

## FARMERS ADAPTION OF ORGANIC VEGETABLE PRODUCTION IN SINILOAN, PANGIL AND KALAYAAN, LAGUNA

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### Abstract

*This research was conducted with the aim of presenting the levels of adoption on organic vegetable production by farmers in Siniloan, Pangil and Kalayaan, Laguna. Likewise, to find the answers to the questions: what are the socio-demographic profile and practices of farmers about organic vegetable production in Siniloan, Pangil and Kalayaan, Laguna? Specifically, this aims to answer the following questions: what is the socio-demographic profile of the farmer adopters of organic vegetable production in terms of: age, gender, civil status, family size, educational attainment, other source of income, organizational affiliation, farming experience, farm size, tenurial status, crop raised, extension exposure, definition of organic farming?; what is the level of adoption on organic vegetable production?; is there significant difference between socio-demographic profile of the respondents and their level of adoption of organic vegetable production. Descriptive-analysis was used with 54 farmers in Siniloan, Pangil and Kalayaan, Laguna as respondents using quota sampling. The farmer respondents are included on the list of the Department of Agriculture. Data were gathered through interview and observation. The instrument used by the researcher is a questionnaire to collect the data. The results of the study show that the majority of the respondents ranged from 53 to 49 years old while few of them have age ranging from 74 to 80 years old. The respondents were from the lowland and upland areas. Majority of the respondents are high school graduates and have no other sources of income. Twenty-nine respondents were members of organizations and had farming experience of 1 to 5 years. Majority of the respondents were just renting the land they use and eggplant is their main crop followed by string beans and squash. The respondents believe that organic agriculture is natural way of farming. The highest level of adoption on organic vegetable production is in planting while the respondents answered frequently on disease management practices, fertilizer application, watering, postharvest handling and marketing. In land preparation and pest management they answered sometimes, and seldom in seed sowing and seedling production. Based on findings of the study, the level of adoption on organic vegetable production is not influenced by the respondents' age, civil and tenurial status. It is recommended that strong coordination among different agencies will help to develop and enhance the skills and knowledge of farmers about organic vegetable production. Likewise more trainings and seminars regarding organic vegetable production must be undertaken.*

**Keywords:** Farmers adaption, Organic vegetable, Organic production, Vegetable production

### INTRODUCTION

Vegetable is believed to be the most important food in the world for the people who want to achieve a healthy life. Organic vegetable production seems to be the trend these days as more people have become conscious of what they are eating. This is because conventional methods which involve the use of harmful chemicals may enter our systems. In order to control the problem, the Senate and

House of Representatives of the Philippines in Congress assembled the Republic Act No. 10068, this act shall be known as the "Organic Agriculture Act of 2010" an act providing for the development and promotion of organic agriculture in the Philippines and for other purposes. This encourages farmers to shift to organic farming. With organic farming, farmers will no longer need to plant crops using genetic engineering, irradiation and sewage sludge. Instead, this will be replaced with crop rotation.

The use of modern techniques and methods in organic vegetable farming is believed to be the main reason why most farmers increase vegetable production. According to Grubinger et. al (2001), "today, organic production is a combination of new technology and traditional methods. As a result of recent research, there are many new tools for organic farmers to use including soil analysis, plant nutrient monitoring and integrated pest management systems. Additionally, there are many new commercial organic fertilizers and pesticide products on the market which have made organic farming more user-friendly than ever. Consumers are showing their support for this method of production at the market. Demand for organic produce has increased 20% a year on the average since 1990. This has resulted in higher profit potential for organic producers."

The municipalities of Siniloan, Pangil and Kalayaan are some of the towns in Laguna which are using different methods of organic vegetable farming. Approximately, Siniloan has twenty-one thousand (21,000) sq. m. land area intended for vegetable farming. Pangil has four thousand six hundred (4,600) sq.m. land area. Kalayaan has eighteen thousand (18,000) sq. m. land area intended for vegetable farming. The production of organic vegetable is the main source of livelihood, along with backyard gardening, livestock, poultry, and high value crops.

Organic vegetable farms use a variety of methods. Compost and manure can be used to feed the plants and nourish the soil. Mulch can be used to control weed growth, to keep soil moist, to prevent erosion, to supply nutrients as it breaks down, and to prevent rot when fruit drops to the ground. Beneficial insects can be used to pollinate the plants and to get rid the plants of insect pests. Natural deposits of rocks, sand or shell can add minerals and help the pH of the soil.

## **RESEARCH METHODOLOGY**

### **Research design**

Descriptive-analysis was used in this study. The survey method of research involved the collection of data through the use of questionnaire. Data were gathered through interview and observation to determine the level of organic vegetable adopted by farmers

### **Target population**

The farmers who are engaged in organic vegetable production consist of 48 from upland areas and 6 from lowland areas of Siniloan, Pangil and Kalayaan, Laguna.

### **Research materials and instrument**

The researcher used questionnaire to gather data. The questionnaire- checklist is composed of three parts. The first part is the demographic profile of the farmers. The second part is the farm information of the farmers. The third part contains the practices of organic vegetable production.

**Data gathering procedure**

The researcher prepared an endorsement Letter which signed by the dean. Then, went to the Department of Agriculture for the approval of the study and to get information regarding the selected towns. After that, go to the different municipalities of Laguna to gather information regarding their documented records of farmer adopters of organic vegetable production. Interviewed the farmers and asked them to fill the questionnaires provided. Lastly, applied statistical instrument to get the result of the study which led to the forming of conclusion and recommendation.

**DATA PROCESSING AND STATISTICAL ANALYSIS**

The data gathered were analyzed through the following statistical tools:

| Variables  | Statistical tools                                |
|--|--|
| 1.Socio-demographic profile of the farmer adopters of organic vegetable production   | Mean, Frequency, Rank, Percentage                |
| 2.Organic vegetable production adapted   | Mean, Weighted mean, Verbal interpretation, Rank |
| 3. Significant difference between socio-demographic profile of the respondents and their level of organic vegetable production adopted | ANOVA  |

**RESULTS AND DISCUSSION**

**Demographic profile of respondents**

Table 1 presents the distribution of the respondents by age. Majority of the respondents' age ranged from 53 to 59 years old which has a frequency of 21 while the few had age ranging from 74 to 80 years old which has a frequency of 1. The highest percentage is 53 to 59 years old because this is the range of age where people are very conscious about their health and living. The mean of the age of respondents is 9 years.

**Table 1. Socio-Demographic Profile of the Farmer Adopters of Organic Vegetable Production**

| VARIABLES            | FREQUENCY | PERCENTAGE | RANK |
|----------------------|-----------|------------|------|
| <b>Age, in years</b> |           |            |      |
| 39 to 45             | 3         | 5.56       | 5    |
| 46 to 52             | 10        | 18.52      | 3    |
| 53 to 59             | 21        | 38.89      | 1    |
| 60 to 66             | 14        | 25.93      | 2    |
| 67 to 73             | 5         | 9.26       | 4    |
| 74 to 80             | 1         | 1.85       | 6    |
| Mean= 9              |           |            |      |
| Total=               | 54        | 100        |      |
| <b>Gender</b>        |           |            |      |
| Male                 | 27        | 50         | 1.5  |
| Female               | 27        | 50         | 1.5  |
| Total=               | 54        | 100        |      |
| <b>Civil Status</b>  |           |            |      |

|                   |    |       |   |
|-------------------|----|-------|---|
| Single            | 2  | 3.7   | 3 |
| Married           | 48 | 88.89 | 1 |
| Widow             | 4  | 7.41  | 2 |
| <i>Total=</i>     | 54 | 100   |   |
| <b>Residences</b> |    |       |   |

|                                |    |       |     |
|--------------------------------|----|-------|-----|
| Siniloan, Laguna               | 17 | 31.48 | 2   |
| Table 1. Continued             |    |       |     |
| Pangil, Laguna                 | 12 | 22.22 | 3   |
| Kalayaan, Laguna               | 25 | 46.3  | 1   |
| <i>Total=</i>                  | 54 | 100   |     |
| <b>Family size</b>             |    |       |     |
| 1 to 3 Family members          | 9  | 16.67 | 2.5 |
| 4 to 6 Family members          | 34 | 62.96 | 1   |
| 7 to 9 Family members          | 9  | 16.67 | 2.5 |
| 10 to 12 Family members        | 2  | 3.7   | 4   |
| <i>Total=</i>                  | 54 | 100   |     |
| <b>Educational Attainment</b>  |    |       |     |
| Elementary Level               | 6  | 11.11 | 3   |
| Secondary Level                | 32 | 59.26 | 1   |
| College Level                  | 16 | 29.63 | 2   |
| <i>Total=</i>                  | 54 | 100   |     |
| <b>Other Sources of Income</b> |    |       |     |
| Apartment for rent             | 1  | 1.85  | 7.5 |
| Beautician                     | 1  | 1.85  | 7.5 |
| Business                       | 3  | 5.56  | 2.5 |
| Carpentry                      | 1  | 1.85  | 7.5 |
| Coconut production             | 2  | 3.70  | 4.5 |
| Employment                     | 2  | 3.70  | 4.5 |
| Fishing                        | 1  | 1.85  | 7.5 |
| Laborer                        | 1  | 1.85  | 7.5 |
| Livestock raising              | 2  | 3.70  | 4.5 |
| Rice farming                   | 3  | 5.56  | 2.5 |
| No other sources of income     | 37 | 68.52 | 1   |
| <i>Total=</i>                  | 54 | 100   |     |

Data show that the majority of the respondents are male and female with the frequency of 27. There is an equal percentage distribution of male and female respondents which proves that both gender has the ability and capacity to plant organic vegetables. The distribution of the respondents by civil status shows that the majority of the respondents are married which has a frequency of 48 (88.89%). Four are widow/widower and two were single. Married status has the highest percentage because commonly farmers help each other on organic vegetable farming. By residence, the respondents were distributed to different towns in Laguna but the highest numbers

were from Kalayaan, Laguna which has a frequency of 25 (46.3%). The highest percentage/number of organic farmers is from San Antonio, Kalayaan, Laguna. The land for cultivation is wide and the soil is fertile.

In terms of family size, majority of the respondents have family members ranging from 4 to 6 which has a frequency of 34 while the least have family member ranging from 10 to 12 which has a frequency of 2. The highest family size is 4 to 6 members. Based on the interview conducted having 3 or 4 children are enough for farmers. Their children would be of great help in organic vegetable production or earning a living.

The distribution of the respondents by educational attainment about that majority are secondary level which has a frequency of 32 (59.26%) while the college level have frequency of 16 (29.63%) and elementary level has a frequency of 6 (11.11%) educational attainment. Almost 60 percent of organic farmers are high school graduates. They did not enter college because of poverty. They also do this to support the education of their children. Most of them have sons/daughters who are degree holders..

Majority of the respondents have no other sources of income which has frequency of 37 (68.52%) while rice farming and business have frequency of 3 (5.56%) and 2 (3.70%) are engaged in employment, livestock raising and coconut production as source of income. Business (Sari-sari store) is the most common source of income aside from vegetable production. The profit on horticulture is not enough to sustain the needs of their family.

### ORGANIZATIONAL AFFILIATION

Table 2 presents the distribution of the respondents by organizational affiliation. Majority of the respondents have no affiliation which has a frequency of 25, while others are members of organizations having frequency of 29. These organizations are GARB (Galalan Agrarian Reform Beneficiaries), LVIC (Laguna Vegetable Industry Council and Livelihood), KASALONIA (Kalayaan, San Antonio, Longos), KOFA (Kalayaan Organic Farming Association), KOFA (Kalayaan Organic Farming Association), UOFA (Upland Organic Farmers Association), MAFSI, FFS (Farmers Field School), Farm Worker, Agriculturist and AGAP.

**Table 2. Distribution of the respondents by organizational affiliation**

| Organizational affiliation                              | Frequency | Percentage | Rank |
|---|-----------|------------|------|
| GARB (Galalan Agrarian Reform Beneficiaries)            | 4         |            | 5.5  |
| LVIC (Laguna Vegetable Industry Council and Livelihood) | 2         |            | 8    |
| KASALONIA (Kalayaan, San Antonio, Longos)               | 1         |            | 9.5  |
| KOFA (Kalayaan Organic Farming Association)             | 3         |            | 7    |
| UOFA (Upland Organic Farmers Association)               | 6         |            | 3.5  |
| MAFSI   | 1         |            | 9.5  |
| FFS (Farmers Field School)                              | 4         |            | 5.5  |
| Farm Worker   | 1         |            | 9.5  |
| Agriculturist   | 1         |            | 5.5  |
| AGAP  | 6         |            | 9.5  |
| Have organization                                       | 29        | 53.7       | 3.5  |
| No organization   | 25        | 46.3       | 1    |

|       |    |     |   |
|-------|----|-----|---|
| Total | 54 | 100 | 2 |
|-------|----|-----|---|

### FARMING EXPERIENCE

Table 3 presents the distribution of the respondents by farming experience. Data show that most commonly respondents have farming experience ranging from 1 to 5 years which has a frequency of 25, while the least have farming experience ranging from 11 or more with frequency of 12 (22.22%).

**TABLE 3. DISTRIBUTION OF THE RESPONDENTS BY FARMING EXPERIENCE**

| No. of years' experience | Frequency | Percentage | Rank |
|--------------------------|-----------|------------|------|
| 1 to 5                   | 25        | 46.3       | 1    |
| 6 to 10                  | 17        | 31.48      | 2    |
| 11 or more               | 12        | 22.22      | 3    |
| <b>Total</b>             | <b>54</b> | <b>100</b> |      |

### FARM SIZE

Table 4 presents the distribution of the respondents by the farm size. Data show that the majority of the respondents have a farm size ranging from 0.03 to 0.70 hectares which has a frequency of 44, while few have farm size ranging from 0.75 to 1.42 hectares with frequency of 2 (5.4%). The highest percentage is 0.03 to 0.07 hectares with the percentage of 81.48. even if the land that they use for organic vegetable production is not large and wide, they cultivate it.

**Table 4. Distribution of the respondents by farm size**

| Farm size (ha) | Frequency | Percentage | Rank |
|----------------|-----------|------------|------|
| 0.03-0.70      | 44        | 81.48      | 1    |
| 0.75-1.42      | 2         | 3.70       | 4    |
| 1.47-2.14      | 5         | 9.26       | 2    |
| 2.19-2.86      | 3         | 5.56       | 3    |
| <b>Total</b>   | <b>44</b> | <b>100</b> |      |

### TENURIAL STATUS

Table 5 presents the distribution of the respondents by tenurial status. Data show that majority of the respondents were just renting the land that they use which has a frequency of 30, while the least are tenants which has a frequency of 1. Rent is the highest percentage by tenurial status because most of the farmer-respondents do not own the land for which they pay rent to plant organic vegetables.

**Table 5. Distribution of the respondents by tenurial status**

| Tenurial Status | Frequency | Percentage | Rank |
|-----------------|-----------|------------|------|
| Lease           | 2         | 42.59      | 2    |
| Tenant          | 1         | 1.85       | 3    |
| Rent            | 3         | 55.56      | 1    |
| <b>Total</b>    | <b>5</b>  | <b>100</b> |      |

### CROP RAISED

Table 6 presents the distribution of the respondents by crop raised which shows the number of vegetables planted and number of farmers planting the identified crops in Siniloan, Pangil and Kalayaan, Laguna. Data show that majority of the respondents planted eggplant as main crop which has a frequency of 37 (16.51%), while the least crops are taro, swamp cabbage and turmeric with a frequency of 1. The highest percentage in crop raised is eggplant which has frequency of 37 with percentage of 16.51. The second is string beans with the frequency of 30 with percentage of 13.39. The third is squash which has the frequency of 20 with percentage of 8.92. The fourth is sili with the frequency of 19 and with percentage of 8.48. The fifth is bitter gourd with the frequency of 17 and percentage of 7.59. The sixth crops are ladies finger and pechay with the frequency of 12 and percentage of 5.36. The eighth crop is lettuce with frequency of 11 and percentage of 4.91. The ninth crops are bottle gourd and mustard with the frequency of 10 and percentage of 4.46. The eleventh crops are cucumber, radish and tomatoes with the frequency of 9 and percentage of 4.02. The fifteenth crops are cauliflower and snap beans with the frequency of 4 and percentage of 1.79. The lowest percentage of crops raised are swamp cabbage, taro, turmeric and winged bean with the frequency of 1 and percentage of 0.45.

**Table 6. Distribution of the respondents with multiple responses**

| <b>Tenurial Status</b> | <b>Frequency</b> | <b>Percentage</b> | <b>Rank</b> |
|------------------------|------------------|-------------------|-------------|
| Bitter Gourd           | 17               | 7.59              | 5           |
| Bottle Gourd           | 10               | 4.46              | 9.5         |
| Cauliflower            | 4                | 1.79              | 15.5        |
| Cucumber               | 9                | 4.02              | 11.5        |
| Eggplant               | 37               | 16.51             | 1           |
| Ladies Finger          | 12               | 5.36              | 6.5         |
| Lettuce                | 11               | 4.91              | 8           |
| Loofah                 | 7                | 3.12              | 14          |
| Mustard                | 10               | 4.46              | 9.5         |
| Pechay                 | 12               | 5.36              | 6.5         |
| Radish                 | 9                | 4.02              | 11.5        |
| Sili                   | 19               | 8.48              | 4           |
| Snap Beans             | 4                | 1.79              | 15.5        |
| Squash                 | 20               | 8.92              | 3           |
| String Beans           | 30               | 13.39             | 2           |
| Swamp Cabbage          | 1                | 0.45              | 17.5        |
| Taro                   | 1                | 0.45              | 17.5        |
| Tomatoes               | 9                | 4.02              | 11.5        |
| Turmeric               | 1                | 0.45              | 17.5        |
| Winged Bean            | 1                | 0.45              | 17.5        |
| <b>Total</b>           | <b>224</b>       | <b>100</b>        |             |

**SEMINAR/TRAINING ATTENDED**

Figure 3 presents the distribution of the respondents in terms of their seminars/trainings attended. Majority of the respondents have no seminars attended which have a frequency of 9 and while the others have seminars attended having frequency of 45. These seminars are Farmers' Field School

on Organic Vegetable, Season Long Training for Organic Practitioners and Agricultural Extension Workers with Emphasis on Documentation, Record Keeping, Philippine National Standards on Organic Agriculture & Laguna Internal Control System, and others.

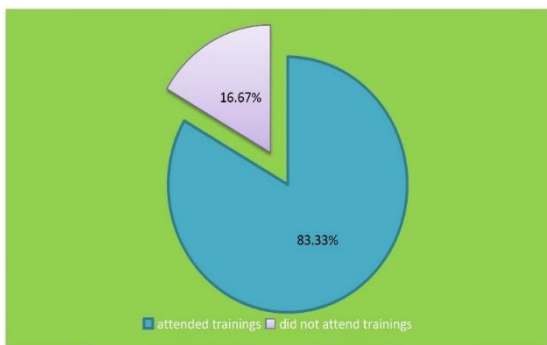


Figure 3. Distribution of the respondents by seminars/trainings attended.

**DEFINITION OF ORGANIC FARMING**

Table 7 presents the distribution of the respondents based on their definition of organic farming. It shows that the respondents believe that organic agriculture is natural way of farming with the frequency of 21(38.89%) while the least is believe that organic agriculture is use of animal manure which have a frequency of 5 (9.26%).

**Table 7. Distribution of the respondents by definition of organic farming**

| Definition of Organic Farming          | Frequency | Percentage | Rank |
|--|-----------|------------|------|
| Organic farming is not using chemicals | 16        | 29.63      | 2    |
| Natural way                            | 21        | 38.89      | 1    |
| Use of Animal Manure                   | 5         | 9.26       | 5    |
| Use of Fertilizer                      | 6         | 11.11      | 3.5  |
| Good for the health and environment    | 6         | 11.11      | 3.5  |
| <b>Total</b>                           | <b>54</b> | <b>100</b> |      |

**PRODUCTION AND MANAGEMENT PRACTICES**

The farms are located in Siniloan, Pangil and Kalayaan, Laguna. The discussion of the production and managements practices is based on the interview of the researcher through the use of questionnaire.

**SEEDLING PRODUCTION**

Seedbed, seedling tray and recycled materials are use in planting seeds. A seedbed can produce enough seedlings. Incorporate 1 sack of animal manure or 5 kg of compost fertilizer. Distribute seeds through the use of different methods. Make sure that the soil is rich. Enough amount of water. Farmers said that the seedling tray or recycled materials are used in transplanted seed to avoid pest like ants and to monitor the growth of vegetables.

**LAND PREPARATION**

Thorough land preparation requires soil analysis, weeding and soil sterilization using solar operations. Some of them don't practice the soil analysis because they know that this is a fertile soil. Before planting, they do the practice of weeding. They removed the unnecessary weeds. Incorporate burnt rice hull during land preparation. Burnt rice hull reduces occurrence of weeds and diseases, and improves soil texture. After cultivating the soil mix the chicken manure.

**PLANTING**

Water the seedbeds well. Gently uproot seedlings to prevent root damage. Cultivate the soil before



transplanting after 2 days. Apply 3 sacks of compost using the method of banded and top dress or apply 1 sack of animal manure. Be careful in handling while transplanting. It reduced transpiration and increase plant survival. Two fingers may be used to make holes. Plant deep enough. Be careful in transplanting to avoid the damage of the seeds. Press the soil lightly around the basal portion. Make sure that the root is in full contact with the soil. Irrigate the field before and after transplanting.

### **VARIETY SELECTION**

They plant varieties including eggplant (Morena F1, Lightning F1, Ramgo), string beans (Mariposa, Pole Sitaw Maranaw), squash (Suprema F1) and other crops varieties. The farmers selected good seeds/planting materials. All farmers used resistant varieties to prevent the damage of the crops caused by pest and insect. The seeds came from the Department of Agriculture. The farmers usually buy seeds on the seller recommended by the government.

### **PEST AND DISEASE MANAGEMENT**

Most of the farmers practice pest management using mechanical and physical control practices. They removed the pest in the plants through the use of hand picking and smothering with non-living materials. Farmers practice the cultural practices including sanitation, tillage, crop rotation and other. Practice disease management using preventive practices including use resistant varieties and practice hygiene and sanitation and others. Practice intervention against diseases including cultural practices and biological control. Use the organic fertilizer to control pest and diseases.

### **FERTILIZATION**

The practice of application of fertilizer was observed in different vegetables. Farmers used chicken manure, 100% Eco friendly, compost, complete, FAA, FFJ, vermicast and vermicompost. The time of application of the chicken manure, vermicast and vermicompost are before planting or after cultivating the soil and mix well using the broadcast and top dress method. The time of application of the 100% Eco friendly is after transplanting in 15 to 21 days using the band method. The time of application of the compost fertilizer is 2 days before transplanting using the top dress and band method. The time of application of the complete fertilizer is every 2 weeks in the morning and before evening through the use of fertigation method. The time of application of the FAA and FFJ fertilizer are after planting of the seeds with the use of clean sprinkler/spray.

### **IRRIGATION**

Organic vegetable farmers practice irrigation so that the crops would grow regularly. Sprinkled is used in watering the vegetables. There are two sources of water namely; rainfed and irrigation system. Vegetable is irrigated early in the morning and before the sunset. Most of them irrigate the plants through irrigation system and few to rainfed. Farmers used river as a source of water. They irrigate their crops mixing with water and fertilizer. Irrigate daily during dry season.

### **POSTHARVEST HANDLING**

Farmers pick, trim and package the fruit. Usually grading is use in identified vegetables. Pick the fruit carefully before washing. Trimming should be done gently to avoid crushing of the leaf tissue. Vegetable should be washed in clean, properly sanitized water to remove soil particles, dirt and surface stains. They package their product using plastic or string. Some of them are not package they're product.

### DISTRIBUTION OF CHANNELS OF MARKETING

After picking, trimming, grading and packaging early in the morning, avoid exposing the fruits from direct sunlight. Removed the damaged and arrange properly. The organic vegetable was sold whole sale, most of the time are retail and direct selling. Figure 4 presents the marketing channel for organic vegetables. It shows how the product from producers reaches the consumers. The arrows indicate the direction of movement.

Harvesting is successfully done by the producer. The middleman is the one who can buy the product. The retailer or consumer is the one who can buy in a small amount of the product. The final destination is the consumer which they use or they consume the product.

After harvesting, the farmers or the producer will sell their vegetables in retail then the last destination is to the consumer. Most of the time, after they harvest, they sell it in retail. The last destination is to the consumer.



Figure 4. Marketing channel in organic vegetables

### Level of adoption on organic vegetable production

Level of adoption on organic vegetable production based on the respondents' frequency practices, the highest level of adoption on organic vegetable production is in planting which have a mean of 4.26 and the average mean of adoption on organic vegetable production is 3.51 at a frequently level. The lowest level of adoption on organic vegetable production is in seed sowing and seedling production. On seed sowing the highest level of adoption is in broad or line sowing and dibbling and they answered sometimes in broadcasting. The lowest level of adoption is in putting seeds behind the plough. On seedling production, the highest level of adoption is in using seedbed while the respondents answered frequently on using seedling tray. The lowest level of adoption is in using recycled materials. On medium used, the highest level of adoption is in using compost. In using chicken manure, they answered sometimes and seldom in using rice hull. The lowest level of adoption is in using coco coir dust, vermin compost, vermin cast carbonized rice hull and grass.

On land preparation, the highest level of adoption is in weeding and seldom in soil analysis and soil sterilization. The lowest level of adoption is in soil sterilization of the land. On planting production practices, the highest level is in direct seeding and they answered frequently on transplanting. The

respondents answered sometimes on pest management while answered frequently on disease management practices.

On fertilizer management, the highest level of adoption is in using animal manure and they answered frequently in using compost. In using FPJ and green manure they answered sometimes while seldom in using FFJ, FAA, vermicompost. The lowest level of adoption is in using IMO.

On fertilizer application method, the highest level of adoption are in top dress, banded, side dress method and they answered frequently on fertigation and foliar application method and seldom in broadcast method.

The schedule of watering plants is in the morning and in the afternoon and never in the noon. On the source of water, the highest level of adoption is in irrigation while seldom on rainfed system. On postharvest handling, the highest level of adoption is in trimming and they answered frequently on picking and packaging. Sometimes is on grading. On marketing, the highest level of adoption is in retail and frequently on direct selling. The lowest level of adoption is in whole sale marketing.

Difference between the socio-demographic profile of the respondents and their level of adoption on organic vegetable production

There's significant difference between the demographic profile of the respondents and their level of adoption on organic vegetable production. Data show that there was no significant difference between the demographic profile of respondents except in their age, civil and tenurial status.

Also there's a significant difference between tactical management and schedule of watering, for the tenurial status. Instead of applying their knowledge and practices to their own land, they apply those on the land that they rent. Source of water is significant to the civil status. Based on my interview, most of the farmers are married and have family. They have children who help in planting organic vegetable that's why farmers have some ease in farming.

There's a significant difference between postharvest handling and farmers' age because most of them have only one way of harvesting the plant. Not all postharvest handling are used. Based on their age, they choose simple way to post harvesting.

## CONCLUSION

Based on the findings of the study, the level of adoption on organic vegetable production is not influenced by the socio-demographic profile of the respondents except on their tenurial status to the tactical management and schedule of watering plants. The civil status of the respondents is significant to the source of water. The age of farmers is significant to their practices of postharvest handling. All farmers are adopters of organic vegetable but not all practices are being adopted. Therefore, the farmers are required to attend more training and adopt all practices on organic vegetable production.

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