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Navya D
Student, Department of
Agricultural Extension,
University of agricultural
sciences, GKVK, Bengaluru,
Karnataka, India

Venkataramanaika K
Professor, Directorate of
Extension, Distant education
unit, Hebbal, Bengaluru,
Karnataka, India

A study on constraints faced by the paddy and cotton growers in adoption of plant protection measures in Karimnagar District of Telangana State

Navya D and Venkataramanaika K

Abstract

The study was conducted in Karimnagar district of Telangana State during 2018-19 to assess the constraints in adoption of Plant Protection Measures by The Paddy and Cotton growers. Sixty each paddy and cotton growers were selected by using simple random technique. Thus, making a total sample size of 120. The data was collected through personal interview method and analysed by using appropriate statistical tools. The data revealed that hat majority of the paddy growers (76.66) facing problems related to Poisons to cattle and human beings, 75.00 percent farmers were feeling high cost manual weeding in paddy, 73.33 percent farmers facing problem like Application of pesticides affects the beneficiary insects, 70.00 percent farmers facing difficulties in pesticide handling. Where as in cotton 98.33 percent farmers facing problem like Application of pesticides affects the beneficiary insects, 90.00 percent farmers told that Application of pesticides results in pesticide residues in soil, equal percent of respondent (86.66%) found Problems in High Cost on manual weeding and Continues application of pesticides results in loss of soil fertility, 71.66 percent farmers told that Damaged to the crop due to plant protection measures, 70.00 per cent of informed that inhaling of pesticides results in health problems.

Keywords: Paddy, cotton, constraints, plant protection measures and adoption

Introduction

Paddy (*Oryza sativa*. L) One of the significant cereal crops in the world and an important staple food crop for more than half of the world population, is known as “king of cereals”. The United Nations General assembly, declared the year of 2004 as the “International Year of Rice”, which has great significance to food security. India is the second major rice producer in the world after China. The country’s productivity is higher than Thailand and Pakistan at 2.2tons/ha. In India main three rice producing states are West Bengal, Uttar Pradesh and Andhra Pradesh. India has been the main exporter in global rice trade, counting for 25% of the export in last four years. India is exporting non-Basmati rice to the Middle East and Africa (Anon, 2018). In India, the highest area under paddy is in Uttar Pradesh (5.86mha), followed by West Bengal (5.46mha) and Orrisa (3.94mha). Production-wise, West Bengal stands first (15.75mt), followed by Uttar Pradesh (12.5mt) and Punjab (11.82mt). The highest yield is observed in the state of Punjab (3870 kg/ha), followed by Andhra Pradesh (3360 kg/ha). (Madvisally 2018-19) [5]. Paddy crop gives high economic return to the farmers, while on the other hand, there are many risks involved in it like it depends on climate, pest and disease loss, post-harvest losses, lack of labour availability etc.

Cotton is one of most important commercial fiber crops of India. The seed of cotton is a potential source of edible oil, cake and hull meal. It is also known as “King of Apparel Fiber” and “White Gold”. In India, during 2014-15, cotton is grown in area of 128.19 lakh hectares with a production of 380 lakh bales 170 kg and productivity of 504 kg/ha (Anonymous, 2016) [3]. However, the average cotton yield in India is only 0.49 tons per hectares compared to world average of 0.73 tons per hectare (International Cotton Advisory Committee, 2010. India is the only country where all four cultivated species of cotton are grown on commercial scale and covers 8.5-9.0 million hectares. Hybrid cotton cultivation in about 50 % of total cotton area, is a significant milestone achievement in Indian Cotton scenario. Qualitative and quantitative transformation has taken place in cotton production in India. The production increased from a meager 2.79 million bales (170 kg lint/bale) in 1947-48 to a high of 17.6 million bales in 1996-97 and an all-time record of 28.0 million bales during 2006-07 (AICCIIP, 2007). Cotton crop gives high economic return to the farmers, while on the other hand, there are many risk involved in it.

Corresponding Author
Navya D
Student, Department of
Agricultural Extension,
University of agricultural
sciences, GKVK, Bengaluru,
Karnataka, India

The cultivation of cotton also needs costly inputs in terms of seeds, fertilizers and insecticides/pesticides. If proper care is not taken, it proves as monetary uncertain business. It is also sensitive crop to many diseases and pests. It is known as risky crop considering natural hazards, as well as the everyday fluctuating of wholesale price index. The low yields of cotton in India are attributed to inadequate input usage, rain fed cultivation, untimely operations on field and inefficient crop production technologies (Majumdar, 2012) [7]. About 65.00 per cent of the cotton acreage in India is dependent on rain; the annual variation in monsoon rainfall plays an important role in production and yield for any particular year (Aggarwal, *et al.*, 2008) [1]. With this background, the present study was intended to emphasis on a study on constraints faced by the paddy and cotton growers in adoption of plant protection measures in Karimnagar district of Telangana state. Study of problems faced by the framers would be helpful in determining the aspects of the infrastructural facilities which need further improvement.

Methodology

The research design adopted for this study was ex-post-facto research technique, since the phenomenon has already occurred. The State of Telangana was selected purposively. Karimnagar district was selected among 10 districts in Telangana state is having highest area and production under paddy crops compared to other districts in Telangana state. Manthani, Pedhapally, and Kamanpoor mandals were purposively selected since these mandals are having more number of paddy growers and occupy more area under paddy cultivation as compared to the other mandals in the district. Two villages were selected randomly from each mandal. Thus, constitute 6 villages (2×3) for the study. Gopalpoor, Kammampalli, from Manthani; Elukalapally, Jayyaram, from Ramagundam, Dharamaram, Kamanpoor, from Pedhapally were selected. Ten farmers were selected randomly from each village using random number tables. Thus, constitute (10×6) 60 respondents for the study. The data was collected from Karimnagar district of Telangana state using a pretested interview schedule, the interview method was adapted

wherever needed and confirmed. The final interview schedule was taken to elicit the information from the respondents by personal interview schedule. The data was analysed by mean, standard deviation, percentage, frequency and correlation were employed to draw valid inferences.

Results and Discussion

Constraints faced by farmers in adoption of Plant Protection Measures in paddy with regard to constraints

The results presented in Table 1 indicated that information about the constraints faced in adoption of Plant Protection Measures by farmers. 76.66 per cent of paddy farmers facing problems related to Poisons to cattle and human beings, 75.00 percent farmers were feeling high cost manual weeding in paddy, 73.33 percent farmers facing problem like Application of pesticides affects the beneficiary insects, 70.00 percent farmers facing difficulties in pesticide handling, 68.33 percent farmers facing problems in Application of pesticides leads to severe health issues, 65.00 percent farmers told that Application of pesticides results in pesticide residues in soil, 56.67 percent farmers complained about Continues application of pesticides results in loss of soil fertility. 55.00 and 53.33 percent farmers facing problems in lack of availability of spraying Equipment's and pesticides respectively, equal percent of respondent (51.66%) found Problems in transportation and Lack of recommended pesticides/insecticides 50.00 per cent of paddy growers told that crop damage due to Plant Protection Measures. 45.00 and 41.66 per cent of paddy growers feel that high cost of chemicals and equipment in paddy respectively, 46.67 per cent of paddy growers felt that Lack of knowledge on fertilizer recommendation, 43.33 per cent of paddy growers facing problems in Lack of resistant varieties, 41.67 per cent of paddy growers told that Inhaling of pesticides results in health problems, 38.33 and 2833 per cent of paddy growers mentioned problems like Lack of repairing facility at nearby places and lack of Knowledge regarding plant protection measures respectively. Similar findings reported by Singh (2011), Pavankumar (2017) and Praveen Babu (2014) [10].

Table 1: Constraints faced by paddy growers.

Sl. No	Constraints	(n ₁ =60)	
		F	%
1.	Poisons to cattle and human beings	46	76.66
2.	High Cost on manual weeding	45	75.00
3.	Application of pesticides affects the beneficiary insects	44	73.33
4.	Any difficulties in pesticide handling	42	70.00
5.	Application of pesticides leads to severe health issues	41	68.33
6.	Application of pesticides results in pesticide residues in soil	39	65.00
7.	Continues application of pesticides results in loss of soil fertility	34	56.67
8.	Spray equipment's not available	33	55.00
9.	Pesticides availability	32	53.33
10.	Problems in transportation	31	51.66
11.	Lack of recommended pesticides/insecticides	31	51.66
12.	Damaged to the crop due to plant protection measures	30	50.00
13.	High cost of chemicals	27	45.00
14.	Lack of knowledge on fertilizer recommendation	28	46.67
15.	Lack of resistant varieties	26	43.33
16.	Inhaling of pesticides results in health problems	25	41.67
17.	Non-availability of plant protection equipment's nearby places	25	41.66
18.	High cost of equipment's	25	41.66
19.	Lack of repairing facility at nearby places	23	38.33
20.	Knowledge regarding plant protection measures	17	28.33

Constraints faced by farmers in adoption of Plant Protection Measures in cotton with regard to constraints

Results from table 2 indicating that 98.33 percent farmers facing problem like Application of pesticides affects the beneficiary insects, 90.00 percent farmers told that Application of pesticides results in pesticide residues in soil, equal percent of respondent (86.66%) found Problems in High

Cost on manual weeding and Continues application of pesticides results in loss of soil fertility, 71.66 percent farmers told that Damaged to the crop due to plant protection measures, 70.00 per cent of informed that inhaling of pesticides results in health problems, 66.67 per cent of cotton farmers feel that Table 2: Constraints faced by cotton growers. (n₂=60)

Table 2: Constraints faced by cotton growers.

Sl. No	Constraints	Cotton	
		F	%
1.	Application of pesticides affects the beneficiary insects	56	93.33
2.	Application of pesticides results in pesticide residues in soil	54	90.00
3.	High Cost on manual weeding	52	86.66
4.	Continues application of pesticides results in loss of soil fertility	52	86.66
5.	Damaged to the crop due to plant protection measures	43	71.66
6.	Inhaling of pesticides results in health problems	42	70.00
7.	Poisons to cattle and human beings	40	66.67
8.	Lack of knowledge on fertilizer recommendation	40	66.66
9.	Application of pesticides leads to severe health issues	37	61.66
10.	Any difficulties in pesticide handling	29	48.33
11.	lack of resistant varieties	24	40.00
12.	High cost of chemicals	24	40.00
13.	Spray equipment's not available	23	38.33
14.	High cost of equipment's	23	38.33
15.	Pesticides availability	21	35.00
16.	Problems in transportation	20	33.33
17.	Lack of repairing facility at nearby places	20	33.33
18.	Non-availability of plant protection equipment's nearby places	17	28.33
19.	knowledge regarding plant protection measures	16	28.33
20.	Lack of recommended pesticides/insecticides	12	20.00

plant protection chemicals are poisonous to cattle and human beings, 66.66 per cent of cotton growers lack of knowledge on recommended fertilizers, 61.66 per cent of respondents told application of more pesticides in cotton leads to severe health issues, 48.33 per cent of cotton growers respectively facing difficulties in pesticides handling, 40.00 per cent of cotton growers facing problems in Lack of resistant varieties and High cost of chemicals, 38.33 per cent of respondents found problems like Spray equipment's not available and High cost of equipment's in cotton, another problems likes pesticides availability by cotton (35.00) growers, 33.33 per cent of respondents mentioned problems of transportation and Lack of repairing facility at nearby places in cotton, 28.33 per cent of cotton growers facing problems like non availability of plant protection equipment nearby places and lack of knowledge regarding plant protection measures and 20.00 percent farmers found that Lack of recommended pesticides/insecticides in cotton. Findings of this results are similar with the findings of Thippeswamy (2007) ^[12] and Manjunath (2010) ^[8].

Conclusion

It is evident from the study that farmers facing problems like Lack of resistant varieties, High cost of chemicals, damaged to the crop due to plant protection measures, problems of transportation and Lack of repairing facility at nearby places, lack of knowledge regarding plant protection measures, Lack of recommended pesticides/insecticides and Continues application of pesticides results in loss of soil fertility etc. Regarding the measures to overcome these constraints, the respondents opined that quality seed supply should be ensured, remunerative price of farm produce, input should be

supplied at subsidized rate, effective insect-pest control methods should be developed, sufficient electricity should be provided, crop insurance should be made available for all the farmers at cheaper rate, village level workers should frequently contact the farmers to make them aware about new technologies and provision of sufficient and timely credit facilities should be taken to reduce the constraints in days to come.

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