



Research Article

## Constraints in adoption biological pest management practices in cotton in Vidarbha region

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**SUMMARY :** The study was carried out Saoner Panchayat Samiti of Nagpur district in Vidarbha region in Maharashtra state because of larger area under cotton cultivation, the total geographical area of Saoner Panchayat Samiti is 62130.74 ha out of this 13392 ha average is under cultivation, ten villages selected through random sampling method. The list of farmers who were growing cotton as a major was prepared with the help of Gramsevek and progressive farmers of respective villages. 150 farmers were selected from each village 15 farmers were selected randomly.

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### BACKGROUND AND OBJECTIVES

India is the third largest producer of cotton (*Gossypium* spp.) next to China and USA in the world. Our production level of this crop has satisfactory increased by five fold since independence yet the current yield tends to linger of lower average which has been a national challenge. Cotton is important cash crop of Vidarbha region. However, cotton production per unit area is comparatively low in this area. The lower yields are attributed to infestation of the crop by insect pests and diseases and non adoption of plant protection measures for control of insect pest and diseases by farmers. Biological control is one of the important tools in pest management. This is the area which requires more attention. The judicious and timely use of biocontrol of insect. It is, therefore, necessary to find out the existing level of knowledge and extent of adoption of biocontrol practices for pest management of cotton and also to identify the constraints faced by the farmers in adoption of biocontrol practices for cotton. It is also essential to identify the constraints face by cotton growers in adoption of biological pests management belonging to different personal situational and

socio-economic categories and the study shall attempt to find out the selected variable with constraints faced by cotton growers in using the biological pest management measures.

### RESOURCES AND METHODS

The study was undertaken in randomly selected villages of Saoner Panchayat Samiti of Nagpur district (M.S.). The list of farmers of selected villages was prepared with the help of Gramsevek and progressive farmers of respective village. The farmers from each village were arranged alphabetically and random sample of 150 farmers were drawn by randomization. This on the basis of random sampling 15 farmers from each village were selected and personally interviewed with the help of specially designed interview schedule. The data were subjected to exploratory statistical analysis.

### OBSERVATIONS AND ANALYSIS

The data related to constraints faced by the respondents in adoption of biological pest management practices are shown in Table 1 and 2. From Table 1 with respect to biological practices

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**Table 1 : Distribution of respondents according to practicewise constraints****(n=150)**

Sr. No.	Constraints	Frequency	Percentage (%)
<b>Preventive measures</b>			
1.	The seed of resistant variety is not available at proper time	109	72.67
2.	Lack of sufficient knowledge for seed treatment with <i>Trichoderma</i>	101	67.33
3.	In comparison market price of resistant variety is costly	109	72.66
<b>Biological control</b>			
1.	Lack of knowledge about natural enemies of insect pest in field	134	89.33
2.	Lack of knowledge about bio-agent of parasites for control particular insect pest	129	86.00
3.	Lack of knowledge about proper stage of control of insect pest	121	80.66
4.	Lack of sufficient knowledge about plant protection measures	113	75.33
5.	Non availability of bio-agent or parasites at proper time	95	63.33
6.	Non availability of timely guidance	91	60.66
7.	Non availability of labour at proper time	87	58.00
8.	High cost of some bio-agent	74	49.33
9.	Non availability of sprayer at proper time	73	48.66
10.	Non availability of sufficient water for spraying	36	30.00
<b>Mechanical control</b>			
1.	Lack of knowledge for use of pheromone trap	86	57.33
2.	Lack of knowledge for killing the spotted bollworm larvae	49	32.66

**Table 2 : Distribution of respondents according to level of constraints****(n=150)**

Sr. No.	Category	Frequency	Percentage (%)
1.	Low	27	18.00
2.	Medium	104	69.33
3.	High	19	12.67

in cotton, it is observed that majority of respondents reported partially constraints, seed of resistant variety is not available at proper time (72.67%), lack of sufficient knowledge for seed treatment with *Trichoderma* (67.33%), in comparison with improved variety market price of resistant variety is costly (72.66%) with respect of biological practices of biological pest management practices in cotton majority of the respondents reported the fully constraints, lack of knowledge about natural enemies of insect pest in field (89.33%), lack of knowledge about bioagent of parasites for control particular insect pest (86.00%), lack of sufficient knowledge about plant protection measures (75.33%), non availability of timely guidance (60.66%), the lack of knowledge about proper stage of control of insect pest (80.66%), non availability of bio-agent or parasites at proper time (63.33%), non availability of labour at proper time (58.00%) high cost of some bio-agent (49.33%), non availability of sprayer at proper time (48.66%), it is interesting that only 30.00 per cent of the respondents have partially constraints about non availability of sufficient water for spraying.

Regarding mechanical practices, fully constraints like of

knowledge for use of pheromone trap (57.33%), lack of knowledge for pressing the cotton shoot for killing the spotted bollworm larvae (32.66%).

From the results presented in Table 2 regarding level of constraint faced by cotton growing in adoption of biological pest management practices it was observed that majority of respondents (69.33%) had medium constraints faced followed by 18.00 per cent respondents occupying in low constraints category. Whereas, 12.67 per cent of respondents were in high constraints category.

Similarly Bandgar (2003) worked on knowledge and adoption of university recommended cotton technology by farmers.

### Conclusion:

It could be concluded that lack of knowledge about natural enemies of insect pest in field, lack of knowledge about bio-agent of parasites for control of particular insect pest, lack of knowledge about proper stage of control of insect pest, non availability bio-agent for parasites at proper stage, lack of knowledge for use of pheromone trap, seed of resistant varieties not available at proper time were the main constraints in adoption of biological pest management practices in cotton crops. Thus, it is concluded that majority of respondents (69.33%) had medium constraints in adoption of biological pest management practices followed by low constraints category (18.00%).

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