



Evaluation of Training with Reference to Socio Personal Attributes affecting Knowledge and Skills of Cocoa Farmers of North East Region

LS SINGH¹, ANOK UCHOI¹, SK RIZAL¹, ALPANA DAS¹ AND GANESH DAS²



Received on : 05-06-2020
Accepted on : 20-08-2020
Published online : 01-09-2020



ABSTRACT

Knowledge, skill and attitudes are the most important factors affecting socio personal attributes of human resources. ICAR-Central Plantation Crops Research Institute, Research Centre, Kahikuchi, organizes training to develop more skilled workforce. Training of two batches of 50 farmers each on cocoa cultivation and processing technology was conducted for three consecutive days both during 2016 and 2017. The study was done mainly to create awareness and disseminate the new technologies on cocoa and to study their feedback concerning cocoa cultivation and processing technique. Socio personal attributes of the farmers, pre and post evaluation and perception of the trainees are studied to understand the level of change in their knowledge and skill after undergoing training. Majority of the respondent was found to possess positive impact in the development of knowledge and skill on scientific method of cocoa cultivation and processing technique. The study also showed that education qualification and mass media exposure were found to help enhance knowledge and skill of the trainees.

KEYWORDS

Cocoa, Training, Farmers, Evaluation, Knowledge and skills

INTRODUCTION

The North Eastern Region comprising of eight states namely Assam, Meghalaya, Manipur, Tripura, Arunachal Pradesh, Sikkim, Mizoram and Nagaland is blessed with different agro-climatic conditions favouring the growth of a wide range of agri/hort crops. Despite these favourable conditions, agriculture sector in these regions remains poor and are confined mostly to backyard gardening for sustenance. Therefore, there is an urgent need to promote horticultural crops in these regions in a holistic manner and tap the potential available in the region. Arecanut is an important plantation crop grown in most of the North East region (Acharya and Singh, 2014). Based on crop geometry and rooting pattern of arecanut (Bhat and Leela, 1968), there is a potential scope of introducing cocoa in arecanut plantation. An experiment conducted on cocoa varietal trial at ICAR-Central Plantation Crops Research Institute, Research Centre, Kahikuchi, Guwahati, Assam showed encouraging results. However, due to lack of awareness and transfer of improved technology among the farming community, mono-cropping is normally practiced by the arecanut growers. Cocoa being a semi-shade loving and deep rooted crop, it can be grown as an intercrop in arecanut plantations to increase the income of arecanut farmers.

Training and demonstration are an effective tool for transfer of technology, according to Meenambigai and Sreetharaman (2003), they have asserted that training is the most singular factor affecting individuals' attitude, productivity, improvement and minimization of risks (Gupta *et al.*, 2019; Kumar *et al.*, 2018). So, adequate training is essential for farmers to acquire necessary knowledge and skills in different aspects of farming (Kumar *et al.*, 2018). This is of more important given the new crop like cocoa and unique situation of North East region. Keeping these in view, an attempt was made to assess the performance of training with the help of a structure evaluation sheet. The study was conducted to enlighten the researchers, planner, executives and other stakeholders - NGOs and Government agencies about the usefulness and lacuna in the training and to serve as a model/guidance to the farming community to promote cocoa cultivation in North East region.

MATERIALS AND METHODS

The study was conducted with hundred numbers of farmers from Goalpara, Chirang, Baksa, Kokrajhar, Udalguri and Kamrup (Rural) districts of Assam for three consecutive days both during 2016 and 2017. The training was conducted at ICAR-Central Plantation Crops Research Institute, Research Centre, Kahikuchi, Guwahati, Assam on *Sensitization of cocoa cultivation and processing technology* with slide presentation, lectures and practical demonstration (Fig. 1). The topic covered during the training includes crop improvement, crop production, crop protection and processing technology encompassing of varietal wealth, production of quality planting material, site selection, land preparation, media for potting mixture, sowing cocoa seed, grafting, planting system, training and pruning, fertilizer application, preparation of Bordeaux mixture (1%), Bordeaux paste (10%), diseases and pest management, harvesting, fermentation and drying. Before conducting the training, the socio personal attributes of the farmers *viz.*, age, sex, educational qualification and land holding etc. were collected and tabulated as shown in Table

¹ICAR-Central Plantation Crops Research Institute, Research Centre, Kahikuchi, Guwahati, Kamrup (M), Assam, India

²Krishi Vigyan Kendra, Uttar Banga Krishi Viswavidyalaya, Pundibari, Cooch Behar, West Bengal, India

*Corresponding author email : singhleighbam@gmail.com

3. Evaluation of pre and post training was undertaken by administering a pre tested questionnaire encompassing on various topics covered in the training. Altogether twenty-five questions were given to the participants covering various topic taught in the training. The data were statistically analyzed using SPSS software.



Fig. 1: Practical demonstration of cocoa cultivation to the participant

RESULTS AND DISCUSSION

Ranking of farmers perception on mode of training on cocoa is presented in Table 1. It was observed that main effect of the training on the majority of the attended farmers perception was on how the training impacted on their economic activity (74) followed by risk bearing ability towards cocoa cultivation till the benefit starts (72) and the importance of training which will help them to improve their scientific and technical knowledge towards cocoa cultivation (65).

This ranking study helps to gather information required by the farmers. Here interestingly, the respondent first choice is the economic activity of cocoa cultivation. This is expected because most of the farmers in this region are poor and adoption of new crop like cocoa will have interest only when they can generate additional income. The most optimum training period and mode of effective training were mentions in the least in ranking because most of the farmers are satisfied

Table 1: Ranking of farmers perception on mode of training on cocoa (n=100)

Statement	Ranking			
	I	II	III	IV
Which topic was the most interesting? i. Crop improvement ii. Production iii. Plant protection iv. Processing	42	26	20	12
Whatis your opinion is the most optimum training period? i. 1 day ii. 3 days iii. 5 days iv. 7 days	25	53	21	1
Whats your opinion is the mode of effective training? i. Lecture only ii. Lecture plus projection iii. Lecture plus literature/leaflets iv. Multimedia	41	33	25	1
Please furnish your opinion about the degree of motivation in cocoa cultivation: i. Very strongly ii. Strongly iii. Somewhat iv. Little	55	30	13	2
Please state your degree of possible involvement in future course on cocoa: i. Take lead ii. Be an active member iii. Will be decent follower iv. Can't decide	51	36	7	6
What is the main reason for your interest in cocoa cultivation? i. Economic benefit ii. Compatibility with local ecological situation iii. Do not require extra land iv. All	52	31	11	6
Will you recommend cocoa cultivation to your? i. Sons/daughter ii. Other relatives/friends iii. Neighbor iv. Other villagers	46	28	16	10
Please state the risk you are willing to take in cocoa cultivation: i. Continue till benefit starts ii. Discontinue after 2 years if losses incurred iii. Discontinue after 3 years if losses incurred iv. Discontinue any time if losses incurred	72	16	8	4
The impact of training will be a part of your: i. Economic activity ii. Social activity iii. Cultural activity iv. All	74	11	9	6
In what way the training will help you? i. Improve scientific/technical knowledge ii. Strengthen economic position	65	20	9	6

with the training period and learning activities with presentation and practical demonstration.

Performance of pre- and post-evaluation training on cocoa

Table 2 shows the pre and post training evaluation performance of the participants. The evaluation was done mainly to study the knowledge and skill acquired before and after the training and also to know the effectiveness of the training. In the present study, during pre-evaluation, the average marks of the participants were only 9.37. Most of the participants were found to have poor knowledge of cocoa cultivation and processing aspects. However, after training, the average marks of the participants were found to be 14.53. The pre and post evaluation study also showed that 95% of the participants have gained knowledge after imparting training. Out of 100 participants, 27 trainees acquired knowledge gained up to 30-52%, 62 trainees up to 10-20% and 11 trainees below 10%. An overall knowledge gained of up to 64.48% was observed in the training.

The effectiveness of training in increasing knowledge level of participants has been reported by *Tesfaye et al., (2010); Godase et al., (2011); Noor and Dola (2011); Amar et al., (2016); Sharma et al., (2017)* and *Bharthvajan and Kavitha (2019)*. The study

Table 2: Performance of pre and post training evaluation on cocoa

Name of farmers and district	Pre-evaluation	Post-evaluation	Knowledge gained	Percentage of knowledge gained
Ashok Kumar Rabha, Kamrup	7	13	6	24
Raghu Nath Rabha, Kamrup	3	11	8	32
Jwngdao Basumatary, Goalpara	5	14	9	36
Aushman Marak, Goalpara	8	15	7	28
Sengmiller Marak, Goalpara	9	17	8	32
Tapan Basumatary, Goalpara	6	12	6	24
Khungkhra Kachary, Goalpara	3	8	5	20
Birjoy Brahma, Chirang	5	13	8	32
Tebenson Marak, Goalpara	5	9	4	16
Raju Basumatary, Kokrajhar	12	16	4	16
Mohikanta Rabha, Goalpara	12	16	4	16
Kapil Dev Brahma, Goalpara	13	13	0	0
Prasanta Brahma, Goalpara	9	18	9	40
Ritu Daimari, Udalguri	10	14	4	16
Ramesh C Brahma, Kokrajhar	9	12	3	12
Dharmendra B Patgiri, Goalpara	8	12	4	16
Michael Ch. Momin, Goalpara	5	12	7	28
Guniram Narzary, Kokrajhar	7	9	2	8
Mandal Wary, Kokrajhar	10	11	1	4
Dhruwojyoti B, Goalpara	8	11	3	12
Kripa Charya, Goalpara	5	10	5	20
Bishal Patgiri, Goalpara	7	11	4	16
Ambrit Pradhan, Kokrajhar	12	18	6	24
Monsing Brahma, Udalguri	8	11	3	12
Bipul Brahma, Kokrajhar	8	12	4	16
Pabindra Rabha, Goalpara	12	19	7	28
Dhananjoy Rabha, Goalpara	5	11	6	24

Dipankar Rabha, Goalpara	5	14	9	36
Monoranjan, Goalpara	7	9	2	8
Rajabhumsa Brahma, Udalguri	8	11	3	12
David Basumatary, Udalguri	8	15	7	28
Lachit Chandra Rabha, Chirang	8	11	3	12
Krishna Kanta Rabha, Chirang	10	14	4	16
Prahlad Rabha, Chirang	8	16	8	32
Brihat Rabha, Goalpara	6	10	4	16
Bharat Rabha, Goalpara	12	15	3	12
Tarun Chandra Rabha, Goalpara	9	17	8	32
Mana Murmu, Kokrajhar	14	16	2	8
Nandalal Bhowmik, Baksa	12	17	5	20
Kamakhya Baglari, Udalguri	11	15	4	16
Gopinath Rabha, Goalpara	11	14	3	12
Jiban Brahma, Chirang	8	13	5	20
Birbal Rabha, Chirang	7	15	8	32
Maheswar Rabha, Chirang	14	16	2	8
Chittaranjan Marak, Goalpara	8	12	4	16
Augustine Marak, Goalpara	11	18	7	28
Cheppinson S. Sangma, Goalpara	9	14	5	20
Bishorjit Das, Kamrup	6	9	3	12
Raju Brahma, Chirang	14	16	2	8
Rohilar Sangma, Goalpara	10	13	3	12
Megal B. Marak, Goalpara	7	14	7	28
Tilsing D. Sangma, Goaplara	11	13	2	8
Simon Sangma, Goalpara	9	9	0	0
Dannyshon Ch. Marak, Goalpara	12	13	1	4
Sengban, A. Sangma, Goalpara	8	11	3	12
Suren Boro, Udalguri	13	17	4	16
Guneshwar Das, Kamrup	6	11	5	20
Manoj Daimari, Chirang	7	9	2	8
Marthin A. Sangma, Goalpara	4	12	8	32
Dwimusa Basumatary, Kokrajhar	8	13	5	20
Indrajit Biswas, Baksa	13	16	3	12
Kuhi Ram Das, Kamrup	5	10	5	20
Karna Rabha, Kamrup	15	21	6	24
Mwkthang Brahma, Udalguri	11	20	9	36
Koppin T. Sangma, Goalpara	17	24	7	28
Satmang Ch Marak, Goalpara	11	13	2	8
Willipson A. Sangma, Goalpara	6	16	10	40
Kapil Basumatary, Udalguri	17	23	6	24
Nikhil Biswas, Baksa	8	19	11	44
Kameswar Deka, Udalguri	11	18	7	28
Dipankar Rabha, Kamrup	12	13	1	4
Luk Hasdak, Kokrajhar	10	17	7	28
Bed Bahadur Chetry, Baksa	15	15	0	0
Pinson R. Marak, Goalpara	14	21	7	28
Deepkumar Rabha, Kamrup	10	16	6	24
Simal Basumatary, Udalguri	9	15	6	24
Manyeng Marak, Goalpara	13	16	3	12
Rikseng Sangma, Goalpara	8	14	6	24
Swndwn Basumatary, Kokrajhar	9	22	13	52
Ajit Biswas, Baksa	15	20	5	20
Domnik Tirkey, Kokrajhar	4	13	9	36
Alok Das, Kamrup	12	16	4	16
Dehiram Saikia, Udalguri	12	12	0	0
Ajl Sangma, Goalpara	15	20	5	20
Phillip A. Sangma, Goalpara	11	14	3	12
Pranab Rabha, Kamrup	9	14	5	20

Ephrain Soren, Kokrajhar	8	11	3	12
Sagan Sangma, Goalpara	12	19	7	28
Gopin Tudu, Kokrajhar	9	16	7	28
Jyoti Prasad Rabha, Udalguri	12	12	0	0
Jaduram Basumatary, Goalpara	16	19	3	12
Jatindra Biswas, Baksa	1	13	12	48
Amal Namsari, Baksa	17	20	3	12
Raman Brahma, Udalguri	12	22	10	40
Ajay Biswas, Baksa	6	15	9	36
Tanik Sahariah, Udalguri	8	18	10	40
Nerswn Basumatary, Udalguri	4	12	8	32
Amit Baglary, Udalguri	7	16	9	36
Sanjit Lakra, Kokrajhar	9	14	5	20
Diganta Basumatary, Udalguri	12	18	6	24

was also in agreement with those reported by Ganesh *et al.* (2016). Participants scoring above 20 marks out of 25 marks after the training can serve as a master farmer in further disseminating the technology. The training programme also serves as a platform for promoting cocoa cultivation in North East India.

Distribution of socio-personal attributes of the participants

From Table 3, distribution pattern of the participants has shown that most of the trainees belong to scheduled tribe community between age group of 31-50 years. The majority of the participants are small farmers with land holding less than one hectare (70). It is also seen that most of the participants are found to be educated where majority of the participants highest qualification was class XII (30) followed by class X (28). Few of the participants were also found to possess graduation level (19). With regards to farming experience, maximum number of the participants (34) had farming experience of more than fifteen years indicating that they have been involving in farming for a long period. Regarding training experience on horticultural crops, 76 numbers of the participants have not attended any

Table 3: Distribution pattern of socio-personal attributes of the participants

Parameters	Categorization of participants
Age	Up to 30 = 43, 31-50 = 46, above 51= 11
Community	general = 1, SC = 7, ST = 80, OBC = 12
Total Land Holding	Up to 1 ha = 70, above 1 to 2 ha = 12, above 2 to 5 ha = 12, above 5 ha =16
Cultivated land	Up to 1 ha = 60, above 1 to 2 ha = 24, above 2 to 5 ha = 11, above 5 ha=5
Occupation	only primary = 98, Secondary = 2
Cocoa grown	yes = nil, no = 100
Educational qualification	below class X = 28, Class X and above = 23, Class XII = 30, graduate = 19, PG = nil
Farming experience	Up to 5 years = 20, 6-10 years = 27, 11-15 years = 19, above 15 years =34
Training on Horticultural crops	yes = 24, no = 76
Contact with Extension agencies	Yes 21, no = 79

training related to horticultural crops which need to be empowered with the changing scenario of Indian horticulture. In case of contact with extension agencies, participants were found to have poor contact with the extension personnel who might be due to lack of awareness among the farming community. Cocoa being a new crop for these regions, more awareness needs to be generated through various extension activities.

Correlation study of knowledge and skill of trainees

The correlation coefficient of different independent variables with respect to the knowledge and skill of trainees are presented in Table 4. It is seen that the variable education qualification and mass media exposure had positive and significant correlation with the knowledge of the respondents. Variables age and community had negative correlation with the knowledge of the respondents. Other variables like land type, land size, occupation, cocoa grown, farming experience, training on horticultural crops and contact with extension agencies did not correlate concerning the knowledge of the respondent. Probably cocoa being a new crop of North East region, less information from other source might be the reason for poor transmission.

Table 4: Correlation coefficient of independent variables concerning the knowledge and skill of trainees

Variables	r
Age	-0.292**
Community	-0.296**
Land type	0.065
Land size	0.100
Occupation	0.190
Cocoa grown	0.191
Education qualification	0.362**
Farming experience	-0.187
Previous training on horticultural crops	0.097
Contact with Extension agencies	0.152
Mass media exposure	0.259*
Information sources	0.139

CONCLUSION

From the above study, most of the respondents have shown keen interest in the training programme. Majority of the respondent was found to possess positive impact in the knowledge and skill development on scientific method of cocoa cultivation and processing technique as seen from the pre and post training evaluation. The study also showed that education qualification and mass media exposure were found to help enhance knowledge and skill of the trainees. The type of training programme will help farmers, NGOs, KVKs, Policy makers and other stakeholders to disseminate the technology and promote cocoa cultivation in North East region.

ACKNOWLEDGMENT

The authors are thankful to the Director, Directorate of Cashew nut and Cocoa Development, Kochi, Kerala for providing financial support to conduct training programme on cocoa for promoting cocoa cultivation in North East region of India.

REFERENCES

- Acharya GC and Singh LS. 2014. Arecanut based cropping system: a sustainable approach for North Eastern Region (NEH). *Indian J. of Arecanut, Spices and Medicinal Plants* **16**: 23-26.
- Amar M, Tayade and Umesh R. C. 2016. Impact of training on knowledge level of farmers about use of bio-pesticide and its mass multiplication on agriculture wastage. *Agric. Sci. Digest* **36**: 212-215.
- Bharthvajan R and Kavitha SF. 2019. A research on effectiveness of training and development in its solution. *International J. of Innovative Technology and Exploring Engineering* **8**: 3571-3575.
- Bhat KS and Leela M. 1968. Cultural requirements of arecanut. *Indian Fmg.* **18**: 8-9.
- Ganesh D, Suraj S and Sanjoy K. 2016. Adoption percentage of azolla production-a post training evaluation. *Asian J. of Agril. Ext, Econ. and Sociology* **11**: 1-5
- Godase SS, Gaikwad SP and Shirke VS. 2011. Knowledge and adoption of bio-control measures for cotton by the farmers. *Asian J. of Ext. Edu.* **29**: 128-131.
- Gupta MJ, Pitre AM, Pandurang SC, Vanjar SS. 2019. Impact analysis of Mechanization program for tribal paddy farmers of Goa. *Journal of AgriSearch* **6**(1):55-59.
- Kumar A, Singh AK, Kumar Ujjwal, Singh KM, Singh RKP, Bharati RC. 2018. training needs assessment of farmers of Bihar: a zone wise analysis. *Journal of AgriSearch* **5**(2):130-133.
- Meenambigai J and Sreetharaman RK. 2003. Training needs of extension personnel in communication and transfer of technology. *Agriculture Newsletter* **48**:19.
- Noor KBM and Dola K. 2011. Investigating training impact on farmers, perception and performance. *International J. of Humanities and Social Science* **1**:145-152.
- Sharma VK, Amrith V, Sharma PK, Ajrawat B, Jamwal A, Sharma N, Mahajan V and Gupta S. 2017. Impact assessment of training on farmers perception, performance and entrepreneurship development. *Maharashtra J. of Agril. Economics* **20**: 154-156.
- Tesfaye T, Karippai RS and Tesfaye T. 2010. Farmers training effectiveness in terms of changes in knowledge and attitude: the case of Holeta, Melkassa and Debre jeit Agriculture research centres, Ethiopia. *Journal of Agril. Extension and Rural Development* **2**: 89-96.

Citation:

Singh LS, Uchoi A, Rizal SK, Das A and Das G. 2020. Evaluation of training with reference to socio personal attributes affecting knowledge and skills of cocoa farmers of North East region. *Journal of AgriSearch* **7**(3):163-167