

**RESEARCH ARTICLE :**

# Knowledge and adoption of bio-fertilizers by the sugarcane growers

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**SUMMARY :** The present study was conducted with specific objectives to study the “Adoption of bio-fertilizers by the Sugarcane growers”. For the study, Latur district was selected purposively from Marathwada region. As regard with the adoption of bio-fertilizers by the sugarcane growers it was observed that respondents had 39.17 per cent medium level of adoption, followed by 34.17 per cent and 26.66 per cent of them had high and low level of adoption, respectively. Independent variables viz., farming experience, education, land holding, annual income, social participation, extension contact, innovativeness, economic motivation, and risk orientation were positively and highly significantly related with adoption of bio-fertilizers by the sugarcane growers, while sources of information and innovativeness were positively and significantly related with the adoption.

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**KEY WORDS :**

Bio-fertilizers,  
Sugarcane growers,  
Education, Farming  
experience

## **BACKGROUND AND OBJECTIVES**

Modern farming practices affect our world, by the way of land degradation, nutrient runoff, soil erosion, water pollution, soil compaction, loss of cultivated biodiversity, habitat destruction, contaminated food and destruction of traditional knowledge systems, all these result into changing climatic conditions of the earth. Farmers are directly getting affected due to these climatic changes as it affects the crop production. Though the use of chemicals in agriculture is inevitable to meet the growing demand for food in world, there are opportunities in some areas where organic production can be encouraged to tap the domestic export market. Farmers are now

using the bio-fertilizers, vermicompost, poultry manure, Jeevamrit as source of organic manures in their fields. Sugarcane (*Saccharum officinarum*) is one of the most important cash crop in the country and sugar industry is the largest Agro based industry next to textiles located in Rural India. A Bio-fertilizer is a substance which contains living micro-organisms, when applied to seed, plant surfaces or soil, colonizes the rhizosphere or the interior of the plant and promotes growth by increasing the supply or availability of primary nutrients to the host plant.

**Objectives of the study :**

– To study the adoption of bio-fertilizers by the Sugarcane growers

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– To study the relationship between profile of Sugarcane growers with their adoption

## RESOURCES AND METHODS

The study was conducted in Latur district of Marathwada region of Maharashtra state. Out of ten talukas of Latur district, Latur, Ausa and Nilanga were selected purposively based on the maximum area under sugarcane. Four villages from each talukas were selected purposively based on the maximum area under sugarcane crop. Thus twelve villages from three talukas were selected for this study. From each of the selected village Ten Sugarcane growers were selected randomly on the basis of use of bio-fertilizers. Thus a total of 120 respondents were selected as sample for this study. The Ex-post facto research design was used in the present study. The data were collected through personal interview method. The farmer was contacted personally at their home during their leisure time.

## OBSERVATIONS AND ANALYSIS

It is revealed from Table 1 that, 39.17 per cent of the respondents had medium level of adoption, followed by 34.17 per cent and 26.66 per cent of them had high and low level of adoption, respectively.

Adoption refers to both mental acceptance and also

covers use of bio-fertilizers by the sugarcane growers. The data revealed in Table 2 showed that, as regards the use of bio-fertilizers that full adoption was done by 90.00 per cent of the growers and 10.00 per cent of them partially adoption. As far recommended bio-fertilizers is concerned, it was observed that there was full adoption of recommended bio-fertilizers by 80.83 per cent of the growers, 14.17 per cent of the growers who have partial adoption and 05.00 per cent of them did not adopt recommended bio-fertilizers. Full adoption of recommended quantity of bio-fertilizers by 65.83 per cent of the growers, 26.67 per cent of growers were adopted partially and 07.50 per cent who have not adopted bio-fertilizers as per recommended quantity. It was noticed that 58.33 per cent of the growers fully adopted recommended time for treatment as against 41.67 per cent of the growers were adopted partially. As regards to methods of treatment, 78.33 per cent of the growers were fully followed, 10.00 per cent of them partially followed and 11.67 per cent of them not followed.

Whereas 70.00 per cent of the growers fully adopted, 18.33 per cent of them partially adopted and 11.67 per cent of the growers not adopted knowledge about nutrient availability. 66.67 per cent of the growers full adoption about soil fertility and productivity, 10.00 per cent of them partially adopted and 23.33 per cent of them were not adopted. 68.33 per cent of the growers

**Table 1: Distribution of the respondents according to their level of adoption about bio-fertilizer (n = 120)**

Sr. No.	Adoption level	Frequency	Per cent
1.	Low	32	26.66
2.	Medium	47	39.17
3.	High	41	34.17
	Total	120	100.00

**Table 2 : Distribution of respondents according to their practice wise adoption about bio-fertilizer (n= 120)**

Sr. No.	Practices	Full adoption		Partial adoption		No adoption	
		Freq.	Per cent	Freq.	Per cent	Freq.	Per cent
1.	Use of bio-fertilizers	108	90.00	12	10.00	00	00
2.	Recommended bio-fertilizers	97	80.83	17	14.17	06	05.00
3.	Recommended quantity of bio-fertilizers	79	65.83	32	26.67	09	07.50
4.	Recommended time for treatment	70	58.33	50	41.67	00	00
5.	Methods of treatment	94	78.33	12	10.00	14	11.67
6.	Nutrient availability	84	70.00	22	18.33	14	11.67
7.	Soil fertility and productivity	80	66.67	12	10.00	28	23.33
8.	Consideration of expiry date of bio-fertilizers	82	68.33	38	31.67	00	00
9.	Incompatibility of bio-fertilizers and chemical fertilizers	78	65.00	30	25.00	12	10.00
10.	Availability of bio-fertilizers	86	71.67	30	25.00	04	03.33

**Table 3 : Relationship between profile of sugarcane growers with the adoption**

Sr. No.	Independent variable	Correlation co-efficient ('r')
1.	Farming experience	0.341**
2.	Education	0.477**
3.	Land holding	0.463**
4.	Annual income	0.568**
5.	Social participation	0.302**
6.	Extension contact	0.303**
7.	Sources of information	0.254*
8.	Innovativeness	0.198*
9.	Economic motivation	0.553**
10.	Risk orientation	0.552**

Note : \* and \*\* indicate significance of values at P=0.05 and 0.01, respectively

had full adoption about consideration of expiry date of bio-fertilizers while 31.67 per cent of them partial adoption. As regards to incompatibility of bio-fertilizers and chemical fertilizers 65.00 per cent of the growers had full adoption, 25.00 per cent of them had partial adoption followed by 10.00 per cent of them no adoption. Further it was noticed that 71.67 per cent of the growers had full adoption about availability of bio-fertilizers followed by 25.00 per cent of them partial adoption and 03.33 per cent of them no adoption.

It is observed from Table 3 that, farming experience, education, land holding, annual income, social participation, extension contact, economic motivation, and risk orientation were positively and highly significantly related with the adoption, while sources of information and

innovativeness were positively and significantly related with the adoption.

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