

Print ISSN : 0972-8813
e-ISSN : 2582-2780

[Vol. 18(3), Sept-Dec, 2020]

Pantnagar Journal of Research

(Formerly International Journal of Basic and
Applied Agricultural Research ISSN : 2349-8765)



G.B. Pant University of Agriculture & Technology, Pantnagar



ADVISORYBOARD

Patron

Dr. Tej Partap, Vice-Chancellor, G.B. Pant University of Agriculture and Technology, Pantnagar, India

Members

Dr. A. S. Nain, Ph.D., Director Research, G.B. Pant University of Agri. & Tech., Pantnagar, India
Dr. A.K. Sharma, Ph.D., Director, Extension Education, G.B. Pant University of Agri. & Tech., Pantnagar, India
Dr. S.K. Kashyap, Ph.D., Dean, College of Agriculture, G.B. Pant University of Agri. & Tech., Pantnagar, India
Dr. N.S. Jadon, Ph.D., Dean, College of Veterinary & Animal Sciences, G.B. Pant University of Agri. & Tech., Pantnagar, India
Dr. K.P. Raverkar, Ph.D., Dean, College of Post Graduate Studies, G.B. Pant University of Agri. & Tech., Pantnagar, India
Dr. Sandeep Arora, Ph.D., Dean, College of Basic Sciences & Humanities, G.B. Pant University of Agri. & Tech., Pantnagar, India
Dr. Alaknanda Ashok, Ph.D., Dean, College of Technology, G.B. Pant University of Agri. & Tech., Pantnagar, India
Dr. Alka Goel, Ph.D., Dean, College of Home Science, G.B. Pant University of Agri. & Tech., Pantnagar, India
Dr. R.S. Chauhan, Ph.D., Dean, College of Fisheries, G.B. Pant University of Agri. & Tech., Pantnagar, India
Dr. R.S. Jadaun, Ph.D., Dean, College of Agribusiness Management, G.B. Pant University of Agri. & Tech., Pantnagar, India

EDITORIALBOARD

Members

Prof. A.K. Misra, Ph.D., Chairman, Agricultural Scientists Recruitment Board, Krishi Anusandhan Bhavan I, New Delhi, India
Dr. Anand Shukla, Director, Reefberry Foodex Pvt. Ltd., Veraval, Gujarat, India
Dr. Anil Kumar, Ph.D., Director, Education, Rani Lakshmi Bai Central Agricultural University, Jhansi, India
Dr. Ashok K. Mishra, Ph.D., Kemper and Ethel Marley Foundation Chair, W P Carey Business School, Arizona State University, U.S.A
Dr. B.B. Singh, Ph.D., Visiting Professor and Senior Fellow, Dept. of Soil and Crop Sciences and Borlaug Institute for International Agriculture, Texas A&M University, U.S.A.
Prof. Binod Kumar Kanaujia, Ph.D., Professor, School of Computational and Integrative Sciences, Jawahar Lal Nehru University, New Delhi, India
Dr. D. Ratna Kumari, Ph.D., Associate Dean, College of Community / Home Science, PJTSAU, Hyderabad, India
Dr. Deepak Pant, Ph.D., Separation and Conversion Technology, Flemish Institute for Technological Research (VITO), Belgium
Dr. Desirazu N. Rao, Ph.D., Professor, Department of Biochemistry, Indian Institute of Science, Bangalore, India
Dr. G.K. Garg, Ph.D., Dean (Retired), College of Basic Sciences & Humanities, G.B. Pant University of Agric. & Tech., Pantnagar, India
Dr. Humnath Bhandari, Ph.D., IRRI Representative for Bangladesh, Agricultural Economist, Agrifood Policy Platform, Philippines
Dr. Indu S Sawant, Ph.D., Director, ICAR - National Research Centre for Grapes, Pune, India
Dr. Kuldeep Singh, Ph.D., Director, ICAR - National Bureau of Plant Genetic Resources, New Delhi, India
Dr. M.P. Pandey, Ph.D., Ex. Vice Chancellor, BAU, Ranchi & IGKV, Raipur and Director General, IAT, Allahabad, India
Dr. Martin Mortimer, Ph.D., Professor, The Centre of Excellence for Sustainable Food Systems, University of Liverpool, United Kingdom
Dr. Muneshwar Singh, Ph.D., Project Coordinator AICRP- LTFE, ICAR - Indian Institute of Soil Science, Bhopal, India
Prof. Omkar, Ph.D., Professor, Department of Zoology, University of Lucknow, India
Dr. P.C. Srivastav, Ph.D., Professor, Department of Soil Science, G.B. Pant University of Agriculture and Technology, Pantnagar, India
Dr. Prashant Srivastava, Ph.D., Cooperative Research Centre for Contamination Assessment and Remediation of the Environment, University of South Australia, Australia
Dr. Puneet Srivastava, Ph.D., Director, Water Resources Center, Butler-Cunningham Eminent Scholar, Professor, Biosystems Engineering, Auburn University, U.S.A.
Dr. R.C. Chaudhary, Ph.D., Chairman, Participatory Rural Development Foundation, Gorakhpur, India
Dr. R.K. Singh, Ph.D., Director & Vice Chancellor, ICAR-Indian Veterinary Research Institute, Izatnagar, U.P., India
Prof. Ramesh Kanwar, Ph.D., Charles F. Curtiss Distinguished Professor of Water Resources Engineering, Iowa State University, U.S.A.
Dr. S.N. Maurya, Ph.D., Professor (Retired), Department of Gynecology & Obstetrics, G.B. Pant University of Agric. & Tech., Pantnagar, India
Dr. Sham S. Goyal, Ph.D., Professor (Retired), Faculty of Agriculture and Environmental Sciences, University of California, Davis, U.S.A.
Prof. Umesh Varshney, Ph.D., Professor, Department of Microbiology and Cell Biology, Indian Institute of Science, Bangalore, India
Prof. V.D. Sharma, Ph.D., Dean Academics, SAI Group of Institutions, Dehradun, India
Dr. V.K. Singh, Ph.D., Head, Division of Agronomy, ICAR-Indian Agricultural Research Institute, New Delhi, India
Dr. Vijay P. Singh, Ph.D., Distinguished Professor, Caroline and William N. Lehrer Distinguished Chair in Water Engineering, Department of Biological Agricultural Engineering, Texas A&M University, U.S.A.
Dr. Vinay Mehrotra, Ph.D., President, Vinlax Canada Inc., Canada

Editor-in-Chief

Dr. Manoranjan Dutta, Head Crop Improvement Division (Retd.), National Bureau of Plant Genetic Resources, New Delhi, India

Managing Editor

Dr. S.N. Tiwari, Ph.D., Professor, Department of Entomology, G.B. Pant University of Agriculture and Technology, Pantnagar, India

Assistant Managing Editor

Dr. Jyotsna Yadav, Ph.D., Research Editor, Directorate of Research, G.B. Pant University of Agriculture and Technology, Pantnagar, India

Technical Manager

Dr. S.D. Samantray, Ph.D., Professor, Department of Computer Science and Engineering, G.B. Pant University of Agriculture and Technology, Pantnagar, India

CONTENTS

Marker assisted selection for aromatic and semi-dwarf segregants in cross of aromatic Katarni rice SUNDARAM BHARTI, P.K. SINGH, KUMARI SUVIDHA, SATYENDRA, S. P. SINGH, ANAND KUMAR and MANKESH KUMAR	188
D² and principal component analysis for variability studies in <i>Vigna</i> and <i>Phaseolus</i> species PRIYANKA BHARETI, R. K. PANWAR, ANJU ARORA and S. K. VERMA	193
Assessment of genetic parameters in F₅ recombinants derived from <i>Indica</i> rice (<i>Oryza sativa</i> L.) line Pusa 6A PRACHI PRIYA, MANKESH KUMAR, TIRTARTHA CHATTOPADHYAY, BISHUN DEO PRASAD, SWETA SINHA, ANAND KUMAR and SATYENDRA	198
Genetic diversity analysis by D² clustering of fodder yield and its related traits in forage sorghum HARSH DEEP, INDRANI CHAKRABORTY, SATYAWAN ARYA, PUMMY LAMBA, S. K. PAHUJA and JAYANTI TOKAS	203
Genetic diversity for morpho-physiological and seed vigour traits in wheat (<i>Triticum aestivum</i> L.) PUNEET KUMAR, Y.P.S. SOLANKI, VIKRAM SINGH and ASHISH	209
<i>In vitro</i> plant regeneration from mature embryo using different plant growth regulators in wheat genotype HD 3059 SWATI SHARMA, ASHWANI KUMAR, ANIL SIROHI, R. S. SENGAR, KAMAL KHILARI, MUKESH KUMAR and MANOJ K. YADAV	215
Weed management and crop geometry effect on nutrient uptake and yield in aerobic rice VASUNDHRA KAUSHIK, S. P. SINGH, V. P. SINGH, TEJ PRATAP and B. S. MAHAPATRA	222
Studies on sucker control in natu tobacco (<i>Nicotiana tabacum</i> L.) under rainfed vertisols S. JAFFAR BASHA, P. PULLI BAI, S. KASTURI KRISHNA and C. CHANDRASEKHARA RAO	228
Seed and oil yield of bidi tobacco (<i>Nicotiana tabacum</i> L.) varieties as influenced by planting geometry and fertilizer levels under rainfed vertisols S. JAFFAR BASHA, P. PULLI BAI, S. KASTURI KRISHNA and C. CHANDRASEKHARA RAO	232
Comparison of non-linear models on area, production and productivity of sugarcane crop in Uttar Pradesh JHADE SUNIL and ABHISHEK SINGH	237
Performance of improved varieties of true Cinnamon (<i>Cinnamomum verum</i> J. Presl.) in Andaman Islands, India AJIT ARUN WAMAN, POOJA BOHRA and R. KARTHIKA DEVI	243
Changing climate and its effect on rice yield in Meghalaya DEOTREPHY K. DKHAR, SHEIKH MOHAMMAD FEROZE, RAM SINGH and LALA I.P. RAY	249
Age related changes in morphometrical studies on ductus deferens of guinea fowl (<i>Numida meleagris</i>) TAMILSELVAN S, B. S. DHOTE and MEENA MRIGESH	257

Occurrence of gastrointestinal nematodes in goats slaughtered at Rewa, India D. MARAVI, A. K. DIXIT and POOJA DIXIT	261
Autoimmune haemolytic anaemia in a dog-A case report NEERAJ KUMAR, MUNISH BATRA and R.S. CHAUHAN	265
Erythrocytic anaplasmosis with <i>Fasciolosis</i> in a cross-bred cattle: A case report NEERAJ KUMAR and MUNISH BATRA	269
Modification and evaluation of Pant-ICAR controlled traffic seed-cum-deep fertilizer applicator for multi-crop seeder-cum-deep placement of fertilizers applicator MANISH KUMAR, T.C THAKUR, MANOJ KUMAR and SATYA PRAKASH KUMAR	272
Drying characteristics of shrimp (<i>Metapenaeus dobsoni</i>) in electrical dryer D.S. ANIESRANI DELFIYA, S. MURALI, P.V. ALFIYA and MANOJ P. SAMUEL	281
Baur dam breach analysis using various Manning's roughness values MEENAKSHI RAMOLA, JYOTHI PRASAD and H. J. SHIVA PRASAD	286
Study of constipation and related factors among female students of Pantnagar RITA SINGH RAGHUVANSHI, NIDHI JOSHI, DIKSHA SINGH, SHIKHA SINGH, MEENAL and DASHRATH BHATI	290
Work -related musculoskeletal disorders among chikankari workers in Lucknow (U.P.) POONAM SINGH and KATYAYNI	297
Technology adoption and productivity enhancement in groundnut cultivation: An impact assessment of farm women groups K.UMA, T. NIVETHA and S. PRAVEENA	302
Health hazard and constraints of chikankari worker in Lucknow (U.P.) POONAM SINGH and KATYAYNI	310
Studies on Indigenous Agricultural Technical Knowledge prevalent among the farmers of Assam for the management of common pests and diseases in major crops DEVAMITRA TARAFDAR and NIRMAL MAZUMDER	315
Television viewing pattern among students of CCS Haryana Agricultural University, Hisar ANIL KUMAR MALIK, KRISHAN YADAV and SUNIL KUMAR	325
Media content development and it's standardization for farmers REETA DEVI YADAV, GEETAMATI DEVI and RITA GOAL	331
Analysis of learning behavior and pattern of online learners on a MOOC platform G.R.K. MURTHY, SEEMA KUJUR, S. SENTHIL VINAYAGAM, YASHAVANTH B.S., CH. SRINIVASA RAO, P. S. PANDEY, VANITA JAIN and INDRADEVI T.	338

Media content development and its standardization for farmers

REETA DEVI YADAV, GEETAMATI DEVI¹ and RITA GOAL

Department of Extension Education & Communication Management, College of Home Science, Chaudhary Charan Singh Haryana Agricultural University, Hisar (Haryana),¹Shri Ram Pher, Shiv Pher P.G. College, Milkipur, Faizabad (Uttar Pradesh)

ABSTRACT: With the commercialization of agriculture, the importance of cash crops has increased. India has the largest area under cotton cultivation and ranks third in terms of production in the world. There is a wide gap between the attainable potential yield and the actual yield obtained by the farmers which need to be bridged. In Haryana, cotton is mainly grown in Sirsa, Hisar, Fatehabad, Jind and Bhiwani districts of the state. The transfer of improved technology and their effective adoption is influenced by the method of its transfer to the farmers in accordance to their need. The media is playing an important role in passing on meaningful information at faster rate to the large number of farmers in country. It has emerged as one of the significant sources of seeking relevant scientific information by the farm families, therefore, tapping and utilizing the potential of media for transferring the newly generated technologies, information regarding weather and marketing in agriculture among the farm families is crucial and significant. Electronic media can play a vital role in developing/preparing information rich farmers for situations of urgency and emergency. The present study was conducted in Haryana state in the year 2015-16. For the standardization of media content developed, 30 judges were selected from Hisar, Sirsa and Fatehabad districts were selected purposively. Standard procedure for development of media was followed. Effectiveness of Compact Disc (CD) and booklet in terms of audio quality, video quality, presentation of message, content importance and suitability and text was rated as high. Inter consistency reliability for CD and booklet was found to be statistically significant at 5 per cent level of significance. Field applicability was also found to be high for all the messages.

Key words: Electronic media, farmer's media, media for farmers, media standardization, media effectiveness, print media

The world is now witnessing an information revolution. Information is power; interchange of information or thoughts brings about mutual cooperation and progress. No organization or society can exist without information support. The mass media services are based on the idea of mass production and mass distribution of messages through various channels. Communication flow plants the seeds of progress in the minds of the people and waters it as well. Access to information and improved communication is a crucial tool required for sustainable agricultural development. Improved communication and information access is directly related to social and economic development. It is observed that rural population is still facing difficulty in accessing crucial information in forms they can understand in order to make timely decisions. The gap between information generated and information disseminated through communication technologies have the ability to generate possibilities to solve the problems of rural poverty, inequality and opportunity to bridge the gap between the information rich and poor while supporting sustainable development on rural and agriculture communities. There is an urgent need to develop the media content/message on improved cotton cultivation practices to strengthen the technical know-how.

Therefore, the present study was planned to develop the relevant media content/message on cotton cultivation so that farmers can be sensitized for self-reliance. The objective of the study was to develop, standardize and expose print & electronic media on technical knowledge about cotton cultivation.

MATERIALS AND METHODS

Development of media package involves designing, testing and refining the messages professionally before their widespread use. If we want our clients or target audience to pay attention, understand, accept and act upon the message communicated, it is imperative that we understand the target audience and make relevant messages, professionally tested and modified for the receiver.

Preparation of booklet

1. Planning: Planning is the most important part of any communication process and to make booklet most effective, due consideration was given from the infancy stage. At this stage planning was done regarding format,

title, number of pages, number and kind/types of photographs etc. It was deliberately decided to prepare booklet in MS Word form in Hindi font.

2. Research: After planning stage, research was conducted to collect the information regarding the subject, staff from College of Agriculture, CCSHAU, Hisar Library and internet were explored to gather relevant information.

3. Treatment: Booklet was prepared in small booklet format in Hindi containing 47 pages.

4. Outline: Only after gathering whole information and final decision about treatment, rough outline was prepared.

5. Sequencing: Once outline was prepared, then sequencing was worked out to introduce the subject to reader and take him step by step towards the end. Photographs were inserted wherever required to make the booklet more meaningful and understandable.

6. Review: To make improvements in the text and photographs, it was given to experts of the subject concerned from CCSHAU, Hisar for reviewing.

7. Publishing: Only after reviewing and corrections, the final text was published in booklet form. The cover page of printed booklet included the title, the name of authors, name of department and institution.

The cooperation of experts from Agriculture science and Home science as well as farmers were ensured for all the stages of media production so as to meet the requirements of target group. Details of each step are explained in results and discussion.

Preparation of CD or preparation of video content/film

1. Planning: If a video film/content i.e., incorporated images and sounds are to fulfill the required communication purpose, it needs to be organized properly to convey the meaning. Hence planning is done in terms of who will be the learner? What are the learning assessment criteria? How the subject be sequenced? What will be the treatment given to the message, is very important. Therefore, it was planned to prepare video film for farmers with an objective to give necessary information regarding new scientific cultivation of cotton.

2. Scripting: A video script may be defined as the pre-visualized description of the visual and oral program in a suitable form. A video script enables to understand the requirements of a video program so that objective of the

program can be achieved. While preparing, a script various stages involved were:

(a) Research: Keeping the objectives of CD film/content in mind, information regarding the subject i.e. improved methods of cotton cultivation were collected with the help of literature, package of practices on cotton, Genetic and Plant Breeding (Cotton Section) experts from CCSHAU, Hisar.

(b) Treatment: Treatment of the subject is an important part of effective communication process. To make the communication effective, visual shots of actual working and activities were taken. The language of the script was purposively Hindi, for ease in understanding by the respondents.

(c) Outline: An outline of details were worked out i.e. brief introduction of farm activities, occupational health problems faced by farmers and recommended package of practices, protective clothing/accessories for pesticide applicators and cotton picking selected for preparation of educational package.

(d) Sequencing: Once the outline was prepared, the sequencing of the subject matter was done to make the video coherent, informative and interesting.

(e) Special effect: To convey the idea effectively, special effects like computerized write-up, fade in and fade out, long shot, medium shot, close-up and extreme close-up shots were decided.

(f) Story board: After writing, to help the camera man and special effects, story boards, where in each shot indicated by drawing, were prepared.

(g) Review: Video script was reviewed by the members of advisory committee for further improvement.

3. Recording: Recording is the stage where all visual and oral elements described in the script are collected. Recording for video was done at research farm of CCS Haryana Agricultural University, Hisar. The visual proportions concerning package of practices, pesticide application and preventive measures and recommended protective accessories and methods used while performing activities were recorded.

4. Editing and mixing: Video editing is a highly creative process. Sequence of the visual scenes was arranged as per the script. To make the video film educative as well as

interesting, editing and mixing was done at the computerized editing and mixing studio in Hisar. Commentary as per script was dubbed to match with the visual scenes. Light background music was also dubbed to give pleasant hearing to the audience.

5. Time estimation: Preparation of instructional video is incomplete without estimation of time. It is equally important as the previous steps.

6. Review and fine tuning: Based on the results from the testing process, the CD film/content was fine tuned by incorporating the feedback.

7. Final and mass production of video through CD. (** if the video content created has copy right or if it is worthy to be mentioned in the methodology may be decided)

Assessment of the effectiveness and standardization of prepared media package on cotton cultivation was done with the help of questionnaire. Thirty judges from Genetic and Plant Breeding department, field functionaries and Home Scientists from CCSHAU, Hisar, were contacted and prepared media package was administered to them. Their feedback regarding prepared media package on scientific cultivation of cotton after exposing the package was recorded with the help of developed questionnaire. Standardization implies uniformity of procedures in administering and conducting the test. Standardized tool is one in which the procedure, material and pattern has been fixed, so precisely that the same test can be applied at different times and places to different persons. Reliability and validity were determined to standardize the media on cotton cultivation practices. To establish the reliability of media split half technique was used by administering to 30 judges. The response of the judges was marked 3, 2 and 1 for indicating to greater extent, to somewhat extent and not at all respectively. The zero order correlation coefficient between even and odd numbered

Table 1: Coverage of the messages on improved cotton cultivation in booklet

S. No.	Items	Pages	Pictures
1.	Cotton varieties	1-6	10
2.	Field preparation	7-9	5
3.	Seed treatment	10	-
4.	Seed sowing	11-12	1
5.	Fertilizer application	13-19	9
6.	Weeding and inter-culturing	20-21	4
7.	Irrigation	22-23	3
8.	Cotton pests management	24-32	11
9.	Cotton disease management	33-42	9
10.	Nutrient management in cotton	43-46	5
11.	Cotton picking	47	1

Table 2: Time coverage of messages on improved cotton cultivation in compact disc (CD)

S. No.	Items	Duration (Min.)
1.	Introduction & varieties of cotton	5:30
2.	Field preparation & sowing	5:28
3.	Fertilizer application	2:38
4.	Weeding & weedicide	1:22
5.	Irrigation	0:19
6.	Picking of cotton balls & protective clothes	0:43
7.	Cotton pests and their management and protective clothes	5:03
8.	Cotton diseases and their management	3:03
Total duration		27:10

items was calculated as a measure of reliability. Subsequently, the coefficients of reliability were computed with the help of Spearman Brown formula.

$$\text{Spearman Brown formula } r_{tt} = \frac{2r_{hh}}{1+r_{hh}}$$

Perceived field applicability index (for each message)

$$PFAI = \frac{E(RA+PC+CC+SC+Tr)}{P(RA+PC+CC+SC+Tr)} \times 100$$

The booklet included detailed subject matter along with relevant literature and photographs. This booklet consists of 47 pages with 58 photographs. The description of the messages incorporates, cotton varieties, field preparation, seed treatment, seed sowing, fertilizer application, weeding and inter-culturing, irrigation, cotton pests and disease management, nutrient management in cotton and picking.

In the messages maximum number of pictures were incorporated because the pictures are eye catching and increases the communicability of the message with ease and effectiveness.

Weighted mean scores and ranking: Weighted mean scores were calculated to rank the communication variables i.e. information input, processing and output pattern. This was used to assess the effectiveness and perceived field applicability of media. For each item the frequencies falling under each rating were tabulated. Then the frequencies in each category were multiplied by the assigned scores and added. The resulting sum of each aspect was divided by the total number of respondents. In this way, the weighted mean scores in each aspect were calculated.

RESULTS AND DISCUSSION

The media content-prepared were subjected to 30 judges' to assess their effectiveness in terms of several parameters

selected for booklet as described in methodology. The findings are presented as below:

Accuracy was assessed under six attributes of accuracy in terms of understanding the title, repetition of information, clarity of printing, size of typing, appropriateness of language and free form grammatical spelling and other typographical errors were perceived to be high for all the messages and overall weighted mean score was 2.86. Coverage and objectivity of information was high with weighted mean score 2.87 and 2.86. Thus, contents related to cotton cultivation practices were covered properly and write up of the message was clearly stated, self explanatory and information appeared to be valid and well researched. Regarding writing styles it can be observed from Table 3 that overall mean score was 2.77 high. All the messages/main headings were differentiated from each other with high mean score 2.9 followed by the main point was emphasized with mean score 2.83, and high mean score was observed in the information of messages were not complex in nature and having no doubts with mean score 2.86 and some words repeated again and again which creates boredom mean score 2.5.

The data clearly indicated that overall mean score for content presentation was 2.86. Usefulness of the information was perceived to be high because this parameter attained highest mean score of 3.0.

Table 3 clearly indicates that effectiveness in terms of illustrations and compatibility with readers background was perceived to be high with overall mean score 2.83 and 2.9 respectively.

Overall reliability coefficients of booklet perceived by judges

Split half technique was used to measure inter consistency and it was depicted in Table 4 along with reliability (rtt) value. It is found high for the messages covered under booklet. The overall inter consistency (0.81) was quite high for booklet and found to be statistically significant at 5 per cent level. Frankel remarked in 1996 that for research purposes, thumb rule is that reliability should be at least 0.70 and preferably higher.

Reliability refers to the consistency of the scores obtained.

Table 3: Effectiveness of media on cotton cultivation practices presented in booklet n=30

S.N.	Parameters	WMS	Overall mean score
1.	Attributes of accuracy		2.86
	Understanding of the title	3.0	
	Free from grammatical spelling and other typographical errors	2.8	
	Repetition of information	2.76	
	Clarity of printing	2.8	
	Size of typing	3.0	
	Appropriateness of language	2.8	
2.	Attributes of coverage		2.87
	Message covers all the necessary information	2.87	
3.	Attributes of objectivity		2.86
	Write up of all message clearly stated/self explanatory	2.9	
	Information appeared to be valid and well researched	2.83	
4.	Attributes of writing styles		2.77
	The main points were more emphasized	2.83	
	All the messages/main headings were differentiated from each other	2.9	
	Information of messages were not complex in nature and having no doubts	2.86	
	Some words repeated again and again which creates boredom	2.5	
5.	Attributes of content presentation		2.86
	Material managed in logical sequence and grouping	2.8	
	Technical terms	2.87	
	Usefulness of the information	3.0	
	Completeness of message	2.83	
	Ease in reading	2.87	
	Length of message	2.77	
6.	Attributes of illustration		2.83
	Layout of the pictures/illustrations/graphic was accurate to per content	2.83	
7.	Attributes of compatibility		2.9
	Presentation of materials of various messages was according to readers background	2.9	

Maximum mean score is 3.00, Low- 1-1.66, Medium - 1.67-2.32, High- 2.33-3.00

Table 4: Overall reliability coefficients of booklet perceived by judges n=30

Attributes of content and format	Reliability	Messages	Overall reliability
Accuracy, coverage, objectivity, content presentation, illustrations, writing style and compatibility	Inter consisting methods (split half technique)	0.81*	0.81*

Inter consistency reliability was estimated and reported for the printed booklet and prepared compact disc content/ film (CD).

Perceived Field Applicability of various messages related to cotton cultivation practices presented in booklet perceived by judges

Field applicability perceived by the judges for various messages had been presented in Table 5. The data shows that the triability (WMS 2.97) followed by cultural compatibility, physical compatibility and simplicity (weighted mean score 2.93) and relative advantage with weighted mean score of 2.77. The overall mean score of the field applicability of messages were found to be 2.91 and Perceived Field Applicability Index (PFAI- 93.11).

These obtained scores for each message were put in the form of field applicability index. Thus, separate index was formulated for each message under study.

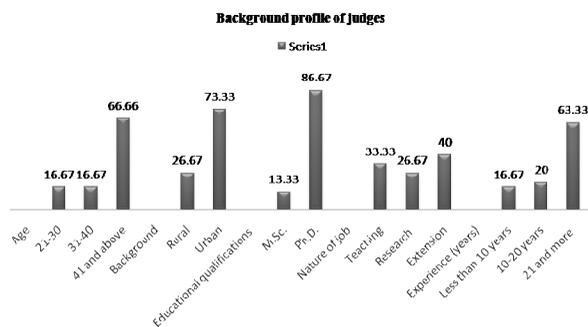


Fig. 3: Background profile of judges

Table 5: Field applicability of various messages related to cotton cultivation practices presented in booklet perceived by judges n=30

Attributes of content (justification)	Weighted Mean Score (WMS)
Relative advantage	2.77
Cultural compatibility	2.93
Physical compatibility	2.93
Simplicity/Complexity	2.93
Triability	2.97
Overall mean score	2.91
Perceived field applicability index	93.11

Maximum mean score is 3.00

Low- 1-1.66, Medium - 1.67-2.32, High-2.33-3.00

Standardization and effectiveness of media package

The media so prepared were subjected to 30 judges' to assess their effectiveness in terms of several parameters selected separately for CD and booklet as described in methodology. Findings clearly indicated that majority of the judges were of above age group 66.66, belonged to

Table 6: Effectiveness of CD perceived by judges n=30

S. N.	Parameters	WMS	Overall mean score
1.	Attributes of visual quality		2.78
	Clarity of pictures	2.6	
	Size of illustration	2.77	
	Perception	2.8	
	Interest orientation	2.77	
	Attention catching	2.83	
	Self explanation	2.8	
	Sequence	2.53	
	General set up	2.93	
	Colour	2.8	
	Timing with commentary	2.87	
	Impressive	2.9	
2.	Attributes of audio quality		2.75
	Voice	2.8	
	Pitch of voice	2.83	
	Interest orientation	2.7	
	Language	2.7	
	Comprehension	2.67	
	Accuracy	2.7	
	Sequence	2.93	
	Understandability	2.8	
	Obstructions (background)	2.6	
	Music	2.77	
3.	Attributes of content		2.79
	Informativeness	2.9	
	Technical terms	2.93	
	Coverage	2.87	
	Relevancy	2.67	
	Usefulness	2.6	
4.	Attributes of presentation		2.79
	Speed of presentation	2.77	
	Simplicity	2.83	
	Style of presentation	2.83	
	Explaining ideas	2.73	
	Message treatment	2.83	
5.	Attributes of text		2.75
	Clarity of text	2.7	
	Size of text	2.8	

Maximum mean score is 3.00

Low -1-1.66, Medium - 1.67-2.32, High- 2.33-3.00

Table 7: Overall reliability coefficients of Compact Disc (CD) perceived by judges**n=30**

Attributes of content and format	Reliability	Messages	Overall reliability
Visual quality, audio quality, presentation of message, content importance and suitability and text	Inter consisting methods (split half technique)	0.78*	0.78*

*significant at 5% level of significance

urban areas 73.33 per cent, and highly qualified upto Ph.D. degree (86.67). Majority of judges were having more than 21 years of work experience 63.33 per cent, nature of job of judges been extension (40.0%). Similar findings were supported by Jain (2005).

Effectiveness of CD entitled, “*Kapas ki Unnat Kheti Hetu Takniki Jankari*” was assessed through judges on selected parameters like audio quality, visual quality, presentation of message, content and text. The weighted mean scores were computed and thorough evaluation done by the judges for the messages. It is clear from Table 6 that clarity of pictures, size of illustration, perception, interest orientation, attention catching, self explanatory, sequence, general set up, colour, timing with commentary and impressive were found to be high with overall mean score 2.78. Further Table 6 illustrated audio quality testing in terms of voice, pitch of voice, interest orientation, language, comprehension, accuracy, sequence, understandability, background and music was found to be high in the opinion of most of the judges with overall mean score 2.75.

Regarding content importance of CD presented in Table 6 reveals that it was perceived highly by most of the judges in terms of all the five attributes i.e., informativeness, technical terms, coverage, relevancy and usefulness for the messages. The overall mean score was perceived to be high 2.79. It is clear from Table 6 that most of the judges evaluated the CD high in terms of speed of presentation, simplicity, style of presentation, ideas explanation and message treatment. None of the judge perceived any of the parameters as low in CD, with overall mean score of 2.79. The data presented in Table 6 highlighted that text given in CD was perceived to be high in terms of size of text with mean score 2.8 and clarity of text with mean score was 2.7.

Split half technique was used as measure of inter consistency. Inter consistency reliability of compact disc (CD) is depicted in Table 7 it is found high for the messages covered under CD. The overall inter consistency reliability for CD was found to be (0.78) which is statistically significant at 5 per cent level of significance. It could therefore, be inferred that the audio and visual status of the prepared CD had been rated to be of good quality. Presentation of the messages and quality of content and coverage and its relevance and appropriateness to the

subject was quite high. The overall mean score of all the messages were also perceived to be high ranging from 2.75 to 2.79 indicating that the clarity of text and size of text was appropriate and it was clearly visible. Sethi (1993) also indicated that video film met the local requirements than broadcast on television. Similar finding were reported by Jain (2005), Asrani (2006), Jadal (2011), Raj and Gupta (2012), Sharma (2012), Choudhary (2012) and Agarwal (2012).

CONCLUSION

Even though great strides have made in cotton production in India, there is a need to improve the yield levels further in order to meet the demand for cotton in the 21st century. There is a wide gap between the attainable potential yield and the actual yield obtained by the farmers which need to be bridged. Prepared contents for media were perceived effective by majority of the judges as overall reliability coefficient was high. Field applicability index was also high. Standardized media may be developed on all aspects of agriculture, home science and animal sciences & may be exposed to the farmers. It may result in higher production & productivity. Resource centers/library in rural areas should be established by field functionaries having media package in the form of compact disc, audio-visual cassette and printed material for further transmission to the farmers.

REFERENCES

- Anonymous. (2009). Directorate of Agricultural Information, Agriculture Department, Punjab. <http://www.agripunjab.gov.pk/agriinfoasp>
- Agarwal, J. (2012). Awareness Programme for Adolescent Girls of Bikaner District about Home Science Education. M.Sc. Thesis, S.K. Rajasthan Agricultural University, Bikaner.
- Asrani, S. (2006). Development and Testing of Interactive Media on Bee Keeping. M.Sc. Thesis, CCS, Haryana Agricultural University, Hisar.
- Choudhary, M. (2012). Video Programme on Nutrition Education for Rural Women. M.Sc. Thesis, S.K. Rajasthan Agricultural University, Bikaner.
- Jadal, M.M. (2011). Use of Video CDs in Learning English that Videu-CDs Given Results Equivalent to or Better than Conventional. *Indian Stream*

- Research Journal*, Vol.-1 Issue VIII, August
- Jain, V. (2005). Development and Standardization of Media Package on Animal Husbandry Practices for Rural Women of Haryana. Ph.D. Thesis, CCS, Haryana Agricultural University, Hisar.
- Raj, M. and Gupta, A.K. (2012). Effectiveness of Electronic Classroom for Teaching General Science at Secondary School Level. www.mierjs.in
- Sethi, N. (1993). Media Support for Rural Women on Scientific Indigenous dry land Technologies. Ph.D. Thesis, CCS Haryana Agricultural University, Hisar, Haryana
- Sharma, A. (2012). Development and standardization of an Electronic Booklet (e-booklet) on Care of Pregnant and Lactating Mother. M.Sc. Thesis, S.K. Rajasthan Agricultural University, Bikaner.

Received: June 21, 2020
Accepted: December 17, 2020