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# The profile of soybean growers of Latur region

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**Abstract**
The present study, titled "Adoption of Integrated Pest Management practices followed by soybean growers," was conducted in Ausa and Nilanga tehsils of Latur district in Maharashtra, using an ex post facto research design. A total of 120 soybean growers were randomly selected from 12 villages, with 10 farmers chosen from each village. The findings revealed that a majority (70.83%) of the respondents were middle-aged, and 40.83% had an education up to the middle school level. About 35.00% were marginal landholders, while 70.83% had a medium level of annual income. In terms of cultivation, 83.33% had a medium-sized area under soybean farming. Regarding access to information and agricultural services, 61.67% had a moderate level of information sources, and 65.84% had a medium level of contact with extension agencies. Additionally, 56.67% of the growers showed moderate economic motivation, 70.00% demonstrated a medium risk orientation, and 74.16% possessed a moderate level of knowledge about Integrated Pest Management practices.

**Keywords:** Knowledge, soybean growers

## Introduction
Soybean (*Glycine max* (L.) Merrill) is an important leguminous and oilseed crop from the Fabaceae family, with a chromosome number of 2n = 40. Originating in East Asia, especially China, it has been cultivated for over 5,000 years and has gained global importance due to its economic, nutritional, and industrial applications. Containing approximately 40% protein and 20% oil, soybean serves as a valuable source of human food, animal feed, and raw material for products like biodiesel, soy-based plastics, and cosmetics. Its natural ability to fix atmospheric nitrogen also enhances soil fertility, making it environmentally sustainable. The crop thrives in well-drained, loamy soils with a pH between 6.0 and 7.5, under moderate temperatures ranging from 25 °C to 30 °C and rainfall between 500 to 1000 mm. However, it is vulnerable to waterlogging, salinity, and poor drainage conditions. To ensure good yields, timely sowing, selection of suitable seed varieties, and proper land preparation are essential. Additionally, adopting sustainable farming methods is critical for preserving soil health, particularly in rainfed regions.

Maharashtra state area and production of soybean according to Third Advance Estimate 2024-2025 is area is 50.72 lakh hectare and production is 74.03 lakh tonnes. Leading top three district in Maharashtra under maximum area under soybean cultivation are Latur district has 5.00 lakh hectare, Dharashiv district has 4.63 lakh hectare and Nanded district has 4.52 lakh hectare. The area and production of the Latur district according to the Third Advance Estimate 2024-2025 is area is 5.00 lakh hectare and production is 10.03 lakh tonnes (Source-Department of Agriculture, Government of Maharashtra).

The area of Ausa and Nilanga tehsils under soybean cultivation in kharif 2024-25 is 64,809 hectare and 69,511 hectare respectively (source-Department of Agriculture, Latur district).

The excessive use of chemical pesticides has led to rising production costs, reduced biodiversity, and disrupted ecological balance. To counter these challenges, Integrated Pest Management (IPM) has emerged as a sustainable and science-based alternative. IPM is a comprehensive pest control strategy that integrates cultural, mechanical, biological, and, when necessary, chemical methods to manage pest populations in a way that is both environmentally responsible and economically viable. Its primary objective is to keep pest levels below those that cause economic harm, while minimizing risks to beneficial organisms, human health, and the environment.

Integrated Pest Management programs rely on up-to-date knowledge of pest life cycles and their interactions with the surrounding ecosystem, using this information to implement the most cost-effective and least hazardous control techniques. This approach is not limited to agriculture but it is also applicable in homes, gardens, and workplaces. Integrated Pest Management promotes the careful and limited use of pesticides, applying them only when other methods are insufficient. While organic farming shares many of IPM's principles, it restricts pesticide use exclusively to those derived from natural sources, avoiding synthetic chemicals altogether.

## Materials and Methods

The present study was carried out in Latur district, located in the Marathwada region of Maharashtra. Latur district was purposively selected due to its extensive area under soybean cultivation. Within the district, two tehsils-Ausa and Nilanga were chosen purposively, as they represent the highest soybean-growing regions within Latur. From each selected tehsil, six villages were randomly selected, resulting in a total of 12 villages for the study. In each village, 10 soybean farmers were selected through a simple random sampling method, making a total sample size of 120 respondents. The study followed an ex post facto research design. Data were collected through a structured interview schedule developed based on the study's objectives. Personal interviews were conducted with the selected soybean growers either at their homes or farms. The collected data were then systematically organized, tabulated, and analyzed using appropriate statistical tools such as frequency, mean, standard deviation, and the coefficient of correlation (r).

## Results and Discussion

Regarding the socio-economic profile of soybean growers, the study revealed that a majority (70.83%) of the respondents belonged to the middle-age group. In terms of education, 40.83% were educated up to the middle school level. With respect to landholding, 35.00% of the farmers fell under the marginal landholding category. A significant portion (70.83%) reported a medium level of annual income. Most of the respondents (83.33%) cultivated soybean on a medium-sized area. Additionally, 61.67% had a moderate level of access to various sources of information, while 65.84% reported a medium level of contact with agricultural extension agencies. Economic motivation among the farmers was also observed to be moderate in 56.67% of the cases. Furthermore, 70.00% of the respondents exhibited a medium level of risk orientation, and 74.16% had a moderate level of knowledge regarding soybean cultivation and related practices.

### The data fom table 1 depicts profile of soybean growers as following

### 1. Age

It was observed from Table 1 that the majority of respondents (70.83%) belonged to the middle-age group, while 15.83% were from the young age group and 13.34% were in the old age category.

These findings are consistent with the results reported by Sharma *et al*. (2022) [11] and Naveen *et al*. (2022) [7].

### 2. Education

It was revealed from Table 1 that the majority of respondents (40.83%) had education up to the middle school level. This was followed by 20.00% who had completed higher secondary school, 18.33% with primary school education, and 9.17% who were illiterate. Additionally, 4.17% of the respondents were graduates, another 4.17% could read and write without formal schooling, and 3.33% could only read.

These findings are in line with the results reported by Kale (2020) [5].

**Table 1:** Distribution of the soybean growers according to their profile

| SL. No. | Category | Respondents (n = 120) | |
|---|---|---|---|
| | | Frequency | Percentage |
| **A.** | **Age** | | |
| 1 | Young (Up to 31 years) | 19 | 15.83 |
| 2 | Middle (32 to 45 years) | 85 | 70.83 |
| 3 | Old (Above 45 years) | 16 | 13.34 |
| **B.** | **Education** | | |
| 1 | Illiterate | 11 | 09.17 |
| 2 | Can read only | 4 | 03.33 |
| 3 | Can read and write | 5 | 04.17 |
| 4 | Primary School | 22 | 18.33 |
| 5 | Middle School | 49 | 40.83 |
| 6 | Higher sec. School | 24 | 20.00 |
| 7 | Graduation | 5 | 04.17 |
| **C.** | **Land holding** | | |
| 1 | Marginal (up to 1.00 ha.) | 42 | 35.00 |
| 2 | Small (1.01 to 2.00 ha.) | 28 | 23.33 |
| 3 | Semi medium (2.01 to 4.00 ha.) | 23 | 19.17 |
| 4 | Medium (4.01 to 10.00 ha.) | 25 | 20.83 |
| 5 | Large (10.01 ha. and above) | 2 | 01.67 |
| **D.** | **Annual income** | | |
| 1 | Low (Up to 88977) | 22 | 18.33 |
| 2 | Medium (88978 to 261174) | 85 | 70.83 |
| 3 | High (Above 261174) | 13 | 10.84 |
| **E.** | **Area under soybean cultivation** | | |
| 1 | Low (Up to 0.53 ha.) | 7 | 05.83 |
| 2 | Medium (0.54 to 3 ha.) | 100 | 83.33 |
| 3 | High (Above 3 ha.) | 13 | 10.84 |
| **F.** | **Source of information** | | |
| 1 | Low (Up to 22) | 26 | 21.67 |
| 2 | Medium (23 to 40) | 74 | 61.67 |
| 3 | High (Above 40) | 20 | 16.66 |
| **G.** | **Extension contact** | | |
| 1 | Low (Up to 23) | 23 | 19.16 |
| 2 | Medium (24 to 41) | 79 | 65.84 |
| 3 | High (Above 41) | 18 | 15.00 |
| **H.** | **Economic motivation** | | |
| 1 | Low (Up to 12) | 28 | 23.33 |
| 2 | Medium (13 to 24) | 68 | 56.67 |
| 3 | High (Above 24) | 24 | 20.00 |
| **I.** | **Risk orientation** | | |
| 1 | Low (Up to 19) | 23 | 19.17 |
| 2 | Medium (20 to 23) | 84 | 70.00 |
| 3 | High (Above 23) | 13 | 10.83 |
| **J.** | **Knowledge** | | |
| 1 | Low (Up to 14) | 23 | 19.17 |
| 2 | Medium (15 to 18) | 89 | 74.16 |
| 3 | High (Above 18) | 8 | 06.67 |

**3. Land holding**

The results presented in Table 1 indicate that the largest proportion of soybean growers (35.00%) had marginal land holdings (up to 1.00 hectare). This was followed by 23.33% with small land holdings (1.01 to 2.00 hectares), and 20.83% with medium land holdings (4.01 to 10.00 hectares). Additionally, 19.17% of the respondents had semi-medium land holdings (2.01 to 4.00 hectares), while only 1.67% were classified under the large landholding category (10.01 hectares and above).

These findings are consistent with the results reported by Raut (2018) [9].

**4. Annual income**

It is revealed from Table 1 that the majority of soybean growers (70.83%) had a medium annual income ranging from Rs. 88,978 to Rs. 2,61,174. Additionally, 18.33% of the respondents reported a low annual income (up to Rs. 88,977), while 10.84% belonged to the high-income category (above Rs. 2,61,174).

These findings are supported by the studies conducted by Tilgame (2021) [13] and Kharatmal (2021) [6].

**5. Area under soybean cultivation**

According to the data presented in Table 1, the majority (83.33%) of soybean cultivation was observed in the medium landholding category, ranging from 0.54 to 3.00 hectares. In comparison, 10.84% of the area fell under the large landholding category (above 3.00 hectares), while only 5.83% was categorized as small holdings (up to 0.53 hectares).

These results are consistent with the findings reported by Shinde *et al*. (2020) [12] and Sayed (2020) [10].

**6. Source of information**

As presented in Table 1, the majority (61.67%) of soybean growers had a medium level of information sources. Additionally, 21.67% of the growers had a low level, while only 16.66% had a high level of information sources.

These findings are in line with the results reported by Jangwad (2019) [4] and Bhaltilak (2017) [1].

**7. Extension contact**

As observed from Table 1, the majority of respondents (65.83%) had a medium level of extension contact with extension agencies. Meanwhile, 19.16% had low contact, and 15.00% had high contact.

These findings are supported by the results of Tilgame (2021) [13] and Kharatmal (2021) [6].

**8. Economic motivation**

As observed from Table 1 indicates that a significant portion of soybean growers (56.67%) demonstrated a moderate level of economic motivation. This was followed by 23.33% of growers who showed a low level of motivation, while 20.00% exhibited a high level.

These findings are supported by the results of Tilgame (2021) [13] and Kharatmal (2021) [6].

**9. Risk orientation**

As shown in Table 1, the majority of respondents (70.00%) had a medium level of risk orientation. This was followed by 19.17% with low-risk orientation and 10.83% with high-risk orientation.

These findings are consistent with the results reported by Chowhan (2020) [2] and Vijayraj (2019) [14].

**10. Knowledge**

As shown in Table 1 reveals that the majority of respondents (74.16%) possessed a medium level of knowledge. In comparison, 19.17% had a low level of knowledge, while only 6.67% of soybean growers demonstrated a high level of knowledge.

These results are in agreement with the findings of Pendam (2021) [8] and Dhaigude (2021) [3].

**Conclusion**

With respect to the profile of soybean growers, it was observed that a majority (70.83%) belonged to the middle-age group. Regarding education, most of the respondents (40.83%) had studied up to the middle school level. In terms of landholding, a significant proportion (35.00%) fell under the marginal landholding category. Additionally, 70.83% of the growers reported a medium level of annual income. A large majority (83.33%) cultivated soybean on a medium-sized area. Furthermore, 61.67% of the respondents had a medium level of access to sources of information, while 65.84% had a medium level of contact with extension agencies. In terms of psychological and behavioural traits, 56.67% had a medium level of economic motivation, 70.00% showed a medium level of risk orientation, and 74.16% demonstrated a medium level of knowledge regarding soybean cultivation.

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