Research Paper

Correlation of profile of farmers with adoption of bio-control measures for cotton

S.S. GODASE, S.P. GAIKWAD, B.N. TAMBE AND A.S. DHANE

See end of the article for authors' affiliations

Correspondence to :
S.P. GAIKWAD
Agricultural Extension Section, College of Agriculture, Baramati, PUNE (M.S.) INDIA

ABSTRACT
The study was undertaken of 150 cotton growers from 10 villages of Narkhed Tahsil in Nagpur district of Maharashtra state. The main object of study was to find adoption level of bio-control measures and profile of cotton growers. In respect of overall adoption level it was found that 65.33 per cent cotton growers were in medium category of adoption. As per their profile it was observed that cotton grower those were old aged, low educated having low land, low socio-economic status, low extension contact and low change proneness had low level of adoption of bio-control measures for cotton while those have medium economic motivation, medium annual income, medium scientific orientation and knowledge had medium level of adoption.

Key words : Adoption, Bio-control measures, Cotton growers, Low category, Medium category

INTRODUCTION

India today is the third largest producer of cotton next to China and U.S.A in the world. Our production level of this crop has satisfactorily increased by five folds since independence yet the current yield tends to linger on lower average which has been a matter of concern and a national challenge. Total area under cotton in India is 81.22 lakh hectors with production of 146 lakh bales and productivity is 306 lint kg per hectors in year 2000-2001(Anonymous, 2000)

Cotton is important cash crops in Vidharbha region of Maharashtra. Cotton production per unit area is comparatively low in this area. The lower yields are attributed due to infestation of the crop by insect pests and diseases and non-adoption of plant protection measures for control of insect pests and diseases by cotton growers. Biological control is one of the important tool in pest management. This is the area which requires much more attention. The judicious and timely use of bio control practices is of prime importance to minimize the use of pesticides and control of insect. Hence, present study was undertaken with the objectives: to study socio-economic, psychological and communication characteristics of cotton growers and to find adoption level of bio-control measures

by cotton growers.

MATERIALS AND METHODS

From Table 1, it is observed that majority of respondents (65.33%) were in medium category in respect to their adoption. This was followed by low category which comprised 20.67 Per cent respondents, while 14.00 per cent of respondents were found in high category. It could thus be inferred that the majority of the respondents were in medium category of adoption of bio-control measures for cotton. Similar findings reported by Bodake *et. al.* (2009).

RESULTS AND DISCUSSION

From Table 1, it is observed that majority of respondents (65.33%) were in medium category in respect to their adoption. This was followed by low category which comprised 20.67 Per cent respondents, while 14.00 per cent of respondents were found in high category. It could thus be inferred that the majority of the respondents were in medium category of adoption of bio-control measures for cotton. Similar findings were reported by Bodake *et al.* (2009).

Table 1 : Adoption level of bio-control measures by cotton growers

Category	No. of farmers (150)	Percentage(100)
Low	31	20.67
Medium	98	65.33
High	21	14.00
Total	150	100.00

The result presented in Table 2 regarding the adoption level of the respondents, it was observed that 77.19, 75.00 and 67.21 per cent respondents from 31-40 years, up to 30 years and 41-50 years age groups had medium level of adoption, respectively. Also 64.28 per cent respondents from above 51 years age group had low level of adoption of bio-control measure of cotton. Statistical analysis

Table 2 : Distribution of cotton growers according to adoption level of bio-control measures

Characters	Adoption level			
Age	Low	Medium	High	Total
Up to 30	00 (0.00)	03 (75.00)	01 (25.00)	04 (02.66)
31 to 40	00 (0.00)	44 (77.19)	13 (22.80)	57 (38.00)
41 to 50	13 (21.31)	41 (67.21)	07 (11.47)	61 (40.67)
51 and above	18 (64.28)	10 (35.71)	00 (0.00)	28 (18.67)
	r= -0.475 Negatively significant at 0.01 % level of probability			
Education				
Illiterate (00)	15 (100.00)	00 (0.00)	00 (0.00)	15 (10.00)
Primary School(1-4)	12 (85.72)	02 (14.28)	00 (0.00)	14 (09.33)
Middle School (5-7)	03 (13.04)	20 (86.96)	00 (0.00)	23 (15.33)
High School (8-10)	01 (02.27)	40 (90.90)	03 (06.83)	44 (29.34)
College and above (11 and above)	00 (0.00)	36 (66.66)	18 (33.34)	54 (36.00)
	r= 0.712 Significant at 0.01% level of probability			
Land holding				
Low (0-3 ha)	08 (80.00)	02 (20.00)	00 (0.00)	10 (06.66)
Medium (4-9 ha)	23 (18.54)	86 (69.37)	15 (12.09)	124 (82.66)
High (10 & above)	00 (0.00)	10 (62.50)	06 (37.50)	16 (10.66)
r= 0.537 Significant at 0.01% level of probability				
Annual income				
Up to 50000	23 (52.27)	21 (47.73)	00 (0.00)	44 (29.33)
50001 to 100000	08 (09.75)	62 (75.62)	12 (14.63)	82 (54.66)
100001 and above	00 (0.00)	15 (62.50)	09 (37.50)	24 (16.00)
	r= 0.561 Significant at 0.01% level of probability			
Socio- economic status				
Low (0-15)	25 (89.28)	03 (10.71)	00 (0.00)	28 (18.66)
Medium (16-28)	06 (05.88)	83 (81.38)	13 (12.74)	102 (68.00)
High (29 and above)	00 (0.00)	12 (60.00)	08 (40.00)	20 (13.34)
	r= 0.64 Significant at 0.01% level of probability			
Extension contact				
Low (0-1)	02 (100.00)	00 (0.00)	00 (0.00)	02 (01.33)
Medium (2-6)	29 (23.20)	86 (68.80)	10 (08.00)	125 (83.33)
High (7 and above)	00 (0.00)	12 (52.18)	11 (47.82)	23 (15.34)
	r= 0.705 Significant at 0.01% level of probability			
Change proneness				
Low (0-1)	27 (49.09)	27 (49.09)	01 (01.82)	55 (36.66)
Medium (2)	04 (05.27)	60 (78.95)	12 (15.78)	76 (50.68)
High (3 and above)	00 (0.00)	11 (57.89)	08 (42.11)	19 (12.66)
	r= 0.559 Significant at 0.01% level of probability			

Contd… Table 2

Table 2 contd...

Economic Motivation				
Low (0-20)	09 (21.43)	25 (59.53)	08 (19.04)	42 (28.00)
Medium (21-24)	17 (22.66)	51 (68.00)	07 (09.34)	75 (50.00)
High (25 and above)	05 (15.16)	22 (66.66)	06 (18.18)	33 (22.00)
		r= 0.41 Significant at 0.01% level of probability		
Scientific orientation				
Low (0-21)	06 (26.08)	14 (68.86)	03 (13.06)	23 (15.33)
Medium (22-26)	22 (21.35)	71 (68.93)	10 (09.72)	103 (68.67)
High (27 and above)	03 (12.50)	13 (54.17)	08 (33.33)	24 (16.00)
		r= 0.21 Significant at 0.01% level of probability		
Knowledge				
Low (0-2)	07 (24.14)	20 (68.96)	02 (06.90)	29 (19.33)
Medium (3-40)	18 (20.45)	64 (72.73)	06 (06.89)	88 (58.67)
High (41 and above)	06 (18.18)	14 (42.42)	13 (39.39)	33 (22.00)
		r= 0.547 Significant at 0.01% level of probability		

indicated negatively significant relationship between age and adoption of bio-control measures. Similar findings were reported by Ankulwar *et al.*(2001). In case of education, 100 and 85.72 per cent farmers illiterate and educated up to primary school had low level of adoption, respectively. While 90.90, 86.96 and 66.66 per cent farmers educated up to high school, middle school and college level had medium level of adoption about bio-control measures for cotton, respectively. Statistical analysis indicated significant relationship between education and adoption of bio-control measures. Dhule (2000) observed that with increase informal education of the respondents the level of adoption also increases.

As regards land holding, 80.00 per cent farmers possessing low land had low level of adoption, while 69.37 and 62.50 per cent farmers possessing medium and high land had medium level of adoption, respectively. There was significant relationship between land holding and adoption of bio-control measures. Similar findings were reported by Dhule (2000).

In case of annual income, 75.62 and 62.50 per cent farmers in the 50001 to 100000 and 100001 and above annual income group had medium level of adoption, respectively. While 52.27 per cent farmers in the up to 50000 annual income group had low adoption of biological control measures. Statistically there was significant relationship between annual income and adoption of bio-control measures. Similar findings were reported by Dhule (2000) and Bodake *et al.* (2009).

Regarding socio economic status, 89.28 per cent farmers from low socio economic status group had low adoption level, while 81.38 and 60.00 per cent farmers from medium and high socio-economic status group had medium level of adoption of bio-control measure for cotton, respectively. Statistically there was significant relationship between socio-economic status and adoption of bio-control measures for cotton.

Regarding extension contact of cotton grower, it was observed that 100 per cent farmers having low extension contact had low level of adoption, while 68.80 and 52.18 per cent farmers having medium and high extension contact had medium level of adoption, respectively. Statistically significant relationship was found between extension contact and adoption of farmers. Similar findings were reported by Dhule (2000) and Bodake *et al.* (2009)

In case of change proneness, 78.95 and 57.89 per cent farmers from medium and high category of change proneness had medium level of adoption, respectively. Also 49.09 per cent farmers form low category had low and medium level of adoption. Coefficient of co-relation analysis indicated significant relationship between change proneness and adoption of farmers. Similar findings were reported by Dhule (2000) and Metkari (2001).

About economic motivation, it was observed that 68.00, 66.66 and 59.53 per cent farmers in the medium, high and low category of economic motivation had medium adoption level, respectively. Statistically there was significant relationship between economic motivation and adoption.

In case of scientific orientation, 68.93, 68.86 and 54.17 per cent farmers in medium, low and high category of scientific orientation had medium level of adoption, respectively. Statistically there was significant relationship between scientific orientation and adoption of farmers regarding bio-control measures for cotton.

Regarding knowledge, it was observed that 72.73,

68.96 and 42.42 per cent farmers in the medium, low and high category of knowledge had medium adoption level adoption of bio-control measures, respectively.

Conclusion:

It can be concluded that old, illiterate and low land holding cotton growers have low level of adoption of bio-control measures and hence, various training programmes should be implemented to increase the adoption level of bio-control measures in old, illiterate and low land holding cotton growers. It is also necessary to make people aware regarding different subsidiary enterprises to increase the annual income, socio economic status and economic motivation of the people. It is also concluded that farmers from low category of extension contact, change proneness, scientific orientation and knowledge had low level of adoption. Hence, various extension programmes, field visits and training should be implemented for popularizing the bio-control measures for cotton among the farmers.

Authors' affiliations:
S.S. GODASE, Krishi Vigyan Kendra, Baramati, PUNE (M.S.) INDIA
B.N. TAMBE, Department of Soil Science and Agricultural Chemistry, College of Agriculture, Baramati, PUNE (M.S.) INDIA
A.S. DHANE, Department of Entomology, College of Agriculture, PUNE (M.S.) INDIA

LITERATURE CITED

Ankulwar, B.N., Jondhale, S.G. and Rangari, P.V. (2001). Extent of adoption of recommended package of practices of sunflower in farm. *Maharashtra J. Extn. Edu.,* **20** : 63-65.

Anonymous (2000). National Cotton Scenario C.I.C.R., Nagpur Annual Report.

Bodake, H.D., Gaikwad, S.P. and Kalantri, L.B.(2009). Study of adoption level of bio-fertilizers by the farmers. *Agric. Update.,* **4** (1&2): 211-213.

Dhule (2000). Adoption of bio-control practices for pest management in cotton by farmer. M.Sc., Thesis. P.G. Institute, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola (M.S.).

Metkari (2001). Awareness and perception about biological pest management measures of cotton. M.Sc., Thesis. P.G. Institute, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola (M.S.).

✶✶✶✶✶✶✶✶✶✶✶✶✶
✶✶✶✶✶✶