the Table 2 that nearly two-third of the viewers of IMCD (62.60 per cent) perceived all the components of IMCD as 'highly satisfied', while more than two-fifth of the viewers (23.30 per cent) expressed as 'satisfied' and for a minimal percentage of the viewers (14.10 per cent) it was 'not satisfied'. It could be inferred from the results presented in Table 2 that on the whole, majority of the farmers (62.60 per cent) were 'highly satisfied' about the IMCD under study. Still, least percentage of farmers expressed 'dissatisfied' perception about the IMCD. This finding indicated that there exists further scope for further improvement in some of the components of IMCD.

Effective Transfer of Technology: A Suggested Model

Our Field Extension System is a century old. Though it has been fairly effective, it also needs change, as change is law of nature. The rapid growth of information in agriculture has led in past decades to the progressive specialization and it is more so after the globalization of Indian agriculture. The information / knowledge gained in research must be transferred in a meaningful and comprehensible way, so that it reaches the end-user, the farmer without much loss of time and content, avoiding seepage of information and distortion.

There is need to have ideal blend of modern IT with traditional extension approaches for effective and efficient transfer system. Further as per popular saying, "One cannot employ Yesterday's method today and be in the business tomorrow". In order to achieve this, we may have to introduce Cyber Extension which promotes using of online networks, computer-aided communication and information technology, browsing of websites and familiarizing them to use digital interactive multimedia to facilitate transfer of technology. Hence, combination of traditional extension approach, modern information technology blends with integrated approach to be worked out to achieve higher farm production and productivity.

Conclusion

IMCD through self-learning tool had imparted high knowledge followed by IMCD through LCD projection as a group learning tool (with interaction) and IMCD through LCD projection as a group learning tool (without interaction). Further, the results concluded that majority of the respondents had the 'high satisfaction and satisfaction' perception with overall components of IMCD. From the results, it is evident that IMCD could be used as an effective tool for the dissemination of farm technologies to farmers.

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