

International Journal of Agriculture Extension and Social Development

Volume 8; Issue 4; April 2025; Page No. 220-224

Received: 05-01-2025
Accepted: 13-02-2025

Indexed Journal
Peer Reviewed Journal

A study on knowledge and adoption level of organic farming by the farmers of Imphal East District, Manipur

¹Thokchom Nandarani Devi, ²Yanglem Lakshimai Devi, ¹Khongbantabam Jogita, ¹Ekita Nameirakpam and ¹Arbin Moirangthem

¹PG Scholar, Department of Agricultural Extension, PDDUIAS, Utlou, Manipur, India

²Assistant Professor, Department of Agricultural Extension, PDDUIAS, Utlou, Manipur, India

DOI: <https://www.doi.org/10.33545/26180723.2025.v8.i4d.1767>

Corresponding Author: Thokchom Nandarani Devi

Abstract

Organic farming is a production system which avoids or largely excludes the use of synthetically compounded fertilizers, pesticides, growth regulators, and livestock feed additives. The present study was conducted in Sawombung sub-division of Imphal East District, Manipur. Out of the total 69 villages in Sawombung sub-division, four villages *viz.*, Uyumpok, Khundrakpam, Keibi Khullen and Lamboikhul were selected for the study. An equal number of respondents were selected from each village and make up a total of 120 respondents. The selected respondents were interviewed personally using pre tested well structured interview schedule. The data collected from 120 respondents revealed that majority of the respondents are middle age (50.00%). Most of the respondents have completed high school and higher secondary education (31.70%) and have significant farming experience (38.30%). Nearly half of the respondents (46.70%) have land holding upto 1ha. In terms of income, 49.17 percent fall within the medium-income group, while a large majority (84.17%) has low farm power. Most respondents live in mixed-type houses (40.00%). When it comes to livestock possession, more than half (52.50%) belong to the medium livestock group. It shows that over half of the respondents have regular extension contact (57.50%) and exposure to mass media (60.83%). It also reveals that majority of the respondents (53.33%) had medium level knowledge in organic farming followed by high level (46.67%) and no respondents under low level knowledge in organic farming. Whereas majority of the respondents (48.33%) had medium adoption level of organic farming practices followed by high level (31.67%) and low level (20.00%) adoption of organic farming practices.

Keywords: Organic farming, knowledge level, adoption level, respondents

Introduction

Organic farming is the most eco friendly system of agriculture, especially with regard to pest and fertilizer inputs. It uses animal and plant manure as organic fertilizers besides cover crops that fix nitrogen. As defined by the Indian Council of Agricultural Research, "Organic Agriculture is a unique production management system that promotes and enhances agro-ecosystem health, including biodiversity, biological cycle and soil biological activity. This is attained through on-farm agronomic, biological and mechanical methods applied exclusively in exclusion of all synthetic off-farm inputs". It is due to this fact that the conventional agriculture used chemical pesticides and synthetic fertilizers at large scales, and hence the concept was born. Organic farming has an immense ecological benefit. It involves using a small amount of pesticides, thus reducing environmental pollution. Moreover, there is a minimal rate of erosion of soils and nitrates that leak to groundwater and surface water. Recycling of animal wastes back into the farm contributes to the fertility of the soils. Organic farming methods would support farmer improvements in farm productivity and ecological health while supporting stronger, more resilient communities. Organic farming, one of the prime reasons why farming interests have increased over the years, is redefining

traditional agricultural pursuits, causing severe migration away from rural settings. Not only does it make farmers self-sufficient, but also promotes support toward strengthening food security within communities. Chemical fertilizer and pesticide-dependent practices have determined the nature of conventional agriculture, with resultant widespread harm to the environment encompassing soil degradation, water contamination, and loss of biodiversity. Organic farming avoids all these toxic inputs and offers a more environmentally friendly approach toward supporting soil health and ecosystem resilience. Organic methods, in this way, offer new opportunities for farmers not only to mitigate the negative impacts associated with conventional agriculture but also to rebuild ecosystems and conserve natural resources. Organic farming can be a means of changing our agricultural systems for the better. It will help transform our agricultural systems into more sustainable and regenerative models that work in harmony with people and the planet.

Objectives of the study

1. To study the socio-economic profile of the respondents.
2. To assess the knowledge level of the respondents in organic farming.
3. To study the level of adoption of organic farming by the

respondents.

Methodology

Ex-post facto research design was adopted. The study was carried out in Imphal East District, Manipur. Purposive, multi- stage and simple random sampling procedures were followed in the study for the selection of district, sub-division, village and respondents. The district is divided into three sub-division viz. Porompat, Sawombung and Keirao Bitra. Out of these three block only one sub- division i.e Sawombung was selected randomly for the present study. Out of the total 69 villages in Sawombung sub division, four villages viz., Uyumpok, Khundrakpam, Keibi Khullen and Lamboikhul were selected for the study. An equal number of respondents were selected from each village and make up

a total of 120 respondents.

Methods used for data collection

A suitable structural interview schedule was prepared keeping in view the objectives of the research. Pre-testing was done with 20 respondents of the study area. On the basis of the experience gathered through pre-testing, appropriate changes in the schedule was made. Then, the schedule was finalized and used for data collection. The respondents interviewed during pre-testing were not included for the final study.

Results and Discussion

Socio economic characteristics of the respondents

Table 1: Characteristics of the respondents (N= 120)

| Sl. No | Attributes | Characteristics | Frequency | Percentage |
|--------|----------------------|----------------------------------|-----------|------------|
| 1 | Age | Young (Up to 36 years) | 20 | 16.70 |
| | | Middle (36 to 55 years) | 60 | 50.00 |
| | | Old (Above 55 years) | 40 | 33.30 |
| 2 | Education | Illiterate | 0 | 0.00 |
| | | Can read only | 0 | 0.00 |
| | | Can read and write only | 0 | 0.00 |
| | | Primary school (up to class V) | 3 | 2.50 |
| | | Middle school (up to class VIII) | 21 | 17.50 |
| | | High school (up to class X) | 38 | 31.70 |
| | | Higher secondary | 38 | 31.70 |
| | | Under graduation | 17 | 14.20 |
| | | PG and above | 3 | 2.50 |
| 3 | Farming experience | Low (1-10 years) | 33 | 27.50 |
| | | Medium (11-20 years) | 41 | 34.20 |
| | | High (20 years above) | 46 | 38.30 |
| 4 | Land holding | Upto 1 hectare | 56 | 46.70 |
| | | 1.1-2 hectares | 48 | 40.00 |
| | | More than 2.1 hectares | 16 | 13.30 |
| 5 | Annual income | Low(> 100000) | 38 | 31.67 |
| | | Medium(100000-200000) | 59 | 49.17 |
| | | High(<200000) | 23 | 19.16 |
| 6 | Farm power | Low | 101 | 84.17 |
| | | Medium | 17 | 14.17 |
| | | High | 2 | 1.66 |
| 7 | House type | Hut | 0 | 0.00 |
| | | Kutchra | 34 | 28.34 |
| | | Mixed | 48 | 40.00 |
| | | Pucca | 38 | 31.66 |
| | | Mansion | 0 | 0.00 |
| 8 | Livestock possession | Low | 44 | 36.67 |
| | | Medium | 63 | 52.50 |
| | | High | 13 | 10.83 |
| 9 | Extension contact | Low | 39 | 32.50 |
| | | Medium | 69 | 57.50 |
| | | High | 12 | 10.00 |
| 10 | Mass media exposure | Low | 21 | 17.50 |
| | | Medium | 73 | 60.83 |
| | | High | 26 | 21.67 |

The data presented in Table 1, indicates that that majority of the respondents belong to middle age group (50.00%) followed by old age group (33.30%) and young age group (16.70%) respectively. Maximum number respondent have high school and higher secondary education (31.70%), followed by those with a middle school education (17.50%) and under graduation (14.20%). A small percentage has

postgraduate degrees or primary school (2.50%), with no respondents being illiterate or having only basic reading and writing skills. It pointed out that majority of the respondents had high (38.30%) level of farming experience followed by medium (34.20%) and low (27.50%) level of farming experience. It was observed that majority of the respondents (46.70%) belonged to the land holding size of upto 1 ha

followed by 1.1-2 ha (40.00%) and more than 2 ha (13.30%). It revealed that 49.17 percent of the respondents had medium income, 31.67 percent had low income and 19.16 percent had high income. It was evident that majority respondents are under the low farm power group (84.17%) followed by medium farm power group (14.17%) and a small percentage of respondents under high farm power group (1.67%). It shows that majority of the respondents mixed house type (40.00%) followed by pucca house (31.66%) and kutchra house type (28.34%). No respondents has been found having hut or mansion type of house. It reveals that majority of the respondents has medium

livestock possession group (52.50%) followed by low livestock possession group (36.67%) and high livestock possession group (10.83%) respectively. It was observed that majority of the respondents belong to medium category of extension contact (57.50%) followed by low (32.50%) and high (10.00%) category of extension contact. It was also found that that majority of the respondents has medium level of mass media exposure (60.83%) followed by high (21.67%) and low (17.50%) level of mass media exposure.

Knowledge level of the respondents in organic farming

Table 2: Knowledge level of respondents in Organic farming

| Sl.no | Statement | Full knowledge F % | Partial knowledge F % | No knowledge F % |
|-------|---|-----------------------|--------------------------|---------------------|
| 1 | Organic farming is a production system which avoids the use of chemical inputs. | 120(100) | 0(0.00) | 0(0.00) |
| 2 | Organic/ solid waste management meaning. | 58(48.35) | 31(25.83) | 31(25.83) |
| 3 | Helps to maintain and increase long-term fertility of the soil. | 66(55.00) | 39(32.50) | 15(12.50) |
| 4 | Crop rotation helpful in reduction of weed population. | 54(45.00) | 40(33.33) | 26(21.67) |
| 5 | Water holding capacity of soil increases due to application of organic manure. | 49(40.83) | 36(30.00) | 35(29.17) |
| 6 | Using ash in vegetable crop helps enhance soil nutrition | 53(44.17) | 32(26.66) | 35(29.16) |
| 7 | Biofertilizer are pollution free fertilizer | 60(50.00) | 33(27.50) | 27(22.50) |
| 8 | Biofertilizers are useful for all types of soils | 61(50.83) | 38(31.67) | 21(17.50) |
| 9 | Manure can be prepared from farm leftovers | 89(74.17) | 31(25.83) | 0(0.00) |
| 10 | Mulching reduce loss of water through evaporation and control weeds | 65(54.17) | 37(30.83) | 18(15.00) |
| 11 | Use of trap methods to control pest and disease. | 60(50.00) | 38(31.67) | 22(18.33) |
| 12 | Knowledge of seed treatment before sowing and seed treatment methods | 31(25.84) | 49(40.83) | 40(33.33) |
| 13 | Knowledge about farm yard manure and its benefits | 120(100) | 0(0.00) | 0(0.00) |
| 14 | Knowledge about vermicompost and its benefits | 76(63.33) | 40(33.34) | 4(3.33) |
| 15 | Proper crop residue management checks major pest and disease | 60(50.00) | 39(32.50) | 21(17.50) |
| 16 | Green manure or plant cover crops reduce soil erosion and increase soil fertility | 45(37.50) | 42(35.00) | 33(27.50) |
| 17 | Manual or hand weeding is one of the main solution. | 63(52.50) | 37(30.83) | 20(16.67) |
| 18 | Rearing livestock with crop production is essential in organic farming | 67(55.83) | 30(25.00) | 23(19.17) |
| 19 | Change in planting dates to avoid pest avoidance. | 37(30.84) | 43(35.83) | 40(33.33) |
| 20 | Benefits of neem for grain storage | 34(28.33) | 42(35.00) | 44(36.67) |

F- Frequency %- Percentage

The above table 2 reveals that 100 percent of the respondents had full knowledge about organic farming is a production system which avoids the use of chemical inputs and knowledge about farm yard manure and its benefits followed by 74.17 percent of the respondents had full knowledge about the statement manure can be prepared from farm leftovers. It shows that 63.33 percent of the respondents had full knowledge about vermicompost and its benefits. It can also be observed that 55.83 percent of the respondent full knowledge about rearing livestock with crop production is essential in organic farming. It was observed that 55.00 percent of the respondents had full knowledge about the statement helps to maintain and increase long-term fertility of the soil. It can be seen that 54.17 percent of the respondents have full knowledge about mulching reduce loss of water through evaporation and control weeds. It was found that 52.50 percent of the respondents had full knowledge about manual or hand weeding is one of the main solution. It reveals that 50.00 percent of the respondents had full knowledge about biofertilizer are pollution free fertilizer, use of trap methods to control pest and disease and proper crop residue management checks major pest and disease. It was observed that 50.83 percent of the respondents had full knowledge about biofertilizers are useful for all types of soils. It was found that 48.34

percent of the respondents had full knowledge about organic/ solid waste management meaning. It indicates that 45.00 percent of the respondents had full knowledge about crop rotation helpful in reduction of weed population. It shows that 44.17 percent of the respondents had full knowledge about using ash in vegetable crop helps enhance soil nutrition. It can be seen that 40.83 percent of the respondents had full knowledge about water holding capacity of soil increases due to application of organic manure. It can also be seen that 40.83 percent of the respondents have partial knowledge about knowledge of seed treatment before sowing and seed treatment methods. It was found that 37.50 percent of the respondents had full knowledge about green manure or plant cover crops reduce soil erosion and increase soil fertility. It was observed that 35.83 percent of the respondents had partial knowledge about change in planting dates to avoid pest avoidance. It was revealed that 36.67 percent of the respondents had no knowledge about benefits of neem for grain storage. The study also reveal majority (53.33%) of the respondents belong medium level of knowledge in organic farming followed by high level of knowledge (46.67%) and no respondents under low level of knowledge. Similar finding was also reported by Sihare *et al.* (2017) ^[2].

Table 3: Distribution of respondents according to their overall knowledge level in organic farming

| Sl. No | Category | Frequency | Percentage |
|--------|----------|-----------|------------|
| 1 | Low | 0 | 0.00 |
| 2 | Medium | 64 | 53.33 |
| 3 | High | 56 | 46.67 |
| Total | | 120 | 100 |

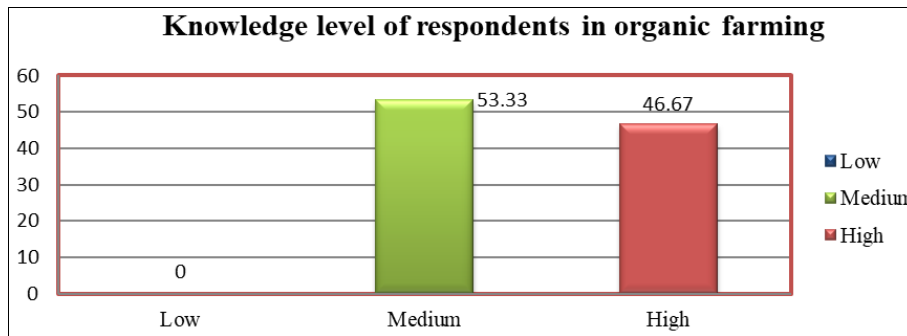


Fig 1: Graphical representation of respondents according to their overall knowledge level in organic farming

Adoption level of respondents in organic farming

Table 4: Adoption level of respondents in organic farming practices

| Sl.no | Practices | Full Adoption F % | Partial Adoption F % | No Adoption F % |
|-------|---|-------------------|----------------------|-----------------|
| 1 | Organic/ solid waste management. | 58(48.33) | 38(31.67) | 24(20.00) |
| 2 | Crop rotation | 66(55.00) | 38(31.67) | 16(13.33) |
| 3 | Use of ash in vegetable crops. | 49(40.83) | 46(38.33) | 25(20.84) |
| 4 | Mulching | 70(58.33) | 31(25.84) | 19(15.83) |
| 5 | Green manuring or planting cover crop | 43(35.83) | 45(37.50) | 32(26.67) |
| 6 | Use of FYM | 89(74.16) | 31(25.84) | 0(0.00) |
| 7 | Use of vermin- compost | 52(43.33) | 43(35.83) | 25(20.84) |
| 8 | Use of biofertilizer | 37(30.83) | 48(40.00) | 35(29.17) |
| 9 | Use of traditional varieties | 34(28.33) | 62(62.67) | 24(20.00) |
| 10 | Manual weeding or hand weeding | 79(65.83) | 41(34.17) | 0(0.00) |
| 11 | Trap methods | 48(40.00) | 34(28.33) | 38(31.67) |
| 12 | Seed treatment | 28(23.33) | 39(32.50) | 53(44.17) |
| 13 | Crop residue incorporation. | 62(51.67) | 40(33.33) | 18(15.00) |
| 14 | Change in planting dates to avoid pest avoidance. | 28(23.33) | 43(35.83) | 49(40.84) |
| 15 | Use of neem for grain storage. | 22(18.33) | 36(30.00) | 62(51.67) |

F- Frequency %- Percentage

The data in table-4 reveals that 74.16 percent of the respondents had full adoption of FYM. It was observed that 65.83 percent of the respondents had full adoption of manual weeding or hand weeding. It shows that 58.33 percent of the respondents had full adoption of mulching. It was found that 55.00 percent of the respondents had full adoption of crop rotation. It can be seen that 51.67 percent of the respondents had full adoption of crop residue incorporation. It was revealed that 48.33 percent of the respondents had full adoption of organic waste /solid management. 43.33 percent of the respondents had full adoption of vermicompost. It was observed that 40.83 percent of the respondents had full adoption of use of ash in vegetable crops. It was found that 51.67 percent of the respondents had partial adoption of use of traditional varieties. It shows that 40.00 percent of the respondents had full adoption of traps methods. It also shows that 40.00 percent of the respondents had partial adoption of use of biofertilizer. It can be seen that 35.83 percent had full

adoption of green manuring or planting cover crop. It shows that 51.67 percent had no adoption of use of neem for grain storage. It was observed that 44.17 percent had no adoption of seed treatment. It was found that 40.84 percent of the respondents had no adoption of change in planting dates to avoid pest avoidance. The study also reveal majority (60.83%) of the respondents belong medium level of adoption in organic farming followed by high level of adoption (31.67%) and low level of adoption (31.67%). The findings of the result are similar to the findings of Patel *et al.* (2017)^[1].

Table 5: Distribution of respondents according to their overall adoption level of organic farming practices

| Sl. No | Category | Frequency | Percentage |
|--------|----------|-----------|------------|
| 1 | Low | 9 | 7.50 |
| 2 | Medium | 64 | 60.83 |
| 3 | High | 56 | 31.67 |
| Total | | 120 | 100 |

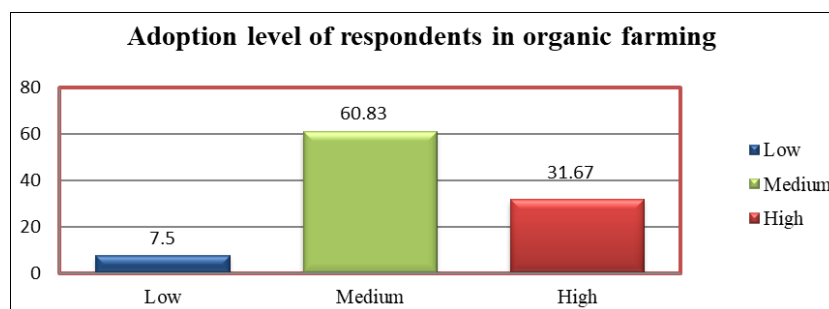


Fig 2: Graphical representation of respondents according to their overall adoption level in organic farming practices

Conclusion

On the basis of study conducted, it can be concluded that majority of the respondents of Sawombung sub-division had medium level of knowledge and adoption of organic farming. The prevalence of medium level of knowledge and adoption of organic farming among majority of farmers clearly reflects their progressive mindset. This indicates that they are open to new practices and willing to enhance their farming techniques, demonstrating a commitment to improving their agricultural methods. A strategic plan aimed at enhancing knowledge and skills in organic farming among farmers, producers, consumers, government departments, and agricultural research institutions would contribute to the wider adoption and promotion of organic farming practices.

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