EXTENT OF KNOWLEDGE AND ADOPTION OF BIOFERTILIZER USE BY BIOFERTILIZER USERS OF NAVSARI DISTRICT IN GUJARAT STATE

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A B S T R A C T

The constant and sustained efforts of the microbiologists and biotechnologists for isolating and standardizing the activities of microorganisms have helped to increase the production of bio fertilizers. The bio fertilizers are carrier based preparations containing effective strains of microorganisms like bacteria, algae, fungi alone or in combination with sufficient number which can provide plant nutrients through microbial activity. When these microorganisms are incorporated with seeds/seedlings and in soil they ensure enhanced crop production by way of biological nitrogen fixation, solubilisation of fixed phosphate, uptake of phosphorous and other mineral nutrients and synthesis of growth promoting substances. This concept has helped in the development of bio fertilizer industries, as they do not depend on high cost and depleting raw materials. Bio fertilizers are environment friendly, less costly and non-bulky. Total production of bio-fertilizers during 2012-13 was 46836 metric tones. Biofertilizers have been recommended to crops like paddy, wheat, barley, maize, jowar, oat, sugarcane, sugar beet, tobacco, cotton, potato, brinjal, sunflower, mustard, onion, cauliflower, tomato, cabbage and many other vegetable and fruit crops. With this background, the study entitled *"Extent of knowledge and adoption of biofertilizers use by the biofertilizer users of Navsari district"* was undertaken with the following objectives: To study the profile of the biofertilizer users, to ascertain the knowledge level of biofertilizer users towards the use of
Biofertilizers, to study the adoption pattern of bio fertilizers by biofertilizer users, to measure the relationship between profiles with level of Knowledge and adoption towards the use of biofertilizer and to identify the constraints faced and obtain suggestions by the biofertilizer users in adoption of biofertilizers. Results indicated that majority of the farmers was in the middle age group (36-50 years),most of the farmers had education up to high school level, majority of farmers had 2 to 5 acre of land holding, majority of farmers belonged to more than Rs. 1,00,000 annual incomes, majority of farmers had low level of social participation, majority of farmers had medium extension contact, majority of the farmers had low level of scientific orientation, majority of farmers belonged to medium mass media exposure, majority of farmers belonged to medium level of knowledge about use of biofertilizer, majority of farmers belonged to medium level of adoption of biofertilizer. The study on correlation indicated that the variable age is negative but significant relationship with the level of knowledge about the use of biofertilizer, education is positive and highly significant and other variables *viz.,* land holding, annual income, social participation, extension contact, scientific orientation and mass media exposure are positive and significant. However, the variable age is negative but significant relationship with the level of adoption of biofertilizer, education and extension contact are the positive and highly significant and other variables *viz.* land holding, annual income, social participation and mass media exposure is positive and significant relationship with the level of overall adoption of the biofertilizer. Scientific orientation is negative and non-significant.

INTRODUCTUION

In India, Agriculture sector contributes 23 per cent share to the national income but day by day still it is going on decreasing. Even though large hectares of area are under cultivation in this country, the yield per hectare for many crops is lower than expected level. This is because of lack of adoption of new,

improved practices, advanced techniques, use of non-productive soils, decreasing soil conditions etc. It is possible to increase yield per unit area by adopting new production technologies *viz.,* use of biofertilizers, vermicompost, organic farming, bio-control remedies, genetically modified crops etc. In Agricultural production, chemical fertilizers play an important role *visa-vis* they are available in sufficient quantities. However, they are more costly and their excessive use may cause ill effects on soil, causing increased soil acidity/alkalinity and increased soil pollution with decreased soil productivity. Now maximum farmers in the world are aware about the dangerous effects of chemicals on human being. Hence, there is increasing demand for organic foods. Therefore, there is a need of certain supplements to the chemical fertilizers with organic manures. In this case, bio-fertilizers can play a significant role in improving soil condition and agricultural production.

With this background, the study entitled "***Extent of knowledge and adoption of biofertilizers use by the biofertilizer users of Navsari district***" was undertaken with the objectives given before.

METHODOLOGY

An ex-post-facto research design was used in the present investigation. The study was conducted during April-June 2016 in Navsari district of Gujarat state. The main focus of the investigation is on **extent of knowledge and adoption of biofertilizers use by the biofertilizer users of Navsari district.** The District comprises of six Talukas, among which Gandevi, Chikhali and Khergam Talukas were randomly selected for the study. Three talukas were selected for the study and from each taluka two village were selected. In each of the selected villages farmers were selected according to random sampling to form 60 respondents as a sample size for the study. Eight variables were measured, in that size of land holding, annual income and social participation, scientific orientation and mass media exposure is measured by scale developed by eminent scientists. In order to measure knowledge and extent of adoption of biofertilizer use a structured schedule was developed by reviewing related literature and seeking expert's suggestions. The data were collected by personal interview method. Statistical tools viz. frequency, percentage, ranking and correlation, were used to analyze the data.

RESULTS AND DISCUSSION:

FINDINGS

1: Personal profile of the respondents

Personal profile of the respondents indicated that majority of the farmers were in the middle age group (36-50 years).Most of the farmers had education up to high school level. Majority of farmers had 2 to 5 acre of land holding. Majority of farmers belonged to more than Rs. 1,00,000 annual income. Majority of farmers had low level of social participation.   Majority   of   farmers   had medium extension contact. Majority of the farmers had low level of scientific orientation. Majority of farmers belonged to medium mass media exposure. The same was also reported by Pandya (2010) and Patel *et al* (2014).

2: Knowledge level of the respondents

Knowledge level of farmers about the use of biofertilizers.

Table No.1: Distribution of the respondents according to their level of overall knowledge of farmers about biofertilizers   n=60

Sr.No	Category	Frequency	Percentage
1	Low knowledge	6	10.00
2	Medium knowledge	41	68.33
3	High knowledge	13	21.67
	Total	**60**	**100**

Mean =8.20   SD=1.60

From the above table No.1 it is evident that majority of farmers (68.33 per cent) belonged to medium level of knowledge, followed by low (21.67 per cent) and high (10.00 per cent).The above findings are in line with the findings of Mokhale *et al.* (2010) with respect to majority of farmers having

medium level of knowledge. Majority of farmers belonged to medium level of knowledge about use of biofertilizer.   Reddy *et al* (2012) also reported the same.

3: Adoption level of biofertilizer by the farmers

Table No.2: Distribution of the respondents according to their level of overall adoption of biofertilizers by farmers   n=60

Sr.No	Category	Frequency	Percentage
1	Low knowledge	15	25.00
2	Medium knowledge	29	48.33
3	High knowledge	16	26.67
	Total	**60**	**100**

Mean =5.05   SD=0.79

From the above table No.2 it is evident that majority of farmers (48.33 per cent) belonged to medium level of adoption, followed by high (26.67 per cent) and low (28.00 per cent).The above findings are in line with the findings of Shashidhara. K. K (2012) with respect to majority of farmers belongs to medium level of adoption. Majority of farmers belonged to medium level of adoption of biofertilizer. Reddy *et al* (2012) also reported the same.

Relationship between knowledge and profile of farmers

Table No. 3 .Relationship between knowledge and profile of farmers

Sr. No.	Characteristics	Correlation coefficient (r)
1	Age	-0.2576*
2	Education	0.4910**
3	Land holding	0.2116*
4	Annual income	0.2224*
5	Social participation	0.2566*
6	Extension contact	0.2162*
7	Scientific orientation	0.2570*
8	Mass media exposure	0.2784*

NS= non-significant, * = significant at 0.05 level, **=significant at 0.01 level

The result presented in Table no. 3 revealed that the variable age is negative but significant relationship with the level of knowledge about the use of biofertilizer, education is positive and highly significant at 0.01 per cent level of probability with knowledge about use of biofertilizer. Other variables *viz.,* land holding, annual income, social participation, extension contact, scientific orientation and mass media exposure are significant at 0.05 per cent level of probability with knowledge about use of biofertilizer. **Patel *et al* (2014) and** Reddy *et al* (2012) also reported the same.

4: Relationship between adoption and profile of farmers

Table No. 4 .Relationship between adoption and profile of farmers

Sr. No.	Characteristics	Correlation coefficient (r)
1	Age	-0.254*
2	Education	0.475 **
3	Land holding	0.268*
4	Annual income	0.2257*
5	Social participation	0.211*
6	Extension contact	0.299**
7	Scientific orientation	-0.208NS
8	Mass media exposure	0.211*

NS= non-significant, * = significant at 0.05 level, **=significant at 0.01 level

The result presented in Table no. 4 revealed that the variable age is negative but significant relationship with the level of adoption of biofertilizer; education and extension contact are the positive and highly significant at the 0.01 per cent probability level of adoption of biofertilizer. Other variables *viz.* land holding, annual income, social participation and mass media exposure is positive and significant relationship with the level of overall adoption of the biofertilizer. Scientific orientation is negative and non-significant relationship with the 0.05 per cent probability level of adoption of biofertilizer. Reddy *et al* (2012) **and Patel *et al* (2014)** also reported the same.

SUMMARY AND CONLUSIONS:

From the above study it can be conclude that majority of biofertilizer users belong to 36 to 50 years, having education primary to graduate, medium land holding, high annual income, low level of membership, medium extension contact, low scientific orientation, medium mass media exposure. Majority of farmers had medium knowledge level. Majority of farmers had medium adoption level. The variable age is negative but significant relationship with the level of knowledge about the use of biofertilizer, education is positive and highly significant and other variables *viz.,* land holding, annual income, social participation, extension contact, scientific orientation and mass media exposure are positive and significant. The variable age is negative but significant relationship with the level of adoption of biofertilizer, education and extension contact are the positive and highly significant and other variables *viz.* land holding, annual income, social participation and mass media exposure is positive and significant relationship with the level of overall adoption of the biofertilizer. Scientific orientation is negative and non-significant.

REFERENCES:

Mokhale, S. U.,Deshmukh, A. N., Holi, S. S. and Shambarkar, Y. B. (2010). Technological knowledge of farmers about the use of biofertilizer. *Agriculture Update.* **5**(3&4): 277-278.

Pandya, C. D. (2010). A critical analysis of soico-economic status of organic farming followers of south Gujarat. Ph.D. (Agri.). Thesis (Unpublished), Navsari Agricultural University, Navsari.

Patel, B. D. (2005). A study on adoption of recommended chili technology in Vadodara district of Gujarat state. M.Sc. (Agri.) Thesis (unpublished) submitted to A.A.U., Anand.

Patel, J. K.; Patel, V. T.; Prajapati, M. R. and Thakka, K. A. (2014). Awareness regarding organic farming among the farmers of Sabarkantha and Banaskantha district. *Guj. J. Extn. Edu.* **25: 152-154.**

Reddy, S. P., Srinath, B., Kishore, S., Naidu, B. V. and Satyanarayana, R. (2012). Knowledge and adoption levels on organic farming in mulberry cultivation with the farmers in Chittoor district of Andhra Pradesh. *Crop Res.* **43** (1, 2 & 3): 284-288.

Shashidhara. K. K. (2012), Adoption of Eco-Friendly Technologies by Cotton Growers. *Indian Research Journal of Extension Education*, **I**: 217