

## **FARMERS' AWARENESS REGARDING AGRICULTURAL POLLUTION IN GUJARAT**

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### **INTRDUCTION**

Environmental changes have put the man in danger. The air, water as well as various food commodities is some time loaded with toxic chemicals. Study carried out a decade back indicates the presence of pesticides residues in mothers' milk in the third world countries. Proper management of the environment is the only way to ensure continuous and sustained development of the society. It is, therefore essential to make the masses aware of the changes about the quality of our environment.

Among various sources, agricultural inputs sometimes cause serious degradation to the ecosystem. In order to know the extent of awareness among farmers the present study entitled "Farmers' Awareness Regarding Agricultural Pollution in Gujarat" was undertaken in Padara, Karjan and Dabhoi talukas of Vadodara district.

#### Agricultural pollution

Agricultural pollution refers to physical, chemical or biological alterations in the quality of air, water and soil due to agricultural inputs to a degree that is harmful to environment and human beings.

#### Identification of agricultural pollutant and pollution causing practices

To identify the major agricultural pollutant and pollution causing practices, relevant literature and experts from the discipline of Entomology, Plant Pathology, Agricultural Chemistry & Soil Science, Agronomy, Agricultural Engineering, various Department

of Dairy Science College and Veterinary College and Gujarat State Pollution Control Board etc. were consulted.

The pollution cause due to use of pesticides in agriculture is considered to be the most serious ones. Such residues built up in the soil, water, food and feed because of wanton and non-judicious use of pesticides. Directed application of herbicides to the soil may result in the contamination of the sub soil as well as ground water.

The causes of fertilizers pollution is attributed to the poor management of fertilizers and incidental addition of toxic elements as impurities in material. Adverse effect of fertilizer is the rise in concentration of nitrate in drinking water, which causes a fatal diseases " blue baby syndrome" in children. Fertilizer pollution leads to accumulation of heavy elements (Zn, Mo, Pb) in to soil, water and food affects adversely on human body.

#### Objectives of the study

- 1 To identify major agricultural pollutants and pollution causing practices.
- 2 To determine the extent of awareness among farmers about agricultural pollution.

### **METHODOLOGY**

The present study was carried out in Vadodara district of Gujarat state which was purposively selected. It is major cotton growing area, agriculturally important district and was considered as highly polluted area. Hence, Vadodara district was selected for the study.

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Three talukas of Vadodara district viz. Padara, Dabhoi and Karjan were selected on the basis of information available from pollution control board of Gujarat. Five villages were randomly selected from each Taluka and from each selected villages ten respondents were randomly selected. In all 150 farmers were selected. The variables under study were selected on the basis of extensive review of literature related to the topic of research and consultation with experts. Only those variables, which were found most relevant to the present investigation, were finally selected for the study. The data were collected personally from the respondents during 2<sup>nd</sup> week of May to 2<sup>nd</sup> week of June 2004 which is considered to be most important tool for the researcher to get authentic first hand information.

## RESULTS AND DISCUSSION.

### Extent of awareness among farmers

Awareness is the perception of an individual is conscious about agricultural pollutants and pollution causing practices. The awareness taken more, as a cognitive behavior has been operational as the respondent's consciousness, i.e. being aware or not aware about type of agricultural pollution. The data of which are presented in Table-1

The data from Table 1 reveal that slightly more than half (52.67 per cent) of the respondents had medium level of awareness followed by 26.00 per cent had high and 21.33 per cent had low level of awareness regarding pesticides pollution with average score 3.67 and ranked 4<sup>th</sup>.

Regarding fertilizer pollution 52.67 per cent had medium level of awareness, 24.00 per cent had low and 23.33 per cent had high level of awareness with average awareness score 3.53 and ranked 7<sup>th</sup>.

The average awareness score of respondents regarding harvest waste pollution was found to be 3.69 and ranked 3<sup>rd</sup> having 56.00 per cent respondents with medium level of awareness, 28.00 per cent had high and 16 per cent respondents with low level of awareness regarding agricultural pollution.

In case of food processing waste the average awareness score of respondents regarding agricultural pollution was found to be 3.34, and ranked 8<sup>th</sup>. The percentage of low level of awareness was 25.33 while 44.00 per cent of the respondents had medium level of awareness and 30.67 per cent respondents had high level of awareness regarding agricultural pollution.

It was found that average awareness score

**Table 1 : Distribution of the respondents according to their level of awareness regarding different agricultural pollution (n=150)**

Sr. No	Source of Pollution	Level of Awareness						Average Score	Rank level
		Low		Medium		High			
		F	%	F	%	F	%		
1	Pesticides	32	21.33	79	52.67	39	26.00	3.67	4
2	Fertilizers	36	24.00	79	52.67	35	23.33	3.53	7
3	Harvest waste	24	16.00	84	56.00	42	28.00	3.69	3
4	Food processing waste	38	25.33	66	44.00	46	30.67	3.34	8
5	Sewage water	32	21.33	89	59.34	29	19.33	3.55	6
6	Salt & silt drained by irrigation water	23	15.33	78	52.00	49	32.67	3.93	1
7	Livestock waste	29	19.33	89	59.34	32	21.33	3.69	3
8	Dead animals	27	18.00	75	50.00	48	32.00	3.83	2
9	Noise from farm machineries	37	24.67	81	54.00	32	21.33	3.57	5

of the respondents regarding sewage water pollution was 3.55 and ranked 6<sup>th</sup>. Nearly three fifth (59.34 per cent) of the respondents had medium level of awareness followed by 21.33 per cent had low and 19.33 per cent had high level of awareness.

As regard to pollution from salt and silt drained by irrigation water, only 15.33 per cent respondents had low level of awareness, whereas 32.67 per cent had high level of awareness and 52.00 per cent of the respondents had medium level of awareness. The average awareness score was 3.93 and remained first in rank.

With regards to livestock waste pollution, nearly three fifth (59.34 per cent) of the respondents had medium level of awareness, while 19.33 per cent and 21.33 per cent of the respondents had low and high level of awareness, respectively with average awareness score of 3.69 and ranked 3<sup>rd</sup>.

As regards to dead animal pollution, 32.00 per cent of the respondents were highly aware, while half (50.00 per cent) of the respondents had medium level of awareness. Only 18.00 per cent respondents had low level of awareness about dead animal pollution with average awareness score 3.83 and ranked second.

In respect of noise pollution from farm machineries, more than half (54.00 per cent) of the respondents had medium level of awareness followed by 24.67 per cent

and 21.33 per cent of the respondents had low and high level of awareness regarding agricultural pollution, respectively. The average awareness score of respondents was found to be 3.57 regarding noise pollution and ranked 5<sup>th</sup>.

#### **Level of overall awareness of the respondents regarding agricultural pollution**

An effort was made to know the overall level of awareness of the respondents regarding agricultural pollution. The results of which are summarized in Table 2

It is evident from the data presented in Table 2 that more than two third (76.00 per cent) of the respondents had medium level of overall awareness regarding agricultural pollution, whereas 16.00 per cent of the respondents had low level of overall awareness. Only 8.00 per cent of the respondents had high level of overall awareness regarding agricultural pollution.

It can be concluded that majority of the farmers of Vadodara district had medium level of overall awareness regarding agricultural pollution. Majority of the respondents had primary to secondary level of education, less contact with mass media and sources of agricultural information might be the probable reason for the medium level of overall awareness regarding agricultural pollution for all sources of pollution.

Similar results were obtained by Kaur (1996) and Sharma *et al.* (1998).

**Table 2 : Distribution of the respondents according to their overall level of awareness regarding agricultural pollution. (n=150)**

Sr. No.	Category	Frequency	Per cent
1	Low awareness (Up to 24.48 score)	24	16
2	Medium awareness (24.49 to 41.36 score)	114	76
3	High awareness (Above 41.36 score)	12	8
	Total	150	100.00

$$\bar{X} = 32.92$$

$$S.D. = 8.44$$

## CONCLUSION

Agricultural pollution refers to physical, chemical or biological alterations in the quality of air, water and soil due to agricultural inputs to a degree that is harmful to environment and human beings. In order to feed the expanding population men started exploiting all the available resources without carrying low of nature. Although pesticides and fertilizers have greatly increase the agricultural production but their use has resulted in pollution of the environment. Proper management of the environment is the only way to ensure continuous and sustained development of the society. It is therefore essential to make the masses aware of the changing in the qualities of our environment. The major agricultural pollutants were pesticides, fertilizers, harvest waste, food processing waste, sewage water, salt and silt drained from irrigation water, live stock waste, dead animal waste and noise pollution from farm machineries and for all these, farmers had medium level of awareness. More than two third (76.00 per cent) of the respondents had medium level of over all awareness regarding agricultural pollution.

## IMPLICATION

The finding of the study reveled that majority of the respondents had membership in one organization, medium extension as well as mass media contact. Extension and mass media contact had showed their significant influences, it is therefore, necessary

1. The village level extension workers and extension functionaries have visit villages for planning and implementation of training programme for increasing the awareness of agricultural pollution.
2. More effort should be made to become subscriber about of popular agricultural magazines.
3. The participation of farmers in various training programme should be increased as it help to increase the awareness.

## REFERENCES

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