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Training Needs of Rythu Mitra Group Member in Bt. Cotton Cultivation

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ABSTRACT

Training is the systematic development of knowledge, skills and attitudes required by an individual to perform adequately for a particular task. With a view to measure the training needs of Rythu Mitra Group members in Bt. Cotton cultivation, the study was conducted in Warangal and Guntur districts of Andhra Pradesh state. Findings revealed that majority of the Rythu Mitra Group members expressed their training needs on recognition of crop damage caused by specific insect pests, manures and fertilizers, soil management, integrated pest management, accurate preparation of sprays and knowledge of insecticide chemical groups and identification of beneficial insects.

Cotton, the 'White gold' occupies an enviable place amongst commercial crop of our country. The economic loss in the cotton through pests is serious concern. The bollworm complex cause significant yield losses, further, the harmful effects of insecticides leading to environmental pollution and more specifically increase the cost of cultivation. In this context the application of biotechnology was seen as a solution and thus the efforts have resulted in developing of 81. Cotton is a genetically engineered crop hence is referred transgenic cotton. This Bt cotton contains a toxic protein - inducing gene from soil bore bacterium bacillus thuringiensis, thus enabling the crop to produce toxin resulting in decrease bollworms infestation reduced application of insecticides, increase the productivity, quality of 'kapas' and provide peace to the framers (Rummel et.al. 1994, Flint et.al. 1995, Bacheler and Mott, 1996). Adoption of Bt. Cotton is increasing since its introduction in India and Andhra Pradesh. It indicates that, farmers are perceived the advantages of Bt. Cotton technology however; the performance of this technology is not uniform. Given the scale of the cotton industry in India and the current global debates over advantages/ disadvantages of GM technology, it is not surprising that there has been considerable and vigorous debate regarding the agronomic and economic performance of Bt. Cotton in India with various reports claiming both successes and failures. The reason of poor performance of the Bt. Cotton could be lack of knowledge and skill about the technology among farmers. Looking to these facts, the present study was carried out with the following objectives,

1. To ascertain the training needs of Rythu Mitra Group members in Bt. Cotton cultivation.
2. To find out the relationship between socio-personal and socio-psychological characteristics or the Rythu Mitra Group members with their training need in Bt. Cotton cultivation.

METHODOLOGY

One Rythu Mitra Croup from each of the 16 villages was selected through random sampling from four mandals of two purposively selected districts or Andhra Pradesh. From each or the selected RMG, 10 members were chosen by simple random method with total sample being 160 respondents. The training needs of the RMG members were measured with help of 3 point rating scale or having a felt need (Most needed-3, needed-2 and Least needed-1) developed especially in this study. The frequencies or each response categories were round out and respective frequencies were multiplied by the score allotted to it, then they were added and divided by tile number or the respondents which gave the mean score for different training needs.

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The mean scores and Garrets rank values were used to rank them in order of need for training as perceived by RMG members for all areas of Bt. Cotton cultivation.

RESULTS AND DISCUSSION

Training needs of RMG members in Bt. cotton cultivation

A cursory glance of the Table 1, reveals that recognition of crop damage caused by specific insect pests was the most preferred area of training with garrets rank value of 10.03 (1st rank) and also more than 95.00 per cent of the respondents needed training on this aspect as "most needed" and "needed" combined. The other preferred areas training need areas were integrated pest management with garrets rank value of 9.02 (4th rank), accurate preparation of sprays and knowledge of insecticide chemical groups (5th rank), identification of beneficial insects (6th rank) and accurate insect pest scouting procedures (9th rank).The reasons for ranking this areas on top by the respondents may probable be Bt. Cotton is first genetically modified technology have recently introduced for farmers cultivation hence farmers were unaware of cultivation practices of this crop. The respondents perceived the training needs in plant protection measures due to significant damage reported by the attack of minor pests like sucking pests, mealy bugs and spodoptera and diseases like grey mildew, reddening of leaves, wilting and bacterial leaf blight. They were also generally not aware of the control measures. Insect scouting is one or the most important method to ascertain the population of the insect pests and their economic threshold level (ETL) that facilitate the farmers to take the spray decision on Bt. Cotton and able to reduce the pesticides sprays.

Skills involved in Bt. Cotton cultivation. The findings of the present study were consistent with the findings of Rajput et al (2007).

Table 1. Distribution of RMG members according to their perceived training needs in Bt. Cotton cultivation. (N=160)

Area	Most needed		Needed		Least needed		Mean	Garrets rank	Rank value
	f	%	f	%	f	%			
Soil management	80	50.00	73	45.60	7	4.40	2.46	9.32	3.00
Selection of variety	6	3.80	95	59.40	59	36.90	1.67	5.57	18.00
Seed rate	5	3.10	71	44.40	84	52.50	1.51	4.79	21.00
Seed treatment	21	13.10	92	57.50	47	29.40	1.84	6.37	14.00
Spacing	12	7.50	62	38.80	86	53.80	1.54	4.94	20.00
Inter cropping	58	36.30	79	49.40	23	14.40	2.22	8.18	7.00
Thinning and gap filling	25	15.60	58	36.30	77	48.10	1.68	5.60	17.00
Manures and fertilizer	95	59.40	59	36.90	6	3.80	2.56	9.79	2.00
Irrigation and drainage	42	26.30	99	61.90	19	11.90	2.14	7.83	8.00
Weed management	28	17.50	101	63.10	31	19.40	1.98	7.05	12.00
Life cycle and behaviour of each cotton insect pest	35	21.90	65	40.60	60	37.50	1.84	6.40	1.00
Recognition of crop damage caused by specific insect pests	104	65.00	49	30.60	7	4.40	2.61	10.03	9.00
Accurate insect pest scouting procedures	41	25.60	99	61.90	20	12.50	2.13	7.77	5.00

Accurate preparation of sprays and knowledge of insecticide chemical groups	58	36.30	93	58.10	9	5.60	2.31	8.60	10.00
Hazards and cumulative effects of insecticides	39	24.40	97	60.60	24	15.00	2.09	7.59	6.00
Identification of beneficial insects	58	36.30	85	53.10	17	10.60	2.26	8.36	11.00
Correct usage, cleaning and maintenance of spraying	28	17.50	104	65.00	28	17.50	2.00	7.14	4.00
Integrated pest management	75	46.90	73	45.60	12	7.50	2.39	9.02	15.00
Harvesting and post harvesting technology	12	7.50	106	66.30	42	26.30	1.81	6.25	16.00
Marketing & storage	10	6.30	97	60.60	53	33.10	1.73	5.86	19.00
Refugee crop	31	19.40	37	23.10	92	57.50	1.62	5.33	

Table 2. correlation of the characteristics of RMG members with training needs in Bt. Cotton cultivation. (N==160)

Sr. No.	Independent variables	r value
1.	Age	-.226**
2.	Educational status	.468**
3.	Family type	-.011
4.	Family size	-.085
5.	Caste	-.048
6.	Occupational status	.280**
7.	Annual income	.134
8.	Social participation	.203**
9.	Extension contact	.441**
10.	Extension participation	.517**
11.	Mass media participation	.504**
12.	Management orientation	.471**
13.	Risk orientation	.376**
14.	Scientific orientation	.371**
15.	Achievement motivation	.087
16.	Credit orientation	.381**
17.	Attitude towards collectivism	.495**
18.	Self reliance	.311*
19.	Locus of control	-.244**

*correlation is significant at the 0.05 level (2-tailed)
**correlation is significant at the 0.01 level (2-tailed)

The training need increases with the increase in social participation, extension contact, extension participation und mass media participation due to the fact that as the participation in social organization extension activities and mass media increases the exposure to mock:1 and lip to date technologies are more and there by awareness and training need in the Bt. Cotton cultivation is more.

As management orientation, risk orientation, scientific orientation, credit orientation, attitude towards collectivism, self reliance and locus of control increases, the training need also increases. These variables indicate direction or earning more by utilizing available resources like credit efficiently through collective action. The necessity of economic prosperity motivates farmers for acquiring various skills in modern practices of agriculture.

This finding was supported by the earlier study of Rajput et al. (2007) (Table 2).

Multiple linear regression analysis of the characteristics of RMG members with training needs in Bt. Cotton. The method or multiple linear regression analysis was used for predicting the relative contribution of independent variables to influence the dependent variable, i.e. training need. All the selected socio-economic and socio-psychological variables were subjected to multiple linear regression analysis.

The findings in the table 3 revealed that the computed F value of 8.271 was highly significant at 0.01 level of probability indicating that all the variables together contributed significantly to variation of training needs of RMG members in Bt. cotton cultivation. The coefficient of determination (R^2) revealed that 44.40 per cent of the variation in the training need was explained by the variables.

Out of all the selected variable teh 't' values of two variables were found to be significant. These variables were age (t=2.995) and attitude towards collectivism

Table 3. Multiple linear regression analysis of the characteristics of RMG members with training needs in Bt. Cotton (N=160)

Sr. No.	Characteristics	Regression coefficient	S.E. of partial	Value
1.	Age	-0.194**	0.051	-2.995
2.	Educational status	-0.010	0.455	-0.101
3.	Occupational status	0.086	0.693	1.241
4.	Social participation	-0.019	0.491	-0.270
5.	Extension contact	0.004	0.200	0.040
6.	Extension participation	0.173	0.317	1.612
7.	Mass media participation	0.150	0.103	1.460
8.	Management orientation	0.085	0.106	0.967
9.	Risk orientation	0.099	0.158	1.325
10.	Scientific orientation	-0.030	0.155	-0.363
11.	Credit orientation	0.093	0.608	1.250
12.	Attitude towards collectivism	0.153*	0.200	1.784
13.	Self reliance	0.079	0.677	1.100
14.	Locus of control	-0.67	0.561	-0.939

*significant at the 0.05 level of probability (2-tailed) **significant at the 0.01 level of probability (2-tailed)

R = 0.666 R^2 = 0.444 $F_{14,145}$ = 8.271**

(t=1.784) the reason might be RMG members who were young in age and having better towards collective action, were action, were more active and better motivated to learn new skills to improve living conditions. Step down regression analysis of the characteristics of RMG members with training needs in Bt. cotton

The step down regression analysis was used to get the joint influence of the best sub set of predictors of training need though the multiple regression analysis gave the influence of all the selected independent variables jointly on training need it was felt better to have a simpler model in which there would be lesser number of predictors in explaining the variation.

Table 4. Step-down regression analysis of the characteristics of RMG members with training needs in Bt. cotton (N=60)

Sr. No.	Characteristics	Regression coefficient	S.E. Partial regression coefficient	t value
1.	Age	-0.213**	0.049	-3.418
2.	Extension participation	0.243**	0.270	2.650
3.	Mass media participation	0.199*	0.094	2.130
4.	Attitude towards collectivism	0.262**	0.173	3.544

* Significant at 0.05 level or probability (2-tailed). ** Significant at 0.01 level of probability (2-tailed).

R = 0.635 **R^2 = 0.404** **F4, 155 = 26.225****

The step down regression analysis was carried out after eliminating the variables with high probability values. The resulted presented in Table 4, revealed that four variables, age, extension participation, mass media participation and attitude towards collectivism contributed significantly to the variation in training need (F = 26.225). The coefficient of determination (R^2) was found to be 0.404 which indicated that 40.40 per cent of variation in training need could be explained by these four variables.

In this analysis, the 't' values of the variables age (t = -3.418), extension participation (t = 2.650), mass media participation (t = 2.130) attitude towards collectivism (t = 3.544) were found to be significant. This justified because all these four variables showed highly positive and significant relationship with training need of RMG members in Bt. Cotton cultivation (Table 4).

CONCLUSION

It can be concluded from the investigation that majority of the RMG members had expressed their need for training in Bt. Cotton cultivation. It is also concluded that majority of 131. Cotton farmers gave highest emphasis of training needs on recognition of crop damage caused by specific insect pests, manures and fertilizers and soil management. They also require training on integrated pest management, accurate preparation of sprays and knowledge of insecticide chemical groups and identification of beneficial insects. So while preparing farmers training programmes for the area or training required by the RMG members should be given due importance to support them to take decision regarding adoption of Bt. Cotton technology. Further, the transfer or technology agents should concentrate on major areas, identified by this study for deciding the content or the message to he prepared for the RMG members.

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