



Knowledge of Cotton Farmers on Health Hazards of Pesticides in Kurnool District of Andhra Pradesh - An Analysis

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ABSTRACT

Majority of the cotton farmers were having medium knowledge on hazards of pesticides. Farmers are spraying pesticides indiscriminately, which are hazardous to their health. Education, extension participation, extension contact are positively & significantly correlated with Knowledge on pesticide hazards. This indicated that as rise in educational levels increased their ability to grasp facts, analyze and interpret the negative effects of indiscriminate pesticide use. The data also revealed that increase in extension participation, and extension contact helped in better gain of knowledge on pesticide hazards.

Key words : Correlation, Cotton, Knowledge, Pesticide hazards.

Pesticides pollutants have increased environmental health disasters worldwide. Pesticides pollutants contaminate soil, water, and air increasing human as well as animal exposure to the dangerous chemicals. Pesticides pollutants in the atmosphere cause and worsen tuberculosis, bronchitis, heart disease, cancer, and asthma. Chemical based pesticides present dangers to farmers, but also to consumers and bystanders. Even after vegetables and fruits are washed and peeled, pesticide residues remain inside the crops. According to a study conducted at Harvard School of Public Health, there is a 70% increase of risk in developing Parkinson's disease in people who have been exposed to even the lowest amounts of pesticides. Farmers spray indiscriminately pesticides, which are hazardous to their health. Exposure to pesticide to farmers while application is by dermal exposure, oral ingestion and respiratory exposure. Most of the farmers are unaware of the harmful effects of pesticides and the signs & symptoms associated with these pesticide poisoning.

MATERIAL AND METHODS

The study was conducted in the Kurnool district of Andhra Pradesh as it occupies 1st place in pesticide consumption in the state and also it is one of the important district cultivating cotton in the state (3rd place). Out of the 53 mandals in Kurnool district, 3 cotton growing mandals have been purposively selected and cotton growing villages of the selected 3 mandals were enlisted and out of which 2 cotton growing villages were selected from each mandal at random, thus making a total of 6 villages for the study. 15 cotton-growing farmers from

each village were selected thus making a total of 90 farmers for the study. An interview schedule was developed for the study and pretested in non sample areas. The data was collected using standardized interview schedule by personal interview method. The data was organized, tabulated and classified using manifold, qualitative and quantitative classification and subjected to statistical tests. The statistical tools and techniques that were used for analyzing data include; frequency, percentage, means, standard deviation etc. The results obtained from analysis were interpreted by using tables and graphs. Ex post facto research methodology was used for this study.

RESULTS AND DISCUSSION

The results of the study with respect to knowledge of cotton farmers on ETL of pests are given below:

The above table clearly shows that 50 percent of the cotton farmers were having medium knowledge followed by 44.75 percent having low level of knowledge and 5.55 percent of the farmers having high knowledge on hazards of pesticides. Therefore, it can be concluded that most of the farmers were having medium knowledge on hazards of pesticides.

The knowledge statements were subjected to item analysis for in depth analysis of responses and the results were given in the table below:

The farmers should basically understand that pesticide is a poison and poisons are harmful to human beings. They should also know that no matter what ever kind of protective measures are taken by them pesticide enters into the body because of their habits while spraying pesticides through dermal

Table 1. Distribution of cotton farmers according to Knowledge on Hazards of pesticides.

n= 90			
S.No	Category	Frequency	Percentage
1	Low	40	44.75
2	Medium	45	50.00
3	High	5	5.55
TOTAL		90	100
Mean: 2.695		SD: 1.656	

Table 2. Item analysis of farmers' knowledge of hazards of pesticides.

		n = 90			
S.No	Statement	Yes		No	
		F	P	F	P
1	Do you think pesticides are always essential to get higher yield	58	64.44	32	35.56
2	Do you think Pesticides kill only pests?	29	32.22	61	67.78
3	Do you think the repeated applications of pesticides increases the pest population?	21	23.33	69	76.67
4	Do you know that pesticides affect livestock population?	10	11.11	80	88.88
5	Do you know that pesticide applications contaminate air, water, food products etc?	0	0	90	100
6	Do you know what agro ecosystem is?	0	0	90	100
7	Do you know about Agro Ecosystem Analysis (AESA)?	0	0	90	100
8	Do you know about the information that is required for AESA?	0	0	90	100
9	Do you have knowledge about pesticide residues?	0	0	90	100
10	Do you know about pesticide chain?	0	0	90	100
11	Did you mix pesticides with hand?	49	54.33	41	45.56
12	Have you ever treated for pesticide poisoning?	27	30.00	63	70.00
13	Do you spray pesticides weekly in your field?	42	46.66	48	53.33
14	Do you spray pesticides in your field when other farmers spray?	38	42.11	52	57.78
15	Do you spray 5- 10 times in cotton crop?	14	15.50	76	84.40
16	Do you spray 10-20 times in cotton crop?	65	72.20	25	27.80
17	Do you spray > 20 times in cotton crop?	11	12.20	79	87.80
18	Do you use combination chemicals	81	90.00	9	10.00
19	Do you wear protective clothing while spraying	7	7.80	83	92.20
20	Do you know effects of pesticide poisoning on human health? If Yes what are they?	21	23.33	69	76.66
21	Do you know the signs & symptoms of pesticide poisoning? If Yes what are they?	17	18.88	73	81.11
22	Do you get ideas from other farmers about your pesticide related problems?	13	14.33	77	85.55
23	Do you know pesticides cause serious respiratory & neurological disorders	9	10.00	81	90.00
24	Do you know pesticides cause serious skin problems	12	13.33	78	86.66
25	Do you know pesticide residues were reported even in mothers' milk	0	0	90	100
26	Do you know pesticides are harmful to even poultry also	0	0	90	100

F:Frequency P: Percentage

Table 3. Correlation between independent variables and knowledge of cotton farmers on pesticide hazards.

		n=90
S.No	Independent Variable	‘r’ values
1	Age	0.0516 ^{NS}
2	Education	0.2614*
3	Farm size	0.0737 ^{NS}
4	Farming experience	0.0613 ^{NS}
5	Material possession	0.1123 ^{NS}
6	Extension participation	0.2219*
7	Extension contact	0.2532*
8	Economic motivation	0.0358 ^{NS}
9	Scientific orientation	0.0116 ^{NS}
10	Cosmopolitaness	0.1653 ^{NS}
11	Risk orientation	0.1257 ^{NS}
12	Innovativeness	0.1439 ^{NS}
13	Social participation	0.0921 ^{NS}
14	Achievement motivation	0.1413 ^{NS}
15	Information seeking behaviour	0.0139 ^{NS}
16	Concern for environment	0.1698 ^{NS}
17	Change pronsess	0.0213 ^{NS}
18	Pollution consciousness	0.0865 ^{NS}

* = significant at 0.05 level of profitability

NS= non significant

exposure, oral ingestion and respiratory exposure. They should know the chronic effects of pesticides and should know the action to be initiated in case of pesticide poisoning. They should clearly differentiate between the signs & symptoms of pesticide poisoning because sometimes these signs & symptoms may be misunderstood and will be attributed to other causes rather than going for a medical attention immediately which may sometimes be fatal. It is important that pesticide regulation is prioritized, in order to minimize the environmental and health risks that chemical pollutants impose on the world.

The indiscriminate use of toxic pesticides is associated with farmer health and environmental risks. The severe danger from pesticide use implies that a reduction of pesticides has to take place. The development of risk-reducing technologies such as IPM is now the preferred approach in pest management worldwide. The results in the Item analysis table indicated that >80% of the respondents were not aware of the fact that pesticide application contaminates environment, affects

livestock & plant residues. Majority of the farmers were not aware of the fact that pesticide cause serious respiratory & neurological disorders & skin irritations.

The study clearly indicated that farmers were not aware of most of the hazards caused by pesticides hence Department of Agriculture and State Agricultural Universities (SAUs) through their wide network of officials & grass root level extension workers should educate farmers on the above enlightened lapses for a pollution free environment.

From Table 3 it was evident that Education, extension participation, extension contact were positively & significantly correlated with Knowledge of cotton farmers on pesticide hazards (Arunadevi 1998). This indicated that as rise in educational levels increased their ability to grasp facts, analyze and interpret the negative effects of indiscriminate pesticide use. (Chatterjee 2000). The data also revealed that increase in extension participation, and extension contact helped in better gain of knowledge on pesticide hazards.

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(Received on 14.10.2008 and revised on 16.12.2008)