

FARMERS' OPINION TOWARDS BIO-GAS

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ABSTRACT

The per capita consumption and availability of energy is one of the major yardsticks of any country's development. In view of shrinking oil and coal reserves and rising costs of these commodities, alternatives have to be developed up to a level where their exploitation is feasible technologically and economically. One of these alternatives is bio-gas. The present study was conducted to find out the opinion of farmers towards bio-gas technology in Udaipur district of Rajasthan. It was found that majority of farmers had favourable opinion towards bio-gas technology. It was also found that both the categories of respondents strongly disagreed with the negative statements namely "planning and implementation of bio-gas technology in villages is faulty" and "bio-gas technology is mere wastage of time, energy and money". Whereas, the positive statements namely "bio-gas is desirable and non-traditional source of energy" and "the gas produced in gobar gas plant is of superior quality", were strongly favoured by bio-gas owners of tribal and non-tribal areas.

Key Words : Opinion; Bio-gas technolog; Energy

INTRODUCTION

Commercial fuel prices are increasingly becoming out of reach of rural people because of increasing demand and high cost of finite commercial energy supply. Though, commercial energy is being extensively exploited and used, there is realisation of its being limited in supply. Ever increasing consumption of energy is not only resulting in escalation of its cost, but its unchecked and insufficient manner of consumption is leading the world, specially the developing nations, to crisis of great magnitude. India with the largest bovine population of 251 million has tremendous potential for the development of bio-gas technology. The bio-gas technology is one of the solutions to meet the growing energy demand in rural areas. The state of Rajasthan is also one of the potential states where bio-gas technology is being observed to be most popular in the rural areas as well as urban sector. It is a fact that a positive opinion of farmers towards an innovation leads to its greater adoption. Considering this fact, the present study was conducted with an objective "to know the opinion of farmers towards bio-gas technology."

METHODOLOGY

The present study was conducted in purposively selected Girwa (tribal) and Bhinder (non-tribal) panchayat samities of Udaipur district, where maximum number of bio-gas plants had been installed. Six villages from each panchayat samiti were selected on the basis of possessing highest number of bio-gas plants. Thus, in all twelve villages were taken for present investigation. From each selected village, eight respondents were identified by applying random sampling technique. Hence, the total study sample composed of 96

respondents. Data were collected by the investigator through personal interview technique with the help of structured scale. The scale consisted of 26 statements, out of which 13 statements were positive and remaining 13 statements were negative. To know the opinion of farmers, the responses were recorded on five-point continuum. Thereafter, collected data were analysed, tabulated and interpreted in the light of objective.

RESULTS AND DISCUSSION

In order to have an in-depth understanding about the opinion of respondents towards bio-gas technology, they were grouped into two opinion categories viz., less favourable (up to 99) and more favourable (above 99). This stratification was based on the calculated mean of the opinion scores obtained by the respondents. The distribution of respondents in each group is presented in Table 1.

The data presented in Table-1 reveal that 54.16 per cent of total respondents were having more favourable opinion towards bio-gas technology while 45.84 per cent respondents had less favourable opinion towards bio-gas technology. Further analysis of table indicates that 47.92 per cent tribal area respondents and 43.75 per cent non-tribal area respondents were in less favourable opinion group. While more than half of both tribal area respondents (52.08%) and non-tribal area respondents (56.25%) had reflected favourable opinion towards bio-gas technology. Hence, it may be inferred that majority of tribal and non-tribal area respondents had positive opinion towards bio-gas technology. The results of the study are in line with the findings of Dissgraskar and Wangikar (1993) who reported that most of the respondents (82.50%)

had favourable attitude towards bio-gas and only 17.50 per cent respondents had shown unfavourable attitude towards bio-gas technology.

Table 1. Distribution of respondents on the basis of their opinion towards bio gas technology

S.No.	Degree of opinion	Tribal area		Non-tribal area		Total	
		F	%	F	%	F	%
1.	Less favourable (Up to 99)	23	47.92	21	43.75	44	45.84
2.	More favourable (Above 99)	25	52.08	27	56.25	52	54.16
Total		48	100.00	48	100.00	96	100.00

To know the opinion of respondents towards the different aspects of bio-gas technology, 26 statements were considered. Mean per cent score for each statement was calculated and ranked accordingly. The results are presented in Table 2.

Table 2 reveals that most of the total bio-gas owners were strongly disagreed with the statements namely "planning and implementation of bio-gas technology in villages is faulty" with M.P.S. 96.45 and was ranked first by the respondents. While the statement "gobar gas is desirable and non-traditional source of energy" was strongly viewed by the respondents of tribal and non-tribal areas with M.P.S. 93.54 and assigned rank second.

Data further showed that respondents had strongly disopined with the negative statements entitled "bio-gas technology is mere wastage of time, energy and money", "the food prepared on it smells foul", "gobar gas is least fuel efficient and costlier among non-conventional sources of energy" and "the site selected for the installation of a gobar gas plant should be in the shade" with M.P.S. 93.33, 92.91, 92.70 and 91.70 respectively. These statements were placed on third, fifth, sixth and eighth positions in ranking hierarchy. Whereas the statements like "the gas produced in gobar gas plant is of superior quality", "gobar gas is a good alternative to LPG", "the gas pipe and stove (oven) should be of ISI mark" and "the gobar gas slurry as manure contains more nutrients than FYM" were positively favoured by the bio-gas owners in the study area. They were ranked fourth, seventh, ninth and twelfth with M.P.S. 93.12, 92.50, 91.24 and 85.20, respectively.

It is interesting to note that opinion of respondents regarding statements namely, "repair and maintenance of gobar gas plant is very high" and "problem of environmental pollution can be reduced with the adoption of bio-gas technology" scored 83.33 per cent each and were ranked intermediately at number 14.50 each in the ranking hierarchy. It was further noted that majority of the bio-gas owners showed neutral opinion about the statement "employment opportunities for the people in the rural areas has increased due to bio-gas technology" with M.P.S. 61.04 and accorded rank twenty first.

Further analysis of data clearly shows that the respondents

were disagreed with positive statements like "bio-gas technology has not been affected due to the scarcity of water and cattle dung" (M.P.S. 47.70) and "proper distance between the kitchen and bio-gas plant is essential for right gas pressure" (M.P.S. 39.78) and were ranked twenty second and twenty third, respectively. Likewise the negative statements entitled "lesser quantity of gas is produced during winter and rainy season in bio-gas plant" (M.P.S. 27.03), "there is no objection from the neighbour's point of view regarding the installation of bio-gas plant" (M.P.S. 22.29) and "it is difficult to cook maize chapaties and rab on bio-gas (M.P.S. 21.87) were strongly agreed by the respondents and assigned ranks at the bottom in ranking hierarchy as twenty fourth, twenty fifth and twenty sixth respectively.

From the above results, it may be concluded that bio-gas owners showed favourable opinion towards bio-gas technology, although it was affected due to the poor rainfall for the last five years in the study area.

The rank order correlation coefficient was calculated between the ranks assigned by the respondents of tribal and non-tribal area to different aspects of opinion about bio-gas technology. The table reveals that the calculated r_s value was 0.89, which was found to be statistically significant at 1 per cent level of significance. Thus, it was inferred that there was a significant correlation between tribal and non-tribal area respondents with regard to ranks assigned about different aspects of opinion towards bio-gas technology.

The present findings are in accordance with the findings of Wadhvani and Prasad (1985) who reported that the owners had very positive attitude towards bio-gas plant, they feel the installation of the bio-gas plant is a concrete step towards economic development and also towards solution of the problem of fuel and fertilizer (organic). The housewives consider that bio-gas plant will considerably improved their living standard.

CONCLUSION

The study indicated that majority (54.16 %) of the respondents had favourable opinion towards bio-gas technology. Whereas, 45.84 per cent respondents had less favourable opinion towards bio-gas technology. Therefore, it may be concluded that majority of farmers had more favourable opinion towards bio-gas technology. It was also found that both category of respondents strongly disagreed with the negative statements namely, planning and implementation of bio-gas technology in villages is faulty, bio-gas technology is mere wastage of time, energy and money, etc. Whereas, the positive statements namely, bio-gas is desirable and non-traditional source of energy, the gas produced in gobar gas plant is of superior quality, etc. were strongly favoured by bio-gas owners of tribal and non-tribal areas.

Table 2. Opinion of respondents towards different aspects of bio-gas technology.

S.No.	Opinion statements	Tribal area		Non-tribal area		Total	
		M.P.S	Rank	M.P.S	Rank	M.P.S	Rank
1	Bio-gas is desirable and non-traditional source of energy	96.25	1	90.83	9	93.54	2
2	Gobar gas is least fuel efficient and costlier among the non-conventional sources of energy	92.91	5.5	92.50	5	92.70	6
3	The sufficient subsidy is offered by the government for the installation of bio-gas plant	81.66	16.5	82.50	16	82.08	17
4	The site selected for the installation of a gobar gas plant should be in the shade	92.50	7	90.91	8	91.70	8
5	A sufficient number of cattle are required for effective running of bio-gas plant	84.16	13	83.33	15	83.74	13
6	Gobar gas takes more time in cooking as compared to other non-conventional sources of energy	60.83	20	67.91	20	64.37	20
7	Proper distance between the kitchen and bio-gas plant is essential for right gas pressure	34.16	23	45.41	22	39.78	23
8	It is difficult to cook maize chapaties and rab on gobar gas	22.50	26	21.25	25	21.87	26
9	The gas pipe and stove (oven) should be of ISI mark	94.50	3	87.91	11	91.24	9
10	The food prepared on it smells foul	93.75	4	92.08	6	92.91	5
11	The dung mixture prepared from cow dung does not produce foul smell	80.00	19	81.66	18	80.83	19
12	There is no objection from neighbour's point of view regarding the installation of bio-gas plant	24.58	25	20.00	26	22.29	25
13	The gobar gas slurry as manure contains more nutrients than FYM	83.75	14	86.66	12	85.20	12
14	The gas production in bio-gas plant is not affected by temperature fluctuation	88.75	10	88.33	10	88.54	11
15	The gas produced in gobar gas plant is of superior quality	92.91	5.5	93.33	4	93.12	4
16	High initial cost of the plant restrict the villagers from its adoption	80.41	18	85.41	13	82.91	16
17	Bio-gas technology has not been affected due to the scarcity of water and cattle dung	55.41	22	40.00	23	47.70	22
18	Bio-gas technology is mere wastage of time, energy & money	91.25	8	95.41	2	93.33	3
19	The bio-gas technology has reduced the drudgery and health hazards among women and children	81.66	16.5	80.83	19	81.24	18
20	Lesser quantity of gas is produced during winter and rainy season in gobar gas plant	26.66	24	27.91	24	27.03	24
21	Gobar gas is a good alternative to LPG	90.00	9	95.00	3	92.50	7
22	Bio-gas technology is not a suitable alternative to meet out the increasing demands of fuel in the villages	85.83	11	91.66	7	88.74	10
23	Employment opportunities for the people in the rural areas has increased due to bio-gas technology	59.58	21	62.50	21	61.04	21
24	Repair and maintenance of gobar gas plant is very high	84.58	12	82.08	17	83.33	14.5
25	Problem of environmental pollution can be reduced with the adoption of bio-gas technology	82.08	15	84.58	14	83.33	14.5
26	Planning and implementation of bio-gas technology in villages is faulty	95.83	2	97.08	1	96.45	1

rs = 0.89^{SS} M.P.S. = Mean percent score, SS = Significant at 1 percent level of significance

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