CONSTRAINTS IN ADOPTION OF RECOMMENDED PLANT PROTECTION PRACTICES IN GROUNDNUT AND COTTON CROPS

A. D. Sardhara[1*], N. B. Jadav[2] and P. H. Zala[3]

1 M.Sc. Student, Agricultural Extension, College of Agriculture, JAU, Junagadh – 362001
2 Professor & Head, Dept. of Agril. Ext. & Communication, CoA, JAU, Junagadh - 362001
3 Ph.D. Scholar, Agricultural Extension, College of Agriculture, JAU, Junagadh – 362001
Email: kapuriya.tushar@gmail.com

ABSTRACT

Groundnut and cotton both are the important crops of Saurashtra region of Gujarat state. Saurashtra region, which is known as "Groundnut Bowl of India" has greater importance for groundnut as it accounts for about 92.00 per cent of the total groundnut area of the state. Cotton "King of Fiber" is one of the most ancient and important commercial crop next only to food grains. Adoption of plant protection recommendation is one of the important aspects of controlling pests and diseases. In spite of this fact, farmers are not adopting the recommendations properly and hence, the importance of systematic use of plant protection measures to control pests and diseases cannot be neglected. A farmer faces many constraints in adoption of recommended groundnut and cotton production technology. Keeping in view the study was carried out in major groundnut and cotton growing area of Saurashtra region with 180 numbers of respondents. It was found that major constraints faced by groundnut growers were lack of adequate knowledge about groundnut plant protection practices (87.78%), inadequate knowledge about proper use of insecticide (83.33%), high price of plant protection chemicals (77.78%). Besides these all 13 constraints faced by cotton growers' major constraints were; lack of adequate knowledge about cotton plant protection practices (83.33%), high price of plant protection chemicals (80.00%), lack of knowledge about proper diagnosis of disease / pest (76.67%). Major suggestions to overcome constraints of groundnut were; knowledge about plant protection measures should be given to groundnut growers on field by scientists and extension workers (90.00%), technical guidance should be provided regarding plant protection of groundnut crop (86.67%) and major suggestions of cotton crop were knowledge about plant protection measures should be given to cotton growers on field by scientists and extension workers (87.78%), more number of demonstrations on plant protection of cotton crop should be organized on farmers' field (86.67%).

Keywords : *groundnut, cotton, constraints, suggestions, plant protection*

INTRODUCTION

India is the home of food grains, pulses and few oilseed crops like cotton, castor, groundnut etc. Groundnut and cotton both are the important crops of Saurashtra region of Gujarat state. Saurashtra region, which is known as "Groundnut Bowl of India" has greater importance for groundnut as it accounts for about 92.00 per cent of the total groundnut area of the state. Cotton "King of Fiber" is one of the most ancient and important commercial crop next only to food grains. Adoption of plant protection recommendation is one of the important aspects of controlling pests and diseases. In spite of this fact, farmers are not adopting the recommendations properly and hence, the importance of systematic use of plant protection measures to control pests and diseases cannot be neglected. A farmer faces many constraints in adoption of recommended groundnut and cotton production technology.

The agricultural technology is generally not adopted by the farmers completely in all respects as such. There always appears a gap between the technology recommended by the scientists and its use at farmer's level. This technological gap is a major problem in the efforts of increasing agricultural production.

Plant protection plays an important role in crop production. Adoption of plant protection recommendation is one of the important aspects of controlling pests and diseases. In spite of this fact, farmers are not adopting the recommendations properly and hence, the importance of systematic use of plant protection measures to control pests and diseases cannot be neglected. Plant protection covers Integrated Pest Management and Integrated Disease Management. Keeping in view the study was under taken with the objective of to find out the constraints faced by cotton

and groundnut growers in adoption of recommended plant protection practices and to seek suggestions to overcome the constraints.

OBJECTIVE

To know the constraints in adoption of recommended plant protection practices in groundnut and cotton crops

METHODOLOGY

The study was carried out in two taluka of Rajkot district of Saurashtra region, where the major area under Groundnut and cotton cultivation. Total 180 respondents were selected randomly from twelve villages of two talukas of Rajkot district for the study. For measurement of constraints and suggestion it was kept open ended so that farmers gave his opinion freely. The frequency and per cent work out and ranked each constraints and suggestion basis of higher percentage.

RESULTS AND DISCUSSION

Constraints faced by respondents in adoption of plant protection practices of groundnut

Table 1: Constraints perceived by the groundnut growers in adoption of plant protection practices (n= 90)

Sr. No.	Constraints	Frequency	Percent	Rank
1	Lack of adequate knowledge about groundnut plant protection practices	79	87.78	I
2	Inadequate knowledge about proper use of insecticide	75	83.33	II
3	High price of plant protection chemicals	70	77.78	III
4	Lack of knowledge regarding seed treatment	68	75.56	IV
5	Lack of knowledge regarding recommended dose of insecticide /pesticide application	66	73.33	V
6	Lack of guidance from extension personal	62	68.89	VI
7	Improper monitoring of fields for pest surveillance	59	65.56	VII
8	Lack of knowledge about pests and disease cycle and their infestation	56	62.22	VIII
9	Lack of knowledge about crop rotation	54	60.00	IX
10	Lack of knowledge about resistance varieties	49	54.44	X
11	Lack of knowledge about trichoderma	45	50.00	XI
12	Non-availability of trichoderma at local market	42	46.67	XII
13	Lack of trainings on plant protection practices	41	45.56	XIII
14	Inadequate demonstrations on plant protection practices	39	43.33	XIV
15	Lack of awareness about hazardous and residual effect of chemical pesticides	35	38.89	XV

A perusal from the table 1 revealed that major constraints perceived by more than half of the farmer were; lack of adequate knowledge about groundnut plant protection practices(87.78%), inadequate knowledge about proper use of insecticide (83.33%), high price of plant protection chemicals (77.78%), lack of knowledge regarding seed treatment (75.56%), lack of knowledge regarding recommended dose of insecticide /pesticide application (73.33%), lack of guidance from extension personal (68.89%), improper monitoring of fields for pest surveillance (65.56%), lack of knowledge about pests and disease cycle and their infestation (62.22%), lack of knowledge about crop rotation (60.00%), lack of knowledge about resistance varieties (54.44%), lack of knowledge about trichoderma (50.00%), non-availability of trichoderma at local market (46.67%), lack of trainings on plant protection practices (45.56%), inadequate demonstrations on plant protection practices (43.33%), lack of awareness about hazardous and residual effect of chemical pesticides (38.89%).

These finding were in line with the finding of Chavda (2007), Khodifad (2010) and Gorfad (2012).

Constraints faced by respondents in adoption of plant protection practices of cotton

Table 2: Constraints perceived by the cotton growers in adoption of plant protection practices (n = 90)

Sr. No.	Constraints	Frequency	Percent	Rank
1	Lack of adequate knowledge about cotton plant protection practices	75	83.33	I
2	High price of plant protection chemicals	72	80.00	II
3	Lack of knowledge about proper diagnosis of disease / pest	69	76.67	III
4	More incidence of insects, pest and disease	68	75.56	IV
5	Lack of effective bio-pesticide	64	71.11	V
6	Lack of technical skill to use biopesticides	61	67.78	VI
7	Lack of knoweledge about the benefits of plant protection	57	63.33	VII
8	Lack of knowledge about intercropping	56	62.22	VIII
9	Lack of knowledge about beauveria	55	61.11	IX
10	Non-availability of beauveria at local market	46	51.11	X
11	Lack of trainings on plant protection practices	45	50.00	XI
12	Lack of knowledge about botanical pesticide	40	44.44	XII
13	Non-availability of neem cake at local level	35	38.89	XIII

The data in table 2 showed that the respondents experienced some constraints as major level. These constraints are; lack of adequate knowledge about cotton plant protection practices (83.33%), high price of plant protection chemicals (80.00%), lack of knowledge about proper diagnosis of disease / pest (76.67%), more incidence of insects, pest and disease (75.56%), lack of effective bio-pesticide (71.11%), lack of technical skill to use biopesticides (67.78%), lack of knoweledge about the benefits of plant protection (63.33%), lack of knowledge about intercropping (62.22%), lack of knowledge about beauveria (61.11%), non-availability of beauveria at local market (51.11%), lack of trainings on plant protection practices (50.00%), lack of knowledge about botanical pesticide (44.44%), non-availability of neem cake at local level (38.89%).

These finding were in line with the finding of Chavda (2007), Khodifad (2010) and Gorfad (2012).

Suggestions from the respondents to overcome the constraints in adoption of plant protection practices of groundnut

Table 3: Suggestions from the respondents to overcome the constraints in adoption of plant protection practices of groundnut (n=90)

Sr. No.	Suggestions	Frequency	Percent	Rank
1	Knowledge about plant protection measures should be given to groundnut growers on field by scientists and extension workers	81	90.00	I
2	Technical guidance should be provided regarding plant protection of groundnut crop	78	86.67	II
3	More number of demonstrations on plant protection of groundnut crop should be organized on farmers' field	73	81.11	III
4	Farmers should be protected under crop insurance scheme in case of failure of crop due to pest incidence	70	77.78	IV
5	Trichoderma should be made available at local market	67	74.44	V
6	Training on plant protection technologies should be imparted	60	66.67	VI
7	Appropriate insecticides should be given on right time	59	65.56	VII
8	Pesticides,fungicides and biofertilizers be made available for seed treatment at village level	57	63.33	VIII
9	Necessary suitable implements should be made available for field sanitation and deep ploughing	48	53.33	IX
10	Recommendation should be on the basis of bigha, rather than hectare	42	46.67	X
11	Provide information about the benefits of biofertilizers and biopesticides	36	40.00	XI

The most important suggestions offered by the respondents to overcome the constraints in adoption of plant protection practices of groundnut were; knowledge about plant protection measures should be given to groundnut growers on field by scientists and extension workers (90.00%), technical guidance should be provided regarding plant protection of groundnut crop (86.67%), more number of demonstrations on plant protection of groundnut crop should be organized on farmers' field (81.11%), farmers should be protected under crop insurance scheme in case of failure of crop due to pest incidence (77.78%), trichoderma should be made available at local market (74.44%), training on plant protection technologies should be imparted (66.67%), appropriate insecticides should be given on right time (65.56%), pesticides,fungicides and biofertilizers be made available for seed treatment at village level (63.33%), necessary suitable implements should be made available for field sanitation and deep ploughing (53.33%), recommendation should be on the basis of bigha, rather than hectare (46.67%), provide information about the benefits of biofertilizers and biopesticides (40.00%).

These finding were in line with the finding of Khodifad (2010), Khare *et al.* (2013) and Sable and Kadam (2013).

Suggestions from the respondents to overcome the constraints in adoption of plant protection practices of cotton

Table 4: Suggestions from the respondents to overcome the constraints in adoption of plant protection practices of cotton (n=90)

Sr. No.	Suggestions	Frequency	Percent	Rank
1	Knowledge about plant protection measures should be given to cotton growers on field by scientists and extension workers	79	87.78	I
2	More number of demonstrations on plant protection of cotton crop should be organized on farmers' field	78	86.67	II
3	Quality biopesticides should be made available	75	83.33	III
4	Provide information about the benefits of biofertilizers and biopesticides	69	76.67	IV
5	Price of produce should be regulated	65	72.22	V
6	Farmers should be protected under crop insurance scheme in case of failure of crop due to pest incidence	62	68.89	VI
7	Beauveria should be made available at local market	55	61.11	VII
8	Pesticides,fungicides and biofertilizers be made available for seed treatment at village level	50	55.56	VIII
9	Timely supply of essential inputs and plant protection chemicals should be provided	47	52.22	IX
10	Recommendation should be on the basis of bigha, rather than hectare	40	44.44	X
11	Seeds of resistance varieties should be made available	37	41.11	XI
12	Technical guidance should be provided regarding plant protection of cotton crop	30	33.33	XII

The most important suggestions offered by the respondents to overcome the constraints in adoption of plant protection practices of cotton were; knowledge about plant protection measures should be given to cotton growers on field by scientists and extension workers (87.78%), more number of demonstrations on plant protection of cotton crop should be organized on farmers' field (86.67%), quality biopesticides should be made available (83.33%), provide information about the benefits of biofertilizers and biopesticides (76.67%), price of produce should be regulated (72.22%), farmers should be protected under crop insurance scheme in case of failure of crop due to pest incidence (68.89%), beauveria should be made available at local market (61.11%), pesticides, fungicides and biofertilizers be made available for seed treatment at village level (55.56%), timely supply of essential inputs and plant protection chemicals should be provided (52.22%), recommendation should be on the basis of bigha, rather than hectare (44.44%), seeds of resistance varieties should be made available (41.11%), technical guidance should be provided regarding plant protection of cotton crop (33.33%).

These finding were in line with the finding of Khodifad (2010), Khare *et al.* (2013) and Sable and Kadam (2013).

CONCLUSION

The most important constraints faced by the groundnut growers were: lack of adequate knowledge about groundnut plant protection practices, inadequate knowledge about proper use of insecticide, high price of plant protection chemicals, lack of knowledge regarding seed treatment, while

the most important constraints faced by the cotton growers were: lack of adequate knowledge about groundnut plant protection practices, high price of plant protection chemicals, lack of knowledge about proper diagnosis of disease / pest.

The important suggestions offered by majority of groundnut growers were: knowledge about plant protection measures should be given to groundnut growers on field by scientists and extension workers, technical guidance should be provided regarding plant protection of groundnut crop, where as the important suggestions offered by majority of cotton growers were: knowledge about plant protection measures should be given to cotton growers on field by scientists and extension workers, more number of demonstrations on plant protection of cotton crop should be organized on farmers' field, quality biopesticides should be made available.

REFERENCES

Chavda, M. G. 2007. Knowledge and adoption of post harvest technology of groundnut crop in south Saurashtra agro climatic zone of Gujarat state. Ph.D. (Agri.) Thesis (Unpublished). Junagadh Agricultural University, Junagadh.

Gorfad, P. S. 2012. Farmers' perception and adoption of groundnut production technology. Ph.D. (Agri.) Thesis (Unpublished). Junagadh Agricultural University, Junagadh.

Khare, A.; Wakle, P. K.; Shambharkar, Y. B. and Patil, J. 2013. Correlates of Adoption and Constraints faced by the Gram Farmers in Adoption of Improved Cultivation Practices, *Indian Journal of Research,* 2(10): 8-10.

Khodifad, P. B. 2010. Sustainability of groundnut based cropping system of south Saurashtra agro-climatic zone of Gujarat state, Ph.D. Thesis (Unpublished). Junagadh Agricultural Univeristy, Junagadh.

Sable, B. D. and Kadam, R. P. 2013. Constraints faced by cotton growers in adoption of Integrated Pest Management. *Journal of Agriculture Research and Technology,* 38(3): 482-484.

Received : October 2020 : Accepted : December 2020