

**RESEARCH ARTICLE :**

Adoption of Bt cotton growers about management practices for control of pink bollworm

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SUMMARY : The present study on adoption of Bt. cotton growers about management practices for control of pink bollworm was undertaken in Daryapur and Achalpur taluka of Amravati district. With sample size of the 80 respondents. The data were collected on personal, socio-economic, communicational and psychological characteristics of the Bt. cotton growers, adoption about management practices for control of pink bollworm with the help of pre-structured interview schedule. Finding revealed that majority 65.00 per cent of the respondents belonged to middle age group, high proportion of respondents 31.25 per cent were studied upto high school level, majority of respondent 37.50 per cent had small land holding (1.01 to 02.00 ha), Majority 58.75 per cent respondents were having medium level farming experience, More than half of the respondents 77.50 per cent having annual income between Rs. 70,0001 to Rs. 2,90,000, majority of 60.00 per cent had occupied medium level of social participation, majority of 71.25 per cent of the respondents have medium level of extension contact, majority of the respondent 62.50 per cent had medium level of source of information, majority of the respondent 61.25 per cent of the respondents had medium level of achievement motivation, majority of the 66.25 per cent of the respondents had medium level of training received, majority of the 56.25 per cent found to be in the medium level of risk orientation. in case of adoption of management practices for control of pink bollworm 77.50 per cent having medium level of adoption. The variable namely education, source of information, training received are positively significant with adoption of management practices for control of pink bollworm at 0.01 level of probability and the variable namely farming experience, extension contact, achievement motivation, risk orientation are positively significant and age, land holding, annual income, social participation, were non - significantly correlated with adoption of management practices for control of pink bollworm at 0.05 level of probability.

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BACKGROUND AND OBJECTIVES

Cotton is one of the most important fibre crop playing key role in economic as well as social affairs of the world. It is the oldest among the commercial crops of the world.

The area of cotton in India is 105.00 lakh hectares where as production is 351 lakh bales and productivity is 568 kg/ha. Cotton is grown chiefly for its fibre which is used in the manufacture of cloth for the mankind. It is

also used for several other purposes like, making threads, for mixing in other fibres and extraction of oil from the cotton seed. In the world cotton crop grown as an annual crop in both tropical and warm temperate regions. The crop is attacked by 1326 species of insect pests throughout the world, of which about 130 different species of insects and mites found to devour cotton at different stages of crop growth in India. Crop is affected by bollworms viz., spotted bollworm, American bollworm and pink bollworm etc, which causes yield reduction in almost all cotton growing area. Among it the pink bollworm assumed major pest status in recent past. Worldwide, pink bollworm has become economically the most destructive pest of cotton.

RESOURCES AND METHODS

Daryapur and Achalpur talukas of Amravati district was selected for study. The Bt. cotton growers were

interviewed with the help of structured interview schedule personally. Total 80 respondents were selected for research purpose. The interview schedule was constructed by relevant questions in accordance with the objective of study. The data were analysed by using mean, S.D. and co-efficient of correlation methods were used for analysis of the data.

OBSERVATIONS AND ANALYSIS

The findings of the study as well as relevant discussion have been summarized under the following heads:

Table 1 revealed that the adoption of management practices for control of pink bollworm 52.5 per cent respondent partially adopted to terminate cotton crop by December end and destroy plant stubble followed by 17.5 per cent fully adopted, 60.00 per cent partially adopt deep ploughing in the month of March and April followed by

Table 1 : Adoption of Bt. cotton growers about management practices for control of pink bollworm

| Sr. No. | Statement | Adoption | | |
|---------|--|------------|------------|------------|
| | | FA (2) | PA (1) | NA (0) |
| 1. | Do you terminate cotton crop by December end and destroy plant stubbles | 14 (17.5) | 42 (52.5) | 24 (30.00) |
| 2. | Do you follow deep ploughing in month of March and April followed by cleaning operation | 16 (20.00) | 48 (60.00) | 16 (20.00) |
| 3. | Do you adopt sowing in the month of June- July | 22 (27.5) | 58 (72.5) | 00 (00.00) |
| 4. | Do you adopt early Bt. cotton variety for sowing | 12 (15.00) | 68 (85.00) | 00 (00.00) |
| 5. | Do you adopt sowing of non- Bt. refugia around Bt. cotton. | 15 (18.75) | 52 (65.00) | 13 (16.25) |
| 6. | Do you adopt crop rotation for control of pink bollworm. | 08 (10.00) | 13 (16.25) | 59 (73.75) |
| 7. | Do you sow trap crop like okra /marigold | 02 (2.50) | 19 (23.75) | 59 (73.75) |
| 8. | Do you adopt of proper dose of nitrogen fertilizer | 17 (21.25) | 28 (35.00) | 35 (43.75) |
| 9. | Do you inspect the crop at the time of squiring and flowering for presence of pink bollworm larvae within flower | 09 (11.25) | 41 (51.25) | 30 (37.5) |
| 10. | Do you installed two pheromone per acre for monitoring moth activity of pink bollworm | 13 (16.25) | 43 (53.75) | 24 (30.00) |
| 11. | Do you installed bird perches ten per hector in cotton crop | 00 (00.00) | 05 (6.25) | 75 (93.75) |
| 12. | Do you destroy fallen square, flower, ball every week | 06 (7.50) | 18 (22.5) | 56 (70.00) |
| 13. | Do you installed trichocards three per acre | 00 (00.00) | 08 (10.00) | 72 (70.00) |
| 14. | Do you use <i>Neem</i> seed kernel extract for spraying at the time of flowering | 36 (45) | 44 (55.00) | 0 (00.00) |
| 15. | Do you adopt avoid of mixing insecticide | 18 (22.5) | 19 (23.75) | 43 (53.75) |
| 16. | Do you avoid spraying of monocrotophos, trizophos and highly poisonous insecticide at starting of the crop | 14 (17.5) | 27 (33.75) | 39 (48.75) |
| 17. | Do you avoid rationing (khodva) | 09 (11.25) | 20 (25.00) | 52 (65.00) |
| 18. | Do you store cotton plant debris for fire purpose | 12 (15.00) | 51 (63.75) | 17 (21.25) |
| 19. | Do you allow grazing the crop by cattle after last picking to destroy pest affected plant debris | 14 (17.5) | 28 (35.00) | 38 (47.50) |
| 20. | Do you installed light trap | - (--) | - (--) | - (--) |

Table 2: Distribution of respondents according to their adoption level about management practices for control of pink bollworm by Bt. cotton grower (n=80)

| Sr. No. | Adoption level | Respondents | |
|---------|-------------------|-------------|------------|
| | | Number | Percentage |
| 1. | Low (Upto 27) | 07 | 08.75 |
| 2. | Medium (28 to 42) | 62 | 77.50 |
| 3. | High (Above 42) | 11 | 13.75 |
| | Total | 80 | 100.00 |

cleaning operation 20.00 per cent fully adopted. 72.50 per cent partially and 27.5 per cent fully adopted sowing in the month of June-July. 85.00 per cent of respondent adopted partially and 18.75 per cent fully adopted early Bt. cotton variety for sowing, the sowing of non- Bt. refugia partially sown 65.00 per cent respondent and 18.75 per cent fully adopted sowing of non- Bt. refugia. Less than half 16.25 per cent and 10.00 per cent partially and fully adopted crop rotation, 23.75 per cent partially and 2.50 per cent fully sown trap crop like okra/ marigold, 35.00 per cent and 21.25 per cent partially and fully adopted proper dose of nitrogen fertilizer and 43.75 per cent not adopted proper dose of nitrogen fertilizer, 51.25 per cent partially 11.25 per cent fully follow the inspection of crop at the time of squaring, flowering and 37.5 per cent not follow inspection on plant.

As regarding to pheromone trap installation 53.75 per cent partially installed and 16.25 per cent fully installed and 30.00 per cent not installed, less number of respondent 6.25 per cent partially installed and 93.75 per cent, 22.5 per cent partially destroy fallen square boll every week and 7.50 per cent fully destroy the fallen square and ball, only 10.00 per cent respondent installed trichocards three per acre and 70.00 per cent not installed, more than half 55.00 per cent partially and 45.00 per cent used *Neem* seed kernel extract.

23.75 per cent partially avoided and 22.5 fully avoided mixing of insecticide, at the starting of crop 33.75 per cent and 17.5 per cent partially and fully avoided the spraying of monocrotophos and trizophos, 25.00 per cent partially avoided and 11.25 per cent fully avoided ratooning, 15.00 per cent fully and 63.75 per cent partially adopted storage of plant debris for fire purpose. Similar work related to the present investigation was also carried out by Jakkawad and Patange (2019); Jakkawad *et al.* (2019); Mahendrakar *et al.* (2018) Pavan Kumar and Dhorey (2017) and Shambharkar *et al.* (2018).

Conclusion:

The study observed that 77.50 per cent of the respondents had medium level of adoption of management practices for control of pink bollworm. The percentage of respondents having low level of adoption was 08.75 per cent, whereas 13.75 per cent respondents were having high level of adoption. Thus, study concluded that majority of the respondent had medium level of adoption about management practices for control of pink bollworm.

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