**International Journal of Global Science Research** **ISSN: 2348-8344 (Online)**
**Vol. 12, Issue. 2, October 2025, pp. 2894-2899** **DOI: https://doi.org/10.26540/ijgsr.v12.i2.2025.327**
***Available Online* at www.ijgsr.com**


**Research Paper**

# Buying behavior and usage pattern of farmers towards biostimulants in Churu District of Rajasthan

Suraj Singh and Choudhary Kuldeep*
ASPEE Agribusiness Management Institute, Navsari Agricultural University, Navsari, Gujarat
Division of Agribusiness Management, ICAR-National Academy of Agricultural Research Management, Hyderabad, Telangana
*Corresponding author email: kuldeep@naarm.org.in

Received: 21/09/2025
Revised: 28/09/2025
Accepted: 08/10/2025

**Abstract:** The study aims to take a closer look on buying behavior and usage pattern of farmers towards Biostimulant in Churu district of Rajasthan. In this regard a total of 150 farmers were surveyed from two Talukas of Churu district, Rajasthan, for the duration of three months. The study was carried out to attain the objectives; to study the socio- economic profile of farmers, to study the buying behavior and usage pattern of farmers towards Biostimulant. For the collection of primary data interview schedule was used. Recent secondary data was collected from the internet, agricultural department and various other sources. The demographics and socio-economic profile reveal that all surveyed farmers were male and the majority of farmers are between the ages of 46-55. The study highlights the critical role of socio-economic and demographic factors in influencing farmers' biostimulants usage and purchasing behavior. Dealer influence and credit availability are significant constraints. These insights can help develop targeted strategies to support farmers in adopting biostimulants more effectively, enhancing agricultural productivity and sustainability.

**Keywords:** Buying behavior, biostimulant and usage pattern

## Introduction:

Biostimulants are biologically-derived substances applied to plants or soil to improve nutrient uptake ability, abiotic & biotic stress tolerance, and protection from pests. Unlike traditional crop protection chemical inputs, such as pesticides and herbicides, plant stimulants are unique, single products that possess multiple avenues for promoting crop growth. As there is widespread depletion of soil health due to the overuse of chemicals and fertilizers, an increasing number of farmers in the country are incorporating these biologicals into their farming regimes. Increased investment and the need to improve yields per hectare are expected to drive the India biostimulants market growth. In addition, as the demand for organic foods increases, so does the demand for organic farming, which is further predicted to aid the market's growth in the country.

One problem is that many people still know very little about biostimulants and the benefits they can provide. However,

International Journal of Global Science Research
Vol. 12, Issue. 2, October 2025, pp. 2894-2899
*Available Online* at www.ijgsr.com

ISSN: 2348-8344 (Online)
DOI: https://doi.org/10.26540/ijgsr.v12.i2.2025.327

improved implementation of rules and laws is crucial for substantial firms that produce organic products. It's also important to remember that biostimulants need time to work before they can have a beneficial effect on the soil. Soil loses some of its nutrient value with each use, but the application of biostimulants has gradually improved soil lacking in nutrients. The improved crop output and increased productivity from the altered soil greatly benefit the farmer. Moreover, when future demand is expected to rise, inadequate production infrastructure may make it challenging to distribute the products on time in sufficient numbers. A large number of Indian farmers own an average of 1.15 hectare of land, putting pressure on the existing extension mechanisms, with only one extension staff member available for every 800- 1000 farmers. This raises the question of how to best disseminate and raise awareness about biostimulants in India. Despite launching a range of government schemes, India's agricultural sector is hampered by the failure to raise public awareness through effective publicity and promoting the use of biostimulants to achieve long-term sustainability.

Despite being in the early stages of development, the biostimulant market in India has substantial potential for expansion as demand for sustainable farming methods and reduced use of chemical fertilisers grows. Multinational corporations currently dominate the market but rely on local distributors for product sales. Biostimulants, such as biopolymers, nonliving products produced from microbes, formulations based on biomolecules, and botanical extracts, are designed to be used in harsh environments and require targeted marketing to reach their full potential. Looking to the present scenario of the biostimulants, the present study was conducted with the following objectives:

1. To study the Socio-economic profile of farmers
2. To study the buying behavior and usage pattern of farmers towards biostimulants

**Methodology:**

**Sample Size and Participants**

The study was carried out in Churu and Bidasar Talukas of Churu district of Rajasthan state with a sample size of 150 farmers by using the convenience sampling method. 100 Farmers were selected from Bidasar taluka and 50 farmers were selected from Churu Taluka of Churu district. Out of the 150 farmers, 100 per cent of the farmers were male and none of them were female farmers. Majority (53%) farmers were under the age group of 46-55 years, followed by (19%) farmers were under the age group of 36-45 years.

**Measure and Procedure**

Descriptive research design was used for the study as it enabled us to identify the various attributes affecting the buying behaviour and usage pattern. Primary data regarding the basic information pertaining to their socio-economic profiles, awareness levels of the farmers, buying behavior and usage pattern of farmers towards biostimulants were collected with the help of a well-structured interview schedule. Interview schedule was administered to the selected 150 farmers. Secondary data were collected from various sources like relevant research papers, company's website, various published reports, Journals and articles.

**Statistical analysis**

After compiling, the data were analysed using tabular method and statistical tools such as averages, frequency distribution and Chi square test analysis.

**Hypotheses:**

**$HB_0$:** There is no significant association between land holding and quantity of solid biostimulant used by farmers per season per hectare.

**$HB_1$:** There is significant association between land holding and quantity of solid biostimulant used by farmers per season per hectare.

International Journal of Global Science Research
Vol. 12, Issue. 2, October 2025, pp. 2894-2899
*Available Online* at www.ijgsr.com

ISSN: 2348-8344 (Online)
DOI: https://doi.org/10.26540/ijgsr.v12.i2.2025.327

**Results and Discussion:** The results for "study the buying behavior and usage pattern of farmers towards biostimulants" are as under: -

**Table 1: Time Span (in years) farmers using biostimulants**

| Time Span (in years) | No. of Farmers | Percentage (%) |
|---|---|---|
| Less than 1 Year | 12 | 8.00 |
| 1-3 Years | 42 | 28.00 |
| 3-5 Years | 64 | 42.70 |
| More than 5 Years | 32 | 21.30 |
| **Total** | **150** | **100** |

From the above table 1, it was observed that (42.70%) farmers are using biostimulant from 3-5 yrs followed by (28%) farmers are using biostimulant from 1-3 yrs,(21.30%) farmers are using biostimulant from more than 5 yrs,(8%) farmers are using biostimulant from less than 1 yr.

**Table 2: Sources of information about biostimulants**

| Sources of information about biostimulant | No. of farmers | Percentage (%) |
|---|---|---|
| Company representative | 29 | 19.30 |
| Dealer | 55 | 36.70 |
| Extension officer | 9 | 6.00 |
| Media advertisement | 21 | 14.00 |
| Neighbor and friends | 36 | 24.00 |
| **Total** | **150** | **100** |

From the above table 2, it could be concluded that mostly farmers (36.70%) got the information about biostimulants from dealer followed by (24%) farmers got to know about biostimulants from neighbor and friends, (19.30%) farmers got the information from the media advertisement, 14 per cent got to know about biostimulants from company representative. While only (6%) farmers got the information about biostimulants from extension officer. So, most of the farmers got the information about biostimulants from dealer and after that neighbor and friends were the second source of information about biostimulants. It may have influence on purchasing behaviour of farmers towards biostimulants. The similar results were found in the study conducted by Kusumah and Christianingrum (2018).

**Table 3: No. of biostimulant dose given per crop per season by farmers**

| No. of biostimulant dose given per crop per season | No. of farmers | Percentage (%) |
|---|---|---|
| 1-2 dose | 73 | 36.50 |
| 3-4 dose | 96 | 48.00 |
| 5 or more dose | 31 | 15.50 |
| **Total** | **150** | **100** |

International Journal of Global Science Research
Vol. 12, Issue. 2, October 2025, pp. 2894-2899
*Available Online* at www.ijgsr.com

ISSN: 2348-8344 (Online)
DOI: https://doi.org/10.26540/ijgsr.v12.i2.2025.327

From the above table 3, it could be concluded that mostly farmers (48%) spray 3 to 4 doses per crop per season while (15.50%) farmers spray 5 or more doses and (36.50%) farmers spray 1 to 2 doses per crop per season. Factors affecting the number of biostimulant spray per season per crop by farmers were land holding of farmers, intensity of insect infection in the crop and affordability of farmers to purchase fungicides

**Table 4: Major influence to choose the particular brand**

| Major influence to choose the particular brand | No. of farmers | Percentage (%) |
|---|---|---|
| Advertisement | 13 | 8.70 |
| Agriculture officer | 8 | 5.30 |
| Company personnel | 22 | 14.70 |
| Dealer | 76 | 50.70 |
| Own decision | 17 | 11.30 |
| Peer group | 14 | 9.30 |
| **Total** | **150** | **100** |

From the above table 4, it could be concluded that mostly farmers (50.70%) were influence by dealer, followed by (14.70%) farmers were influence by company personnel, (11.30%) farmers choose the brand as per their own decision, (9.30%) farmers influence by advertisement, (8.70%) farmers influence by peer group, while only (5.30%) farmers influence by agriculture officer. So, it could conclude that dealer has most influence on farmers to choose the particular brand. The results are in line with the study conducted by Likith et al., (2020).

**Table 5: Source of purchase**

| Sources of purchase | No. of farmer | Percentage (%) |
|---|---|---|
| Company person | 30 | 20.00 |
| Online purchase | 16 | 10.70 |
| Private dealer | 104 | 69.30 |
| **Total** | **150** | **100** |

From the above table 5, it could be concluded that mostly farmers (69.30%) purchase biostimulant from the private dealer, followed by (20%) farmers purchase from company person, while only (10.70%) farmers purchase biostimulant from online source. So, most of the farmers purchase biostimulant from private dealers because dealers have high influence on farmers and also, they provide better credit facilities to the farmers.

International Journal of Global Science Research
Vol. 12, Issue. 2, October 2025, pp. 2894-2899
*Available Online* at www.ijgsr.com

ISSN: 2348-8344 (Online)
DOI: https://doi.org/10.26540/ijgsr.v12.i2.2025.327

**Table 6: Mode of purchase**

| Mode of purchase | No. of farmer | Percentage (%) |
|---|---|---|
| By cash | 75 | 50.00 |
| By cash and credit | 34 | 22.70 |
| By credit | 41 | 27.30 |
| **Total** | **150** | **100** |

From the above table 6, it could be concluded that mostly (50%) farmers purchase biostimulant by cash followed by (27.30%) farmers purchase biostimulant by both cash and credit.while (22.70%) farmers purchase biostimulant by credit. mostly small and marginal farmers purchase biostimulants on credit. Similar type of results was found by Singh et al., (2025) in their study on Purchasing behaviour and brand preferences toward packaged spices: Evidence from Gondal City, Gujarat.

**Table 7: Quantity of solid biostimulants used by farmers in a season per acre**

| Quantity of solid biostimulant used by farmers per season per hectare (in Kg) | No. of farmers | Percentage (%) |
|---|---|---|
| 5-10 kg | 35 | 23.30 |
| 10.1- 20 kg | 65 | 43.40 |
| 20.1-50 kg | 35 | 23.30 |
| More than 50 kg | 15 | 10.00 |
| **Total** | **150** | **100** |

From the above table 7, it was found that mostly farmers (43.40%) used 10.1 to 20 kg biostimulant per season per hectare followed by (23.30%) farmers used 5 to 10 kg biostimulant, (23.30%) farmers used 20.1 to 50 kg biostimulant per season per hectare. While (10%) farmers used more than 50 kg biostimulant per season per hectare. Quantity of biostimulants used by farmers depends upon land holding.

**Table 8: Association between land holding and quantity of biostimulant used by farmers per season per hectare**

| Count of Total land holding (ha) | 5-10 kg | 5.1- 20 kg | 20.1-50 kg | More than 50 kg | Grand Total |
|---|---|---|---|---|---|
| **Less than 1 ha** | 21 | 18 | 5 | 0 | **44** |
| **1.1 to 2 ha** | 11 | 37 | 13 | 0 | **61** |
| **2.1 to 10 ha** | 2 | 8 | 16 | 14 | **40** |
| **More than 10 ha** | 1 | 2 | 1 | 1 | **5** |
| **Grand Total** | **35** | **65** | **35** | **15** | **150** |
| **Chi square test** | | | | | |
| **Chi square statistics value** | | **df** | | **Chi square table value** | |
| 70.65 | | 9 | | (0.05)-16.92 | |

ISSN: 2348-8344 (Online)
DOI: https://doi.org/10.26540/ijgsr.v12.i2.2025.327

From above table 8, it could be inferred that the value of chi square statistics is 70.65 which is more than the chi square table value at 0.05 level with degree of freedom is 9. Hence it can be interpreted that Chi Square statistics is significant. So, the relation between land holding and quantity of solid biostimulant used by farmers established. Hence, accept the alternate hypothesis $HB_1$ and reject the null hypothesis $HB_0$.

**Conclusion:**

The study revealed that almost all farmers were male, indicating a high gender disparity in decision- making power. The age distribution showed that farmers in the age group of 46-55 years constituted the largest segment. In terms of buying behavior and usage patterns of biostimulants, it was found that most of the farmers were aware of benefits and use of biostimulants for control. Dealers were the primary source of information about biostimulants, followed by neighbors and friends. Dealer recommendations were the most influential factor in the selection of biostimulants. Farmers predominantly used three to four doses of biostimulants per crop per season, and the preference for known biostimulants brands was evident. Cash availability played a crucial role in biostimulants purchases, while many farmers opting for credit from private dealers. Farmers showed a preference for medium packaging sizes of both solid and liquid biostimulants. So, it is crucial for company to understand the socio-economic factors, buying behavior, and usage pattern to develop effective strategies for ensuring its position in the competitive market and can effectively capture farmers' attention.

**References:**

Kusumah, E. P. and Christianingrum, M. (2018) Analysis of decision factors to purchase organic fertilizer by white pepper farmers. RJOAS, 3(75), 145-154.

Likith, R., Lavanya, S. M., Mahendran, K., and Krishnakumare, B. (2020) Consumer purchase behaviour towards leafy greens in a specialized retail store. Indian Journal of Economics and Development, 16(4), 636–640.

Singh, V. K., Choudhary, K. and Dash, S. (2025) Purchasing behaviour and brand preferences toward packaged spices: Evidence from Gondal City, Gujarat. International Journal of Agriculture Extension and Social Development, 8 (9), 606-609.