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Evaluation of National training program on mushroom cultivation technology for entrepreneurs

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ABSTRACT

There is an increasing need of training on mushroom cultivation technology among the farmers and entrepreneurs as a result of good prospect for mushroom in the market. The training on mushroom cultivation technology for entrepreneurs is a flagship programme of Directorate of Mushroom Research, Solan which aims to facilitate the complete knowledge of mushroom production activity on commercial scale. Evaluating the quality and effectiveness of such training for further improvement in their standard is strongly emphasized by extension research. The 10 day training programme on mushroom cultivation technology for entrepreneurs was evaluated by using structured questionnaires before and after the trainings. The training was evaluated with respect to the topics covered, training facility, training outcome, overall evaluation of the training and suggestions for future trainings. The participants evaluated the training topics highly with respect to relevance, content, supportiveness of teaching aids and overall learning achieved. Most of the variables to assess the overall training programme were rated highly by the trainees. The participants felt the need for more number of practical classes and additional information on finance and subsidy support for the commercial unit of white button mushroom. It is important to ensure the satisfaction of the trainees with respect to their expectations about the programme. Regular intervention of the scientists to assess the constraints faced by the clients in adoption of the technology can only be deemed as success of the training programmes.

Key words: Mushroom cultivation, Training, Entrepreneurs and Evaluation

At a time when agriculture is in distress, farmers are looking into activities that can improve their livelihood security. Agri-preneurs are exploring the high value enterprises like floriculture and mushroom cultivation. Mushroom cultivation is an important horti-business activity which can help farmers realize round the year returns compared to many other crops or enterprises. However, mushroom being an indoor crop, its cultivation differs from other traditional vegetables. This is the reason for increasing need of training among the farmers and entrepreneurs who wish to take up mushroom cultivation as an horti-business activity. The Directorate of Mushroom Research, Solan offers year around training on mushroom cultivation technology. The national training program on mushroom cultivation for entrepreneurs was held during April-2010 in which 42 trainees took part. The training program was evaluated with respect to the assessment of the training (as perceived by the trainees), training outcome, appropriateness of training facility and suggestions for future training.

Extension strongly emphasizes the importance of evaluating the quality and effectiveness of educational programs offered to the community (Astroth, 1991; Butler, 1991; Johnson & Verma, 1990; Rockwell & Kohn, 1990). Evaluation helps to answer the questions on accountability, effectiveness, relevance and strategies about the extension programmes (Suvedi, 2011). On this precept, the present study was undertaken at Directorate of Mushroom Research, Solan to evaluate the quality and effectiveness of training on mushroom cultivation technology for entrepreneurs held in April, 2010.

Methodology

The trainees were subjected to evaluation after the 10 day training for entrepreneurs on mushroom cultivation technology. An evaluation form was designed to evaluate the training programme on the line of the evaluation tool developed by Kay Rockwell (1999). The training was evaluated with respect to following criteria.

i) Evaluation of topics covered in the training
ii) The training facility
iii) Training outcome
iv) Overall evaluation of the training
v) Suggestions for future training programmes

The topics covered in the training were evaluated with respect to four variables viz, content, relevance, supportiveness of teaching aids and overall learning from the topic. Each of the variables was measured with Likert-type items with 5 as the highest score and 1 as the lowest score. The cumulative score of all the trainees was averaged to arrive at a single value. The training facilities were analysed on 5-point likert for 10 items of logistic support and later a composite variable was arrived for the same. Training outcome was measured by the difference in the pre and post training scores in knowledge and attitude on mushroom cultivation. Pre tested questionnaires were used to measure the knowledge and attitude of all the trainees. The overall evaluation of the training was done with the help of five different criteria like content of the course, resource persons' skill and support, relevance to the needs, learning from the course and course in general. Eleven different variables were taken to elicit the overall feedback about the training. Five open-ended questions were asked to bringforth the suggestions for improvement in the future training.

The data was analyzed with the use of simple statistical tools. Descriptive statistics was used to measure the Likert- type items. Paired t-test was applied to measure the impact of training with respect to their knowledge level. The discussions and implications were drawn by the results of the study and the suggestions given by the trainees in the open ended questions. (AM-Arithmetic mean was considered for calculating averages of all the variables)

RESULTS AND DISCUSSION

A total of 42 trainees participated in the training. Trainees represented 15 different states of India and one trainee was from abroad (Native of Kuwait, citizen of UK). Training participants were predominantly male (93%), married (69%) and belonged to different age groups: 21-30 (33%), 31-40 (29%), 41-50 (24%) and few either less than 20 years or more than 50 years (14%). Most of the participants were from high income groups as majority (36%) of the participants gross monthly was Rs. 25,000-50,000 followed by Rs. 50,000-100,00 (26%) and Rs. 10,000-25,000(19%). Few (12%) had a gross monthly income of more than Rs 100,000. The education level of the group was quite high as majority of the trainees (90%) were either graduates, post graduates or Ph.D

and above. (Figures in the parenthesis are in percentages and rounded off to nearest whole number)

Findings of the study are presented below under different headings.

i) Evaluation of topics covered in the training: There were totally 24 different topics in the training covering the spawn production, substrate preparation for different mushrooms, cultivation, crop protection, harvesting, post harvest management and marketing of different mushrooms, specialty and medicinal mushrooms, project formulation, financing and subsidy schemes for mushroom project etc. The participants response was largely found favourable towards appropriateness of the content (M=4.24, SD=0.27), relevance of the topic to the training (M=4.10, SD=0.26), supportiveness of training aids (M=4.05, SD=0.23) and overall learning from the topic (M=4.01, SD=0.23). The results were indicative of consistency in their response to different topics covered in the training. The arithmetic mean for overall learning was found relatively low compared to other variables. Further exploration of the responses in the open ended questions revealed that the trainees expected more support of practical classes. The results of the study are presented in the table 1.

ii) Evaluation of training facility: The variables considered for the evaluation of training facilities offered including the logistics like food, accommodation, travel, training venue, library and internet facilities etc. The trainees were satisfied with the training facilities. The mean of composite variable of the training facility was 4.26 with SD of 0.50. The range of the individual variable was 1.40 (3.25-4.65). This shows that there is relatively wide range of opinion among the trainees about the training facilities *vis-a-vis* their assessment of evaluation of training topics.

iii) Training outcome: All the trainees had positive change in the level of knowledge after the training. The final scores of the trainees showed significant improvement in their knowledge. The arithmetic mean of pre-training test was 33.00 and increased to 41.24 after training with the variance of 38.66 and 25.18 respectively. The results showed that, prior to the training, the trainees were less aware and largely heterogeneous (within group) with respect to their knowledge and understanding about the mushroom cultivation aspects. But after the training, there is significant increase in the knowledge level of trainees. The reduction in the variance also is an indication of relatively similar knowledge level among the trainees after training than before. The Pearson correlation was 0.72, suggesting there was positive correlation among the trainees with respect to their pre-training and post training knowledge level.

Not only had the change in the level of knowledge, but the trainees shown favourable attitude and willing to take up mushroom cultivation. Knowledge increase is traditionally less important than a positive behavior change (Butler, 1991). Among the 42 participants, 38 trainees were feeling much more confident to start mushroom cultivation and were changed

Table 1. Response of trainees to different topics with respect to the variables

Variable	Range	Median	Mean	SD
Appropriateness of content	3.76-4.90	4.20	4.24	0.27
Relevance	3.62-4.76	4.10	4.10	0.26
Supportiveness of aids	3.55-4.55	4.07	4.05	0.23
Overall learning	3.60-4.56	3.98	4.01	0.23

in their attitude and became confident of growing mushrooms after exposed to the training. The detailed observation of the data suggested that, the trainees with even high knowledge level prior to training were also changed in their behavior with respect to their attitude toward mushroom cultivation and expressed more confidence than before training.

iv) Overall evaluation of the training: The trainees evaluated the training highly, which was evident from the high scores for 'I will recommend this program to others' and 'I can use the information learned and skills acquired'. The participants were happy with the opportunities they had to interact with the trainers. Rao (1986), Mohanty (1998) and Singh *et al* (2009) reported similar kind of response. The cumulative average of all the variables was 4.10 which is an indication of the favourable opinion of the trainees about the training programme.

However, There was relatively lesser agreement for two variables viz., 'Proportion of exercise/ examples/ case studies and practicals were adequate' (AM = 3.70) and 'Topics were updated to suit the present scenario' (3.87). The feedback in the open ended question were also indicative of the same opinion among majority of the trainees. The average score for different variables are presented in Table 2.

v) Suggestions for improving future trainings: The open ended questions were aimed to elicit the diverse suggestions from the trainees by giving them the freedom of expressing their opinion. The open-ended questions mainly asked to evaluate the training with respect to its strengths, weakness, appropriateness of the duration and suggestions for further improvement of the training module.

Majority of the trainees were highly appreciative about the training material provided to them followed by the visit to the big commercial mushroom production house (Trainees were taken to INKAA foods Pvt Ltd Nalagarh of Solan district. It is one of the leading white button mushroom plant in India. The production capacity of the unit is more than 1000 metric tones per annum)

Table 2. Mean score of different variables to assess the overall evaluation of the training.

Sr. No	Criteria of training assessment	Average score (out of 5.00)
1	Expectations from the course were mostly fulfilled	4.01
2	I will recommend this program to others	4.37
3	Proportion of exercise/ examples/ case studies and practicals were adequate.	3.70
4	Topics were updated to suit the present scenario	3.87
5	Additional knowledge was gained due to the programme	4.16
6	Resource materials were well organized, useful and adequate	4.18
7	Teaching aids used were well prepared and comfortable in viewing	4.13
8	Speakers were clear in their presentation & trainees were given relevant information	4.16
9	Participants had enough opportunities to interact with the trainers	4.21
10	Training methodologies used were interesting and relevant for the purpose	4.08
11	I can use the information learned and skills acquired	4.27

Most of the trainees feel that the practical classes must be increased at the expense of theory classes. The participants' expectations were more on the information about the financial support, schemes of subsidy, market intelligence, and the input suppliers of different machinery. It was expressed by many of the participants to deal exclusively with the training on button mushroom technology. This was understandable, as the trainees attending the entrepreneurs training come with an intention of setting up the commercial unit of the button mushroom. In the training need assessment the topics on button mushroom cultivation were felt mostly needed by the majority.

About half of the trainees were in favour of increased duration of the training and bulk of remaining participants felt that 10 days duration is appropriate for the training module for entrepreneurs. Very few were also of the opinion that one-week training but with only practical module is the most appropriate.

CONCLUSION

The demand for training on mushroom cultivation by farmers and entrepreneurs is on the rise. Many ICAR institutes, SAUs and State department of Horticulture offer several trainings on mushroom cultivation. However, the level of satisfaction among the trainees is not well ascertained. The number of trainings on mushroom cultivation provided by these institutions belies the actual spread of adoption of mushroom cultivation among the trainees. Hence, it is important to ensure the satisfaction among the trainees with respect to their training need assessment, information on cultivation aspects along with practical exposure, industrial visits and follow up about the constraints in adoption can only achieve the real success of technology transfer. Moore *et al.,* (2007) express similar opinion as 'somewhere between a single reminder and multiple interventions lies a useful compromise to ensure adoption of training messages and taking action.'

REFERENCES

1. Astroth, K. A. 1991. Prevention education programs: Can they be effective? *Journal of Extension* **29(2):** 38-39.

2. Butler, S. W. 1991. Integrating evaluation into teaching. *Journal of Extension* **29(2):** 35-36.

3. Johnson, E., and S. Verma. 1990. Are extension publications readable? *Journal of Extension* **28(2):** 35.

4. Mohanty, N. 1998. A Study on attitude and vocational aspiration of agricultural school students in middle Gujarat. Unpublished M. Sc. (Agri.) Thesis, G.A.U., Anand Campus, Anand.

5. Moore, D. A., M. L. Truscott, J. Kirk, and D. J. Klingborg. 2007. Does adding an extra educational intervention add value? the dairy beef train-the-trainers program. *Journal of Extension* **45:** 3, 3FEA7.

6. Rao, K.R. 1986. A Study of attitude, aspiration, motivation and preference for placement of training students in rural areas of Maharastra. Unpublished Ph. D. Thesis, M.A.U., Parbhani

7. Rockwell, S. K., and H. Kohn, H. 1989. Post-then-pre- evaluation: Measuring behavior change more accurately. *Journal of Extension* **27(3):** 19-21.

8. Rockwell, K. 1999. Does Extension make a difference: Measuring program outcomes. Unpublished, West Virginia University Jackson's Mill Conference Center.

9. Singh Akoisana, Angad Prasad, Daya Ram and K. Tamhpasana. 2009. Attitude of Ex-Trainees towards Vocational Bakery Training. Indian Research Journal of Extension Education **9(3):** 84-88.

10. Suvedi, M. 2011 Training manual on evaluating extension programs, Michigan State University. www.meas-extension.org/meas-offers/trainingoffers/training/evaluating extension program.