

Original Research Article

Profile of the Farmers Perception about Environmental Risk in Pesticidal Use

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ABSTRACT

The present study was conducted during the year 2019-20 in randomly selected Parbhani district in Marathwada region of Maharashtra state. Two talukas were selected from the Parbhani district i.e. Parbhani and Purna. From each talukas four villages were selected randomly. From each village (15) farmers were selected, thus total sample size will be 120 and information pertaining to objectives was schedule prepared. The simple percentage was worked to describe the profile of the farmers. The Ex-post-facto research design was used for the study. A well-structured questionnaire designed for study was used for collecting the data from respondents through personal interview method. The data collections from the respondents were edited tabulated and analyzed using suitable statistical tools like frequency, percentage, mean, standard deviation and Pearsons coefficient of correlation. The study was observed that, the profile characteristics of farmers concluded that from present study that majority (60.00%) farmers were belonged to middle age group, (38.33%) farmers were belonged to secondary education group. Also clearly observed that majority (34.17%) of farmers belonged to medium land holding category, (45.83%) per cent farmers had rabi season cropping pattern and more than half (70.83%) of the farmers were found with medium annual income category. Majority (50.83%) of farmers had well as irrigation source, less than half (42.11%) of the farmers had membership in one organization, half of the farmers received no any training, (85.00%) of the farmers were having medium level of extension contact, (59.16%) had medium level of source of information and (61.66%) of the farmers had medium level of knowledge about different areas of pesticide.

Keywords

Profile of farmers,
Perception,
Pesticides

Introduction

In India a majority of population is engaged in agriculture and is therefore exposed to the pesticides use in agriculture. Although Indian average consumption of pesticide is far lower than many other developed economies, the problem of pesticide residue is very high and has also affected the export of agricultural commodities in the last few years. Around the world to minimize the crop losses more

than thousands of pesticides both chemical and biological were used. Pesticide consumption is the highest in Maharashtra, followed by Uttar Pradesh, Punjab and Haryana. The country like India where more than two-third of the population were directly or indirectly depends on agriculture and responsible for providing food for people, adequate plant protection measures are one of the important parameters of crop husbandry. Many farmers don't have information about

types of pesticides, their level of poisoning, hazards and safety measures to be taken before use of those pesticides. Pesticides have harmful effect on health and environment.

Pesticides being used in agricultural tracts are released into the environment and come into human contact directly or indirectly. Humans are exposed to pesticides found in environmental media (soil, water, air and food) by different routes of exposure such as inhalation, ingestion and dermal contact. A pesticide is any substance used to kill, repel, or control certain forms of plant or animal life that are considered to be pests. To control these pests, we have “pesticides”. These are products made for preventing, destroying and mitigating any pests.

Some pesticides contribute to global warming and the depletion of the ozone layer. Excessive use of pesticides increases soil, water and air pollution. The economic loss is enormous since these highly poisonous chemicals find their way into the air and water system, including rain, fog and snow affecting often totally the flora and fauna, even humans. Farmers are using excessive amount of pesticides in a wrong manner with disproportionate dosage, which leads to high cost of cultivation as well as ecological imbalance. Thus the perception about environmental risk in pesticidal use is play an important role to know the knowledge of farmers about pesticides, their improper use dosage and environmental hazards.

Materials and Methods

The present study was conducted during the year 2019-20 in randomly selected Parbhani district in Marathawada region of Maharashtra state. Two talukas were selected from the Parbhani district i.e. Parbhani and Purna. From each talukas four villages were selected randomly. From each village (15)

farmers were selected, thus total sample size will be 120 and information pertaining to objectives was schedule prepared. These selections were done by using simple random sampling method for the purpose of the study. Keeping in the view of objective of the study, a structured interview schedule was prepared. The data were collected through personal interview method with the help of interview schedule. The questions and statements were asked in local language i.e., Marathi. Ex-post facto research design was used for present study. The statistical methods and tests such as frequency, percentage, mean, standard deviation and coefficient correlation were used for the analysis of data.

Results and Discussion

Socioeconomic profile of the farmers

Age

It refers to chronological age of farmers at the time of investigation and was recorded by asking them. The table 1 revealed that the majority 60.00 per cent farmers were belonged to middle age group followed by 20.83 per cent of the farmers belonged to old age group 19.17 per cent were belonged to young age group. Thus, it is concluded that majority of the more than half farmers belonged to middle age group categories. The probable reason might be that the parental occupation has been taken-up by middle aged farmers being responsible for maintaining their families.

The results were supported by the findings of Badhe (2012).

Education

It refers to the formal schooling of an individual from school to the university

degree. Educational status may influence the level of perception and awareness of the farmers. The table 1 revealed that the most of the farmers 38.33 per cent found in a secondary education group. An equal number of the farmers 22.05 per cent had educated up to primary and higher secondary education level, followed by 08.33 per cent and 07.05 per cent of them illiterate and college level of education, respectively. And single farmer 00.84 per cent was found can read and write.

While no body farmers were found under other category. It is inferred that majority of the farmers had education level up to higher secondary level. The probable reason for literacy among the respondents of may be due to more primary and secondary level education facilities available in rural area.

The results were supported by the findings of Shitre (2010).

Land holding

It refers to the total number of the hectares of land possessed and owned by the respondents at the time of interview. The table 1 revealed that the majority 34.17 per cent of farmers belonged to medium land holding category. 26.66 per cent of the farmers were belonged to category of small land holding, followed by 22.05 per cent of farmers were belonged to category of semi-medium land holding possessing land between 2.01ha. – 4.00 ha, 15.84 per cent of the farmers were belonged to marginal land holding category i.e up to 1.00 ha. 00.83 per cent farmers were belonged to large category between (10.10 ha and above ha). Thus it is concluded that majority of farmers had belonged to medium farmer's category. The probable reason might be that the ancestral transfer of land holding from generation to generation and other reasons that the fragmentation of land that is decreases the farm size Similar.

The results were supported by the findings of Badhe (2012).

Cropping pattern

It refers to number of crops grown by an individual respondent. The table 1 revealed that the 45.83 per cent farmers had rabi season cropping pattern. It was followed by 29.16 per cent farmers had kharif season cropping pattern. 11.66 per cent of the farmers had Annual season cropping pattern, followed by 09.16 per cent of the farmers had perennial season cropping pattern. 04.19 per cent farmers had summer season cropping pattern. Thus, it is concluded that majority of the respondents had rabi season cropping pattern. The probable explanation might be that Marathwada region comes under drought condition area. Hence farmers store water in rainy season and this water may available to the crops. Due to this most of the farmers had rabi season cropping pattern.

The results were supported by the findings of Madhu (2013).

Annual income

It refers to the total income received by the respondents and their family members from all the sources during a year in Rupees. The table 1 revealed that the more than half 70.83 per cent of the farmers were found with medium annual income i.e Rs 31583 to 3043101 /-., followed by 22.51 per cent and 06.66 per cent of them with high and low annual income, respectively. It inferred that great majority of the farmers were found with medium to high annual income category. Possible reason that could be attributed was majority farmers were belonging to medium income category due to drought, marginal land holding and less source of irrigation. The results were supported by the findings of Badhe (2012).

Source of irrigation

It is referred as irrigation facilities available with selected respondent. It was operationalized as the source of irrigation for cultivation and kind of irrigation practiced by the respondent in the farm. The table 1 revealed that the majority 50.83 per cent of farmers had well as irrigation source, followed by 17.50 per cent had tube well as source of irrigation, 15.83 per cent farmers depend upon the canal as source of irrigation.

whereas, 08.34 per cent farmers had no source of irrigation. Whereas 07.05 per cent farmer was used river as source of irrigation. Thus it appears that majority of farmers had well as source of irrigation. The probable explanation might be that having less irrigation facilities that Marathwada Region comes under the drought prone area and less number of farm pond in Marathwada region could be attributed to having small land holding.

The results were supported by the findings of Thakare (2013).

Social participation

Social participation is the degree of involvement and frequency of the participation of an individual in different activities performed by social organizations. The table 1 revealed that the less than half 42.11 per cent of the farmers had membership in one organization, followed by 33.33 per cent with no membership and 15.40 per cent of them member of more than one organization. Very few 09.16 per cent of farmers were holding position in various organizations. It is clear from the data that majority of the farmers found in a member of one organization category. Farmers participating in social work and activities. Hence for developing societies performance

in programs social participation is back bone of socialization might be the possible explanation of this result.

The results were supported by the findings of Badhe (2012).

Training received

It has been operationalised in terms of the gain in knowledge and skill by the farmers during the course of training programme conducted by an institution. It refers to the training received by the farmers. The table 1 revealed that the half of the farmers received no any training, while 46.66 per cent of the farmers received only one training. Where- as 03.34 per cent farmers received two or more than two trainings. It was concluded that majority 50.00 per cent farmers don't receive any training. The probable reason might be that farmers not attends the training due farm work at village level or they may not show interest in attending training.

The results were supported by the findings of Mustapha (2017).

Extension Contact

It refers to the frequency of contact made by the respondents with the extension workers inside or outside the village for acquiring information. The table 1 revealed that the majority 85.00 per cent of the farmers were having medium level of extension contact.

Whereas 10.83 per cent of them were having low level of extension contact and remaining 04.17 per cent of farmers were having high level of extension contact. This might be due to less availability of these agencies to farmers and existence of Government, private agencies in that area. The results were supported by the findings of Alam *et al.*, (2016).

Table.1 Distribution of farmers according to their socio-economic profile

(N=120)

Sr. No.	Variable	Frequency (F)	Percentage (%)
1.	Age		
	Young	23	19.17
	Middle	75	60.00
	Old	22	20.83
2.	Education		
	Illiterate	10	08.33
	Can read and write	01	00.84
	Primary school	27	22.05
	Secondary education	46	38.33
	Higher secondary education	27	22.05
	College level	09	07.05
	Other	00	00.00
3.	Land Holding		
	Marginal	19	15.84
	Small	32	26.66
	Semi-medium	27	22.05
	Medium	41	34.17
	Large	01	00.83
4.	Cropping pattern		
	Kharif	35	29.16
	Rabi	55	45.83
	Summer	05	04.19
	Annual	14	11.66
	Perennial	11	09.16
5.	Annual income		
	Low	08	06.66
	Medium	85	70.83
	High	27	22.51
6.	Source of irrigation		
	No source	10	08.34
	River	09	07.05
	Well	61	50.83
	Canal	19	15.83
	Tube well	21	17.50
7.	Social participation		
	No membership	40	33.33
	Member of one organization	51	42.11
	Member of more than one organization	18	15.40
	Office holders	11	09.16
8.	Training received		
	No any	60	50.00
	Only 1	56	46.66

	two or more than 2	04	03.34
9.	Extension Contact		
	Low	13	10.83
	Medium	102	85.00
	High	05	04.17
10.	Source of information		
	Low	29	24.18
	Medium	71	59.16
	High	20	16.66
11.	Knowledge		
	Low	20	16.66
	Medium	74	61.66
	High	26	21.68

Source of information

It has been operationally defined as resource used by the respondent for seeking technical information and guidance about perception of environmental risk in pesticidal use. The table 1 revealed that the majority of the respondents 59.16 per cent had medium level of source of information, while only 24.18 per cent. farmers had low level of source of information. Only 16.66 per cent of the farmer’s had high level of source of information. It could be inferred that most of the farmers were belonged to the medium level of source of information. Probable reason for above finding may be due to sources of information help to seek knowledge and guidance about different aspects related to farming. Farmers also want the latest, new, modern, up-dated and recent information. Information needs of farmers vary from area to area and from crop to crop based on their exposures, agricultural situations, availability of the inputs and so on.

The results were supported by the findings of Madhu (2013).

Knowledge

Knowledge is facts, information, and skills acquired through experience or education. It

refers to the methods of pesticide use and side effects of pesticides known to the farmers. The table 1 revealed that the majority 61.66 per cent of the farmers had medium level of knowledge about different areas of pesticide, while 21.68 per cent and 16.66 per cent of farmers had high and low level of knowledge about different areas of pesticide. Thus it can be concluded that the most of the farmers had medium to high level of knowledge regarding different areas of pesticides. Probable reason for above finding may be due to their primary to secondary level of education, majority of farmers had good extension contact, literacy result. They could not properly read the quantity given with pesticides container regarding dose, time and other operation related to the application method. Another reason might be due to all farmers can’t read instructions about safe handling of pesticides and unaware about self-protection from pesticide.

The results were supported by the findings of Badhe (2012).

The study indicated that, the profile of the farmers concluded from the present study that majorities of the farmers were having medium age and education up to higher secondary school level. Farmers belong to medium land holding category, having rabi

season cropping pattern. It was observed that, majority of the farmers belongs to medium annual income category, had membership in one organization, had well as main source of irrigation. Rare farmers received the training. Majority of the farmers had medium level of extension contact and source of information. Medium level of knowledge of farmers about environmental risk in pesticidal use and application of pesticides.

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References

- Afari-Sefa V, Asare- Bediako E, Kenyon L, JA Miach 2015. Pesticide use practices and perceptions of vegetable farmers in the cocoa belts of the Ashanti and Western Regions of Ghana. *Adv crop Sci. Tech* (3); 174.
- Jhalendra, P. R., R. Regmi, R. Ghimire, K. D. Puri, 2018. Farmers' Knowledge on Pesticide Safety and Pest Management Practices: A Case Study of Vegetable Growers in Chitwan, Nepal. *Agriculture Journal*. 8: 1-11.
- Madhu, K. B., 2013. farmers' perception about environment risk in pesticidal use. M.Sc. (Agri.) Thesis Dr. PDKV. Akola.
- Kesha, R., 2015. "Perception of paddy growers about environmental hazards caused through injudicious use of chemicals in paddy cultivation" Anand Agricultural university, Anand.
- Muhammad, H., K., and Ruslan R., 2012. farmer's perception on the adverse effects of pesticides on environment: the case of Bangladesh. *Int. J. Sustainable Agric*.4 (2): 25-32.
- Sharma DR, Thapa RB, Manandhar HK, Shrestha SM, Pradhan SB. 2012. Use of pesticides in Nepal and impacts on human health and environment. *J Agric Environ* 13: 67-72.