

# Knowledge Level of Respondents about Recommended Production Practices of Pigeon Pea (*Cajanus cajan*) in Shorapur Taluka of Yadgir District Karnataka

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**Abstract:** *‘knowledge level of pigeon pea (*Cajanus cajan*) growers in shorapur taluka of yadgir district (Karnataka)’ was taken up with the objectives to elicit information regarding profile characteristics of pigeon pea growers, knowledge level of pigeon pea growers was carried out during the year 2017-18. which having maximum area and production of pigeon pea. The study revealed that majority pigeon pea growers had medium level of knowledge (61.66%) followed by low (22.51%) and high level of knowledge (15.83%) regarding Overall knowledge of recommended production practices of pigeon pea .*

**Key Words:** *Knowledge level, socioeconomic profile, pigeon pea growers, overall knowledge.*

## 1. INTRODUCTION:

Pigeon pea or red gram (*Cajanus cajan* L.) is most important pulse crop of tropics and sub tropical region of the world. it ranks second important pulse crop next to the Bengal gram. Pigeon pea is considered to be origin of peninsular India. It is a perennial shrub and a short annual crop in India and as a perennial in many other countries, where the pods are harvested at regular interval. The crop has deep root system and hence highly drought tolerant. More than 350 vernacular names of red gram have been recorded however, it is commonly known as Tur. The name Pigeon pea was first reported from Barbados, where the seeds were once considered very useful as feed for pigeons.

Pigeon pea is one of the major pulse crop, endowed with several unique characteristics. It finds a major pulse crop, endowed with several unique characteristics. It finds an important place in the farming system adopted by small holding peasants in large number of developing countries. The main use is in the form of dhal in the Indian diet. Its green seeds are used as vegetable. It has good nutritive value although, it contains considerable amount of ant nutritional polyphenolic compounds which inhibit the digestive enzymes trypsin, chymotrypsin and amylase. Besides the human diet, the green leaves and dry seeds of Pigeon pea are used as fodder for animals.

Major pulses grown in India include pigeon pea, lentil, chick pea, black gram, moonbeam, moth bean, horse gram, pea, grass pea or khesari, cow pea, and broad bean or faba bean. More popular among these are pigeon pea, mung bean, chickpea, urdbean and lentil. Among various pulse crops, pigeon pea dominates with over 15 to 20 per cent share of total pulse production followed by mung bean (11 %), urdbean (10-12 %), lentil (8-9 %) and other legumes (20 %) (Anon., 2013).

India is the largest producer (25% global production) consumer ( 27% of world consumption ) and importer (14%) of pulses in the world pulses account for around 20 percent of the area under foodgrains and contribute around 7-10 per cent of the total food grains production in the country through pulses are grown in both kharif and rabi seasons, rabi pulses contribute more than 60 per cent of the total production gram is the most dominant having a share of around 40 per cent in the total production followed by tur/arhar at 15 to 20 per cent and urad/black matpe and mung at around 8-10 per cent each. Madhya Pradesh, Maharashtra, Rajasthan, Uttar Pradesh and Karnataka are the top five pulses producing states. Productivity of pulses is 764kg/ha.

Since ages, pulses have been well integrated in to the farming system of our country as the farmers could produce them by using their own seeds and family labour without depending much on external inputs. With the advent of green revolution, which promoted rice and wheat using external input and modern varieties of seeds pulses were pushed to the marginal lands. This resulted in decline in productivity and land degradation. Thus, pulses are still cultivated on the marginal and sub marginal land, predominantly under unirrigated conditions. The trend of commercialization of agriculture has further aggravated the status of pulses in the farming system.

## 2. METHODOLOGY:

The research study on recommended production practices of pigeon pea was conducted during the year 2017-2018 in Shorapur taluka of Yadgir district of Karnataka. In the present investigation, descriptive type of ex-post-facto research design was employed. This design was appropriate because the phenomenon had already occurred. Ex-post-

facto research is the most systematic empirical enquiry in which the researcher does not have any control over independent variables as their manifestation has already occurred or as they are inherent and not manipulatable thus, inferences about relations among variables were made without direct intervention from concomitant variation of independent and dependent variables. (Kerlinger,1973). Yadagiri district comprises of three Talukas namely, shahapur, yadagiri and shorapur. The shorapur taluka is purposively selected, because highest area under pigeon pea crop. In shorapur five hoblies were selected namely, Kembhavi, Kakkeri, Kodekal, Hunasagi and Shorapur from each hoblies 24 samples were drawn randomly such that the total sample size was 120.

Knowledge was operationally defined, as the extent to which pigeon pea production techniques was known by the respondents. For the present study an operational measure for knowledge was developed by constructing a “teacher made knowledge test”. The knowledge test was constructed based on the package of practices developed for pigeon pea cultivation. Lists of 19 cultivation practices were developed for the purpose and each practice was administered in the form of questions to respondents to obtain the response from pigeon pea growers. The questions were provided with multiple choice answers. The questions and answers pertaining to knowledge test were carefully designed in consultation with experts. The questions covered full range of cultivation practices beginning from variety selected till the crop yield. Frequency percentage calculated each statements.

The above procedure was followed by Angadi (1999) and Raghavendra (2005)

### 3. RESULTS AND DISCUSSION:

The knowledge level of the farmers was assessed using the pre-structured interview schedule and the following findings are got. TABLE .

- 1.) It Revealed that (75.00%) of the respondents are not known chance for weed growth followed by (41.67%) of the respondents are not known the what is the use of deep and summer ploughing destroying the pupa exposing them to sun light .(16.67%) of the respondents are not known the maximum yield can be obtained statement respectively .
- 2.) It was revealed that in recommended pigeon pea varieties (66.67%)of the respondents fully known Maruti (ICP-8863) followed by (33.33%) Asha and (25.00%) BSMR-736 and (8.33%) TS-3R respectively. (66.67%) of their respondents not known the TS-3R followed by (41.67%) BSMR-736 (33.34%) Asha and (25.00%) Maruti (ICP-8863) and (33.33%) of the respondents are partially known Asha and BSMR-736 and (8.33%) Maruti (ICP-8863) respectively.
- 3.) It was found that (75.00%) of the respondents are not known the light textured sandy soil followed by (58.33%) red soil and (16.66%) black soil respectively. Followed by (66.67%) respondents fully known the black soil followed by (25.00%) red soil and (8.33%) light textured sandy soil. (16.67%) respondents partially known all the 3 soil type.
- 4.) It was found that (75.00%) of the respondents are fully known the june-july suitable season for growing pigeon pea crop. followed by (58.33%) June (25.00%) after the fort night of July and (8.33%) may respectively. (75.00%) of respondents are not known the may season followed by (58.33%) after fort night of July and (8.33%) June -July (mid) June respectively. Followed by (33.33%) of respondents partially known June season and (16.67%) respondents are partially known june-july (mid), after the fort night of July and may respectively.
- 5.) It was found that (66.67%) if the respondents are fully known recommended variety will give the maximum yield followed by (33.34%) certified seed (25.00%) common or local seed respectively. (41.67%) of the respondents not known the common or local variety seed followed by (33.33%) certified seed and (8.33%) respondents recommended variety respectively. (25.00%) partially know recommended variety (33.33%) certified seed and common or local seed varieties respectively.
- 6.) It was found that (91.67%) of the respondents are not known the 1 kg /acre is seed rate recommended followed by (58.33%) 2 Kg /acre (16.67%) 3 kg/acre and (8.33%) 4 kg /acre respectively.
- 7.) It was observed that (75.00%) of respondents are fully known the 90cm spacing is sufficient between row to row, (33.33%) the respondents are fully known 60cm spacing respectively, (41.67%) of the respondents are not known 60cm and (8.33%) not known 90cm respectively. (25.00%) of the respondents are partially known the 60cm and (16.67%) partially known 90cm respectively.
- 8.) It was observed that (75.00%) of the respondents fully known 30 cm spacing between 2 plants followed by (16.67%) of the respondents 60cm respectively (50.00%) of the respondents are partially known 60cm followed by (8.33%) respondents 30cm respectively. (33.33%) of respondents are not known 60cm followed by (16.67%) 30cm respectively.
- 9.) It was observed that in FYM application quantity knowledge/tonnes/acre (75.00%) of respondents are not known 4tonnes /acre FYM recommended followed by (50.00%) of the respondents are 3 tonnes/acre (41.67%)of the respondents 2 tonnes/acre and (16.67%) respondents 5tonnes/acre respectively. (66.67%) of the respondents are fully known 5 tonnes/acre followed by (33.33%) of the respondents 4 tonnes /acre (25.00%) 1 tonnes /acre and (16.66%) respondents are 4 tonnes /acre respectively.
- 10.) It was observed that about sowing method knowledge (75.00%) the respondent fully known putting seed behind the plough followed by (41.67%) line sowing (25.00%) broadcasting and (16.67%) dibbling respectively. (50.00%)

the respondents are partially known the sowing dibbling method followed by (33.33%)line sowing and (16.67%) broadcasting and putting seed behind the plough respectively.

11). It was observed that (75.00%) of the respondents are not known the intercrop with pigeonpea soyabean followed by (50.00%) of the respondents are bajra (16.67%) of respondents green gram respectively. (50.00%) respondents are partially known green gram followed by (33.33%) bajra and (16.67%) soyabean (33.33%) of respondents fully known green gram followed by (16.67%) bajra and (8.33 %) soybean respectively .

12). It was observed that (66.67%) of respondents are fully known 2-3times of the irrigation required followed by (58.33%) 1-2times (50.00%) 3-4times (33.33%) 4-5 times respectively. (25.00%) of the respondents are partially known 1-2times and 4-5 times followed b (33.33%) 3-4times and (16.67%) 2-3times respectively (25.00%) not known 4-5 times irrigation followed by (16.67%) of respondents not known 1to2 times 3-4 times (16.66%) 2 -3 times and respectively.

13). It was found that (66.67%) of the respondents are fully known the 25:50:25 dose/acre for pigeon pea cultivation followed by (25 00%) of respondents are 20:30:50 and (16.67%) 30:20:40 and 40:to30:50 respectively (58.33%) of the respondents are partially known 30:20:40 followed by (50.01%) of the respondents 20:30:50 and (33.33%) 40:30:50 and 25:50:25 respectively.

14). It was observed that in nipping practice (75.00%) of the respondents fully known 1time nipping practice followed by (33.33%) 2 times and 3 times respectively (50.00%) of respondents are partially known 2 and 3 time s of nipping practice (16.67% ) not known 2-3 times respectively .

15). It was observed that (66.67%) of respondents are fully known 100-200 lit of NSKE formulation required to spray one followed by (16.67%) of respondents are 300-400 lit and (8.33%) respondents are 200-250 lit respectively (66.67%) of the respondents are partially known 200-250 lit followed by (50.00%) 300-400 lit (16.67%) 100-200 lit respectively.

16). It was observed that (70.83%) of the respondents are not known the pod fly pest followed by (58.33%) pod bug and (16.67%) of respondent are pod borer anmdmurka leaf webbeer respectively. (50.00%) of the respondents are fully known foollowed by (33.33%) muiraka leaf webber and (9.17%) respondents pod fly and (8.34%) pod bug respectively . (50.00%) of the respondents are partially known murakan leaf webber followed by (33.33%) of respondents are pod borer anmdpod bug and pod borer (20.00%) maruka leaf webber respectively .

17). It was observed that (66.67%) of respondents are fully known the pest controlling management spinosad(45SC) 0.1ml/lit followed by (25.00%) respondents are Flubendiamide (480SC) 0.1ml/lit (16.67%) Methomyl(40SP) 0.6gm/lit Lannate (66.67%) of respondents are not known Indoxacarb (14.5SC)0.3ml/lit (Avaunt) followed by (58.33%) Flubendiamide (480SC) 0.1ml/lit Respectively (33.33%) partially known the Methomyl (40SP) 0.6 gm/lit (Lannate) followed by (16.67%) Flubendiamide(480 SC) 0.1 ml/lit and spinosad respectively.

18). It was observed that (75.00%) of the respondents are not known the important disease in pigeon pea Phytophthora Blight followed by (58.33%) sterility mosaic (16.67%) wilt (50.00%) of the respondents are fully known wilt followed by (16.67%) Sterility mosaic and (8.33%) Phytophthora Blight respectively.

19). It was observed that (75.00%) of the respondents are fully known the dec-jan is harvesting time of followed by (25.00%) dec-feb and (16.67%) nov-dec respectively. (50.00%) of respondents are partially known dec-feb followed by(33.33%) dec-feb (25.00%) dec-jan (41.67%) not known dec-feb followed by (33.33%) nov-dec respectively.

This trend of results might be due to the fact that, farmers might have acquired knowledge about recommended production practices since the respondents had medium farming experience, better education, large land holdings and better extension contact and high income.

Another reason might be more exposure to various training programmes, awareness programmes, demonstration and krushimela. All these factors might have influenced the respondents to acquire more knowledge. It is quite natural that, if the individual is having higher education, high land, more farming experience with higher income naturally, one would like to have more knowledge about new technologies and would like to earn more profit.

**To determine the level of knowledge about improved practices of pigeonpea production.**

**Table.1 level of knowledge about improved practices of pigeonpea production.**

| Statements   | knowledge level |       |                 |       |           |       |
|--|-----------------|-------|-----------------|-------|-----------|-------|
|  | Fully known     |       | Partially known |       | Not known |       |
|  | F               | %     | F               | %     | F         | %     |
| 1. What is the use of deep and summer ploughing?   |                 |       |                 |       |           |       |
| a. Destroying the pupae exposing them to sun light | 30              | 25.00 | 40              | 33.33 | 50        | 41.67 |
| b. Maximum yield can be obtained                   | 70              | 58.33 | 30              | 25.00 | 20        | 16.67 |
| c. No chance for weed growth                       | 10              | 8.33  | 20              | 16.67 | 90        | 75.00 |
| 2. What are the recommended pigeonpea varieties?   |                 |       |                 |       |           |       |
| a. Maruti(ICP-8863)                                | 80              | 66.67 | 10              | 8.33  | 30        | 25.00 |

|  |    |       |    |       |     |       |
|--|----|-------|----|-------|-----|-------|
| b. Asha  | 40 | 33.33 | 40 | 33.33 | 40  | 33.34 |
| c. TS-3R   | 10 | 8.33  | 30 | 25.00 | 80  | 66.67 |
| d. BSMR-736  | 30 | 25.00 | 40 | 33.33 | 50  | 41.67 |
| 3. Name the suitable soil type for pigeon pea?                                       |    |       |    |       |     |       |
| a. Black soil  | 80 | 66.67 | 20 | 16.67 | 20  | 16.66 |
| b. Red soil  | 30 | 25.00 | 20 | 16.67 | 70  | 58.33 |
| c. Light textured sandy soil   | 10 | 8.33  | 20 | 16.67 | 90  | 75.00 |
| 4. What is the suitable season for growing pigeon pea crop?                          |    |       |    |       |     |       |
| a. June-July(mid)  | 90 | 75.00 | 20 | 16.67 | 10  | 8.33  |
| b. After the fort night of July  | 30 | 25.00 | 20 | 16.67 | 70  | 58.33 |
| c. May   | 10 | 8.33  | 20 | 16.67 | 90  | 75.00 |
| d. June  | 70 | 58.33 | 40 | 33.33 | 10  | 08.34 |
| 5. Which type of seeds gives maximum yield?  |    |       |    |       |     |       |
| a. recommended variety   | 80 | 66.67 | 30 | 25.00 | 10  | 08.33 |
| b. certified seed  | 40 | 33.34 | 40 | 33.33 | 40  | 33.33 |
| c. common or local seed  | 30 | 25.00 | 40 | 33.33 | 50  | 41.67 |
| 6. What is the seed rate recommended for (Kg/acre)?                                  |    |       |    |       |     |       |
| a. 1   | 0  | 0.00  | 10 | 8.33  | 110 | 91.67 |
| b. 2   | 30 | 25.00 | 20 | 16.67 | 70  | 58.33 |
| c. 3   | 40 | 33.33 | 60 | 50.00 | 20  | 16.67 |
| d. 4   | 80 | 68.34 | 30 | 23.33 | 10  | 8.33  |
| 7. What is the spacing between row to row?   |    |       |    |       |     |       |
| a. 60cm  | 40 | 33.33 | 30 | 25.00 | 50  | 41.67 |
| b. 90cm  | 90 | 75.00 | 20 | 16.67 | 10  | 8.33  |
| 8. What is the spacing between two plants?   |    | 0.00  |    | 0.00  |     | 0.00  |
| a. 30cm  | 90 | 75.00 | 10 | 8.33  | 20  | 16.67 |
| b. 60cm  | 20 | 16.67 | 60 | 50.00 | 40  | 33.33 |
| 9. What is the recommended quantity of FYM application (tonne/acre)?                 |    |       |    |       |     |       |
| a. 2   | 30 | 25.00 | 40 | 33.33 | 50  | 41.67 |
| b. 3   | 40 | 33.33 | 20 | 16.67 | 60  | 50.00 |
| c. 4   | 20 | 16.67 | 10 | 8.33  | 90  | 75.00 |
| d. 5   | 80 | 66.67 | 20 | 16.67 | 20  | 16.66 |
| 10. Which sowing method do you follow for pigeon pea?                                |    |       |    |       |     |       |
| a. Dibbling  | 20 | 16.67 | 60 | 50.00 | 40  | 33.33 |
| b. Broadcasting  | 30 | 25.00 | 30 | 25.00 | 60  | 50.00 |
| c. Line sowing   | 50 | 41.67 | 40 | 33.33 | 30  | 25.00 |
| d. putting seeds behind the plough   | 90 | 75.00 | 30 | 25.00 | 10  | 8.33  |
| 11. Do you know the crop grown as intercrop in pigeon pea?                           |    |       |    |       |     |       |
| a. Bajra   | 20 | 16.67 | 40 | 33.33 | 60  | 50.00 |
| b. Green gram  | 40 | 33.33 | 60 | 50.00 | 20  | 16.67 |
| c. Soyabean  | 10 | 8.33  | 20 | 16.67 | 90  | 75.00 |
| d. Black gram  |    | 0.00  |    | 0.00  |     | 0.00  |
| 12. How many times does pigeon pea require irrigation                                |    |       |    |       |     |       |
| a. 1-2 times   | 70 | 58.33 | 30 | 25.00 | 20  | 16.67 |
| b. 2-3 times   | 80 | 66.67 | 20 | 16.67 | 20  | 16.66 |
| c. 3-4 times   | 60 | 50.00 | 40 | 33.33 | 20  | 16.67 |
| d. 4-5 times   | 40 | 33.33 | 50 | 25.00 | 30  | 25.00 |
| 13. What is the optimum dose of fertilizer for pigeon pea cultivation (Kg/Acre) NPK? |    |       |    |       |     |       |
| a. 25:50:25  | 80 | 66.67 | 40 | 33.33 | 0   | 0.00  |
| b. 20:30:50  | 30 | 25.00 | 70 | 50.01 | 20  | 24.99 |
| c. 30:20:40  | 20 | 16.67 | 70 | 58.33 | 30  | 25.00 |

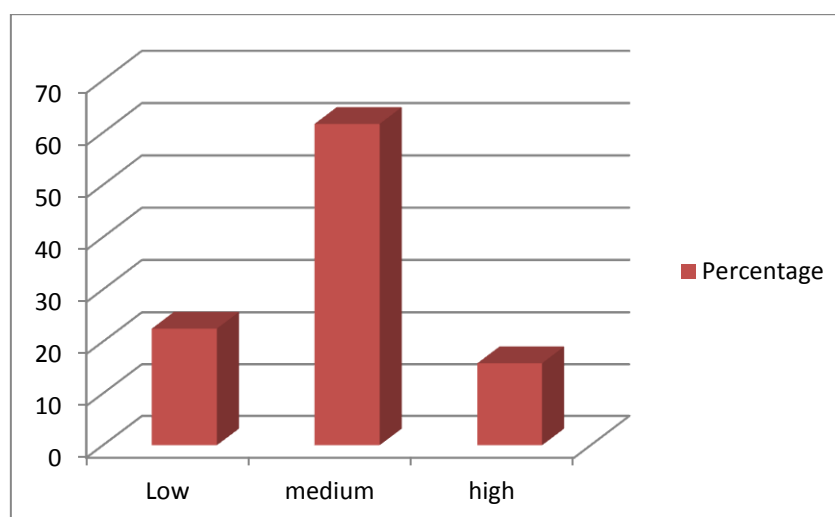


|   |    |       |    |       |    |       |
|---|----|-------|----|-------|----|-------|
| d. 40:30:50   | 20 | 16.67 | 40 | 33.33 | 60 | 50.00 |
| 14. Do you follow nipping practice? If yes how many times               |    |       |    |       |    |       |
| a. 1 time   | 90 | 75.00 | 20 | 16.67 | 10 | 8.33  |
| b. 2 times  | 40 | 33.33 | 60 | 50.00 | 20 | 16.67 |
| c. 3 times  | 40 | 33.33 | 60 | 50.00 | 20 | 16.67 |
| 15. How many litters of NSKE formulation is required to spray one acre? |    |       |    |       |    |       |
| a. 300-400 litters  | 20 | 16.67 | 60 | 50.00 | 40 | 33.33 |
| b. 200-250 litters  | 10 | 8.33  | 80 | 66.67 | 30 | 25.00 |
| c. 100-200 litters  | 80 | 66.67 | 20 | 16.67 | 20 | 16.66 |
| 16. Name the major pest in pigeon pea?                                  |    |       |    |       |    |       |
| a. Pod borer ( <i>H. armigera</i> )                                     | 60 | 50.00 | 40 | 33.33 | 20 | 16.67 |
| b. Pod bug  | 30 | 08.34 | 20 | 33.33 | 70 | 58.33 |
| c. Pod fly  | 10 | 09.17 | 25 | 20.00 | 85 | 70.83 |
| d. Maruka leaf webber   | 40 | 33.33 | 60 | 50.00 | 20 | 16.67 |
| 17. Name the control measures for pest management.                      |    |       |    |       |    |       |
| a. Methomyl (40 SP) 0.6 gm/lit (Lannate)                                | 20 | 16.67 | 40 | 33.33 | 60 | 50.00 |
| b. Indoxacarb (14.5 SC) 0.3 ml/lit (Avaunt)                             | 10 | 8.33  | 30 | 25.00 | 80 | 66.67 |
| c. Flubendiamide (480 SC) 0.1 ml/lit                                    | 30 | 25.00 | 20 | 16.67 | 70 | 58.33 |
| d. Spinosad (45 SC) 0.1 ml/lit  | 80 | 66.67 | 20 | 16.67 | 20 | 16.66 |
| 18. Indicates the important disease in pigeon npea cultivation.         |    |       |    |       |    |       |
| a. wilt   | 60 | 50.00 | 40 | 33.33 | 20 | 16.67 |
| b. Sterility mosaic   | 20 | 16.67 | 30 | 25.00 | 70 | 58.33 |
| c. Phytophthora Blight  | 10 | 8.33  | 20 | 16.67 | 90 | 75.00 |
| 19. What is the harvesting time for pigeon pea?                         |    |       |    |       |    |       |
| a. Dec-Feb  | 30 | 25.00 | 40 | 33.33 | 50 | 41.67 |
| b. Nov- Dec   | 20 | 16.67 | 60 | 50.00 | 40 | 33.33 |
| c. Dec- Jan   | 90 | 75.00 | 30 | 25.00 | 0  | 0.00  |

Overall Knowledge of Pigeonpea Growers About Recommended Production Practices

**Table.2 Overall knowledge of pigeon pea growers.**

| Sl. no | categories   | frequency         | percentage      |
|--------|--------------|-------------------|-----------------|
| 1      | Low          | 27                | 22.51           |
| 2      | Medium       | 74                | 61.66           |
| 3      | High         | 19                | 15.83           |
|        | <b>Total</b> | <b>120</b>        | <b>100.00</b>   |
|        |              | <b>Mean=26.17</b> | <b>S.D=3.17</b> |



### Figure. 1 over all knowledge wise distribution of the respondents

A perusal of the data in Table.2 and Fig.1 indicated that. The analysis of results presented in table indicated that a high percentage of respondents (61.66%) were noticed in medium knowledge, and low knowledge (22.51%) where as high knowledge of pigeonpea practices was noticed with 15.83 per cent of respondents only.

This clearly shows that the respondents had average level of knowledge, which might be due to majority of the respondents had medium extension contact and mass media exposure. Above all lower education of the respondents might be the responsible for average knowledge level.

#### 4. CONCLUSION:

This trend of results might be due to the fact that, farmers might have acquired knowledge about recommended production practices since the respondents had medium farming experience, better education, large land holdings and better extension contact and high income.

Another reason might be more exposure to various training programmes, awareness programmes, demonstration and krushimela. All these factors might have influenced the respondents to acquire more knowledge. It is quite natural that, if the individual is having higher education, high land, more farming experience with higher income naturally, one would like to have more knowledge about new technologies and would like to earn more profit.

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