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RESEARCH ARTICLE :

Constraints in adoption of SAWAJ brand bio fertilizers under field condition by the farmers of Surendranagar district in Gujarat state

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SUMMARY : A bio-fertilizer is a substance which contains living micro-organisms which, when applied to seeds, plant surfaces, or soil, colonize the *Rhizosphere* or the interior of the plant and promotes growth by increasing the supply or availability of primary nutrients to the host plant. Bio fertilizers are known to play a number of vital roles in soil fertility, crop productivity and production in agriculture as they are eco-friendly and cannot at any cost replace chemical fertilizers that are indispensable for getting maximum crop yields. Junagadh Agricultural University is engaged in production of bio-fertilizers and made it available to farming community since year 2005-06. In the year 2014-15, JAU sold *Azotobacter*, *Rhizobium* and PSM (each 500 ml bottles) to the farmer were1981, 11698 and 1987, respectively. While in the year, 2015-16 it was 2857, 2520 and 4552 bottles, respectively. Whereas in the year 2016-17, total sell of *Azotobacter*, *Rhizobium* and PSM (each 500 ml bottles) was 2716, 2994 and 4520, respectively. It shows static adoption by farmers which need to be enhanced. Junagadh Agricultural University made available bio fertilizer in the brand name "SAWAJ bio fertilizer" to farming community since year 2005-06. Since then its production and selling increased manifold. Therefore, this study is undertaken for following objectives. To know the constraints faced by respondents in adoption of bio fertilizers. To seek suggestions to overcome the constraints. Present study was carried out in Surendranagar district. Surendranagar district has 10 talukas. Out of 10 talukas, 5 talukas were randomly selected. Then from each taluka, 20 respondents who are using SAWAJ brand bio fertilizers were selected for study purpose. Thus total 100 respondents were selected from five talukas who have used SAWAJ brand bio-fertilizers. For study purpose, an interview schedule was prepared and data collected through the structured interview schedule. For analysis and interpretation of data, appropriate statistical methods and measures used. Findings of this study shows that in case of constraints faced by respondents, unavailability of SAWAJ brand bio fertilizer at taluka level and lack of moisture in soil at the time of application in standing crop were the most important constraints. Most of the respondents (53%) suggested that SAWAJ brand bio fertilizers should made locally available and Govt. should provide subsidy on SAWAJ brand bio fertilizers (52%).

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BACKGROUND AND OBJECTIVES

A bio-fertilizer is a substance which contains living micro-organisms which, when applied to seeds, plant surfaces, or soil, colonize the *Rhizosphere* or the interior of the plant and promotes growth by increasing the supply or availability of primary nutrients to the host plant. Bio fertilizers are known to play a number of vital roles in soil fertility, crop productivity and production in agriculture as they are eco-friendly and cannot at any cost replace chemical fertilizers that are indispensable for getting maximum crop yields. Junagadh Agricultural University is engaged in production of bio-fertilizers and made it available to farming community since year 2005-06. In the year 2014-15, JAU sold *Azotobacter*, *Rhizobium* and PSM (each 500 ml bottles) to the farmer were1981, 11698 and 1987, respectively. While in the year, 2015-16 it was 2857, 2520 and 4552 bottles, respectively. Whereas in the year 2016-17, total sell of *Azotobacter*, *Rhizobium* and PSM (each 500 ml bottles) was 2716, 2994 and 4520, respectively (*www.jau.in*).

Junagadh Agricultural University made available bio fertilizer in the brand name "SAWAJ bio fertilizer" to farming community since year 2005-06. Since then its production and selling increased manifold. It is made available at University level outlet and Krishi Vigyan Kendras of jurisdiction area of Junagadh Agricultural University and its other extension centres for easy outreach and access of its ultimate clientele *i.e*. farming community. Therefore, this study is undertaken for following objectives. To know the constraints faced by respondents in adoption of bio fertilizers. To seek suggestions to overcome the constraints. Present study was carried out in Surendranagar district. Surendranagar district has 10 talukas. Out of 10 talukas, 5 talukas were randomly selected. Then from each taluka, 20 respondents who are using SAWAJ brand bio fertilizers were selected for study purpose. Thus, total 100 respondents were selected from five talukas who have used SAWAJ brand bio-fertilizers. For study purpose, an interview schedule was prepared and data collected through the structured interview schedule.For analysis and interpretation of data, appropriate statistical methods and measures were used.

RESOURCES AND METHODS

Present study was carried out in Surendranagar district. Surendranagar district has 10 talukas. Out of 10 talukas, 5 talukas were randomly selected. Then from each taluka, 20 respondents who are using SAWAJ brand bio fertilizers were selected for study purpose. Thus, total 100 respondents were selected from five talukas who have used SAWAJ brand bio-fertilizers. For study purpose, an interview schedule was prepared and data collected through the structured interview schedule. For analysis and interpretation of data, appropriate statistical methods and measures were used.

Table A: Details of selected talukas and village undertaken for study

Sr. No.	Name of taluka	Name of villages	Respondents
1.	Chotila	Maghrikheda	10
		Lakhchokiya	10
2.	Sayala	Sapar	10
		Doliya	10
3.	Chuda	Karmad	10
		Ramdevgadh	10
4.	Vadhwan	Vadod	10
		Rampar	10
5.	Than	Kanpar	10
		Navagam	10
	Total		100

OBSERVATIONS AND ANALYSIS

The results obtained from the present study as well as discussions have been summarized under following heads:

Constraints faced by the farmers in adoption of SAWAJ brand bio-fertilizers and their suggestion for increasing adoption:

Table 1 showing about the constraints faced by respondents in adoption of SAWAJ brand bio fertilizers. Most of the respondent (77%) were opined that "Unavailability of SAWAJ bio fertilizer at Taluka level" is major constraint faced by mostly and ranked 1st. While 71 per cent of respondents had constraint pertaining to 'Lack of soil moisture when application of SAWAJ bio fertilizer needed in standing crop' and ranked 2nd. Similarly 67 per cent respondents who at least used SAWAJ fertilizers had opined that packing of material is constraints as it sometimes leakage the bottle containing liquid bio fertilizers during transportation and ranked it 3rd most important constraint. Equal number of respondents (67%) opined that application of SAWAJ bio fertilizer is difficult at the time of sowing.

63 per cent respondents said that they feel that "Labour cost increased because SAWAJ bio fertilizers

cannot mix with other chemical fertilizers and it was ranked 5th. SAWAJ biofertilizers not available in time (55%) ranked on 6th in the order of most important constraints. Cost of SAWAJ bio fertilizer is high (52%) ranked at 7th and problem in application through drip irrigation (45%) given 8th most important constraint and was second least important constraints. Only 36 per cent respondents told that 'Not available in required quantity' of SAWAJ brand bio fertilizer and was least important constraints felt by respondents and ranked last in list of all 9 constraints.

Suggestions to overcome the constraints:

There is always possibilities of improvement that can achieved through inviting suggestions from ultimate client and efforts should be implemented honestly to overcome constraints to improve services, product delivery mechanism etc.

Looking into the constraints face by the respondents in adoption of SAWAJ brand bio fertilizer effectively with pace and to reach to unreached, it becomes essential to know the opinion from the respondents to do efforts to minimize the constraints. Farmers who are ultimate clientele and their suggestions are of immense values.

Table 2 depicted the suggestion to increase the adoption of SAWAJ bio-fertilizers among the farmers. Most of them (55 %) made suggestion regarding made available SAWAJ brand bio fertilizers at local level. Whereas 52 per cent respondent suggested that Government should provide subsidy on SAWAJ brand bio fertilizers for improvement in packaging. Many farmers (48 %) suggested cost of input is also important and they said that prices of SAWAJ brand is little bit high and a farmer with poor financial status could not adopt the same. 46 per cent respondents said that bottle containing liquid bio fertilizer, sometime leakage started due to certain pressure, load etc. So leak proof bottles packaging should be designed. 41 per cent of respondents were interested in getting training and stressed on organizing more training programmes for bringing awareness regarding use of bio fertilizers. Similar work related to the present investigation was also carried out by Bhalekar *et al.* (2013); Joshi *et al.* (2018); Khatri and Patel (2018); Patel *et al.* (2017); Punia and Punia (1997); Shehrawat *et al.* (2016); Sundravardarajan *et*

Table 1: Distribution of respondents according to constraints faced **(n= 100)**

Sr. No.	Constraints	Frequency	Percentage	Rank
1.	Bio fertilizer not available on time	55	55	VI
2.	Application of SAWAJ bio fertilizer is difficult at the time of sowing	67	67	III
3.	Lack of soil moisture when application of SAWAJ bio fertilizer needed in standing crop	71	71	II
4.	Not available in required quantity	36	36	IX
5.	Cost of SAWAJ bio fertilizer is high	52	52	VII
6.	Labour cost increased because it cannot mix with other chemical fertilizers	63	63	V
7.	Unavailability of SAWAJ bio fertilizer at Taluka level	77	77	I
8.	Packing of SAWAJ bio fertilizer is not attractive and reliable	67	67	III
9.	Problem in application through drip irrigation	45	45	VIII

Table 2 : Distribution of respondents according to suggestion given to increase adoption of SAWAJ bio fertilizers **(n= 100)**

Sr. No.	Suggestions	Frequency	Percentage	Rank
1.	SAWAJ brand bio fertilizers should made locally available	53	53	I
2.	More training programme should be organized for bringing awareness regarding use of bio fertilizers	41	41	V
3.	Bottle packaging should be leak-proof and should be viable enough to avoid loses during transportation	46	46	IV
4.	Govt. should provide subsidy on SAWAJ brand bio fertilizers	52	52	II
5.	Prices of bio fertilizer should be reduced	48	48	III

al. (2006) and *www.jau.in/coa.*

Conclusion:

Findings of this study shows that in case of constraints faced by respondents, majority of respondents were expressed unavailability of SAWAJ brand bio fertilizer at taluka level (77%) and lack of moisture in soil at the time of application in standing crop (71 %) as most important constraints and ranked first and second, respectively. Application of SAWAJ bio fertilizer is difficult at the time of sowing (67%) and packing of SAWAJ bio fertilizer is not attractive and reliable (67 %) were found combined third most important constraints faced by respondents in adoption of SAWAJ bio fertilizers. Least faced constraints was 'Problem in application through drip irrigation' (45%) and 'Not available in required quantity' (36%) and ranked eighth and ninth position in the list of constraints, respectively. This means respondents had no issue with availability of required quantity as well as its application through drip irrigation system. Majority of the respondents (53%) suggested that SAWAJ brand bio fertilizers should made locally available and Govt should provide subsidy on SAWAJ brand bio fertilizers (52%).

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REFERENCES

Bhalekar, M.D., Sidam, V. N., Bondarwad, S. P. and Lad, A. S. (2013). Constraints in adoption of biological pest management practices in cotton in Vidharbha region. *Agric. Update*, **8** (1&2): 70-72.

Joshi, N. S., Patel, M. L., Parmar, V. S., Baladaniya, R. B. and Prajapati, P. J.(2018). Constraints faced by respondents in adoption of SAWAJ Trichoderma. *Internat. J. Chem. Stud.,* **6** (6) : 500-502.

Khatri, K. D. and Patel, Arun (2018). Constraints faced by the agro-input dealers in getting the knowledge about recommendations of Anand Agricultural University. *Gujarat J. Extn. Edu.,* **29** (2) : 261 - 263.

Patel, D. B., Mistry, J. J. and Patel, V. M. (2017). Farmer perception on use of bio fertilizers.*Gujarat J. Extn. Edu.,* **28** (2) : 357-360.

Punia, D. and Punia, R. K. (1997).Constraints in adoption of bio fertilizers in Haryana. *Haryana Kheti*, **27** (4) : 6.

Shehrawat, P. S., Rati, M. and Nora, A. (2016). Study of constraints analysis in organic farming cultivation in Sonipat and Hisar district of Haryana state. *Indian J. Apprl. & Nat. Sci.,* **1** : 100-106.

Sundravardarajan, K. R., Jahanmohan, K. R. and Swaminathan, L. P. (2006). Constraints in adoption of bio input usage in cotton cultivation. *Agril.Econ. Res. Rev.*, **19**:155-164.

WEBLIOGRAPHY

www.jau.in/coa/index.php/department/plant-pathology.