

Field testing of multimedia CD on value-addition of mango for its comprehension by rural women

Manju*¹, Upadhyay R.² and Solanki D.³

Department of Home Science, University of Rajasthan, Jaipur
Department of EECM, College of Community & Applied Science, MPUAT, Udaipur
E-mail : manjuch059@gmail.com

ABSTRACT

Technology has reshaped communication and the integration of multimedia in communication has expanded its inclusivity and outreach. The role of technology in agriculture is transformative, offering farmers new possibilities. This study aimed on standardization of a multimedia CD to empower rural women on value-addition of mango. The development of multimedia CD was done in two phase such as designing of multimedia CD and field testing of multimedia. The designed multimedia CD was field tested with 30 rural women of village Dussehra in Banswara panchayat samiti of Banswara district, Rajasthan. Overall comprehension of the multimedia CD was found excellent with MPS 92.22. The multimedia CD emerges as a powerful tool to uplift the lives of rural women, encouraging entrepreneurship and the overall development of rural communities.

Keywords: Value-addition, Multimedia CD, Digital Resource, Empowerment, Field Testing, Comprehension, Measuring understanding, Rural Women

INTRODUCTION

In the ever-evolving landscape of communication, technology plays a pivotal role in shaping the way people access and engage with various media channels. The rapid advancements in technology have not only revolutionized the modes of communication but have also transformed the entire media ecosystem. From traditional print media to the vast realm of digital platforms, technology has significantly impacted the accessibility, reach, and dynamics of communication media. The advent of the internet marked a paradigm shift in the way people access information and communicate. Digitalization has made communication instantaneous, breaking down geographical barriers and enabling real-time interaction. Social media platforms,

online news portals, and messaging apps have become integral parts of daily life, providing a diverse range of communication options.

The integration of text, images, audio, and video has enhanced the richness and effectiveness of communication. Platforms like YouTube, Instagram, and Twitter exemplify the growing preference for multimedia content, enabling users to express themselves in diverse and engaging ways. Technology has played a crucial role in making communication media more accessible and inclusive. Mobile devices, smartphones, and high-speed internet have ensured that people from various socio-economic backgrounds can access information and communicate seamlessly. Social media activism, online communities, and digital platforms have given a voice to

marginalized groups, fostering a more inclusive media landscape.

Technology's influence on communication channels in agriculture is undeniable, offering farmers unprecedented opportunities to improve productivity, sustainability, and connectivity. From precision farming and mobile technology to social media platforms and e-marketplaces, the digital transformation of agriculture is creating a more interconnected and informed farming community.

Agriculture, the backbone of economies worldwide, faces numerous challenges, including climate change, market fluctuations, and resource constraints. Enhancing the resilience and sustainability of agriculture is imperative to ensure food security and the livelihoods of millions. One powerful strategy is the promotion of value-addition in agricultural produce, which not only augments farmers income but also contributes to building a robust and sustainable agricultural ecosystem.

Value-addition encourages farmers to diversify their agricultural products, reducing dependence on a single crop. By processing raw produce into value-added goods such as jams, juices or packaged snacks, farmers can mitigate the impact of market fluctuations and climate-related risks. Value-addition opens new avenues for farmers to access broader markets. Processed and value-added products often have a longer shelf life, enabling farmers to reach distant markets and cater to consumer demands for convenience. This expanded market access not only increases profitability for farmers but also reduces the vulnerability associated with localized market disruptions. Value-addition often involves adopting sustainable practices. For instance, converting surplus fruits into dehydrated snacks or creating

organic fertilizers from agricultural residues aligns with environmental sustainability. By optimizing resources and reducing waste, value-addition contributes to a more efficient and ecologically friendly agricultural system, promoting long-term sustainability. Value-addition can play a pivotal role in rural development by fostering local entrepreneurship and employment. Establishing small-scale processing units or cooperatives empowers local communities, providing them with the skills and resources to add value to their agricultural produce. Women play a pivotal role in various stages of farming, from sowing and nurturing crops to harvesting. However, they often lack access to recent technologies hindering their contribution and empowerment. Providing women with training on value-addition of agricultural produce has the potential to bring about prosperity in agriculture sector and empower these women economically.

Therefore, a study was planned to standardise the multimedia CD on value-addition of mango for rural women. This multimedia CD will work as digital resource for rural women who can access it any-time anywhere. This multimedia CD can also be used by extension functionaries like Home Scientists, Krishi Vigyan Kendra (KVKs), and other agriculture and rural development departments as a communication material in training rural women on value-addition of mango.

Review of literature

Sasikala *et al.*, (2012) studied the effect of multimedia CD on knowledge of pig farmers and concluded that the multimedia CD had a significant impact on scientific pig farming practices.

Sasikala and Tiwari (2014) reported the effectiveness of the Multimedia Training Module (MTM) on Integrated Farming

Systems (IFS) in enhancing farmers knowledge and skills in Tamil Nadu. The MTM was well-received by farmers, who found it useful and relevant, aiding their understanding of IFS concepts and benefits. The study revealed a preference for the MTM over traditional extension methods like field demonstrations and lectures. Notably, 68.75% of respondents found the multimedia CD highly effective in arousing curiosity and interest. Additionally, 85.62% perceived the multimedia CD as very useful, with 14.37% finding it useful.

Yadav and Verma (2014) standardized a multimedia CD on fruits and vegetables processing and preservation for rural women and reported that the multimedia CD positively impacted the knowledge and skill of rural women and there was 63.51 per cent gain in knowledge and attitude of women regarding fruits and vegetable processing.

Sharma *et al.*, (2012) reported in a study titled "Effectiveness of a CD-ROM for knowledge gain about abortion in dairy animals" that there was 71.11 per cent gain in the knowledge of the farmers after exposure to the CD-ROM regarding all aspects of abortions in dairy animals.

Lohmann and Frederiksen (2018) emphasized the significance of information technology, integrated with multimedia audio/video in making teaching effective. It will also be a vital tool for teachers and students to add information technology into curricula, material and instructions.

Findings of a study conducted by Gautam *et al* (2019) in Nadia and North 24 districts of West Bengal indicate the significant role of modern media tools in the adoption of clean milk production practices among dairy farmers. The findings revealed that the majority of dairy farmers (67.50%) cleaned their animal sheds daily, and a significant

proportion (44.17%) followed pre-milk teat washing with water to remove dirt and dung. Additionally, 26.66% of the respondents practiced full-hand milking and washed their hands with soap before milking, while 23.33% of farmers used a sieve during milk transfer.

Lalitha and Rani (2020) conducted a study to analyze the content effectiveness of a multimedia module on domestic water sanitation and highlighted the importance of diverse communication strategies that provide practical utility, informative, and adequacy in imparting education to clients with low socio-economic backgrounds.

MATERIAL AND METHODS

The process of development of multimedia CD can be divided into two phases: designing of multimedia CD and field testing of multimedia CD.

1. Designing of multimedia CD on value-addition of mango

Designing of multimedia CD had two components i.e. preparation of multimedia CD and expert evaluation of multimedia CD

i. Preparation of multimedia CD

A video script was written using scientific information available on the value-addition of mango drawing insights from both primary and secondary resources. The script was classified into different chapters i.e., introduction, preparation of values added products of mango like *Amchoor*, raw mango *murabba*, mango pickle, raw mango squash, mango jam, *Aam-papad* and preservation of mango as pulp and closure. A separate template of case study of a successful women entrepreneur was added to the script. Following the written script, essential

video scenes, photographs and illustrations were initially captured and then assembled according to the storyboard. The editing and synchronization of audio and video of the multimedia CD was done using Pinnacle Studio version 9 video editing software. The storyboard presented the visual description of long, medium and close-up shots. The audio editing software used for the voice over was Sound Forge version 8.0. The assembled video clippings were edited and incorporated with voice over audio, background music and sound effects. An introductory slide having title of the multimedia CD and author description was also added in the starting and a closing slide were also added to the multimedia CD

ii. Expert evaluation of multimedia CD

The developed video CD was then evaluated by a panel of experts from the Department of Extension Education and Communication Management, and Foods and Nutrition. An evaluation sheet was prepared by the researcher which included visual and audio aspects of evaluation. The visual evaluation aspect had 10 evaluation criteria i.e., purpose accomplished, content coverage, logical sequence, organization/layout, illustration, visual clarity, attention-catching, self-explanatory, synchronization of audio and video, and overall presentation. The audio evaluation aspect included 5 evaluation criteria such as content clarity, voice, pace and speed of narration, background music and overall presentation. Experts evaluated the multimedia CD on a 5-point continuum i.e., excellent, very good, good, fair and poor scoring 5,4,3,2 and 1 respectively. Suggestions given by the experts were

incorporated, scores were compiled in MS Excel and Mean Weighted Scores (MWS) were calculated. The whole process of designing the video CD spanned over five months, with initial four months dedicated to preparation of the video script, video editing and disc authoring and the remaining one month for expert evaluation of video CD.

2. Field testing of multimedia CD on value-addition of mango

The designed multimedia CD was field tested with 30 rural women in the age group of 25-30 years, who were willing to participate in the study. The sample was selected randomly from a list of women prepared in the village Dussehara in Banswara panchayat samiti of Banswara district, Rajasthan. Banswara district was selected purposively for the study as it the highest mango producing district of Rajasthan and it is one of the districts which comes under extension services of Maharana Pratap University of Agriculture and Technology (MPUAT), Udaipur.

Data were collected through personal interview method. A personal interview schedule was prepared by the researcher. The interview schedule had two sections. First section of the interview schedule mainly comprised the personal attributes of the respondents such as age, marital status, education, occupation, caste, organisational membership, family type and size, family occupation, land holding, household type, livestock ownership and dwelling for livestock and media ownership. For this purpose, Socio-Economic Status (SES) scale developed by Gupta (2000) was slightly modified and used. The second section of the interview schedule

was an open-ended tool having questions related to different aspects of value-addition of mango. Data were analysed and interpreted statistically using frequency, percentage and Mean Per cent Score (MPS).

RESULTS AND DISCUSSION

Comprehension of the multimedia CD was recorded while standardizing the multimedia CD. Data collected were analysed using different statistical tools and interpretation of the data is presented here in this section.

1) Socio-economic status of the respondents

The statistics in Table 1 provide the information that most of the respondents (80%) had low socio-economic status while 20 per cent respondents were into medium socio-economic status. None of the respondents were found to be in high socio-economic status.

Table 1 : Socio-economic status of the respondents

S. No.	Socio-economic status	f	%
1.	Low	24	80
2.	Medium	06	20
3.	High	00	00

2) Comprehension of multimedia CD

Comprehension of the multimedia CD was analysed as component wise and overall comprehension of multimedia CD. The multimedia CD introduced the concept value-addition-need and benefits followed by method of preparation of selected value-added products of mango i.e. mango jam, Aam-

papad, Amchoor, mango pickle, raw mango *murabba*, raw mango squash and preservation of mango as pulp.

i. Component wise comprehension of multimedia

Table 2 presents the description of messages comprehended in each component of the multimedia CD on value-addition of mango. In the component "Value-addition-need and benefits", 90 per cent respondents understood all the messages. Further, comprehension of "Amchoor" and "mango pickle" was 100 per cent. It can also be interpreted from the table that 96.67 per cent respondents were able to comprehend the messages of plate test for making mango jam and process of making raw mango squash. However, comprehension of messages in the subcomponent "raw mango *murabba*" was comparatively low as 86.67 per cent respondents could comprehend the messages.

The possible reason for 100 percent comprehension of *Amchoor* and mango pickle is that these two products are traditionally prepared in community and women could relate it to their real-life situations. In a discussion with the respondents, researcher found that women did not even hear about many of the mango products and they had no idea that products like mango jam, *Aam-papad* or preservation of mango pulp can also be prepared from mango. The introductory part of the multimedia CD covering concept of value-addition, its need and benefits was more conceptual in nature, this was the reason that it was comparatively comprehended by a smaller number of respondents.

Table 2 : Comprehension of messages in different components of multimedia CD n=30

S. No.	Component	f	%
1.	Value-addition- need and benefits	27	90.00
2.	Value-added mango products		
a.	Mango jam		
i	Ingredients for preparing mango jam	27	90.00
ii	Process of preparing mango jam	26	86.67
iii	Plate test	29	96.67
b.	<i>Aam-papad</i>		
i	Ingredients for preparing <i>Aam-papad</i>	27	90.00
ii	Process of preparing <i>Aam-papad</i>	27	90.00
c.	Preservation of mango as pulp		
i	Ingredients for preserving mango as pulp	27	90.00
ii	Process of preserving mango as pulp	27	90.00
d.	<i>Amchoor</i>	30	100.00
e.	Mango pickle		
i	Ingredients for preparing mango pickle	30	100.00
ii	Process of preparing mango pickle	30	100.00
f.	Raw mango <i>murabba</i>		
i	Ingredients for preparing raw mango <i>murabba</i>	26	86.67
ii	Process of preparing raw mango <i>murabba</i>	26	86.67
g.	Raw mango squash		
i	Ingredients for preparing raw mango squash	26	86.67
ii	Process of preparing raw mango squash	29	96.67

Similar findings were reported by Sasikala and Tiwari (2014) that 85.62 percent farmers found the multimedia CD very useful and 14.37 percent respondents found it useful while none of the farmers found the multimedia CD to be not useful.

Overall comprehension of multimedia CD
Table3 presents the information about overall

comprehension of the multimedia CD that was measured by calculating Mean Percent Scores (MPS). The overall presentation of the multimedia CD was comprehended very good with the Mean Percent Score (MPS) of 92.22 that means the CD was very easy to comprehend by the respondents.

Table 3 : Overall comprehension of messages through multimedia CD n=30

S. No.	Component	Mean Percent Score (MPS)
1.	Value-addition - need and benefits	90.00
2.	Mango products	92.38
3.	overall presentation	92.22

The comprehension of other components of multimedia CD was also very good as the MPS scores for both "Value-addition- need and benefits" and "Mango products" were 90 and 92.38 respectively. Finding are in confirmation with Bala et al (2019) who reported very good overall comprehension of messages through multimedia with MPS 93.62.

On the basis of findings it could be concluded that the comprehension of multimedia CD was excellent. It also confirms that the multimedia CD was meticulously designed and thoughtfully organised. The CD's content was not only pertinent to its target audience but also delivered in a manner that captivates and involves the intended users. This can be used as a standardised communication material by different extension functionaries for capacity building of rural women on value-addition of mango.

CONCLUSION

The findings presented here emphasize the potential of multimedia technology as a catalyst for knowledge dissemination and skill enhancement in agricultural practices. Through this study, an easily accessible and interactive learning tool tailored to the unique needs of rural women has been developed. This multimedia CD on value-addition of mango will serve as a comprehensive digital resource that will not only equip the rural women with necessary knowledge and skills but also facilitates economic independence and entrepreneurship.

REFERENCES

- Lalitha, A., & Neela Rani, R. (2020). A study on analysis of the content effectiveness of the developed multimedia module on domestic water sanitation. *Pharma Innovation Journal*, 9(1), 328-330.
- Bala, K., Maheshwari, S., & Upadhyay, R. (2019). Field testing of multimedia CD on nutrition for children (0-3 years) for its comprehension by rural women. *International Journal of Education and Management Studies*, 9(1), 42-44.
- Sasikala, V., & Tiwari, R. (2014). Opinion and perceived utility of the multimedia training module on integrated farming systems. *Journal of Extension Education*, 26(2).
- Vidya, P., Manivannan, C., & 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.
- Sharma, M. K., Verma, H. K., & Sharma, R. K. (2016). Effectiveness of a CD-ROM for knowledge gain about abortion in dairy animals. *Indian Veterinary Journal*, 93(8), 24-26.
- V., Sasikala., Papaiyan, K., Mathialagan, P., & Mani, S. (2012). *Effectiveness of multimedia compact Disc on dissemination of knowledge among the pig farmers*. VIII, 381-388.
- Yadav, M., & Varma, S. K. (2014). Media standardization for fruits and vegetables processing and preservation for rural women of Haryana. *Annals of Agri Bio Research*, 19(3), 595-598.
- Lohmann, S., & Frederiksen, L. (2017). *Faculty Awareness and Perception of Streaming Video for Teaching*. Pages from 101-119 Retrieved from <https://doi.org/10.1080/01462679.2017.1382411>
- Gautam, P. K., Kumar, V., Patnaik, N. M., & Kar, P. (2019). Effect of Multimedia on Clean Milk Production Practices Followed by Dairy Farmers. *Paper presented at ISEE Seminar*, ABS/310.