

**RESEARCH ARTICLE :**

# Farmers profile and their perception regarding environmental hazards caused through injudicious use of chemicals in paddy cultivation

■ **KESHA RAM, J.K. PATEL AND GORDHAN SINGH BHATI**

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**SUMMARY :** This study was carried out in Anand district of Gujarat state with specific objectives to study the profile of paddy growers and their perception regarding environmental hazards. The study revealed that more than half (56.00 %) of the paddy growers belonged to middle age group, more than two-fifth (42.00 %) of the paddy growers had primary level of education, nearly half of the respondents (46.66 %) had low (upto 10 years) experience, majority (63.33%) of the paddy growers had membership in one-organization. Nearly two-fifth (40.66 %) of the paddy growers had medium size of land holding, less than one-third of the paddy growers (30.00 %) had annual income ranging from Rs. 2,00,001 to 3,00,000 lakh, more than two-fifth (41.33 %) of the paddy growers had medium level of extension contact, slightly more than half (52.67%) of paddy growers had medium level of mass media exposure, slightly more than half (52.00 %) of the paddy growers had medium degree of economic motivation, majority (70.67 %) of the paddy growers had medium risk orientation, more than three- fifth (62.00%) of paddy growers had medium level of scientific orientation, more than half (53.33%) of the paddy growers had medium level of knowledge pertaining to eco-friendly technology, great majority (70.00 %) of the paddy growers had neutral attitude towards global warming, majority (53.33 %) of the respondents had medium level of adoption of eco-friendly technology and great majority (73.34%) of the paddy growers had medium level of perception pertaining to environmental hazards caused through injudicious use of chemicals in paddy cultivation among the different independent variables, viz., education, scientific orientation, knowledge, attitude and adoption had positive and highly significant correlation with perception level of paddy growers in relation to environmental hazards caused through paddy cultivation. whereas, farming experience, social participation, mass media exposure, economic motivation and risk orientation of the paddy growers exerted positive and non-significant influence.

**KEY WORDS:**

Profile of paddy growers, Perception

**Author for correspondence :**

**KESHA RAM**

Department of  
Extension Education,  
B.A. College of  
Agriculture, Anand  
Agricultural University,  
ANAND (GUJARAT) INDIA  
Email: keshavpanchal99@gmail.com

See end of the article for authors' affiliations

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## **BACKGROUND AND OBJECTIVES**

Rice is a water loving cereal crop. The hot and humid climate is necessary for rice

crop and the crop is heavily infested with numerous insect-pests and diseases. The loss caused by insect-pest and diseases is very

high in paddy. Ultimately, the rate of production per unit area is quite low in India as compared to other rice producing countries. On the other hand, farmers are using excessive amount of pesticides and nitrogenous fertilizer in rice in a wrong manner with disproportionate dosage, which leads to a higher cost of cultivation as well as ecological imbalance. Hence, reducing the environmental hazards arising due to pesticides, chemicals and fertilizers needs immediate action to be taken by the environmentalists and all other concerned to mitigate the greenhouse gas emission, fertilizer pollution and health hazards to the enormous human population. Recent escalation in fertilizer and pesticides prices is a matter of concern and invites the attention of scientists and extension functionaries to analyze the situation and plan suitable strategies with judicious use of such inputs for substantiality of agriculture in future. One way by which extension scientists can contribute to find out better ways and means of promoting eco-friendly measures among the group of clientele to check environment hazards. Since change in perception helps in formation of positivism towards the subjects and, therefore, it is always important to find out the most important factors of changing farmers perception about environmental hazards caused through injudicious use of chemicals in paddy cultivation. Keeping all the above facts in mind, the present research study was carried out with following objectives :

- To study the profile of paddy growers.
- To study the perception of paddy growers regarding environmental hazards caused through injudicious use of chemicals in paddy cultivation.
- To find out relationship between profile of paddy growers and their perception regarding environmental hazards caused through paddy cultivation.

## **RESOURCES AND METHODS**

The present study was conducted in Anand district of Gujarat state. Ten villages from two talukas of Anand district with higher potentiality of paddy cultivation were selected for the study. Fifteen respondents from each selected villages were selected randomly and thus, total 150 farmers were selected as respondent.

Suitable and appropriate scales developed by past researchers were used for the measurement independent variables and dependent variable in light of the derived

objective. The data were collected through personal interview and then after compiled, tabulated and analyzed to get proper answer for the specific objectives of the study with the help of various appropriate statistical tools like mean, frequency, percentage and co-efficient of correlation to test the hypotheses under study.

## **OBSERVATIONS AND ANALYSIS**

Fourteen independent variables and perception of paddy growers regarding environmental hazards were measured and the result is presented in Table 1.

### **Age :**

It is apparent from the data presented in Table 1 that, more than half (56.00 %) of the paddy growers belonged to middle age group, followed by young age (29.33 %) and old age (14.67 %) groups .

### **Education :**

It is apparent from the data presented in Table 1 that, more than two-fifth (42.00 %) of the paddy growers had primary level of education, followed by secondary level of education (30.00 %) and illiterate (18.00%). While, 8.00 per cent of the paddy growers had higher secondary level of education, 2.00 per cent had graduation and no one had postgraduate and above level of education.

### **Farming experience:**

The data presented in Table 1 show that, nearly half of the respondents (46.66 %) had very low (upto 10 years) experience, followed by medium (40.00 %) experience and high (above 20 years) experience 13.34 per cent.

### **Social participation :**

The data displayed in Table 1 indicated that, majority (63.33 %) of the paddy growers had membership in one-organization, followed by 28.67 per cent, 5.33 per cent and 2.67 per cent had no-membership in any organization, membership in more than one organization and position holder, respectively.

### **Land holding :**

Table 1 shows that, nearly two-fifth (40.66 %) of the paddy growers had medium size of land holding, followed by 34.67 per cent with small size of holding and 16.67 per cent with marginal size of land holding and

**Table 1 : Profile of paddy growers and their perception regarding environmental hazards caused through paddy cultivation (n=150)**

Sr. No.	Components	Categories	Frequency (No.)	Percentage (%)
1.	Age	Young age (Upto 35 year)	44	29.33
		Middle age (36 to 50 year)	84	56.00
		Old age (Above 50 year)	22	14.67
		Total	150	100
2.	Education	Illiterate	27	18.00
		Primary education	63	42.00
		Secondary education	45	30.00
		Higher secondary	12	08.00
		Graduate	03	02.00
		Postgraduate and above	00	00.00
		Total	150	100
		3.	Farming experience	Low experience (Upto 10 years)
Medium experience (11 to 20 years)	60			40.00
High experience (Above 20 years)	20			13.34
Total	150			100
4.	Social participation	No membership	43	28.67
		Membership in one organization	95	63.33
		Membership in more than one organization	08	05.33
		Membership in more than two organization	00	00.00
		Membership along with position holder in any organization	04	02.67
		Total	150	100
5.	Land holding	Marginal (Upto 1.0 ha)	25	16.67
		Small (1.0 to 2.0 ha)	52	34.67
		Medium (2.01 to 4.0 ha)	61	40.66
		Large (Above 4.0 ha)	12	08.00
		Total	150	100
6.	Annual income	Upto Rs. 1 lakh	19	12.67
		Rs. 1,00,001 to 2,00,000 lakh	39	26.00
		Rs. 2,00,001 to 3,00,000 lakh	45	30.00
		Rs. 3,00,001 to 4,00,000 lakh	30	20.00
		Above Rs. 4 lakh	17	11.33
		Total	150	100
7.	Extension contact	Very low (0 to 3.6 score)	35	23.33
		Low (3.7 to 7.2 score)	49	32.67
		Medium (7.3 to 10.8 score )	62	41.33
		High (10.9 to 14.4score)	04	02.67
		Very high (14.5 to 18 score)	00	00.00
		Total	150	100
8.	Mass media exposure	Very low (0 to 1.6 score)	02	01.34
		Low (1.7 to 3.2 score)	37	24.66
		Medium (3.3 to 4.8 score)	79	52.67
		High (4.9 to 6.4 score)	29	19.33
		Very high (6.5 to 8.0 score)	03	02.00
		Total	150	100

Table 1 : Contd.....

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9.	Economic motivation	Very Low (6 to 10.80 score)	00	00.00
		Low (10.81 to 15.60 score)	02	01.33
		Medium (15.61 to 20.40 score)	78	52.00
		High (20.41 to 25.20 score)	66	44.00
		Very high (25.20 to 30.00 score)	04	02.67
		Total	150	100
10.	Risk orientation	Very low (10 to 18 score)	02	01.33
		low (19 to 26 score)	12	08.00
		Medium (27 to 34 score)	106	70.67
		High (35 to 42 score)	30	20.00
		Very high (42 to 50 score)	00	00.00
		Total	150	100
11.	Scientific orientation	Very low (8 to 18 score)	00	00.00
		Low (19 to 26 score )	24	16.00
		Medium (27 to 34 score)	93	62.00
		High (35 to 42 score)	30	20.00
		Very high (42 to 50 score)	03	02.00
		Total	150	100
12.	Knowledge	Very low (0 to 20 score)	03	02.00
		low (21 to 40 score)	51	34.00
		Medium (41 to 60 score)	80	53.33
		High (61 to 80 score)	14	09.33
		Very high (81 to 100 score)	02	01.34
		Total	150	100
13.	Attitude	Most unfavorable (12 to 21.6 score)	00	00.00
		Unfavorable (21.7 to 31.2 score)	15	10.00
		Neutral (31.3 to 40.9 score)	105	70.00
		Favourable (41 to 50.5 score)	30	20.00
		Most favourable (50.6 to 60 score)	00	00.00
		Total	150	100
14.	Adoption	Very low (0 to 20 score)	00	00.00
		low (21 to 40 score)	28	18.67
		Medium (41 to 60 score)	80	53.33
		High (61 to 80 score)	42	28.00
		Very high (81 to 100 score)	00	00.00
		Total	150	100
15.	Perception	Very low (0 to 20 score)	00	00.00
		low (21 to 40 score)	32	21.33
		Medium (41 to 60 score)	110	73.34
		High (61 to 80 score)	08	05.33
		Very high (81 to 100 score)	00	00.00
		Total	150	100

rest 08.00 per cent of the paddy growers belonged to large size of land holding.

#### **Annual income :**

It is clearly mentioned in the Table 1 that less than one-third of the paddy growers (30.00 %) had annual income ranging from Rs. 2,00,001 to 3,00,000 lakh, followed by 26.00 per cent had annual income ranging from Rs. 1,00,001 to 2,00,000 lakh, 20.00 per cent had annual income in between Rs. 3, 00,001 to 4, 00,000 lakh. 12.67 per cent had annual income upto 1.00 lakh and 11.33 per cent had above 4.00 lakh annual income.

#### **Extension contact :**

It is apparent from the data presented in Table 1 that, more than two-fifth (41.33 %) of the paddy growers had medium level of extension contact, followed by 32.67 per cent, 23.33 per cent and 02.67 per cent had low, very low and high level of extension contact, respectively.

#### **Mass media exposure :**

The data presented in Table 1 show that, slightly more than half (52.67%) of paddy growers had medium level of mass media exposure, followed by low, high, and very high level of mass media exposure with 24.66 per cent, 19.33 per cent and 02.00 per cent, respectively.

#### **Economic motivation :**

The data displayed in Table 1 indicated that, slightly more than half (52.00 %) of the paddy growers had medium degree of economic motivation, followed by high, very high and low degree of economic motivation with 44.00 per cent, 02.67 per cent and 01.33 per cent, respectively. No paddy growers found place in the category of very low level of economic motivation.

#### **Risk orientation :**

Table 1 shows that, majority (70.67 %) of the paddy growers had medium risk orientation, followed by 20.00 per cent, 08.00 per cent and 01.33 per cent of them had high, low and very low level of risk orientation, respectively. None of the respondents belonged to the categories of very high risk orientation (Badhe, 2012).

#### **Scientific orientation :**

It is clearly mentioned from the Table 1 that more than three-fifth (62.00 %) of paddy growers had medium level of scientific orientation, followed by 20.00 per cent,

16.00 per cent and 2.00 per cent had high, low and very high level of scientific orientation, respectively. None of the paddy growers belonged to very low level of scientific orientation.

#### **Knowledge :**

The distributional analysis mentioned in Table 1 indicated that more than half (53.33%) of the paddy growers had medium level of knowledge pertaining to eco-friendly technology, followed by 34.00 per cent, 9.33 per cent, 2.00 per cent and 1.34 per cent had low, high, very low and very high level of knowledge regarding eco-friendly technology, respectively.

#### **Attitude :**

Table 1 shows that, great majority (70.00 %) of the paddy growers had neutral attitude towards global warming, followed by 20.00 per cent and 10.00 per cent of them had favourable and unfavourable attitude towards global warming, respectively. None of the paddy growers fell under the categories of most favourable attitude and unfavourable attitude.

#### **Adoption :**

It is clearly mentioned from the Table 1 that majority (53.33 %) of the respondents had medium level of adoption of eco-friendly technology, followed by 28.00 per cent and 18.67 per cent of them had high and low level of adoption of eco-friendly technology in paddy cultivation.

#### **Perception :**

The distributional analysis pertaining to perception level of the paddy growers mentioned in Table 1 indicated that great majority (73.34 %) of the paddy growers had medium level of perception pertaining to environmental hazards caused through paddy cultivation, followed by 21.33 per cent and 5.33 per cent had low and high level of perception whereas no one respondents were belonged to very low and very high level of perception about environmental hazards caused through injudicious use of chemicals in paddy cultivation (Bagheri *et al.*, 2008; Balasubramani and Lekshmi, 2008; Chand, 2012 and Yadav, 2012).

#### **Relationship between profile of paddy growers and their perception regarding environmental hazards caused through paddy cultivation:**

It could be seen from Table 2 that among the

different personal, socio-economic, communicational and psychological variables, viz., education, scientific orientation, knowledge attitude and adoption had positive and highly significant correlation with perception level of paddy growers in relation to environmental hazards cause through injudicious use of chemicals in paddy cultivation. Whereas, farming experience, social participation, mass media exposure, economic motivation and risk orientation of the paddy growers exerted positive and non-significant relationship. While age, land holding, annual income and extension contact of the paddy growers had negative and non-significant correlation with their perception level.

**Table 2 : Relationship between profile of paddy growers and their perception regarding environmental hazards (n=150)**

Sr. No.	Independent variables	Correlation co-efficient ('r' value)
1.	Age	-0.01 <sup>NS</sup>
2.	Education	0.281 <sup>*</sup>
3.	Farming experience	0.012 <sup>NS</sup>
4.	Social participation	0.001 <sup>NS</sup>
5.	Land holding	-0.124 <sup>NS</sup>
6.	Annual income	-0.128 <sup>NS</sup>
7.	Extension contact	-0.028 <sup>NS</sup>
8.	Mass media exposure	0.030 <sup>NS</sup>
9.	Economic motivation	0.012 <sup>NS</sup>
10.	Risk orientation	0.120 <sup>NS</sup>
11.	Scientific orientation	0.251 <sup>*</sup>
12.	Knowledge	0.229 <sup>**</sup>
13.	Attitude	0.250 <sup>**</sup>
14.	Adoption	0.27 <sup>**</sup>

\* and \*\* indicate significance of values at P=0.05 and 0.01, respectively  
NS=Non-significant

### Conclusion :

To epitomize the results it can be said that majority of the farmers belonged to middle age group having primary to secondary level of education with low to medium experience in paddy farming, and had membership in at least one organization with medium to small size of land holding having annual income ranging from Rs. 1 to Rs.3 lakhs with low to medium level of extension contact and had medium level of mass media exposure, economic motivation, risk orientation, scientific

orientation and knowledge regarding eco-friendly technology with neutral attitude towards global warming with medium adoption of eco-friendly technology. As far as perception level of paddy growers is concerned majority of paddy grower possessed medium level of perception. Among independent variables, education, scientific orientation, knowledge, attitude and adoption had positive and highly significant correlation with perception level of paddy growers. Whereas, farming experience, social participation, mass media exposure, economic motivation and risk orientation of the paddy growers exerted positive and non-significant relationship. While age, land holding, annual income and extension contact of the paddy growers had negative and non-significant correlation with their perception level in relation to environmental hazards caused through injudicious use of chemicals in paddy cultivation.

Authors' affiliations :

**J.K. PATEL**, Dairy Vigyan Kendra, Sheth M.C. College of Dairy Science, Anand Agricultural University, ANAND (GUJARAT) INDIA

**GORDHAN SINGH BHATI**, Department of Extension Education, B.A. College of Agriculture, Anand Agricultural University, ANAND (GUJARAT) INDIA

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