

## International Journal of Agriculture Extension and Social Development

Volume 9; Issue 5; May 2026; Page No. 371-373

Received: 13-02-2026  
Accepted: 18-03-2026

Indexed Journal  
Peer Reviewed Journal

### To study the knowledge and adoption level of soybean growers in Ambachandan Village of the Indore District of Madhya Pradesh

<sup>1</sup>Shivpal Singh, <sup>2</sup>Aakarsh Chouksey, <sup>2</sup>Geetansh Khandelwal, <sup>2</sup>Akhil Bhuriya and <sup>2</sup>Aman Mehra

<sup>1</sup>Faculty of Agriculture, Medicaps University, A.B. Road, Pigdambar, Rau Indore, Madhya Pradesh, India

<sup>2</sup>B.Sc. (Hons.) Agriculture, Medicaps University, A.B. Road, Pigdambar, Rau Indore, Madhya Pradesh, India

DOI: <https://www.doi.org/10.33545/26180723.2026.v9.i5e.3597>

Corresponding Author: Shivpal Singh

#### Abstract

The present study was undertaken at Ambachandan village in the Mhow block of the Indore district, Madhya Pradesh. The research findings demonstrated the level of understanding and adoption among soybean growers. Out of total soybean growers, 65.15% had a medium adoption level of recommended soybean practices, and only 19.70% had a high adoption level of recommended soybean practices. The majority of the soybean growers had a medium level of knowledge about recommended soybean practices, followed by a low level (18.18%) and a high level (16.67%). The study also revealed various socio-economic & personal, communication, and psychological attributes of soybean growers, like age, education, family size, family type, annual income, landholding, farm mechanization, area under soybean growers, extension participation, information-seeking behavior, cosmopolitaness, economic motivation, scientific orientation, and risk orientation.

**Keywords:** Soybean, Growers, Adoption, Knowledge, Technology

#### Introduction

Soybean (*Glycine max*) also known as the Golden Bean. It has become a crop in the twenty-first century. In India soybean is considered an oilseed crop. Since 2006 soybean has been an oilseed crop in India. Soybean is a source of good protein and oil. It has a lot of quality protein around 40 to 42 per cent and a lot of oil 18 to 20 per cent. Soybean also has acids, vitamins and minerals like calcium and iron. These are really good for health. The soybean crop originally came from East Asia from a place called China. Soybean is cultivated over the world. The world produces an amount of soybean every year around 390 to 400 million ton. Some countries like Brazil, the United States and Argentina produce a lot of soybean. The area under soybean cultivation in the world for 2025-26 was estimated at 145.0 million hectare with a production of 420.0 million tonnes and an average productivity of 2896 kg/ha. The area under soybean cultivation in India was 11.21 million hectares with a production of 11.03 million tonnes and an average productivity of 983 kg/ha. Madhya Pradesh is the largest soybean producing state in India with an area of 4.86 million hectares, production of 4.32 million tonnes and productivity of 889 kg/ha (SOPA 2025). Other major states that cultivated soybean are Maharashtra, Rajasthan, Karnataka, Telangana and Chhattisgarh. Some states, like Gujarat and the North-Eastern region are also becoming places to cultivated soybean. The production of soybean is affected by many factors viz. rainfall, soil, crop varieties, insect and disease and fertilizer management. Soybean has

been play very important role in India yellow revolution. Among the nine oilseeds crops cultivated in India, Soybean produces 25 to 28 per cent of the vegetable oil. Soybean is used in soya milk, soya paneer, soya flour and made many products, which is helped in India economy. Soybean is also fix nitrogen from the air, which helps the soil. This reduces the need of nitrogenous fertilizers. Soybean is very important for nutrition, economy and ecology. The study was conducted in Ambachandan village, Indore district of Madhya Pradesh state with the specific objective to study the socio-personal-economic, knowledge level and adoption level, communicational and psychological features of the soybean growers.

#### Materials and Methods

This study was conducted in Ambachandan, a village in the Indore district. A list of farmers from selected villages who are cultivating soybean crops was prepared with the help of the sarpanch and extension officers working in the study area. The total sample size of 66 for the primary data were collected personally by interview schedule. The respondents were asked to give their opinion about the use of recommended soybean cultivation practices (adoption and knowledge) on a three-point continuum, viz., completed, uncompleted, and never, and scores 2, 1, and 0 were assigned, respectively. Extent of knowledge and adoption was calculated on the basis of these scores. The data were analyzed using frequency, mean, percentage, and the chi-square test.

## Results and Discussion

### Socio-personal, economic, communication and psychological characteristics of respondent

The data indicates that the majority of the respondents were middle-aged (62.12%), followed by young (22.73%) and old age (15.15%) (Table 1). Since the old-age farmers almost have fixed behavior patterns, the middle-aged and especially young farmers should be targeted for imparting knowledge of soybean crops. The respondents were having education up to the primary level (30.30%), followed by the high school level (28.78%), followed by the middle school level (24.24%), followed by the illiteracy level (12.12%) and undergraduate level (4.56%) of education. Most of the respondents were soybean growers (63.63%) with medium family sizes, followed by (25.76%) small family sizes and (10.61%) soybean growers with large family sizes. Soybean growers (89.40%) belong to the joint family type, and soybean growers (10.60%) belong to the nuclear family type. The majority of the responders (63.63%) showed that they have a medium annual income range between 100,001 and 300,000, followed by 30.30% having high annual income and 6.06% having poor income. The table also

revealed that the highest number of soybean growers (45.45%) were found to be medium farmers, followed by the large farmers (30.31%) and small farmers (24.24%). The maximum number of soybean growers (39.39%) were found to be medium farmers in the region under soybean crops. The finding on agricultural farm mechanization found that the highest number of soybean growers (53.03%) had medium mechanization. Most of the soybean growers participated in medium-level extension (39.39%), followed by low involvement (34.84%) and high extension participation (25.77%). Soybean growers had medium information-seeking activity (57.58%). The results also revealed that most soybean growers (46.96 percent) were with medium cosmopolitaness. The economic motivation of soybean growers was highest in medium (50.00%), followed by low (25.75%) and high (24.25%) economic motivation. The majority (59.10%) of soybean growers had a medium-risk orientation, whereas the majority (22.72%) had a high-risk orientation and 18.18% had a low-risk orientation. The findings are in line with the findings of Rajan *et al.* [10] and Kumar *et al.* [7].

**Table 1:** Socio-personal, economic, communication and psychological characteristics of respondent

| S. No. | Categories                    | Characteristics                   | Frequency | Percentage |
|--------|-------------------------------|-----------------------------------|-----------|------------|
| 1.     | Age                           | Young (Up to 35 years)            | 15        | 22.73      |
|        |                               | Middle (36 to 55 years)           | 41        | 62.12      |
|        |                               | Old (Above 55 years)              | 10        | 15.15      |
| 2.     | Education                     | Illiterate                        | 08        | 12.12      |
|        |                               | Primary School                    | 20        | 30.30      |
|        |                               | Middle School                     | 16        | 24.24      |
|        |                               | High School                       | 19        | 28.78      |
|        |                               | Under Graduate                    | 03        | 4.56       |
| 3.     | Family Size                   | Small family (Less than 5 member) | 17        | 25.76      |
|        |                               | Medium family (5 to 9 member)     | 42        | 63.63      |
|        |                               | Large family (Above 9 member)     | 07        | 10.61      |
| 4.     | Family Type                   | Nuclear family                    | 07        | 10.60      |
|        |                               | Joint family                      | 59        | 89.40      |
| 5.     | Annual Income                 | Low (Up to Rs 1,00,000)           | 04        | 6.06       |
|        |                               | Medium (Rs. 1,00,001 to 3,00,000) | 42        | 63.63      |
|        |                               | High (Above Rs. 3,00,000)         | 20        | 30.30      |
| 6.     | Land Holding                  | Small farmers (Up to 1 ha)        | 16        | 24.24      |
|        |                               | Medium farmers (1.01 to 3 ha)     | 30        | 45.45      |
|        |                               | Large farmers (Above 3 ha)        | 20        | 30.31      |
| 7.     | Farm Mechanization            | Low (Less than 6 score)           | 24        | 36.36      |
|        |                               | Medium (6 to 8 score)             | 35        | 53.03      |
|        |                               | High (Above 8 score)              | 07        | 10.61      |
| 8.     | Area Under Soybean            | Small farmers (Up to 1 ha)        | 19        | 28.78      |
|        |                               | Medium farmers (1.01 to 3 ha)     | 26        | 39.39      |
|        |                               | Large farmers (Above 3 ha)        | 21        | 31.83      |
| 9.     | Extension Participation       | Low (Less than 11 score)          | 23        | 34.84      |
|        |                               | Medium (11 to 13 score)           | 26        | 39.39      |
|        |                               | High (Above 13 score)             | 17        | 25.77      |
| 10.    | Information Seeking Behaviour | Low (Less than 20 score)          | 18        | 27.27      |
|        |                               | Medium (20 to 24 score)           | 38        | 57.58      |
|        |                               | High (Above 24 score)             | 10        | 15.15      |
| 11.    | Cosmopolitaness               | Low (Less than 16 score)          | 19        | 28.80      |
|        |                               | Medium (16 to 18 score)           | 31        | 46.96      |
|        |                               | High (Above 18 score)             | 16        | 24.24      |
| 12.    | Economic Motivation           | Low (Less than 23 score)          | 17        | 25.75      |
|        |                               | Medium (23 to 25 score)           | 33        | 50.00      |
|        |                               | High (Above 25 score)             | 16        | 24.25      |
| 13.    | Scientific Orientation        | Low (Less than 23 score)          | 14        | 21.21      |
|        |                               | Medium (23 to 27 score)           | 31        | 46.96      |
|        |                               | High (Above 27 score)             | 21        | 31.83      |
| 14.    | Risk Orientation              | Low (Less than 24 score)          | 12        | 18.18      |
|        |                               | Medium (24 to 26 score)           | 39        | 59.10      |
|        |                               | High (Above 26 score)             | 15        | 22.72      |

### Distribution of soybean growers according to their knowledge level

The statistics shown in Table 2 indicate that about two-thirds of the respondents (65.15%) had a medium level of understanding of the proposed improved practices of soybean cultivation, followed by low (18.18%) and high (16.67%) levels of knowledge of the recommended soybean cultivation practices. The findings are in line with the findings of Parikh *et al.* <sup>[9]</sup> and Shinde *et al.* <sup>[12]</sup>

**Table 2:** Distribution of soybean growers according to their knowledge level

| S. No. | Categories               | Frequency | Percentage |
|--------|--------------------------|-----------|------------|
| 1.     | Low (Less than 26 score) | 12        | 18.18      |
| 2.     | Medium (26 to 32 score)  | 43        | 65.15      |
| 3.     | High (Above 32 score)    | 11        | 16.67      |
| Total  |                          | 66        | 100        |

(Mean: 29.43, Standard Deviation: 3.07)

### Distribution of soybean growers according to their adoption level

The findings in Table 3 show that about fifty percent of the respondents (48.48%) adopted recommended improved methods of soybean cultivation at medium level, followed by low (31.82%) and high (19.70%) levels of adoption of recommended soybean cultivation practices. Most of the respondents probably had an average level of understanding and this drove them to adopt the technology whole or partially. The findings are in line with the findings of Sani and Shinde *et al.* <sup>[11]</sup>

**Table 3:** Distribution of soybean growers according to their adoption level

| S. No. | Categories               | Frequency | Percentage |
|--------|--------------------------|-----------|------------|
| 1.     | Low (Less than 22 score) | 21        | 31.82      |
| 2.     | Medium (22 to 26 score)  | 32        | 48.48      |
| 3.     | High (Above 26 score)    | 13        | 19.70      |
| Total  |                          | 66        | 100        |

(Mean: 24.57, Standard Deviation: 1.95)

### Conclusion

The study found that the majority of the soybean growers were middle aged, medium educated, medium income, medium landholder, medium mechanization, medium extension contact and medium information seeker. Most of the respondents reported medium awareness and adoption levels of suggested soybean production practices. The results show that the socio-economic and psychological variables are important factors affecting the adoption behavior of soybean growers. Moderate levels of adoption may be attributed to moderate awareness and limited access to upgraded technologies and extension services. Thus, there is need to expand extension efforts, training programmes, demonstrations and farmer awareness campaigns to improve adoption of recommended practices, productivity and overall revenue of soybean growers.

### Acknowledgement

I am very thankful to the dean and HoD of the Faculty of Agriculture, the RAWE coordinator and co-coordinator, all faculty members, and my esteemed university for their full cooperation in my work, and I would also like to thank the

farmers who have helped me.

### Competing Interests

The authors have stated that there are no conflicting interests.

### References

1. Chandurkar WY, Rajput UU, Borde SA. Adoption of improved package of practices of soyabean crop and its constraint faced by soyabean growers. *Asian Journal of Agricultural Extension, Economics & Sociology*. 2024;42(12):337-343.
2. Desai HK, Patel GJ, Makani AY. Effect of front line demonstrations of soybean on soybean growers. *Gujarat Journal of Extension Education*. 2021;32(2):202-208.
3. Desai HK, Patel GJ, Pandya EH. Knowledge and adoption behavior of soybean growers. *Guj J Ext Edu*. 2021;32(2):40-44.
4. Deshmukh SK, Tamilselvi G. Impact of KVK training on knowledge and adoption levels of soybean growers in Maharashtra State. *Indian Society of Oilseeds Research*. 2021:377.
5. Jaybhay SA. Soybean cultivation by farmers of Maharashtra: identification and analysis of the problems. *Legume Research-An International Journal*. 2018;41(3):474-479.
6. Kamble P. Relationship between the profile of soybean growers and their knowledge and adoption of liquid biofertilizer in Marathwada region of Maharashtra. *Asian Journal of Agricultural Extension, Economics & Sociology*. 2024;42(11):350-356.
7. Kumar A, Rathod MK, Kalantri LB. Behaviour of farmers in adoption of recommended technology for soybean. *Indian Research Journal of Extension Education*. 2021;2:223-227.
8. Kumar S. A study on technological gap in adoption of the improved cultivation practices by the soybean growers. Dharwad (India): University of Agricultural Sciences; 2009.
9. Parikh A, Soni NV, Chaudhari JK. Technological gap in adoption of improved cultivation practices by soybean growers. *Guj J Ext Edu*. 2015;26(2):192-194.
10. Rajan P, Nahatkar SB, Thomas M. Farmers knowledge on soybean production technologies in Madhya Pradesh. *Indian Journal of Extension Education*. 2021;57(4):139-142.
11. Sani P. Adoption behaviour of different categories of soybean growers towards improved production technology in Shahapura block of Jabalpur [MSc (Agri) thesis]. Jabalpur (India): JNKVV; 2018.
12. Shinde PB, Deshmukh PR, Ahire RD. Knowledge and adoption of recommended seed production technology by the soybean growers. 2014;23:16-19.
13. Silva L. The role of knowledge management practices in the absorptive capacity: a research of soybean farms. *Knowledge Management Research & Practice*. 2023;21(6):1084-1094.