
AWARENESS OF FARMERS REGARDING PLANT PROTECTION METHODS, EQUIPMENTS AND INFORMATION SOURCES

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ABSTRACT

The present survey was carried out in Vadgam Taluka of Banaskantha District of Gujarat state during *Krushhi Mahotsav* - 2008 to be familiar with awareness of the farmers regarding plant protection in agriculture. The information about the personal characteristics of the farmers, knowledge level of the farmers about major pest of the crops grown in the area, source of information utilized by the farmers and methods and equipments used by the farmers for the plant protection were collected during the survey by distributing the questionnaires to ten randomly selected farmers in a single village, who were present in these month long mass campaigns *Krushhi Mahotsav*. Thus, total of 250 farmers were interviewed in 25 different villages. Based on the finding of the survey, it can be concluded that majority of the respondents belonged to middle age group (35-50 years), had undertaken the primary education up to 1-7 standard and of Socially and Economically Backward Class. Majority of the respondents (> 90.00 %) possessed the knowledge about major pests of the crop grown in the surveyed area. Their main source of information about the pesticides was pesticides dealers. Majority of the farmers sprayed the pesticides on plants by using Knapsack sprayer and Aspee bollow sprayer and/or giving the seed treatment for pest control. Majority of the respondents (78.40 %) used approximate proportion of pesticides solution for the control the pests. A few respondents wear hand gloves and used the mask during preparation of pesticide solution. The author has also suggested the probable reasons behind the lower adoption rate of plant protection measures and ideas to create awareness among the farmers were discussed.

KEY WORDS: *Krushhi Mahotsav*, plant protection, survey

INTRODUCTION

Fertilizers, plant protection measures, irrigation and improved seeds are the key elements of modern agriculture. Of which, plant protection plays a vital role in modern agriculture. The new technology is associated with the high pests and disease incidences. In the absence of adequate plant protection methods and equipments, the positive contribution of improved seeds,

fertilizers and irrigation to output could completely nullify and farmers may incur heavy losses. It is the experience of the extension workers that plant protection procedures in spite of their merits are not accepted widely by the farmers. Some technologies record very slow rate of adoption. It is, therefore, a question as to why one practice is more readily adopted than the other. One of the possible answers is some innate characteristics of the practice, which may speed up or retard its rate of adoption. The differential rate of adoption of farm technologies by farmers is generally attributed to some of the personal and socio-economic characteristics of farmers, as reported by Chand and Gupta (1966).

Krusha Mahotsav is an intensive convergence and mass contact strategy was successfully organized in Gujarat started right from 2005 to every year before the onset of monsoon. Gujarat is a pioneer in having such unique month long programme of mass contact of agricultural scientist with the farmers of the state. The contact was made through a mobile exhibition van called KRUSHIRATH in each and every village of the state. The farmers were educated with collective efforts of all the government and non-government agencies engaged in rural development with highly qualified agricultural scientists of all the agricultural universities of the state and also from the Department of Agriculture, Gujarat State. Thus, this campaign was meant for all round development of farming community.

The productivity of different crops of the surveyed region is far from satisfactory levels. The results of the past research studies pointed out that there is a vast scope to enhance the yield potentiality of the different crops of the surveyed region by using recommended plant protection methods. The thorough knowledge of plant protection methods by the farmers would help them in obtaining higher yields to the tune of 20-30 per cent. Keeping this fact, the survey was carried out during *Krusha Mahotsav* - 2008 to be familiar with awareness of the farmers regarding plant protection in agriculture. The information about the personal characteristics of the farmers, knowledge level of the farmers about major pest of the crops grown in the area, source of information utilized by the farmers and methods and equipments used by the farmers for the plant protection were collected during the survey.

METHODOLOGY

The present survey was carried out in Vadgam Taluka of Banaskantha District of Gujarat state during *Krusha Mahotsav* - 2008. The help of scientists of Extension Education Department was taken to prepare the questionnaire for the survey. The information was collected through personnel interview of ten randomly selected farmers in a single village, who were present in these month long mass campaigns *Krusha Mahotsav*. Thus, total of 250 farmers were interviewed in 25 different villages. The collected data were tabulated, analyzed and interpreted in light of the objectives of the study.

RESULTS AND DISCUSSION

The data on distribution of the respondents according to their personal attributes was presented in Table 1. The data revealed that majority of respondents (46.40 %) belonged to middle age group (35-50 years), whereas 18.40 and 35.20 per cent of them belonged to young age (15-35 years) and old age (above 50 years), respectively. Usually, farmers of middle aged are enthusiastic having more responsibility and are more efficient than the younger and older ones. Further, middle age group respondents have more physical vigour and also more responsibility towards family than the younger ones. This might be the important reasons to find that majority of the respondents in the age group of 35 to 45 years. The results are in line with the research findings reported by Vedamurthy (2002) and Patel (2011).

In respect of formal education level obtained (Table 1), it is observed that 21.60 per cent were illiterates, whereas 46.40 per cent of the respondents had received primary education (1-7 standard), followed by 12.00 per cent of respondents had received Secondary level (8-10 standard), while 17.60 per cent and 2.40 per cent of the respondents had education up to Secondary level (11-12) standard) and degree level, respectively. Non-realization of the influence of formal education in one's life, illiteracy of the parents might have come in the way of getting them better education by their parents. Another contributing reason could be the rural social environment might not have encouraged their parents to provide education to their children. As the rural people have still traditional orientation they generally do not prefer to send their children to assist in farm and household activities. The distance of higher study centres from the villages and need for more investment also might have prevented the parents from providing higher education to their children. The above findings got support from the studies conducted by Babanna (2002), Vedamurthy (2002) and Patel (2011). As far as the caste group (Table 1), majority of the respondents were coming from Socially and Economically Backward Class (85.60 %). The similar finding has been reported by Patel (2011).

The data pertaining to distributions of the respondents according to their knowledge about pests seen in different crops grown in the surveyed areas presented in Table 2 revealed that majority of the respondents (more than 90.00 %) possessed knowledge about termites in wheat, aphids in mustard, semilooper in castor and ear head worm in sesamum, whereas between 35 to 45 per cent of the respondents had knowledge about white grub in groundnut and different cotton pests. It is cleared from the data that majority of the respondents had knowledge about major pest of the crop. The reason may be that the wheat, mustard, castor, cotton, sesamum and groundnut are the important crops grown by farmers in this region. The finding is in line with the finding of Pandya (2011).

Distributions of the respondents according to their sources of information regarding pesticide use were presented in Table 3. Pesticides dealers (89.60 per cent) were the main source of information for the respondents regarding pesticide use. The second important source of information was village level worker reported 68.80 per cent for the respondents. Remaining sources of information for getting information regarding pesticide use in descending order were

farm publication (39.20%), SAU's scientists (19.20 %), self experience (15.20 %) and relatives (1.60 %). The above findings got support from the study conducted by Pandya (2011), who also reported that pesticides dealers considered are credible source of information for majority of the respondents regarding pesticide use.

It is evident from the data collected from the respondents according to method of application of pesticide (Table 4) that majority of the respondents (96.00 %) apply the pesticides by spraying them on the plants for the control of the pests, followed by seed treatment (81.60 %), through irrigation water (42.40 %) and soil application (19.20 %). It can be pointed out from the results that majority of the farmers spraying the pesticides on plants and also giving the seed treatment for pest control. However, few farmers possessed some knowledge about the application of pesticides through irrigation water and soil application too.

Distributions of the respondents according to equipments for application of pesticides was presented in the Table 5 noticed that more than half of the respondents (55.20 %) used the Knapsack sprayer for the spraying the pesticides, followed by Aspee bollow sprayer (40.00 %) and Rotary duster (18.40 %). It can be evident from the Table that majority of the respondents had awareness of Knapsack sprayer and Aspee bollow sprayer as equipments of spraying the pesticides. Results draws support from the statement, the problem of non-availability of plant protection inputs/equipments. The other reason for low adoption of plant protection equipments might be the lack of extension support to educate and providing knowledge to the farmers regarding plant protection measures.

The data of application of pesticides as per dose evident that majority of the respondents (78.40 %) used approximate proportion of pesticides solution for the control the pests, while only 21.60 per cent of respondents prepared a solution for spraying as per recommended dose for controlling the pest (Table 6). The inference that could be drawn from the above findings that large number of farmers did not adopt recommended plant protection chemicals.

Distributions of the respondents according to preparation of pesticide solution for spraying purpose presented in the Table 7 pointed out that majority of the respondents (66.40 %) shaking pesticides solution with stick, followed by shaking pesticides solution through hand (34.40%). A few respondents wear hand gloves (14.00 %) and used the mask (10.00 %).

From the results of the survey, it is evident that low adoption of plant protection measures could be due to lack of proper knowledge. Further, lack of technical guidance could be also the reason for non-adoption and lack of contact with extension personnel may have resulted in lower overall adoption level of plant protection measures. This indicated that the farmers had good knowledge regarding plant protection measures, but they had low level of adoption. The facts implied that the extension agency, therefore, need to conduct method demonstration, group discussion, meetings, exhibitions and field days to convince the farmers regarding benefits of adopting recommended plant protection measures.

Adoption of the plant protection measures is complex one, as it involves skills and more risk too. Since, the more number of farmers were small land holders, their income is very low. Hence, they are not ready to take risk and for many other reasons like non-availability of plant protection inputs, lack of technical knowledge regarding plant protection were responsible for low adoption of plant protection measures (Vasantha Kumar, 2000).

CONCLUSION

Based on the survey conducted, it can be concluded that majority of the respondents belonged to middle age group (35-50 years), had undertaken the primary education up to 1-7 standard and of Socially and Economically Backward Class. Majority of the respondents (> 90.00 %) possessed the knowledge about major pests of the crop grown in the surveyed area. Their main source of information about the pesticides was pesticides dealers. Majority of the farmers sprayed the pesticides on plants by using Knapsack sprayer and Aspee bollow sprayer and/or giving the seed treatment for pest control. Majority of the respondents (78.40 %) used approximate proportion of pesticides solution for the control the pests. A few respondents wear hand gloves and used the mask during preparation of pesticide solution.

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Table 1: Distribution of the respondents according to their personal attributes (N= 250)

Sr. No	Personal Attributes	Number	Per cent
1.	Age Group		
	Young Age (15-35Yrs.)	46	18.40
	Middle Age (35-50Yrs.)	116	46.40
	Old Age (Above 50 Yrs.)	88	35.20
2.	Education level		
	Illiterate	54	21.60
	Primary level (1-7 std.)	116	46.40
	Secondary level (8-10std.)	30	12.00
	Higher Secondary level (11-12 std.)	44	17.60
	College level	06	2.40
3.	Caste Group		
	General	24	09.60
	S.E.B.C (Baxi)	214	85.60
	Schedule Caste (S.C)	12	04.80
	Schedule Tribe (S.T)	00	00.00

Table 2: Distributions of the respondents according to knowledge of pest (N= 250)

Sr. No	Name of Crop	Name of Pest	Number	Per cent
1	Groundnut	(a) White grub	94	37.60
		(b) Aphids	10	04.00
2	Cotton	(a) Spotted ball worm	88	35.20
		(b) <i>Heliothis</i>	112	44.80
		(c) Sucking pest	112	44.80
3	Sesamum	(a) Ear head worm	226	90.40
4	Castor	(a) Semilooper	236	94.40
		(b) Capsule borer	16	06.40
5	Mustard	(a) Aphids	236	94.40
		(b) Saw fly	14	05.60
6	Wheat	(a) <i>Heliothis</i>	12	04.80
		(b) Termites	238	95.20

Table 3: Distributions of the respondents according to their sources of information regarding pesticide use (N= 250)

Sr. No	Motivational Sources	Number	Per cent	Rank
1	Village Level Worker	172	68.80	II
2	Pesticides Dealers	224	89.60	I
3	Relatives/Neighbours	04	01.60	VI
4	Self experience/Knowledge	38	15.20	V
5	SAU'S Scientists	48	19.20	IV
6	Farm Publication	98	39.20	III

Table 4: Distributions of respondents according to method of application of pesticides (N=250)

Sr. No	Control Methods	Number	Per cent	Rank
1	Spray	240	96.00	I
2	Soil application	48	19.20	IV
3	Seed treatment	204	81.60	II
4	Pesticides application through irrigation water	106	42.40	III
5	Cleaning of bunds	18	07.20	V
6	Biopesticides/ Biocontrol	04	01.60	VI
7	Ploughing	02	00.80	VII

Table 5: Distributions of the respondents according to equipments used for pesticide application (N=250)

Sr.No	Protection Equipments	Number	Per cent
1	Knapsack sprayer	69	55.20
2	ASPEE bolo sprayer	50	40.00
3	Rotary duster	23	18.40
4	Pheromones traps	09	07.20
5	Light traps	03	02.40

Table 6: Distributions of the respondents according to use of pesticide dose (N= 250)

Sr. No	Statements	Number	Per cent	Total Score	Rank
1	As per recommendation	54	21.60	108	II
2	Approximate proportion	196	78.40	196	I

Table 7: Distributions of the respondents according to preparation of pesticide solution for spraying purpose (N= 250)

Sr. No	Statements	Number	Per cent	Total Score	Rank
1	Hand shaking	86	34.40	172	II
2	Shaking with stick	104	41.60	208	I
2	Wear hand gloves	25	10.00	50	III
4	Mask use	35	14.00	70	IV

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