

Original Research Article

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## Attitudes of Farmers Regarding “Gir sawaj” Brand Biofertilizer in Saurashtra Region of Gujarat State

J. P. Vanpariya<sup>1</sup>, N. B. Jadav<sup>2</sup> and T. D. Kapuriya<sup>3\*</sup>

<sup>1</sup>Department of Agricultural Extension, College of Agriculture, JAU, Junagadh – 362001, India

<sup>2</sup>Department of Agril. Extension, CoA, JAU, Junagadh, India

<sup>3</sup>Department of Agricultural Extension, College of Agriculture, JAU, Junagadh – 362001, India

\*Corresponding author

### ABSTRACT

Biofertilizers are used to improve the fertility of the land by using biological wastes and biological wastes do not contain any chemicals which are harmful to the living soil. Junagadh Agricultural University developed biofertilizers; *Rhizobium*, *Azotobacter*, Phosphate Solubilizing Bacteria as ‘Gir sawaj’ trade name. There is great need to increase farm production to overcome the requirement of food for increasing population without damaging the environment. The more use of chemical fertilizers is harmful to living soil and therefore use of biofertilizers are required which improve the soil fertility without any harmful effect to the soil. In the light of above facts, the study was carried out with objective to measure attitude of farmers towards use of biofertilizer. The study was conducted in Rajkot district with 60 “Gir sawaj” brand biofertilizer users. The study revealed that majority (61.66 per cent) respondents were from medium attitude level group followed by 21.66 per cent and 16.67 per cent were from high and low level of attitude towards use of Gir sawaj biofertilizer respectively. The characteristics of the respondents namely land holding, farm mechanization index, innovativeness and scientific orientation had positive and highly significant relationship with attitude about ‘Gir sawaj’ biofertilizers. It means that attitude of respondents increased significantly with increase land holding, farm mechanization index, innovativeness and scientific orientation. There was negative and significant relationship with attitude about ‘Gir sawaj’ biofertilizers with age of respondents. It clearly indicates that mostly young age people had positive attitude about biofertilizers and biopesticides.

#### Keywords

Attitude,  
Biofertilizer,  
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### Introduction

Biofertilizers are used to improve the fertility of the land by using biological wastes and biological wastes do not contain any chemicals which are harmful to the living

soil. Biofertilizers generate plant nutrients like nitrogen and phosphorus through their activities in the soil and make available to plants in gradual manner. They are beneficial in enriching the soil with microorganisms which increases quality of nutrient in soil and

also impart strength to combat with diseases (Savci 2012). The main sources of biofertilizers are bacteria, fungi and cyanobacteria. The most striking relationship that these microorganisms have with plants is symbiosis in which the partners derive benefits from each other. The most important microorganisms which have symbiotic relationship with plants are *Mycorahiza*, *Rhizobium* and *Cyanobacteria*. These delivers number of benefits including plant nutrition, disease resistance and tolerance to adverse soil and climatic conditions.

Biofertilizers are defined as preparations containing living cells or latent cells of efficient strains of microorganisms that help crop plants to uptake of nutrients by their interactions in the rhizosphere when applied through seed or soil. They accelerate certain microbial processes in the soil which augment the extent of availability of nutrients in a form which easily assimilated by plants. In arid and semi-arid area where the moisture is limiting factor there is no chance or sometime less chances of giving top dressing of fertilizers. In such situation biofertilizers are the cheap source to maintain fertility as well as soil moisture.

Very often microorganisms are not as efficient in natural surroundings as one would expect them to be and therefore artificially multiplied cultures of efficient selected microorganisms play a vital role in accelerating the microbial processes in soil.

Poor microbial load, higher contamination and use of improper strains resulted in mixed response of biofertilizers. Here the research institutes have a great responsibility towards ensuring the correct and high quality product enters the market along with government and thereby ensuring that substandard product do not enter the market. New practices take time to pick up success or failure of new products entering the market will depend on the proper

marketing, branding, promotional policies of government for which study needs to be conducted at every level of production, consumption and factors affecting them. Junagadh Agricultural University developed *Rhizobium*, *Azotobacter* and Phosphate Solubilizing bacteria as '*Gir sawaj*' trade name. University provide facility to buy '*Gir sawaj*' biofertilizers at university campus, KVKs (Krishi Vigyan Kendra) and various NGOs (Non-Government Organizations) to the farmers.

The main objectives of this study include to measure the attitude of the respondents about '*Gir sawaj*' biofertilizers. And also to ascertain the relationship between attitude of respondents about '*Gir sawaj*' biofertilizers with their selected characteristics.

### **Materials and Methods**

The study was conducted under *ex-post facto* research design and proportionate random sampling technique was used for selection of respondents from village-wise list of biofertilizer users. The study area was purposively selected in Junagadh district of Saurashtra region because of the Junagadh Agricultural University situated in the district and university developed biofertilizers product, selling and using in this district more as compare to other district. Finally sixty numbers of biofertilizer users were selected for the study purpose. For the measurement of attitude of farmers, 15 statements teacher made test was developed and score was given on five-point continuum. Responded were classified according to strongly agree, agree, undecided, disagree and strongly disagree as per various attitude statements. A weightage mean score was work out and ranked each statement on basis of highest weightage mean score. To measure over all significance of the attitude scale, pooled data was work out and checked significant with compare to agreed mean of the scale. Distribution of the

respondents were made in three group based on frequency and percentage.

## **Results and Discussion**

### **Attitude of the respondents towards 'Gir sawaj' biofertilizers**

It is observed from the Table 1 that more than half (61.66 per cent) of the farmers had medium level of attitude towards '*Gir sawaj*' biofertilizers, followed by 21.67 per cent and 16.67 per cent belonged to high and low level of attitude towards biofertilizers respectively. Thus, it can be concluded that all most all farmers had medium to high level of attitude towards '*Gir sawaj*' biofertilizers.

This might be due to reason that respondents belonged to medium age, education and medium social and extension participation. They might have perceived medium to low level of knowledge about biofertilizers.

This finding is in line with the findings of Zuntic and Tratnik (2004), Chanpaneri (2012) and Patel (2012).

The data presented in Table 2 regarding response of farmers about attitude statement. It is revealed that different statements viz; I believe that use of biofertilizers results in decreasing crop yield (WMS= 4.03) ranked first, I feel that '*Gir sawaj*' biofertilizers cost remain lower than chemical fertilizer. (WMS= 3.98) ranked second '*Gir sawaj*' Biofertilizers are cheaper than other biofertilizers (WMS = 3.73) ranked third, I believe that quality of product is increase by using '*Gir sawaj*' biofertilizers (WMS= 3.43) ranked fourth and Biofertilizers cannot provide whole plant nutrient need

(WMS=3.40) ranked. While least response in the statements viz; Use of biofertilizers improves the lifespan of farm. (WMS=2.70) ranked thirteen, Biofertilizers plays important role in the recycling of plant nutrients (WMS=2.683) ranked fourteen and I think that future of biofertilizers is not bright due development of high yielding varieties day by day (WMS=2.02) ranked fifteen.

The overall pooled mean was 3.17 and agreed mean score is 3.00 so attitude about '*Gir sawaj*' biofertilizers of respondents was significant.

### **Relationship between characteristics of the respondents and their attitude level about 'Gir sawaj' biofertilizers**

To explore the relationship between selected characteristics and attitude towards '*Gir sawaj*' biofertilizers among the respondents, correlation method was applied and the values of correlation coefficient ( $r$ ) were estimated. These values have been given in Table 3.

The observed relationships are discussed with respect to personal, socio-economic, communication and psychological characteristics of the '*Gir sawaj*' biofertilizers users.

The characteristics of the respondents namely land holding, farm mechanization index, innovativeness and scientific orientation had positive and highly significant relationship with attitude about '*Gir sawaj*' biofertilizers. It means that attitude of respondents increased significantly with increase land holding, farm mechanization index, innovativeness and scientific orientation.

**Table.1** Distribution of respondents according to their attitude level towards ‘Gir sawaj’ biofertilizers (n = 60)

Sr. No.	Categories	Frequency	Percentage
1.	Low level of Attitude (up to 23.93 score)	10	16.67
2.	Medium level of Attitude (23.94 to 47.63 score )	37	61.66
3.	High level of Attitude (Above 47.63 score)	13	21.67
<b>Total</b>		<b>60</b>	<b>100.00</b>
<b>Mean = 35.78</b>		<b>S.D. = 11.85</b>	

**Table.2** Statement wise attitude about ‘Gir sawaj’ Biofertilizers (n=60)

Sr. no.	Statements	WMS	Rank
1.	I believe that use of biofertilizers results in decreasing crop yield.	4.03	I
2.	I feel that ‘Gir sawaj’ biofertilizers cost remain lower than chemical fertilizer.	3.98	II
3.	‘Gir sawaj’ Biofertilizers are cheaper than other biofertilizers.	3.73	III
4.	I believe that quality of product is increase by using ‘Gir sawaj’ biofertilizers.	3.43	IV
5.	Biofertilizers cannot provide whole plant nutrient need.	3.40	V
6.	According to my view only big farmers can adopt biofertilizers.	3.33	VI
7.	Biofertilizers are non-polluting and eco-friendly.	3.27	VII
8.	I think that use of biofertilizers requires high technical knowledge.	3.20	VIII
9.	‘Gir sawaj’ Biofertilizers is reducing the consumption of chemical fertilizers and also cost for fertilizers for crop production.	3.12	IX
10.	I feel that Bio-fertilizers maintain the soil fertility and productivity in the long-run.	2.98	X
11.	I feel that chemical fertilizers are more helpful than biofertilizers.	2.97	XI
12.	Use of biofertilizers helps to retain levels of other beneficial microorganisms in soil.	2.78	XII
13.	Use of biofertilizers improves the lifespan of farm.	2.70	XIII
14.	Biofertilizers plays important role in the recycling of plant nutrients.	2.63	XIV
15.	I think that future of biofertilizers is not bright due development of high yielding varieties day by day.	2.02	XV
<b>Agreed mean = &gt;3.00</b>		<b>Pooled mean = 3.17*</b>	

**Table.3** Correlation between selected characteristics of the respondents and their attitude about 'Gir sawaj' biofertilizers (n = 60)

Sr. No	Independent variables (Characteristics)	'r' value
1.	Age	-0.2603*
2.	Education	0.2676*
3.	Social Participation	0.2602*
4.	Herd size	0.1227NS
5.	Land holding	0.4126**
6.	Annual income	0.1156NS
7.	Cropping intensity	0.2241NS
8.	Farm mechanization index	0.3175**
9.	Extension participation	0.2616*
10.	Cosmopolitaness	0.2743*
11.	Innovativeness	0.3055**
12.	Scientific orientation	0.3106**

\* = Significant at 0.05 level

\*\* = Significant at 0.01 level

NS = Non-significant

The characteristics of the respondent's namely education, extension participation and cosmopolitaness were positively and significantly related with attitude of farmers about 'Gir sawaj' biofertilizers. There was no significant relationship with the attitude of respondents about 'Gir sawaj' biofertilizers with their cropping intensity and annual income.

There was negative and significant relationship with attitude about 'Gir sawaj' biofertilizers with age of respondents. It clearly indicates that mostly young age people had positive attitude about biofertilizers and biopesticides.

This finding is in line with the findings of Darandale (2010) and Awasthi *et al.*, (2000).

It can be concluded that majority (61.66 per cent) respondents were from medium attitude level group followed by 21.66 per cent and 16.67 per cent were from high and low level of attitude towards use of Gir sawaj

biofertilizer respectively. The characteristics of the respondents namely land holding, farm mechanization index, innovativeness and scientific orientation had positive and highly significant relationship with attitude about 'Gir sawaj' biofertilizers. It means that attitude of respondents increased significantly with increase in characteristics like land holding, farm mechanization index, innovativeness and scientific orientation. There was negative and significant relationship with attitude about 'Gir sawaj' biofertilizers with age of respondents. It clearly indicates that mostly young age people had positive attitude about biofertilizers and biopesticides. For increase of use of biofertilizer among the farmers community, training should be imparted to rural youth and selection of trainee based on innovativeness and scientific orientation.

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