

## **BIBLIOGRAPHY**

BALANG, RACHELLE L. APRIL.2010. Perceptions of Strawberry Farmers Towards Organic Farming. Benguet State University, La Trinidad, Benguet.

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## **ABSTRACT**

Organic farming is a prime topic in agriculture sector but only few farmers go with this. This study aimed to determine the perceptions and attitudes of strawberry farmers towards organic agriculture, relating these to their demographics.

Eighty respondents were taken from Betag and Longlong, the major production areas of La Trinidad. Respondents with lesser farm size rely on strawberry farming as a major source of income indicating a sensitivity in decisions made to generate income.

The farmers have a minimal understanding of organic farming claiming certainty on its effects on soil management but uncertainty on effectiveness for pest management.

Radio programs have been a major source of information on organic farming for the respondents.

Respondents disagree that organic farming is an expensive endeavor, but are concerned, however, that organic farming equates to lower yields and requires more labor. These are their main reasons for not going into organic farming. On the other hand, they also understand the positive contributions of organic farming to health and the environment.

Furthermore, respondents exhibits low understanding of consumers behavior and preferences in consuming organically grown strawberry.

It is therefore recommended that concerned institutions increase the intensity and frequency of providing farmers with information and education on organic farming to the strawberry farmers. To convince them to go into organic farming, the concerned institutions, must likewise present farmers with comparative quantitative values and budgets they can relate to.



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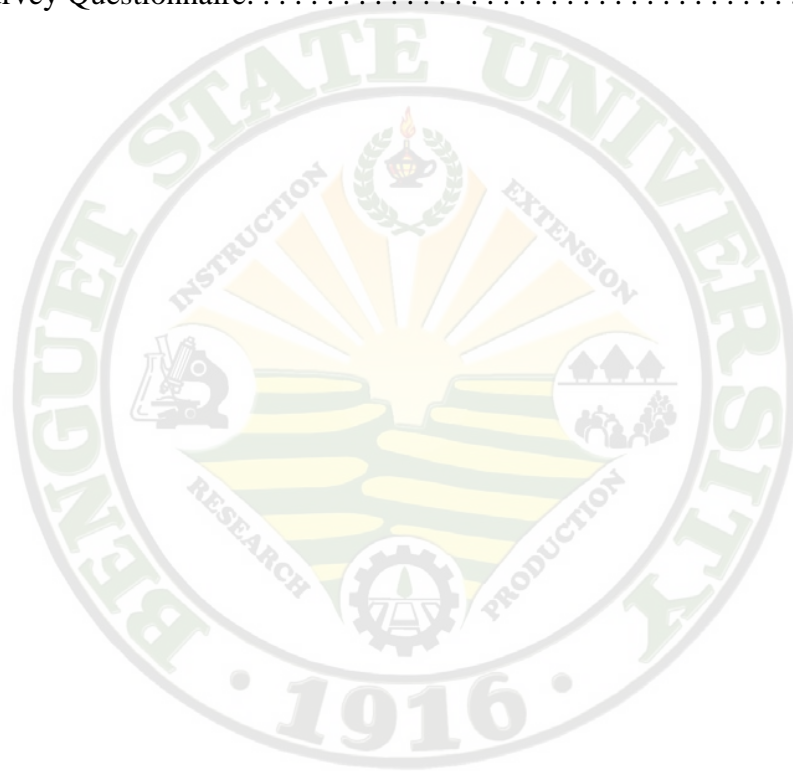
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## INTRODUCTION

### Rationale

Organic farming has now become a prime topic of discussion and concern in the agricultural sector. It is a method of farming that requires farmers to operate a system based on ecological principles and which imposes strict limitations on the inputs that can be used in order to minimize damage to the environment and wildlife. So, emphasis is given on natural methods of production and pest's control. Organic agriculture has developed rapidly worldwide during the last few years and is now practiced in approximately 120 countries (Ghosh, 2008).

Organic farming is a form of agriculture that relies on crop rotation, green manure, compost, biological pest control and mechanical cultivation etc...to maintain soil productivity and control pests, excluding or strictly limiting the use of synthetic fertilizers and synthetic pesticides (Wikipedia, 2009).

Fruits and veggies grown organically show significant higher levels of cancer fighting antioxidants than conventionally grown foods, according to a new study of corn, strawberries and marion berries. Sustainable and organically grown strawberries showed about 19 percent more antioxidants than conventionally grown. The research suggests that pesticides and herbicides actually thwart their production of phenolics-chemicals that acts as a plants natural defense and also happen to be good for our health. Fertilizers, however, seem to boost the levels of anti-cancer compounds (Mitchell, 2003).

The Organic Farming Research Foundation (OFRF) in the United States of America defines organic farming as a modern, sustainable farming system which maintains the long-term fertility of the soil and uses less of Earth's finite resources to



produce high quality, nutritious food (OFRF. 2004).Furthermore, the International Federation of Organic Agriculture Movements (IFOAM), states: The purpose of organic agriculture is to optimize the health and productivity of independent communities of soil life, plants, animals and people.

Organic farming as stated by Mgdoff and Weil (2004) does not allow the use of synthetic pesticides or fertilizers and is intended to reduce the detrimental effects of agriculture on soils, animals and the environment.

Increasing population levels on a near stabilized agricultural land places a heavy burden on the soil source-particularly its nutrient supplying power. Chemical fertilizers have come to increase the output of an agricultural product and to meet ever increasing demand of human population. The problem is further compounded in several areas due to the excessive use of chemical fertilizers which resulted into considerable deterioration in the quality of indigenous soil. Intensive agriculture with the use of chemical fertilizers in large amount has, no doubt, resulted in manifold increase in the productivity of farm commodities but the adverse effect of these chemicals are clearly visible on soil structure, microflora, quality of water, food, and fodder. Organic farming has emerged as the only answer to bring sustainability to agriculture and environment. Organic farming is a farming integration of biological, cultural and natural inputs including integrated diseases and pest management practices (Panda and Hota Eds, 2007).

Organic agriculture is a problematic label that can be interpreted to a wide range of things. The sustainability of organic farming ultimately depends upon people making a personal commitment to maintaining the health and productivity of self-renewing, regenerative living ecosystems, societies, and economies (Berry, 1990).



Like many other vegetables, strawberry needs fertilizer and pesticide to supply its nutritional requirements to obtain optimum growth and development. One way to meet this is to supply the right kind of organic fertilizer and pesticide.

Strawberry is the most popular berry fruit in the world. Their unique *phenol* content makes them heart protective, anti-cancer, and anti-inflammatory. They are a good source of Vitamin C, manganese, fiber, folate, magnesium, copper, and Vitamins B5 and B6. And, because strawberry is eaten as raw, it is important to produce it organically to avoid consumer's risk. Beside, organic strawberry production eliminates environmental stress caused by pesticide use, thus increasing soil biotic diversity and beneficial organism (Liebman, 1994 and Baker, 1996).

#### Statement of the Problem

Strawberry farmers are one of the heavy users of fertilizers and pesticides. Because of the unfavorable effect of using inorganic materials, agriculture institutions recommend farmers to adapt organic farming. This study was conducted to answer the following questions in order to contribute to the data needed in understanding the perception of strawberry farmers towards organic farming.

1. What is the concept of organic farming to strawberry farmers?
2. What are the perceptions of the strawberry farmers on organic farming in terms of:
  - a. technical aspects
  - b. socio-economic aspects
  - c. environmental aspects?





3. What are the perceptions of strawberry farmers on the consumer's behavior in terms of consumption pattern and reasons for consumption or non-consumption?
4. How does the farmers profile relate to their perceptions in organic production and consumption on organically produced strawberry?
5. What are the constraints of strawberry farmers in adapting organic farming?

### Objectives of the Study

The study aimed to determine the following objective:

1. To determine the concept of organic farming to strawberry farmers.
2. To determine the perceptions of strawberry farmers on organic farming in terms of :
  - a. technical aspects
  - b. socio-economic aspects
  - c. environmental/ health aspects?
3. To determine the perceptions of strawberry farmers on the consumer's behavior in terms of consumption pattern and reasons for consumption or non-consumption.
4. To determine the relation between the farmers profile and their perceptions in organic production and consumption on organically produced strawberry.
5. To determine the constraints of strawberry farmers in adapting organic farming.

### Importance of the Study

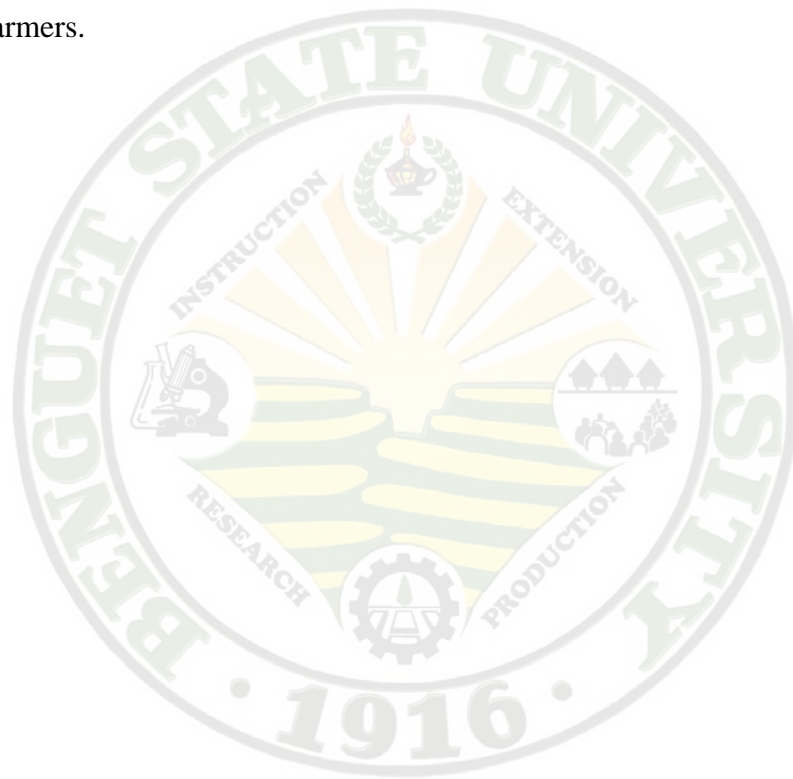
As the study will dwell on how farmers perceive organic strawberry production as well as the constraints they might face in going into such , it will hence point out the fears and misconceptions of farmers in going into organic production and the strong



points of organic production which could be use as reference for future promotion of organic production.

#### Scope and Delimitation of the Study

This study is limited to the perceptions of strawberry farmers in organic farming which will be conducted in two selected areas of La Trinidad, Benguet particularly Longlong and Betag. These areas are selected because most farmers in the place strawberry farmers.



## **REVIEW OF LITERATURE**

### Importance of Farming

Farming is one of the major source of livelihood for Filipinos and one of the most important industries in the Philippines. It plays an important role in the agricultural development of a country.

FAO (1999) stated that organic agriculture is a holistic production management system which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles and soil biological agro-ecosystem.

Organic farming provides long-term benefits to people and the environment. Organic farming aims to increase long-term fertility, control pests and diseases without harming the environment, ensure that water stays clean and safe, use resources which the farmer already has, so the farmer needs less money to buy inputs, produce nutritious foods, feed for animals and high quality crops to sell at a good price (Anonymous, 2009).

The ample use of organic matter gives a soil good structure and makes it easy to till; organic matter also provides food for bacteria, it keeps plant foods available so the growing crops can use them: it serves as a storehouse of nitrogen, phosphorous, potassium, and other plant-nutrient elements, and mulch form, organic matter increases water intake and reduces water loss (Mc Vickar, 1970).

Organic farming lowers the operating cost of the farmers. This is because they don't have to spend money anymore in purchasing chemicals and fertilizers. This would enable them to expand their operations because of bigger profits. Furthermore, it would also mean additional employment for others in the community.



The most important of the advantages of organic food is that it maintains the life of the soil, not only for the current generation, but also for the future generations. Water pollution is reduced with organic farming. Most of the times after it rain, the water from the fields, which contains chemicals, gets drained into the rivers. This pollutes the water bodies. In organic farming, since no chemicals or synthetics are used, water pollution reduces as well. Organic farming helps in building richer soil. The rich soil helps in plant growth. The rate of soil erosion is reduced drastically. A French study has revealed that the nutritional quality and micro-nutrients are present in higher quantities in organically produced crops. The micro-nutrients promote good health. Organically grown food tastes better too. The life of organically grown plants is longer than the plants cultivated by traditional methods. Organically grown crop is more droughts tolerant. However, along with the pros of organic farming, there are certain cons of organic farming too. The first disadvantage of organic farming is low productivity. With the highly developed chemicals and machinery, the farmer is able to multiply his harvest manifold times. The organic farmers use the cultivation method as opposed to drilling method used by the traditional farmers. The next argument, which goes against organic farming, is that the organically produced food is expensive. The cost is very often 50-100 percent more than the traditional food. The other valid argument is that organic food is not always available. There is a reason behind that (Leo, 2009).

Furthermore, Leo (2009) stated that crop rotation, green manure, use of natural fertilizers and biological pests control form the crux of organic farming. It is a proactive ecology management strategy. This strategy enhances the fertility of the soil erosion and



at the same time protects the humans and animals kingdom from the side effects of chemicals and synthetics.

### Perceptions of Farmers

In philosophy, psychology, and cognitive science, perception is the process of attaining awareness or understanding of sensory information. The word “perception” comes from the Latin words *perceptio*, *percipio*, and means “receiving, collecting, and action of taking possession, apprehension with the mind or senses”.

People usually see what they expect to see, and what they expect to see is usually based on familiarity, previous experience or preconditioned set (expectation) (Schiffman and Kanuk, 2007).

Perception as defined by Schiffman and Kanuk (2007) is the process by which an individual organizes and interprets stimuli into a meaningful and coherent picture of the world. It can be describe as “how we see the world around us”

Sherman (1984) as cited by Pugsong (2006) that the individual of the world is determined by personal experience that creates a filter through which the world is viewed. An important part of perception is how people perceive themselves. Their self-perception or self concept as primary determines of how they will act in a particular solution.

Kotler *et al.*, (2006) stated perceptions depend not only on the physical stimuli’s relation to the surrounding field and on conditions within the individual. In marketing, perceptions are more important than the reality, as it is perceptions that will affect consumer’s behavior.



Furthermore, Kotler *et al.*, (2006) stated that people can emerge with different perceptions of the same object because of the perceptual process. Selective attentions in those consumers are exposed to numerous ads or brand communications everyday. Because they cannot possibly attend to all of these, most stimuli will be screened out-a process called selective attention. Selective distortion is the tendency to interpret information in a way that will fit our perceptions. Selective retention in those consumers is likely to remember good points about competing products.

Perceptions vary from person to person. Different people perceive different things about the same situation. But more than that, we assign different meanings to what we perceive. And the meanings might change for a certain person. One might change one's perspective or simply make things mean something else.

Balfour said: I am sure that the techniques of organic farming cannot be imprisoned in a rigid set of rules. They depend essentially on the outlook of the farmer.



### Definition of Terms

Farming. An occupation or way of life.

Fertilizer. Any organic or inorganic material added to soil to provide plant nutrients and to increase the growth, yield quantity or nutritive value of the plant grown therein.

Inorganic. A chemical or fertilizer which is not obtained from a source which is or has been alive.

Organic fertilizer. Fertilizer derived from organic sources such as compost, manure, etc.

Organic farming. A form of agriculture that relies on crop rotation, green manure, compost, biological pest control and mechanical cultivation ect. to maintain soil productivity and control pests, excluding or strictly limiting the use of synthetic fertilizers and synthetic pesticides.

Perception. Process by which an individual selects, organizes, interprets information to create a meaningful picture of the world.

Synthetic. A man-made: not of natural origin; prepared or made artificially.



## **METHODOLOGY**

### Locale and Time of the Study

The study was conducted in two selected barangays of La Trinidad, Benguet, namely, Longlong and Betag. These barangays was selected because it is where most of strawberry production is done. The study was conducted in December to February, 2010.

### Respondents of the Study

The respondents were 80 strawberry farmers of Longlong and Betag, La Trinidad, Benguet. The respondents were selected through random sampling.

### Data Collection

An interview schedule was used to gather the needed information and data. It was supplemented with personal interview to clarify the answers. The questionnaire was formulated based on the objectives of the study.

### Data Analysis

The data gathered was analyzed according to the objective of the study. Responses were cross tabulated against the farmers and farm profile and correlation analysis was done. Simple statistical tools such as frequency counts, percentages and other appropriate statistical tools were also used to determine the trend of perception among farmers in consideration of their demographic.





## RESULTS AND DISCUSSION

### Personal and Farming Profile of Respondents

Table 1 presents the personal and farming profile of respondents in terms of variables such as age, gender, civil status, ethnicity, highest educational attainment, years in farming and farm size and was cross tabulated with their respective barangay.

Betag and Longlong were selected as the area of the study because most farmers in the place are strawberry farmers. There were 60 respondents from Betag and 20 respondents in Longlong.

There were more males (66.2%) than females (33.8%) interviewed in the study and most (55%) were married. Most (21.2%) belong to 26-30 years old. Furthermore, there is an almost equal distribution of respondents across the age ranges with the least number (5%) coming from those older than 51 years old.

Most of the respondents are kankanaey (67.5%), and (16.2%) are Ibaloi and Ilocano. This implies that most strawberry farmers in Betag and Longlong are of common cultural and linguistic characteristics.

All of the respondents have undergone formal schooling with (45%) having reached high school and college (23.8%). This implies that most respondents are educated.

Some 39(48.8%) of the respondents had been farming for less than five years and 38(47.5%) work on a 600-1000 sq. m. farm size. Another 22(27.5%) respondents had been farming for six to ten years and 31(38.8 %) work on a farm size lesser than 600 sq. m.



Table 1. Personal and farming profile of respondents

PARTICULAR	FARM LOCATION					
	BETAG		LONGLONG		TOTAL	
	F	%	F	%	F	%
Age						
25 and below	8	10.0	4	5.0	12	15.0
26-30	11	13.8	6	7.5	17	21.2
31-35	11	13.8	3	3.8	14	17.5
36-40	8	10.0	1	1.2	9	11.2
41-45	11	13.8	1	1.2	12	15.0
46-50	7	8.8	2	2.5	9	11.2
51 and above	4	5.0	3	3.8	7	8.8
TOTAL	60	75.5	20	25.0	80	100
Gender						
Female	20	25.0	7	8.8	27	33.8
Male	40	50.0	13	16.2	53	66.2
TOTAL	60	75.5	20	25.0	80	100
Civil status						
Single	15	18.8	9	11.2	24	30
Married	44	55.0	10	12.5	54	67.5
Separated	1	1.2	1	1.2	2	2.5
TOTAL	60	75.5	20	25.0	80	100
Ethnicity						
Kankanaey	39	48.8	15	18.8	54	67.5
Ilocano	11	13.8	2	2.5	13	16.2
Ibaloi	10	12.5	3	3.8	13	16.2
TOTAL	60	75.5	20	25.0	80	100



Table 1 continued...

PARTICULAR	FARM LOCATION					
	BETAG		LONGLONG		TOTAL	
	F	%	F	%	F	%
Highest educational level						
Elementary graduate	18	22.5	6	7.5	24	30.0
Secondary graduate	25	31.2	11	13.8	36	45.0
College graduate	16	20.0	3	3.8	19	23.8
Post-graduate	1	1.2	0	.0	1	1.2
<b>TOTAL</b>	<b>60</b>	<b>75.5</b>	<b>20</b>	<b>25.0</b>	<b>80</b>	<b>100</b>
Years in farming						
1-5 years	33	41.2	6	7.5	39	48.8
6-10 years	14	17.5	8	10.0	22	27.5
11-15 years	8	10.0	1	1.2	9	11.2
16-20 years	3	3.8	1	1.2	4	5.0
21 years and above	2	2.5	4	5.0	6	7.5
<b>TOTAL</b>	<b>60</b>	<b>75.5</b>	<b>20</b>	<b>25.0</b>	<b>80</b>	<b>100</b>
Total farm size (sq. m.)						
100-500 sq. m	29	36.2	2	2.5	31	31.8
600-1000 sq. m	28	35.0	10	12.5	38	47.5
1100-1500 sq. m	1	1.2	1	1.2	2	2.5
1600-2000 sq. m	1	1.2	2	2.5	3	3.8
2100-2500 sq. m	1	1.2	0	.0	1	1.2
2600 sq. m and above	0	.0	5	6.2	5	6.2
<b>TOTAL</b>	<b>60</b>	<b>75.5</b>	<b>20</b>	<b>25.0</b>	<b>80</b>	<b>100</b>



Strawberry Farming as a Major  
for Additional Source of Income  
for Respondents

Table 2 shows that strawberry farming is the major source of income of most (73.8%) respondents and (26.2%) stated that strawberry farming is just their additional source of income. Out of 59 respondents having strawberry farming as a major source of income, 48.8% have been farming for only five years or less and (47.5%) working with 600-1000 sq. m farm size. Out of 21 respondents who stated that strawberry farming is their additional source of income, 10% of them have also been farming for five years or less and (12.5%) working on a 100-500 sq. m farm size.

A chi-square coefficient of 0.006 for the relation between years of farming and strawberry as a major or additional source of income reveals a significant difference between responses. This is because a majority of respondents with less than ten years of farming have strawberry farming as their major source of income while most of respondents with more than 21 years of farming experience only have strawberry farming as an additional source of income.

A chi-square coefficient of 0.440 reveals no significant difference in responses whether strawberry farming is a major or additional source of income across farm size operated. The results imply that most respondents with lesser farm size rely on strawberry farming as their major source of livelihood and hence, farm income is sensitive to whatever decisions and actions they take on their farming endeavors.



Table 2. Strawberry farming as major or additional source of income for respondents

PARTICULAR	STRAWBERRY FARMING AS A MAJOR SOURCE OF INCOME		STRAWBERRY FARMING AS A ADDITIONAL SOURCE OF INCOME		TOTAL	
	F	%	F	%	F%	%
Years of farming						
< 5	31	38.8	8	10.0	39	48.8
6-10	18	22.5	4	5.0	22	27.5
11-15	5	6.2	4	5.0	9	11.2
16-20	4	5.0	0	.0	4	5.0
21-up	1	1.2	5	6.2	6	7.5
TOTAL	59	73.8	21	26.2	80	100
					$\chi^2=.006$	
Farm size (sq. m)						
100-500	21	26.2	10	12.5	31	38.3
600-1000	30	37.5	8	10.0	38	47.5
1100-1500	2	2.5	0	.0	2	2.5
1600-2000	1	1.2	2	2.5	3	3.8
2100-2500	1	1.2	0	.0	1	1.2
2600 up	4	5.0	1	1.2	5	6.2
TOTAL	59	73.8	21	26.2	80	100
					$\chi^2=.440$	

#### Other Sources of Income for Respondents

Vegetable farming is the other source of income of most (43.5%) respondents as shown in Table 3. A much lesser number of respondents sources of income from other endeavor.

Out of 20 respondents whose other sources of income is vegetable farming, 11(23.9%) are farming for five years and below and 14(30.2%) has a farm size of 100-500 sq. m. The Chi-square test which is .004, which is lesser than .05, implies that there are significant differences between the years of farming and other sources of income. This is because a majority of respondents with less than fifteen years of farming experience have vegetable farming as their other source of income and most of respondents with more than sixteen years of farming experience have a source of income from other endeavors.



able 3. Other sources of income for respondents

OTHER SOURCES OF INCOME														
PARTICULAR	VEGETABLE FARMING		EMPLOYEES		VENDING/SELLING		WAGE EARNER		DRIVING		SPORTS COACH		TOTAL	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%
Years of farming														
< 5	11	23.9	0	.0	1	2.2	12	26.1	0	.0	0	.0	24	52.2
6-10	4	8.7	1	2.2	0	.0	3	6.5	0	.0	1	2.2	9	19.6
11-15	3	6.5	1	2.2	1	2.2	1	2.2	0	.0	0	.0	6	13.0
16-20	0	.0	0	.0	0	.0	1	2.2	1	2.2	0	.0	2	4.3
21- Up	2	4.3	2	4.3	0	.0	1	2.2	0	.0	0	.0	5	10.9
TOTAL	20	43.5	4	8.7	2	4.3	18	39.1	1	2.2	1	2.2	46	100
														$\chi^2=.004$
Farm size (sq. m)														
100-500	14	30.4	1	2.2	0	.0	8	17.4	0	.0	1	2.2	24	52.2
600-1000	3	6.5	3	6.5	2	4.3	10	21.7	1	2.2	0	.0	19	41.3
1100-1500	2	4.3	0	.0	0	.0	0	.0	0	.0	0	.0	2	4.3
2600 up	1	2.2	0	.0	0	.0	0	.0	0	.0	0	.0	1	2.2
TOTAL	20	43.5	4	8.7	2	4.3	18	39.1	1	2.2	1	2.2	46	100
														$\chi^2=.373$

\*multiple response



### Concept of Organic Farming to Respondents

Table 4 presents the concept of organic farming in the point of view of strawberry farmers. Thirty three (41.2%) of respondents define farming as farming without the use of commercial pesticides and fertilizers and another 31(38.8%) see organic as farming that minimizes the use of synthetic chemicals. Overall 64(80%) believe that organic farming is farming without/minimizes the use of synthetic chemicals and fertilizers more than anything else.

There were no significant differences between the responses and their concept on organic farming as shown by the computed chi-square being greater than 0.05.

This implies that the farmers have limited understanding of what organic farming is, as organic farming defined by Wikipedia (2009) is a form of agriculture that relies on crop rotation, green manure, compost, biological pest control and mechanical cultivation etc...to maintain soil productivity and control pests, excluding or strictly limiting the use of synthetic fertilizers and synthetic pesticides as compared to what the respondents say that organic farming is simply the non-use or limitation of the use of commercial pesticides and fertilizers.



Table 4. Concept of organic farming to respondents

PARTICULAR	DEFINITION ON ORGANIC FARMING									
	FARMING WITHOUT THE USE OF COMMERCIAL PESTICIDES AND FERTILIZERS		FARMING WITH THE USE OF ORGANIC FERTILIZERS ONLY		FARMING WITH THE USE OF ORGANIC PESTICIDES ONLY		FARMING THAT MINIMIZES THE USE OF SYNTHETIC CHEMICALS AND FERTILIZERS		TOTAL	
	F	%	F	%	F	%	F	%	F	%
Sex										
Female	13	16.2	5	6.2	0	.0	9	11.2	27	33.8
Male	20	25.0	9	11.2	2	2.5	22	27.5	53	66.2
TOTAL	33	41.2	14	17.5	2	2.5	31	38.8	80	100
										$\chi^2=.610$
Highest educational attainment										
Elementary	10	12.5	2	2.5	0	.0	12	15.0	24	30.0
Secondary	16	20.0	6	7.5	2	2.5	12	15.0	36	45.0
College	6	7.5	6	7.5	0	.0	7	8.8	19	23.8
Post-graduate	1	1.2	0	.0	0	.0	0	.0	1	1.2
TOTAL	33	41.2	14	17.5	2	2.5	31	38.8	80	100
										$\chi^2=.460$
Civil Status										
Single	8	10.0	4	5.0	1	1.2	11	13.8	24	30.0
Married	24	30.0	10	12.5	1	1.2	19	23.8	54	67.5
Separated	1	1.2	0	.0	0	.0	1	1.2	2	2.5
TOTAL	33	41.2	14	17.5	2	2.5	31	38.8	80	100
										$\chi^2=.930$





Table 4 continued...

PARTICULAR	DEFINITION ON ORGANIC FARMING									
	FARMING WITHOUT THE USE OF COMMERCIAL PESTICIDES AND FERTILIZERS		FARMING WITH THE USE OF ORGANIC FERTILIZERS ONLY		FARMING WITH THE USE OF ORGANIC PESTICIDES ONLY		FARMING THAT MINIMIZES THE USE OF SYNTHETIC CHEMICALS AND FERTILIZERS		TOTAL	
	F	%	F	%	F	%	F	%	F	%
Farm size (sq. m)										
100-500	17	21.2	5	6.2	0	.0	9	11.2	31	38.8
600-1000	11	13.8	6	7.5	2	2.5	19	23.8	38	47.5
1100-1500	0	.0	2	2.5	0	.0	0	.0	2	2.5
1600-2000	2	2.5	1	1.2	0	.0	0	.0	3	3.8
2100-2500	0	.0	0	.0	0	.0	1	1.2	1	1.2
> 2600	3	3.8	0	.0	0	.0	2	2.5	5	6.2
TOTAL	33	41.2	14	17.5	2	2.5	31	38.8	80	100
										$\chi^2=.125$
Years in farming										
> 5	18	22.5	8	10.0	2	2.5	11	13.8	39	48.8
6-10	9	11.2	3	3.8	0	.0	10	12.5	22	27.5
11-15	3	3.8	2	2.5	0	.0	4	5.0	9	11.2
16-20	0	.0	0	.0	0	.0	4	5.0	4	5.0
21-up	3	3.8	1	1.2	0	.0	2	2.5	6	7.5
TOTAL	33	41.2	14	17.5	2	2.5	31	38.8	80	100
										$\chi^2=.54$



### Knowledge on Organic Farming

Table 5 presents the knowledge of respondents on organic farming as to pest's management and soil fertilization. Overall, farmers claim to have moderate knowledge that organic farming is effective in pest control and high knowledge that organic farming is effective in soil fertilization.

For all the computed chi-square coefficients which are all greater than 0.05, except one, signifying that there are no significant difference in level of knowledge as to organic farming effects on pests management and soil fertilization.

The chi-square coefficient of 0.022 for effectiveness of organic farming in pest control based on years of farming means that there is a 97.7 % certainty of the differences in level of knowledge within this category. Those farming for less than 20 years claim to have moderate knowledge on the effectivity of organic farming on pest control while those with more than 21 years of farming experience claim to have a low knowledge on this aspect.

Results indicate that farmers are certain of the contribution of organic farming to soil fertilization but uncertain as to the contribution of organic farming to pest management.



Table 5. Knowledge on organic farming

PARTICULAR	ORGANIC FARMING IS EFFECTIVE IN PEST CONTROL		ORGANIC FARMING IS EFFECTIVE IN SOIL FERTILIZATION	
	AVERAGE	DESCRIPTION	AVERAGE	DESCRIPTION
Age				
Below 25	2.83	Moderate knowledge	3.75	High
26-30	2.82	Moderate knowledge	4.23	Very high
31-35	2.5	Low knowledge	3.64	High
36-40	2.67	Moderate knowledge	3.89	High
41-45	1.25	Low knowledge	3.9	High
46-50	2.78	Moderate knowledge	4.33	Very high
51 -up	3.00	Moderate knowledge	4.00	Very high
TOTAL	2.71	Moderate knowledge	3.94	High
	$\chi^2=.285$		$\chi^2=.269$	
Sex				
Female	2.62	Moderate knowledge	3.89	High
Male	2.75	Moderate knowledge	3.96	High
TOTAL	2.71	Moderate knowledge	3.94	High
	$\chi^2=.258$		$\chi^2=.322$	
Highest educational level				
Elementary	2.75	Moderate knowledge	3.91	High
Secondary	2.61	Moderate knowledge	3.9	High
College	2.79	Moderate knowledge	4.00	High
Post-graduate	3.00	Moderate knowledge	4.00	High
TOTAL	2.71	Moderate knowledge	3.94	High
	$\chi^2=.634$		$\chi^2=.841$	
Civil status				
Single	2.71	Moderate knowledge	4.00	High
Married	2.72	Moderate knowledge	3.90	High
Separated	2.5	Low knowledge	4.00	High
TOTAL	2.71	Moderate knowledge	3.94	High
	$\chi^2=.740$		$\chi^2=.625$	



Table 5 continued...

PARTICULAR	ORGANIC FARMING IS EFFECTIVE IN PEST CONTROL		ORGANIC FARMING IS EFFECTIVE IN SOIL FERTILIZATION	
	AVERAGE	DESCRIPTION	AVERAGE	DESCRIPTION
Farm size (sq. m)				
100-500	2.81	moderate knowledge	3.81	high
600-100	2.21	low knowledge	4.11	high
1100-1500	2.00	low knowledge	3.50	high
1600-2000	1.67	no knowledge	4.00	high
2100-2500	3.00	moderate knowledge	4.00	high
2600 –up	2.41	low knowledge	3.00	high
TOTAL	2.71	moderate knowledge	3.94	high
	$\chi^2=.151$		$\chi^2=.680$	
Years in farming				
5 and below	2.79	moderate knowledge	3.90	high
6-10	2.73	moderate knowledge	3.95	high
11-15	3.67	moderate knowledge	4.00	high
16-20	3.25	moderate knowledge	2.25	high
21 –up	2.33	low knowledge	4.67	very high
TOTAL	2.71	moderate knowledge	3.9	high
	$\chi^2=.022$		$\chi^2=.935$	
1-1.7=no knowledge				
1.8-2.5=low knowledge				
2.6-3.3=moderate knowledge				
3.4-4.1= high knowledge				
4.2-5.0=very high knowledge				



### Sources of Information on Organic Farming

Table 6 shows the sources of information of the respondents on organic farming. Out of 80 respondents, 44(55%) have the source of information organic farming from radio programs. fellow farmers (38.75%), DA Technicians (35%), seminars and trainings (21.25%), reading materials (17.5%) and less information in organizations (3.75%).

Among the 44 respondents whose source of information for organic farming is radio programs, most are 26-35 years old, married and farming for less than 10 years with a farm area lesser than 1000 sq. m. Results indicate that more farmers source of information on organic farming from radio programs. However, DA Technicians, trainings and seminars as well as reading materials are other sources of information by the farmers although not a lot of them have acquired these. This could be explained by the fact that radio programs constantly provide information and are readily accessible while DA Technicians and trainings and seminars are relatively not always accessible.

It also shows that it is the younger ones and married farmers who tend to acquire knowledge on organic farming from radio programs.



Table 6. Sources of information on organic farming

PARTICULAR	DA TECHNICIAN		RADIO PROGRAMS		FELLOW FARMER'S		READING MATERIALS		NEIGHBORS & RELATIVES		ORGANIZATIONS		SEMINARS/ TRAININGS		TOTAL	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%
Age																
< 25	4	5.0	6	7.5	5	6.25	4	5.0	2	2.5	0	.0	2	2.5	23	28.8
26-30	3	3.8	12	5.0	7	8.75	2	2.5	1	1.25	0	.0	5	6.25	30	37.5
31-35	4	5.0	10	12.5	6	7.5	4	5.0	1	1.25	0	.0	3	3.75	28	35.0
36-40	5	6.25	3	3.75	2	2.5	2	2.5	1	1.25	1	1.25	1	1.25	15	18.75
41-45	6	7.5	5	6.25	5	6.25	1	1.25	0	.0	1	1.25	5	1.25	23	28.8
46-50	3	3.75	5	6.25	3	3.75	1	1.25	1	1.25	1	1.25	1	1.25	15	18.75
51-up	3	3.75	3	3.75	0	.0	1	1.25	0	.0	0	.0	0	.0	10	12.5
TOTAL	28	35.0	44	55.0	31	38.75	14	17.5	7	8.75	3	3.75	17	21.25	144	
Sex																
Female	7	8.75	18	22.5	6	7.5	5	6.25	3	3.75	1	1.25	5	6.25	45	56.25
Male	21	26.25	26	32.5	25	31.25	9	11.25	4	5.0	2	2.5	12	15.0	99	123.8
TOTAL	28	35.0	44	55.0	31	38.75	14	17.5	7	8.75	3	3.75	17	21.25	144	
Civil status																
Single	7	8.75	16	20.0	10	12.5	6	7.5	3	2.5	1	1.25	2	2.5	45	56.25
Married	20	25.0	28	35.0	21	26.25	8	10.0	4	5.0	2	2.5	14	7.5	97	121.2
Separated	1	1.25	0	.0	0	.0	0	.0	0	.0	0	.0	1	1.25	2	2.5
TOTAL	28	35.0	44	55.0	31	38.75	14	17.5	7	8.75	3	3.75	17	21.25	144	



Table 6 continued...

PARTICULAR	DA TECHNICIAN		RADIO PROGRAMS		FELLOW FARMER'S		READING MATERIALS		NEIGHBORS & RELATIVES		ORGANIZATIONS		SEMINARS/ TRAININGS		TOTAL	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%
Highest educational level																
Elementary	12	15.0	11	13.8	9	11.25	2	2.5	5	6.25	1	1.25	4	5.0	44	55.0
Secondary	11	13.8	21	26.25	12	15.0	2	2.5	2	2.5	1	1.25	7	8.75	56	70.0
College	5	6.25	11	13.8	9	11.25	10	12.5	0	.0	1	1.25	6	7.5	42	52.5
Post-graduate	0	.0	1	1.25	1	1.25	0	.0	0	.0	0	.0	0	.0	2	2.5
TOTAL	28	35.0	44	55.0	31	38.75	14	17.5	7	8.75	3	3.75	17	21.25	144	
Years in farming																
< 5	13	16.25	20	25.0	15	18.75	9	11.25	6	7.5	0	.0	8	10.0	71	88.75
6-10	4	5.0	18	22.5	9	11.25	2	2.5	1	1.25	2	2.5	3	3.75	39	48.75
11-15	4	5.0	3	3.75	3	3.75	1	1.25	0	.0	1	1.25	3	3.75	15	18.75
16-20	2	2.5	2	2.5	2	2.5	1	1.25	0	.0	0	.0	0	.0	7	8.75
21-up	5	6.25	1	1.25	2	2.5	1	1.25	0	.0	0	.0	3	3.75	12	15.0
TOTAL	28	35.0	44	55.0	31	38.75	14	17.5	7	8.75	3	3.75	17	21.25	144	
Farm size (sq. m)																
100-500	10	12.51	21	26.25	13	16.25	7	8.75	5	6.25	2	2.5	5	6.25	63	78.75
600-100	13	16.25	18	22.5	13	16.25	6	7.5	2	2.5	0	.0	10	12.5	62	77.5
1100-1500	1	1.25	1	1.25	2	2.5	0	.0	0	.0	1	1.25	0	.0	5	6.25
1600-2000	2	2.5	1	1.25	2	2.5	0	.0	0	.0	0	.0	1	1.25	6	7.5
2100-2500	0	.0	1	1.25	0	.0	1	1.25	0	.0	0	.0	0	.0	2	2.5
2600 -up	2	2.5	2	2.5	1	1.25	0	.0	0	.0	0	.0	1	1.25	6	7.5
TOTAL	28	35.0	44	55.0	31	38.75	14	17.5	7	8.75	3	3.75	17	21.25	144	

\*multiple response



### Perceptions on Organic Farming: Technical Aspects

Table 7, 8, 9 shows the farmers perception on the technical aspects of organic farming. As to soil management, chi-square coefficients indicate no significant difference in responses of farmers. The respondents fully agree that farm wastes can be processed into fertilizer, that unprocessed animal waste can be readily/directly applied to the soil, that soil microorganisms are more active in soils applied with organic fertilizer than applied synthetic, and that organic fertilizers improve the physio-chemical characteristics of the soil.

A full agreement to some soil management concepts in organic farming should indicate high knowledge on this subject. However, the respondents fully agreed to the idea that unprocessed animal wastes could be applied directly to the soil. This idea is not a recommended activity under organic farming and these indicates the lack of information or knowledge of the respondents on some aspects of soil management under organic farming.

As to the efficiency and productivity of organic farming (Table 8) , the chi-square coefficients indicates no significant difference in responses of farmers, the respondents are neutral whether organic farming has a very slow effect on crops performances. Results indicate that farmers are uncertain to the efficiency and productivity of organic farming.

Respondents mostly agree to the time requirement of organic farming that it takes 3-5 years for a farm to convert from conventional to organic faming (Table 9).

The chi-square coefficients for age ( $\chi^2=0.038$ ) and for years of farming ( $\chi^2=0.007$ ), indicates a significant difference in level of agreement across these





demographic variables, whereas most of the respondents do mostly agree that it takes 3-5 years for a farm to convert into organic, the middle-aged (36-40 years old) respondents and those who have been farming for 11-15 years fully agree to this.

Results imply a difference in level of knowledge in terms of time requirement for organic conversion between the age groups with the middle age groups being more certain of these numbers of years it take to convert to organic farming.



Table 7. Perception on organic farming: technical aspects (soil management)

PARTICULAR	FARM WASTES CAN BE PROCESSED AS FERTILIZER		ANIMAL WASTE (UNPROCESSED) CAN BE DIRECTLY APPLIED TO THE SOIL		SOIL MICROORGANISM ARE MORE ACTIVE IN SOILS APPLIED WITH ORGANIC FERTILIZER THAN APPLIED SYNTHETIC		ORGANIC FERTILIZERS IMPROVE THE PHYSIO-CHEMICAL CHARACTERISTICS OF THE SOIL	
	AVE.	DESCRIPTION	AVE.	DESCRIPTION	AVE.	DESCRIPTION	AVE.	DESCRIPTION
Age								
< 25	4.33	fully agree	3.67	mostly agree	4.25	fully agree	4.08	mostly agree
26-30	4.82	fully agree	4.00	mostly agree	4.53	fully agree	4.59	fully agree
31-35	4.57	fully agree	4.28	fully agree	4.43	fully agree	4.28	fully agree
36-40	4.88	fully agree	4.33	fully agree	4.56	fully agree	4.78	fully agree
41-45	4.67	fully agree	4.33	fully agree	4.17	mostly agree	4.40	fully agree
46-50	4.78	fully agree	3.89	mostly agree	4.67	fully agree	4.67	fully agree
51- up	4.36	fully agree	4.57	fully agree	4.14	mostly agree	4.43	fully agree
TOTAL	4.69	fully agree	4.21	fully agree	4.43	fully agree	4.44	fully agree
	$\chi^2=.311$		$\chi^2=.655$		$\chi^2=.365$		$\chi^2=.386$	
Sex								
Female	4.67	fully agree	4.04	fully agree	4.40	fully agree	4.48	fully agree
Male	4.69	fully agree	4.30	fully agree	4.42	fully agree	4.40	fully agree
TOTAL	4.69	fully agree	4.21	fully agree	4.43	fully agree	4.44	fully agree
	$\chi^2=.311$		$\chi^2=.390$		$\chi^2=.577$		$\chi^2=.884$	
Highest educational level								
Elementary	4.67	fully agree	4.45	fully agree	4.42	fully agree		
Secondary	4.72	fully agree	4.11	mostly agree	4.39	fully agree		
College	4.74	fully agree	4.05	fully agree	4.47	fully agree		
Post-graduate	5.0	fully agree	5.0	fully agree	5.0	fully agree		
TOTAL	4.69	fully agree	4.21	fully agree	4.43	fully agree		
	$\chi^2=.687$		$\chi^2=.517$		$\chi^2=.920$			



Table 7 continued...

PARTICULAR	FARM WASTES CAN BE PROCESSED AS FERTILIZER		ANIMAL WASTE (UNPROCESSED) CAN BE DIRECTLY APPLIED TO THE SOIL		SOIL MICROORGANISM ARE MORE ACTIVE IN SOILS APPLIED WITH ORGANIC FERTILIZER THAN APPLIED SYNTHETIC		ORGANIC FERTILIZERS IMPROVE THE PHYSIO-CHEMICAL CHARACTERISTICS OF THE SOIL	
	AVE.	DESCRIPTION	AVE.	DESCRIPTION	AVE.	DESCRIPTION	AVE.	DESCRIPTION
<b>Civil status</b>								
Single	4.54	fully agree	4.21	fully agree	4.33	fully agree	4.29	fully agree
Married	4.79	fully agree	4.26	fully agree	4.36	fully agree	4.5	fully agree
Separated	4.50	fully agree	3.0	fully agree	4.50	fully agree	4.0	mostly agree
TOTAL	4.69	fully agree	4.21	neutral	4.43	fully agree	4.44	fully agree
	$\chi^2=.337$		$\chi^2=.171$		$\chi^2=.968$		$\chi^2=.113$	
<b>Farm size (sq. m)</b>								
100-500	4.47	fully agree	4.13	fully agree	4.42	fully agree	4.4	fully agree
600-100	4.68	fully agree	4.37	fully agree	4.45	fully agree	4.53	fully agree
1100-1500	4.0	mostly agree	4.0	mostly agree	4.0	mostly agree	4.0	mostly agree
1600-2000	4.67	fully agree	4.33	fully agree	4.67	fully agree	4.33	fully agree
2100-2500	5.0	fully agree	5.0	fully agree	4.0	mostly agree	5.0	fully agree
2600 –up	4.6	fully agree	3.4	mostly agree	4.4	fully agree	4.0	mostly agree
TOTAL	4.69	fully agree	4.21	fully agree	4.43	fully agree	4.44	fully agree
	$\chi^2=.723$		$\chi^2=.204$		$\chi^2=.809$		$\chi^2=.088$	
<b>Years in farming</b>								
< 5	4.64	fully agree	4.0	mostly agree	4.31	fully agree	4.33	fully agree
6-10	4.68	fully agree	4.55	fully agree	4.3	fully agree	4.50	fully agree
11-15	4.67	fully agree	4.11	mostly agree	4.78	fully agree	4.44	fully agree
16-20	5.0	fully agree	5.0	fully agree	5.0	fully agree	5.0	fully agree
21 –up	4.83	fully agree	4.67	fully agree	4.67	fully agree	4.67	fully agree
TOTAL	4.69	fully agree	4.21	fully agree	4.43	fully agree	4.44	fully agree
	$\chi^2=.903$		$\chi^2=.392$		$\chi^2=.406$		$\chi^2=.896$	



Table 8. Perception on organic farming: technical aspects (efficiency and productivity)

ORGANIC FARMING HAS A VERY SLOW EFFECT ON THE CROPS PERFORMANCES		
PARTICULAR	AVERAGE	DESCRIPTION
Age		
< 25	3.5	mostly agree
26-30	2.82	neutral
31-35	3.57	mostly agree
36-40	3.11	mostly agree
41-45	2.75	neutral
46-50	4.11	mostly agree
> 51	3.14	mostly agree
TOTAL	3.25	neutral
	$\chi^2=.289$	
Sex		
Female	3.44	mostly agree
Male	3.15	neutral
TOTAL	3.25	neutral
	$\chi^2=.227$	
Civil status		
Single	3.29	neutral
Married	3.22	neutral
Separated	3.5	mostly agree
TOTAL	3.25	neutral
	$\chi^2=.533$	
Farm size (sq. m)		
100-500	3.5	mostly agree
600-100	2.95	neutral
1100-1500	3.5	mostly agree
1600-2000	4.0	mostly agree
2100-2500	4.0	mostly agree
2600-up	3.0	neutral
TOTAL	3.25	neutral
	$\chi^2=.292$	
Years in farming		
5 and below	3.5	mostly agree
6-10	3.18	neutral
11-15	3.22	neutral
16-20	1.25	fully agree
21-up	3.17	neutral
TOTAL	3.251	neutral
	$\chi^2=.083$	



Table 9. Perception on organic farming: technical aspects( time requirement)

THE CONVERSION FOR ORGANIC FARMING IS 3-5 YEARS		
PARTICULAR	AVERAGE	DESCRIPTION
Age		
< 25	3.17	neutral
26-30	3.94	mostly agree
31-35	3.78	mostly agree
36-40	4.11	fully agree
41-45	3.83	mostly agree
46-50	3.56	mostly agree
51-up	3.71	mostly agree
TOTAL	3.68	mostly agree
	$\chi^2=.038$	
Sex		
Female	3.59	mostly agree
Male	3.72	mostly agree
TOTAL	3.6	mostly agree
	$\chi^2=.689$	
Highest educational level		
Elementary	3.71	mostly agree
Secondary	3.64	mostly agree
College	3.68	mostly agree
Post-graduate	4.0	mostly agree
TOTAL	3.68	mostly agree
	$\chi^2=.756$	
Civil status		
Single	3.17	neutral
Married	3.70	mostly agree
Separated	4.0	mostly agree
TOTAL	3.6	mostly agree
	$\chi^2=.406$	
Years in farming		
< 5	3.38	mostly agree
6-10	3.77	mostly agree
11-15	4.33	fully agree
16-20	4.0	mostly agree
21 –up	4.0	mostly agree
TOTAL	3.68	mostly agree
	$\chi^2=.007$	
1-1.7=fully disagree	3.4-4.1= mostly agree	
1.8-2.5=mostly disagree	4.2-5.0=fully agree	
2.6-3.3=neutral		



### Perceptions on Organic Farming: Socio-economic Aspects

Table 10, 11, and 12 shows the farmers perception on the socio-economic aspects of organic farming. It shows that at an average, respondents mostly disagree to the idea that organic farming is expensive and that an optimum production level is obtained with organic farming. That is because they also most agree that lower yield is obtained with organic farming during conversion period. Respondents are however neutral with the idea that conversion to organic farming does not give economic rewards to farmers. Respondents fully agree that preparation of organic input is laborious and time-consuming and mostly agree that land/ use farm resources is maximized with organic farming. Likewise mostly agree that organically produced products demands higher price and is hard to sell. These collaborated to the statement of Leo (2009) that the cost of organically produced products is very often 50-100 percent more than the traditional food.

For the idea that organic farming is expensive, (Table 10) the chi-square coefficient of 0.003 indicates a significant difference in the demographic variable civil status. It shows that while other groups mostly disagree to the idea, the respondents with a civil status of separated fully agree to this concept.

For the idea that optimum production levels are obtained with organic farming, the chi-square coefficient is 0.031 indicating a significant difference in level of agreement across the demographic grouping by farm size. The data shows that while those farming in size less than 1000 sq. m or more than 2600 sq. m mostly disagree to this idea, those with areas from 1100-1500 sq. m. mostly agree, those with 1600-2000 sq. m. are neutral to the idea, and those with 2100-2500 sq. m. fully agree to the idea.



The results indicate varying levels of certainty among the respondents on the idea of optimum productivity through organic farming with those farmers operating an area between 1100-2500 sq. m. either being neutral to this idea or in agreement to this idea.

A chi-square of .001 for the relation between civil status and conversion to organic farming does not give economic rewards to farmers reveals a significant difference between responses. This is because respondents that are single and married were neutral while those who are separated mostly disagree to this idea.

For the idea that preparation of organic framing is laborious and time consuming, Table 11 the chi-square coefficient is .003 indicating a significant difference in level of agreement across the demographic variable civil status. It shows that while other groups mostly agree to the idea, the respondents with civil status of single fully agree.

A chi-square coefficient of .000, (Table 12) reveals a significant difference between farm size and perception of respondents on organically produced products demands higher price. It shows that while other groups mostly agree to the idea, the respondents with 100-500 sq. m. and 1600-2500 farm size fully agree to the idea.



Table 10. Perception on organic farming: socio-economic aspects (costs and production)

PARTICULAR	ORGANIC FARMING IS EXPENSIVE		LOWER YIELD IS OBTAINED WITH ORGANIC FARMING DURING THE CONVERSION PERIOD		OPTIMUM PRODUCTION LEVEL IS OBTAINED WITH ORGANIC FARMING		CONVERSION TO ORGANIC FARMING DOES NOT GIVE ECONOMIC REWARDS TO FARMERS	
	AVE.	DESCRIPTION	AVE.	DESCRIPTION	AVE.	DESCRIPTION	AVE.	DESCRIPTION
AGE								
< 25	2.33	mostly disagree	3.58	mostly agree	2.9	neutral	2.08	mostly disagree
26-30	1.89	mostly disagree	3.94	mostly agree	2.24	mostly disagree	3.12	neutral
31-35	2.29	mostly disagree	3.64	mostly agree	3.36	mostly agree	3.29	neutral
36-40	2.11	mostly disagree	4.22	fully agree	2.11	neutral	3.89	mostly agree
41-45	1.75	mostly disagree	4.08	mostly agree	2.0	mostly disagree	2.83	neutral
46-50	1.88	mostly disagree	4.11	mostly agree	1.89	mostly disagree	3.55	mostly agree
51 –up	2.29	mostly disagree	3.71	mostly agree	2.43	mostly disagree	3.28	neutral
TOTAL	2.06	mostly disagree	3.89	mostly agree	2.48	mostly agree	3.09	neutral
	$\chi^2=.449$		$\chi^2=.525$		$\chi^2=.229$		$\chi^2=.196$	
Sex								
Female	2.33	mostly disagree	3.93	mostly agree	2.48	mostly disagree	3.15	neutral
Male	1.93	mostly disagree	3.87	mostly agree	2.47	mostly disagree	3.06	neutral
TOTAL	2.06	mostly disagree	3.89	mostly agree	2.48	mostly disagree	3.09	neutral
	$\chi^2=.746$		$\chi^2=.426$		$\chi^2=.939$		$\chi^2=.754$	
Highest educational level								
Elementary	2.13	mostly disagree	4.0	mostly agree	2.21	mostly disagree	3.0	neutral
Secondary	1.83	mostly disagree	3.97	mostly agree	2.47	mostly disagree	3.25	neutral
College	2.47	mostly disagree	3.58	mostly agree	2.89	neutral	2.84	neutral
Post-graduate	1.0	fully disagree	4.0	mostly agree	1.0	fully disagree	4.0	mostly agree
TOTAL	2.06	mostly disagree	3.89	mostly agree	2.48	mostly disagree	3.09	neutral
	$\chi^2=.533$		$\chi^2=.472$		$\chi^2=.816$		$\chi^2=.103$	





Table 10 continued...

PARTICULAR	ORGANIC FARMING IS EXPENSIVE		LOWER YIELD IS OBTAINED WITH ORGANIC FARMING DURING THE CONVERSION PERIOD		OPTIMUM PRODUCTION LEVEL IS OBTAINED WITH ORGANIC FARMING		CONVERSION TO ORGANIC FARMING DOES NOT GIVE ECONOMIC REWARDS TO FARMERS	
	AVE.	DESCRIPTION	AVE.	DESCRIPTION	AVE.	DESCRIPTION	AVE.	DESCRIPTION
<b>CIVIL STATUS</b>								
Single	1.96	mostly disagree	3.88	mostly agree	2.5	mostly disagree	3.0	neutral
Married	2.0	mostly disagree	3.93	mostly disagree	2.0	mostly disagree	3.15	neutral
Separated	4.5	fully disagree	3.0	neutral	4.5	fully agree	2.5	mostly disagree
TOTAL	2.06	mostly disagree	3.89	mostly agree	2.48	mostly disagree	3.09	neutral
	$\chi^2=.003$		$\chi^2=.197$		$\chi^2=.076$		$\chi^2=.001$	
<b>Farm area (sq. m)</b>								
100-500	1.87	mostly disagree	4.03	fully agree	2.32	mostly disagree	3.19	neutral
600-100	2.03	mostly disagree	3.8	mostly agree	2.5	mostly disagree	2.95	neutral
1100-1500	4.0	mostly disagree	4.0	mostly agree	3.5	mostly agree	3.0	neutral
1600-2000	2.67	neutral	3.67	mostly agree	2.67	neutral	3.0	neutral
2100-2500	1.0	fully disagree	3.0	neutral	5.0	fully agree	4.0	mostly agree
2600 –up	2.6	neutral	3.8	mostly agree	2.2	mostly disagree	3.4	mostly agree
TOTAL	2.06	mostly disagree	3.89	mostly agree	2.48	mostly disagree	3.09	neutral
	$\chi^2=.475$		$\chi^2=.177$		$\chi^2=.031$		$\chi^2=.535$	
<b>Years in farming</b>								
< 5	1.90	mostly disagree	3.90	mostly agree	2.33	mostly disagree	3.08	neutral
6-10	2.09	mostly disagree	3.77	mostly agree	2.73	neutral	3.18	neutral
11-15	2.78	mostly disagree	4.0	mostly agree	2.89	neutral	3.0	neutral
16-20	2.5	mostly disagree	4.0	mostly agree	1.75	mostly disagree	3.0	neutral
21 –up	1.67	full disagree	4.0	mostly agree	2.33	mostly disagree	3.0	neutral
TOTAL	2.06	mostly disagree	3.89	mostly agree	2.48	mostly disagree	3.09	neutral
	$\chi^2=.575$		$\chi^2=.725$		$\chi^2=.353$		$\chi^2=.458$	



Table 11. Perception on organic farming: socio-economic aspects (efficiency in preparation and resource maximization in organic farming)

	PREPARATION OF ORGANIC INPUT IS LABORIOUS AND TIME CONSUMING		LAND/USE FARM RESOURCES IS MAXIMIZED WITH ORGANIC FARMING	
PARTICULAR	AVE.	DESCRIPTION	AVE.	DESCRIPTION
<b>Age</b>				
< 25	4.08	mostly agree	3.9	mostly agree
26-30	4.29	fully agree	4.47	fully agree
31-35	4.2	fully agree	3.92	mostly agree
36-40	4.44	fully agree	4.22	mostly agree
41-45	4.0	mostly agree	3.9	mostly agree
46-50	4.33	fully agree	4.22	fully agree
51 –up	4.14	mostly agree	4.0	mostly agree
TOTAL	4.2	fully agree	4.11	mostly agree
	$\chi^2=.919$		$\chi^2=.477$	
<b>Sex</b>				
Female	4.24	fully agree		
Male	4.20	fully agree		
TOTAL	4.2	fully agree		
	$\chi^2=.573$			
<b>Civil status</b>				
Single	4.08	fully agree	4.17	fully agree
Married	4.13	mostly agree	4.09	mostly agree
Separated	4.0	mostly agree	4.0	mostly agree
TOTAL	4.2	fully agree	4.11	mostly agree
	$\chi^2=.003$		$\chi^2=.530$	
<b>Farm size (sq. m)</b>				
100-500	4.19	fully agree	4.0	mostly agree
600-100	4.34	fully agree	4.0	mostly agree
1100-1500	4.0	mostly agree	4.0	mostly agree
1600-2000	3.8	mostly agree	3.33	neutral
2100-2500	4.0	mostly agree	4.0	mostly agree
2600-up	3.8	mostly agree	4.0	mostly agree
TOTAL	4.2	fully agree	4.11	mostly agree
	$\chi^2=.299$		$\chi^2=.157$	
<b>Years in farming</b>				
< 5	4.10	mostly agree	4.10	mostly agree
6-10	4.14	mostly agree	4.05	mostly agree
11-15	4.56	fully agree	4.22	mostly agree
16-20	4.5	fully agree	4.5	mostly agree
21 –up	4.5	fully agree	4.0	mostly agree
TOTAL	4.2	fully agree	4.11	mostly agree
	$\chi^2=.663$		$\chi^2=.447$	



Table 12. Perception on organic farming: socio-economic aspects( pricing and demand)

PARTICULAR	ORGANICALLY PRODUCED PRODUCTS DEMANDS HIGHER PRICE		ORGANICALLY PRODUCT PRODUCED IS HARD TO SELL	
	AVE.	DESCRIPTION	AVE.	DESCRIPTION
Age				
< 25	3.58	mostly agree	3.75	mostly agree
26-30	3.88	mostly agree	3.35	mostly agree
31-35	4.07	mostly agree	3.57	mostly agree
36-40	4.0	mostly agree	3.67	mostly agree
41-45	3.83	mostly agree	3.58	mostly agree
46-50	3.89	mostly agree	3.56	mostly agree
51 –up	3.86	mostly agree	3.57	mostly agree
TOTAL	3.9	mostly agree	3.56	mostly agree
	$\chi^2=.634$		$\chi^2=.516$	
Sex				
Female	4.04	mostly agree	3.63	mostly agree
Male	3.79	mostly agree	3.53	mostly agree
TOTAL	3.9	mostly agree	3.56	mostly agree
	$\chi^2=.244$		$\chi^2=.146$	
Highest educational level				
Elementary	3.63	mostly agree	3.58	mostly agree
Secondary	3.94	mostly agree	3.6	mostly agree
College	4.05	mostly agree	3.42	mostly agree
Post-graduate	4.0	mostly agree	4.0	mostly agree
TOTAL	3.9	mostly agree	3.56	mostly agree
	$\chi^2=.289$		$\chi^2=.091$	
Civil status				
Single	3.75	mostly agree	3.67	mostly agree
Married	3.91	mostly agree	3.54	mostly agree
Separated	4.5	mostly agree	3.0	neutral
TOTAL	3.9	mostly agree	3.56	mostly agree
	$\chi^2=.832$		$\chi^2=.542$	
Farm area (sq. m)				
100-500	4.16	fully agree	3.6	mostly agree
600-100	3.76	mostly agree	3.58	mostly agree
1100-1500	3.5	mostly agree	2.5	mostly disagree
1600-2000	4.33	fully agree	3.33	mostly agree
2100-2500	5.0	fully agree	4.0	mostly agree
2600-up	3.4	mostly agree	3.6	mostly agree
TOTAL	3.9	mostly agree	3.56	mostly agree
	$\chi^2=.000$			



### Perceptions on Organic farming: Environmental/Health Aspects

Table 13 and 14 shows the farmers perception on the environment/health aspects of organic farming. Most of the farmers fully agree that organic farming produce safer products, promotes better human and animal health and that organic products are healthier.

For the concepts that organic farming promotes cleaner/safer environment by minimizing air, soil and water pollution, organic farming produce safer food products and organic farming promotes good human and animal health, there chi-square coefficients are .011, .006, and .026 respectively. This indicates a significant difference in level of agreement across education level attained. This implies that respondents despite of the educational attainment attained, either elementary and secondary, college or post graduate, are still aware or knowledgeable on the health and environmental effects of organic farming.

A chi-square of .001 (Table 14) implies that there are significant differences between the farm size and the idea on organic products are healthier because of the presence of natural nutrients. It shows that while other groups fully agree the respondents with 1600-2000 sq. m. farm size were neutral and those respondents with 1100-1500 mostly disagree to the idea. The results indicate varying levels of certainty among the respondents on the idea of organic farming are healthier because of the presence of natural nutrients with those farmers operating between 1000-2000 sq. m. either being neutral or in disagreement to the idea.



Table 13. Perception on organic farming: environmental/ health aspects (environmentaleffects)

PARTICULAR	ORGANIC FARMING PROMOTES CLEANER/SAFER ENVIRONMENT BY MINIMIZING AIR, SOIL, AND WATER POLLUTION		SOIL FERTILITY IS ENHANCED IN ORGANIC FARMING		ORGANIC FARMING HELPS BALANCE THE ECOSYSTEM		ORGANIC FARMING PROMOTES SUSTAINABLE AGRICULTURE	
	AVE.	DESCRIPTION	AVE.	DESCRIPTION	AVE.	DESCRIPTION	AVE.	DESCRIPTION
Age								
< 25	4.58	fully agree	4.67	fully agree	4.5	fully agree	4.59	fully agree
26-30	4.76	fully agree	4.71	fully agree	4.65	fully agree	4.65	fully agree
31-35	4.76	fully agree	4.64	fully agree	4.79	fully agree	4.71	fully agree
36-40	4.56	fully agree	4.56	fully agree	4.55	fully agree	4.44	fully agree
41-45	4.5	fully agree	4.33	fully agree	4.17	fully agree	4.12	mostly agree
46-50	4.44	fully agree	4.44	fully agree	4.33	fully agree	4.22	fully agree
51 –up	4.71	fully agree	4.86	fully agree	4.57	fully agree	4.57	fully agree
TOTAL	4.63	fully agree	4.6	fully agree	4.53	fully agree	4.4	fully agree
	$\chi^2=.615$		$\chi^2=.226$				$\chi^2=.781$	
Sex								
Female	4.48	fully agree	4.52	fully agree	4.52	fully agree	4.52	fully agree
Male	4.70	fully agree	4.64	fully agree	4.59	fully agree	4.55	fully agree
TOTAL	4.63	fully agree	4.6	fully agree	4.53	fully agree	4.54	fully agree
	$\chi^2=.058$		$\chi^2=.312$		$\chi^2=.087$		$\chi^2=.261$	
Highest educational level								
Elementary	4.38	fully agree	4.38	fully agree	4.25	fully agree	4.29	fully agree
Secondary	4.67	fully agree	4.69	fully agree	4.61	fully agree	4.64	fully agree
College	4.84	fully agree	4.68	fully agree	4.68	fully agree	4.63	fully agree
Post-graduate	5.0	fully agree	5.0	fully agree	5.0	fully agree	5.0	fully agree
TOTAL	$\chi^2=.011$		$\chi^2=.283$		$\chi^2=.231$		$\chi^2=.261$	



Table 13. continued...

PARTICULAR	ORGANIC FARMING PROMOTES CLEANER/SAFER ENVIRONMENT BY MINIMIZING AIR, SOIL, AND WATER POLLUTION		SOIL FERTILITY IS ENHANCED IN ORGANIC FARMING		ORGANIC FARMING HELPS BALANCE THE ECOSYSTEM		ORGANIC FARMING PROMOTES SUSTAINABLE AGRICULTURE	
	AVE.	DESCRIPTION	AVE.	DESCRIPTION	AVE.	DESCRIPTION	AVE.	DESCRIPTION
Civil status								
Single	4.75	fully agree	4.67	fully agree	4.54	fully agree	4.54	fully agree
Married	4.57	fully agree	4.57	fully agree	4.5	fully agree	4.52	fully agree
Separated	4.5	fully agree	4.50	fully agree	5.0	fully agree	5.0	fully agree
TOTAL	4.63	fully agree	4.6	fully agree	4.53	fully agree	4.54	fully agree
	$\chi^2=.312$		$\chi^2=.925$		$\chi^2=.782$		$\chi^2=.810$	
Farm size (sq. m)								
100-500	4.77	fully agree	4.74	fully agree	4.65	fully agree	4.61	fully agree
600-100	4.53	fully agree	4.5	fully agree	4.42	fully agree	4.42	fully agree
1100-1500	4.5	fully agree	4.5	fully agree	4.5	fully agree	4.5	fully agree
1600-2000	5.0	fully agree	4.33	fully agree	4.33	fully agree	4.6	7fully agree
2100-2500	4.0	fully agree	5.0	fully agree	5.0	fully agree	5.0	fully agree
2600-up	4.4	fully agree	4.6	fully agree	4.6	fully agree	4.8	fully agree
TOTAL	4.67	fully agree	4.6	fully agree	4.53	fully agree	4.54	fully agree
	$\chi^2=.312$		$\chi^2=.834$		$\chi^2=.871$		$\chi^2=.926$	
Years in farming								
< 5			4.67	fully agree	4.44	fully agree	4.49	fully agree
6-10			4.5	fully agree	4.60	fully agree	4.55	fully agree
11-15			4.56	fully agree	4.78	fully agree	4.67	fully agree
16-20			4.75	fully agree	4.75	fully agree	4.75	fully agree
21 -up			4.5	fully agree	4.33	fully agree	4.5	fully agree
TOTAL			4.6	fully agree	4.53	fully agree	4.54	fully agree
			$\chi^2=.804$		$\chi^2=.651$	fully agree	$\chi^2=.640$	



Table 14. Perception on organic farming: environmental/health aspects (health effects)

PARTICULAR	Organic farming produce safer food products		Organic farming promotes good human and animal health		Organic products are healthier because of the presence of natural nutrients	
	Ave.	Description	Ave.	Description	Ave	Description
<b>Age</b>						
< 25	4.67	Fully agree	4.67	Fully agree	4.33	Fully agree
26-30	4.76	Fully agree	4.59	Fully agree	4.47	Fully agree
31-35	4.86	Fully agree	4.86	Fully agree	4.14	Fully agree
36-40	4.67	Fully agree	4.56	Fully agree	4.44	Fully agree
41-45	4.5	Fully agree	4.42	Fully agree	4.33	Fully agree
46-50	4.44	Fully agree	4.44	Fully agree	3.78	Fully agree
51 -up	4.71	Fully agree	4.71	Fully agree	4.43	Fully agree
TOTAL	4.68 $\chi^2=.354$	Fully agree	4.61 $\chi^2=.306$	Fully agree	4.29 $\chi^2=.613$	Fully agree
<b>Sex</b>						
Female	4.56	Fully agree	4.52	Fully agree	4.33	Fully agree
Male	4.74	Fully agree	4.66	Fully agree	4.26	Fully agree
TOTAL	4.68 $\chi^2=.104$	Fully agree	4.61 $\chi^2=.218$	Fully agree	4.29 $\chi^2=.809$	Fully agree
<b>Highest educational level</b>						
Elementary	4.42	Fully agree	4.38	Fully agree	4.29	Fully agree
Secondary	4.72	Fully agree	4.75	Fully agree	4.25	Fully agree
College	4.89	Fully agree	4.63	Fully agree	4.37	Fully agree
Post-graduate	5.0	Fully agree	5.0	Fully agree	4.0	Fully agree
TOTAL	4.68 $\chi^2=.006$	Fully agree	4.61 $\chi^2=.026$	Fully agree	4.29 $\chi^2=.768$	Fully agree



Table 14. continued...

	Organic farming produce safer food products		Organic farming promotes good human and animal health		Organic products are healthier because of the presence of natural nutrients	
PARTICULAR	Ave.	Description	Ave.	Description	Ave.	Description
Civil status						
Single	4.79	Fully agree	4.63	Fully agree	4.5	Fully agree
Married	4.63	Fully agree	4.59	Fully agree	4.19	Fully agree
Separated	4.5	Fully agree	5.0	Fully agree	4.5	Fully agree
TOTAL	4.68	Fully agree	4.61	Fully agree	4.29	Fully agree
	$\chi^2=.321$		.504		$\chi^2=.887$	
Farm size (sq. m.)						
100-500	4.81	Fully agree	4.68	Fully agree	4.29	Fully agree
600-1000	4.55	Fully agree	4.53	Fully agree	4.47	Fully agree
1100-1500	4.5	Fully agree	4.5	Fully agree	2.5	Mostly disagree
1600-2000	5.0	Fully agree	4.67	Fully agree	3.33	Neutral
2100-2500	5.0	Fully agree	5.0	Fully agree	5.0	Fully agree
2600 -up	4.6	Fully agree	4.8	Fully agree	4.0	Fully agree
TOTAL	4.68	Fully agree	4.61	Fully agree	4.29	Fully agree
	$\chi^2=.195$		$\chi^2=.660$		$\chi^2=.000$	
Years in farming						
< 5	4.67	Fully agree	4.56	Fully agree	4.26	Fully agree
6-10	4.89	Fully agree	4.64	Fully agree	4.32	Fully agree
11-15	4.67	Fully agree	4.78	Fully agree	4.44	Fully agree
16-20	4.75	Fully agree	4.75	Fully agree	4.5	Fully agree
21- up	4.67	Fully agree	4.5	Fully agree	4.0	Mostly agree
TOTAL	4.68	Fully agree	4.61	Fully agree	4.29	Fully agree
	$\chi^2=.998$		$\chi^2=.715$		$\chi^2=.930$	





Perceptions on Consumers' Behavior in Consuming  
Organically Grown Strawberry

Table 15 shows the perceptions of respondents on the consuming behavior of consumers. Results show that most respondents perceived that consumers consumed organically produced strawberry occasionally. Fewer respondents perceived that consumers consume organically grown strawberry often.

Table 15. Perceptions on consumers' behavior in consuming organically grown strawberry

PARTICULAR	AVERAGE	DESCRIPTION
Age		
< 25	3.25	occasionally
26-30	2.77	occasionally
31-35	3.36	often
36-40	2.78	occasionally
41-45	2.75	occasionally
46-50	2.56	rarely
51 –up	2.29	rarely
TOTAL	2.76	occasionally
	$\chi^2=.298$	
Sex		
Female	2.8	occasionally
Male	2.7	occasionally
TOTAL	2.76	occasionally
	$\chi^2=.278$	
Highest educational level		
Elementary	2.58	rarely
Secondary	2.6	occasionally
College	3.0	occasionally
Post-graduate	2.0	rarely
TOTAL	2.76	occasionally
	$\chi^2=.557$	



Table 15. continued...

PARTICULAR	AVERAGE	DESCRIPTION
Civil status		
Single	2.83	occasionally
Married	2.72	occasionally
Separated	3.0	occasionally
TOTAL	2.76	occasionally
	$\chi^2=.616$	
Farm size (sq. m)		
100-500	2.55	occasionally
600-100	2.92	occasionally
1100-1500	2.26	rarely
1600-2000	4.0	often
2100-2500	2.0	rarely
2600-up	2.6	occasionally
TOTAL	2.76	occasionally
	$\chi^2=.281$	
Years in farming		
< 5	2.76	occasionally
6-10	2.59	occasionally
11-15	2.89	occasionally
16-20	3.5	often
21 –up	2.7	occasionally
TOTAL	2.76	occasionally
1-1.7=not at all		
1.8-2.5=rarely		
2.6-3.3=occasionally		
3.4-4.1= often		
4.2-5.0=very frequent		



Reasons for “occasional” to “not at all” Consumption and Reason for “often” to “frequent” Consumption

Table 16 shows the reasons for “occasional” to “not to all” consumption while Table 17 shows the reason for “often” to “frequent” consumption. For the reasons of occasional to not at all consumption the reasons are strawberry is not a usual part of the household diet (30%), unsure if organic strawberry sold is truly organic (21.5%), unaffordable of expensive price (20%), no knowledge on organic strawberry (7.5%), unavailable in the market and not good in appearance (deformed shape, spotted skin) (5%). For the reason the reason for “often” to “frequent” consumption is assurance of healthy/safer food.

Both tables show just a few replies from the respondents. No reason is dominant indicating that the respondents are not informed on the reasons for purchase or non-purchase, nor for the preferences of consumers.



Table 16. Reasons for “occasional” to “not at all” consumption

PARTICULAR	UNAFFORDABLE / EXPENSIVE PRICE		UNAVAILABLE IN THE MARKET		NO KNOWLEDGE ON ON ORGANIC STRAWBERRY		STRAWBERRY IS NOT A USUAL PART OF THE HOUSEHOLD DIET		UNSURE IF ORGANIC STRAWBERRY SOLD IS TRULY ORGANIC		NOT GOOD APPEARANCE (DEFORMED SHAPED & SPOTTED SKIN)		TOTAL	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%
Age														
< 25	1	1.2	0	.0	2	2.5	4	5.0	3	3.8	0	.0	9	11.2
26-30	3	3.8	1	1.2	1	1.2	4	5.0	2	2.5	1	1.2	11	13.8
31-35	5	6.2	0	.0	1	1.2	4	5.0	2	2.5	1	1.2	13	16.2
36-40	1	1.2	1	1.2	0	.0	3	3.8	1	1.2	0	.0	6	7.5
41-45	0	.0	1	1.2	1	1.2	5	6.2	2	2.5	1	1.2	9	11.2
46-50	4	5.0	1	1.2	1	1.2	2	2.5	0	.0	1	1.2	8	10.0
51-up	2	2.5	0	.0	0	.0	4	5.0	2	2.5	0	.0	7	8.8
TOTAL	16	20.0	4	5.0	6	7.5	24	30.0	17	21.2	4	5.0	63	78.8
Sex														
Female	7	8.8	1	1.2	3	3.8	8	10.0	6	7.5	2	2.5	22	27.5
Male	9	11.2	3	3.8	3	3.8	16	20.0	11	13.8	2	2.5	41	51.2
TOTAL	16	20.0	4	5.0	6	7.5	24	30.0	17	21.2	4	5.0	63	78.8
Highest educational level														
Elementary	5	6.2	0	.0	1	1.2	11	13.8	4	5.0	1	1.2	20	25.0
Secondary	7	8.8	4	5.0	2	2.5	10	12.5	6	7.5	1	1.2	28	35.0
College	3	3.8	0	.0	3	3.8	2	2.5	7	8.8	2	2.5	14	17.5
Post-graduate	1	1.2	0	.0	0	.0	1	1.2	0	.0	0	.0	1	1.2
TOTAL	16	20.0	4	5.0	6	7.5	24	30.0	17	21.2	4	5.0	63	78.8



Table 16. continued...

PARTICULAR	UNAFFORDABLE / EXPENSIVE PRICE		UNAVAILABLE IN THE MARKET		NO KNOWLEDGE ON ON ORGANIC STRAWBERRY		STRAWBERRY IS NOT A USUAL PART OF THE HOUSEHOLD DIET		UNSURE IF ORGANIC STRAWBERRY SOLD IS TRULY ORGANIC		NOT GOOD APPEARANCE (DEFORMED SHAPED & SPOTTED SKIN)		TOTAL	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%
<b>Civil status</b>														
Single	3	3.8	1	1.2	2	2.5	6	7.5	7	8.8	0	.0	18	22.5
Married	13	16.2	3	3.8	4	5.0	17	21.2	9	11.2	4	5.0	43	53.8
Separated	0	.0	0	.0	0	.0	1	1.2	1	1.2	0	.0	2	2.5
<b>TOTAL</b>	<b>16</b>	<b>20.0</b>	<b>4</b>	<b>5.0</b>	<b>6</b>	<b>7.5</b>	<b>24</b>	<b>30.0</b>	<b>17</b>	<b>21.2</b>	<b>4</b>	<b>5.0</b>	<b>63</b>	<b>78.8</b>
<b>Farm size (sq. m)</b>														
100-500	6	7.5	2	2.5	3	3.8	9	11.2	7	8.8	2	2.5	25	31.2
600-1000	7	8.8	1	1.2	3	3.8	11	13.8	10	12.5	1	1.2	29	36.5
1100-1500	2	2.5	0	.0	0	.0	0	.0	0	.0	0	.0	2	2.5
1600-2000	1	1.2	0	.0	0	.0	1	1.2	0	.0	0	.0	2	2.5
2100-2500	0	.0	0	.0	0	.0	0	.0	0	.0	1	1.2	1	1.2
2600-up	0	.0	1	1.2	0	.0	3	3.8	0	.0	0	.0	4	5.0
<b>TOTAL</b>	<b>16</b>	<b>20.0</b>	<b>4</b>	<b>5.0</b>	<b>6</b>	<b>7.5</b>	<b>24</b>	<b>30.0</b>	<b>17</b>	<b>21.2</b>	<b>4</b>	<b>5.0</b>	<b>63</b>	<b>78.8</b>
<b>Years in farming</b>														
< 5	9	11.2	1	1.2	4	5.0	11	13.8	9	11.2	2	2.5	32	40.0
6-10	6	7.5	2	2.5	1	1.2	5	6.2	5	6.2	2	2.5	17	21.2
11-15	1	1.2	1	1.2	0	.0	2	2.5	3	3.8	0	.0	7	8.8
16-20	0	.0	0	.0	0	.0	2	2.5	0	.0	0	.0	2	2.5
21-up	0	.0	0	.0	1	1.2	4	5.0	0	.0	0	.0	5	6.2
<b>TOTAL</b>	<b>16</b>	<b>20.0</b>	<b>4</b>	<b>5.0</b>	<b>6</b>	<b>7.5</b>	<b>24</b>	<b>30.0</b>	<b>17</b>	<b>21.2</b>	<b>4</b>	<b>5.0</b>	<b>63</b>	<b>78.8</b>

\*multiple response



Table 17. Reason for “often” to “very frequent” Consumption

PARTICULAR	Assurance of healthy food		TOTAL	
	F	%	F	%
<b>Age</b>				
<25	3	17.6	3	17.6
26-30	6	35.3	6	35.3
31-35	1	5.9	1	5.9
36-40	3	17.6	3	17.6
41-45	3	17.6	3	17.6
46-50	1	5.9	1	5.9
<b>TOTAL</b>	<b>17</b>	<b>100</b>	<b>17</b>	<b>100</b>
<b>Sex</b>				
Female	5	29.4	9	21.4
Male	12	70.6	12	70.6
<b>Total</b>	<b>17</b>	<b>100</b>	<b>17</b>	<b>100</b>
<b>Highest educational level</b>				
Elementary	4	23.5	4	23.5
Secondary	8	47.1	8	47.1
College	5	29.4	8	29.4
<b>TOTAL</b>	<b>17</b>	<b>100</b>	<b>17</b>	<b>100</b>
<b>Civil status</b>				
Single	6	35.3	6	35.3
Married	11	64.7	11	64.7
<b>TOTAL</b>	<b>17</b>	<b>100</b>	<b>17</b>	<b>100</b>
<b>Farm size (sq. m)</b>				
100-500	6	35.3	6	35.3
600-1000	9	52.9	9	52.9
1600-2000	1	5.9	1	5.9
2600 and above	1	5.9	1	5.9
<b>Total</b>	<b>17</b>	<b>100</b>	<b>17</b>	<b>100</b>
<b>Years in farming</b>				
5 and below	7	41.2	7	41.2
6-10	5	29.4	5	29.4
11-15	2	11.8	2	11.8
16-20	2	11.8	2	11.8
21 and above	1	5.9	1	5.9
<b>TOTAL</b>	<b>17</b>	<b>100</b>	<b>17</b>	<b>100</b>



### Constraints of Strawberry Farmers in Adapting Strawberry Organic Farming

Table 18 shows the constraints of the respondents in adapting organic farming. The concern pointed out by a majority of the respondents 55(68.8%) is that more labor/work intensive. Other problems cited are less production (35%), lack of available materials (input for composting) (21.25%), requires more considerably more skills to farm organically and land is not properly owned, and just rented (12.5%). Less have the constraints of immunity of the soil and pests to synthetic chemicals (6.25%), organic produced strawberry are expensive (5.0%), and location of the farm and non cooperation of farmers (2.5%). These collaborated to the statement of Leo (2009) that the disadvantage of organic farming is low productivity. With the highly developed chemicals and machinery, the farmer is able to multiply his harvest manifold times. The organic farmers use the cultivation method as opposed to drilling method used by the traditional farmers. The next argument, which goes against organic farming, is that the organically produced food is expensive. The cost is very often 50-100 percent more than the traditional food.

This implies that strawberry farmer won't go into organic farming because they see it as more labor/work intensive.



Table 18. Constraints of strawberry farmers in adapting strawberry organic farming

PARTICULAR	REQUIRES MORE CONSIDERABLY SKILLS TO FARM ORGANICALLY		MORE LABOR/ WORK INTENSIVE		LESS PRODUCTION		ORGANIC PRODUCED STRAWBERRY ARE EXPENSIVE		LACK OF AVAILABLE MATERIALS		IMMUNITY OF SOILS ALSO PESTS TO SYN-THETIC CHEMICALS AND FERTILIZERS		LAND IS NOT OWNED & JUST		LOCATION OF THE FARM & NON-COOPERATION OF FARMERS RENTED		TOTAL		
	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	
Age																			
25 and below	4	5.0	10	12.5	6	7.5	0	.0	3	3.75	0	.0	1	1.25	0	.0	24	30.0	
26-30	2	2.5	14	17.5	4	5.0	1	1.25	3	3.75	1	1.25	2	2.5	0	.0	27	33.75	
31-35	2	2.5	11	13.75	4	5.0	2	2.5	1	1.25	2	2.5	3	3.75	2	1.25	27	33.75	
36-40	1	1.25	6	7.5	2	2.5	1	1.25	2	2.5	1	1.25	3	3.75	0	2.5	16	20.0	
41-45	0	.0	5	9.0	5	6.25	0	.0	5	6.25	2	2.5	1	1.25	0	.0	18	22.5	
46-50	1	1.25	5	9.0	4	5.0	1	1.25	2	1.25	0	.0	0	.0	0	.0	13	16.25	
51 and above	0	.0	4	11.25	3	3.75	0	.0	1	1.25	0	.0	0	.0	0	.0	8	10.0	
TOTAL	10	12.5	55	68.8	28	35.0	5	5.0	17	21.25	6	6.25	10	12.5	2	2.5	133		
Sex																			
Female	5	6.25	22	27.5	6	7.5	1	1.2	5	6.25	3	3.75	4	5.0	1	1.25	47	58.75	
Male	5	6.25	33	41.25	22	27.5	4	5.0	12	15.0	3	3.75	6	7.5	1	1.25	86	107.5	
TOTAL	10	12.5	55	68.8	28	35.0	5	5.0	17	21.25	6	6.25	10	12.5	2	2.5	133		
Highest educational level																			
Elementary	1	1.25	13	16.25	10	12.5	1	1.25	8	10.0	1	1.25	1	1.25	0	.0	35	43.75	
Secondary	4	5.0	25	31.25	12	15.0	3	3.75	5	7.5	2	2.5	7	8.75	1	1.25	59	73.75	
College	5	6.25	16	20.0	5	6.25	1	1.25	4	5.0	3	3.75	2	2.5	1	1.25	37	46.25	
Post-graduate	0	.0	1	1.25	1	1.25	0	.0	0	.0	0	.0	0	.0	0	.0	2	2.5	
TOTAL	10	12.5	55	68.8	28	35.0	5	5.0	17	21.25	6	6.25	10	12.5	2	2.5	133		





Table 18. continued...

PARTICULAR	REQUIRES MORE CONSIDERABLY SKILLS TO FARM ORGANICALLY		MORE LABOR/ WORK INTENSIVE		LESS PRODUCTION		ORGANIC PRODUCED STRAWBERRY ARE EXPENSIVE		LACK OF AVAILABLE MATERIALS		IMMUNITY OF SOILS ALSO PESTS TO SYNTHETIC CHEMICALS AND FERTILIZERS		LAND IS NOT OWNED & JUST		LOCATION OF THE FARM & NON-COOPERATION OF FARMERS RENTED		TOTAL	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%
Civil status																		
Single	5	6.25	19	23.75	11	13.8	0	.0	6	6.25	1	1.25	5	6.25	0	.0	47	58.75
Married	4	5.0	24	30.0	17	21.25	5	6.25	11	13.8	5	6.25	4	5.0	2	2.5	82	102.5
Separated	1	1.25	2	2.5	0	.0	0	.0	0	.0	0	.0	1	1.25	0	.0	4	5.0
TOTAL	10	12.5	55	68.8	28	35.0	5	5.0	17	21.25	6	6.25	10	12.5	2	2.5	133	
Farm size (sq. m)																		
100-500	6	7.5	22	27.5	11	13.8	2	2.5	6	7.5	3	3.75	2	2.5	1	1.25	53	66.25
600-1000	4	5.0	25	31.25	14	17.5	2	2.5	10	12.5	3	3.75	7	8.75	1	1.25	66	82.5
1100-1500	0	.0	1	1.25	0	.0	1	1.25	1	1.25	0	.0	0	.0	0	.0	3	3.75
1600-2000	0	.0	2	2.5	1	1.25	0	.0	0	.0	0	.0	1	1.25	0	.0	4	5.0
2100-2500	0	.0	0	.0	1	1.25	0	.0	0	.0	0	.0	0	.0	0	.0	1	1.25
2600-up	0	.0	5	6.25	1	1.25	0	.0	0	.0	0	.0	0	.0	0	.0	6	7.5
TOTAL	10	12.5	55	68.8	28	35.0	5	5.0	17	21.25	6	6.25	10	12.5	2	2.5	133	
Years in farming																		
<5	8	10.0	28	35.0	14	17.5	1	1.25	11	13.8	3	3.75	4	5.0	0	.0	69	86.25
6-10	1	1.25	1	1.25	9	11.25	1	1.25	1	1.25	2	2.5	4	5.0	1	1.25	34	42.5
11-15	1	1.25	5	6.25	3	3.75	2	2.5	3	3.75	0	.0	1	1.25	1	1.25	16	20.0
16-20	0	.0	3	3.75	0	.0	1	1.25	1	1.25	1	1.25	0	.0	0	.0	6	7.5
21-up	0	.0	4	5.0	2	2.5	0	.0	1	1.25	0	.0	1	1.25	0	.0	8	10.0
TOTAL	10	12.5	55	68.8	28	35.0	5	5.0	17	21.25	6	6.25	10	12.5	2	2.5	133	

\*multiple response



## **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

### Summary

Organic farming has now become a prime topic of discussion and concern in the agricultural sector. It is a method of farming that requires farmers to operate a system. It is a form of agriculture that relies on crop rotation, green manure, compost, biological pest control and mechanical cultivation etc...to maintain soil productivity and control pests, excluding or strictly limiting the use of synthetic fertilizers and synthetic pesticides.

However, concerns is placed on the acceptability of this idea to the farmers as only a few have gone into this.

The study aimed to determine the following: the concept of organic farming to strawberry farmers; the perceptions of strawberry farmers on organic farming in terms of technical aspects, socio-economic aspects and environmental/ health aspects; the perceptions of strawberry farmers on the consumer's behavior in terms of consumption pattern and reasons for consumption or non-consumption; determine the relation between the farmers profile and their perceptions in organic production and consumption and lastly to determine the constraints of strawberry farmers in adapting organic farming.

There were 80 respondents from Betag and Longlong La Trinidad, Benguet interviewed in the study selected randomly. Their responses were cross tabulated against their demographic profile and were correlated.

There are more male respondents, and majority are married, middle age (26-35), undergone formal schooling, have been farming for less than ten years and working on a 100-1000 sq. m. farm size.



Respondents with lesser farm size rely on strawberry farming as their major source of income indicating a sensitivity of farm profitability to decisions made.

Results show that most strawberry farmers define organic farming as simply farming without the use/ minimize the use of commercial pesticides and fertilizers. This however shows a limited view of what organic farming really is.

Respondents claim to be certain of the effects of organic farming to soil fertilization but are uncertain as to its effects on pest's control.

Radio programs have been the source of information for a majority of the farmers, particularly the young and married ones. Other considered sources of information are DA technicians and from trainings and seminars.

Respondents fully agree on various soil management principles of organic farming. However, they also fully agree to the idea that unprocessed animal waste could be directly applied to the soil. This indicates a lack in knowledge on soil management principles of organic farming. They also most agree that it takes 3-5 years to convert from conventional to organic farming. However, middle- aged respondents or those who have been farming for 11-15 years show more confidence that this is indeed the time period required for conversion.

Considering the socio-economic aspects of organic farming respondents mostly disagree to the idea that organic farming is expensive and that an optimum production level is obtained with organic farming. That is because they also most agree that lower yield is obtained with organic farming during conversion period. Respondents are however neutral with the idea that conversion to organic farming does not give economic rewards to farmers. Respondents fully agree that preparation of organic input is laborious



and time-consuming and mostly agree that land/ use farm resources is maximized with organic farming. Likewise mostly agree that organically produced products demands higher price and is hard to sell. Results show that there are difference in the level of agreement based on the various concepts considering the civil status, and farm size.

Results shows also that respondents fully agree with the environmental/ health aspects of organic farming such as organic farming promoting cleaner/safer environment by minimizing air, soil and water pollution, organic farming produce safer food products, soil fertility is enhanced in organic farming, organic farming helps balance the ecosystem, organic farming promotes good human and animal health, organic farming promotes sustainable agriculture, and organic products are healthier because of the presence of natural nutrients. The difference in level of agreement is determined by their educational level attained and by their farm size.

Regarding their perception on the consumers behavior in terms of consumption pattern and reasons for consumption or non-consumption, results shows that strawberry farmers perceived that most consumers consume organically produced strawberry occasionally for the following reasons: strawberry is not a usual part of the household diet, unsure if organic strawberry sold is truly organic, unaffordable or expensive price, unavailable in the market and no knowledge on organic strawberry and less consumers consumed organically produced strawberry frequently for it is assurance of healthy/safer food. However there is no dominant reason for the high or low purchases indicating that respondents are unsure of the reasons of consumers for the frequency or volume of their purchases of organic strawberry.



The two leading constraints of strawberry farmers in adapting organic farming are: it is more labor/ work intensive and that less production is achieved.

### Conclusions

Based on the summary of findings and objectives, the following conclusions are drawn:

1. Strawberry farming is a major source of income of young respondents making their decisions sensitive towards income generated from the farm. Respondents are certain of the effects of organic farming to soil fertilization but are uncertain of its effects to pest's management. Information they have acquired on organic farming have been through any media made available to them.

2. The concept of organic farming to strawberry farmers is farming which minimizes the use of synthetic chemicals and pesticides. This implies that respondents have a bit of knowledge about organic farming but not complete information as to the various considerations of organic farming.

3. The farmers have some understanding of the technical aspects of organic farming. Some differences in understanding are related to their age and experience in farming with middle-aged farmers showing better understanding than those younger or older. Their level of understanding of various socio-economic aspects of organic farming is dependent mostly on their civil status and farm size. However there are no demographic variables that could be linked to their understanding of organic farming contribution to health and environment. Understandably, this is because health and environment issues appear to be trivial whereas the technical and socio-economic aspects can be drawn from experiences in farming.



4. Strawberry farmers perceived that more consumers consume organically grown strawberry “occasionally to not to all” and fewer consumers consume organically grown strawberry “often to frequent”. However farmers’ are unsure of the consumer’s reason for low or high purchases on organic strawberry indicating a low understanding of the consumer market for organically grown strawberries.

5. Most respondents won’t go into organic farming because they see it to be more labor/work intensive and less productive.

### Recommendations

Based conclusions, the following are recommended:

1. To inform and educate strawberry farmers in organic farming, consider more accessible venues or media for them to access this information. Whereas radio programs, DA technicians and the conduct of trainings and seminars are the more popular sources of information for the farmers, regularity of delivery of these information on organic farming would be desirable. Middle-aged farmers are more open minded towards accessing concepts of organic farming, hence information and education programs for organic farming should be constructed and purchased with them in mind as a starting point.

2. To convince or influence strawberry farmers to convert into organic farming, concerned agencies must consider presenting them with comparative quantitative values on the costs and benefits of organic farming or simply comparative budgets which they can relate to based on their experience and size of farms. Farmers already know of the health and environment benefits of organic farming but are not sure of its benefits to their farm, and much more to their profits.



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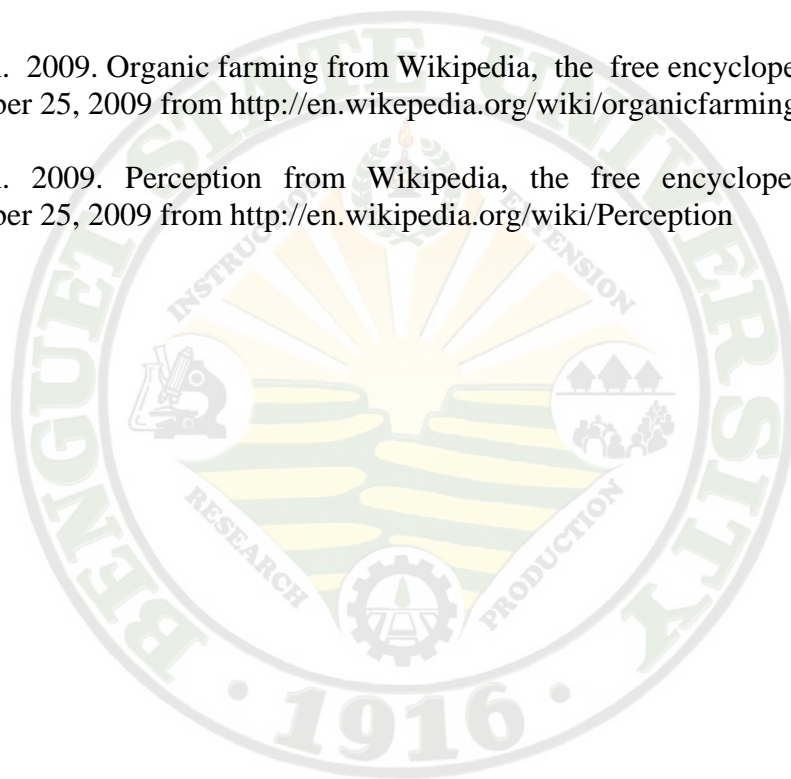
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## APPENDIX A

### Letter to the Respondents

Republic of the Philippines  
Benguet State University  
DEPARTMENT OF AGRICULTURAL ECONOMICS  
AND AGRIBUSINESS MANAGEMENT  
La Trinidad, Benguet

Dear Respondent:

I am Agribusiness student of Benguet State University majoring in Enterprise Management. As part of the course requirement, I am presently conducting a research entitled, "Perceptions of Strawberry Farmers Towards Organic Farming".

In connection with this, may I ask your full cooperation to complete my thesis by answering the questionnaire honestly and completely? Rest assured that all information gathered in this study will be kept confidential and that will be only for the success of the study.

Your cooperation is highly appreciated. Thank-you very much.

Respectfully yours,

RACHELLE L. BALANG  
Researcher

Noted:

CLIFTON D. LLANES  
Adviser



## APPENDIX B

## Survey Questionnaire

## PERCEPTIONS OF STRAWBERRY FARMERS TOWARDS ORGANIC FARMING

Name: \_\_\_\_\_ Age: \_\_\_\_\_ Gender: ( ) Male ( ) Female

Civil Status: ( ) Single ( ) Married ( ) Separated ( ) Widowed

Barangay: \_\_\_\_\_

Ethnicity: ( ) Kankanaey ( ) Ilocano ( ) Ibaloi ( ) Others (specify) \_\_\_\_\_

Highest Educational Attainment

( ) Elementary Level ( ) High school Level ( ) College Level ( ) Post-graduate

No. of years in strawberry farming: \_\_\_\_\_

Total farm area for strawberry production: \_\_\_\_\_

Is Strawberry farming your: ( ) major source of income ( ) Additional income only

Other sources of income: ( ) Vegetable Farming ( ) Vending/Selling

( ) Employees ( ) Others (specify) \_\_\_\_\_

\_\_\_\_\_

1. What definition would apply most to your understanding of what organic farming is?

(Choose only one)

- ( ) Farming without the use of commercial pesticides and fertilizers  
 ( ) Farming with the use of organic fertilizers only  
 ( ) Farming with the use of organic pesticides only  
 ( ) Farming that minimizes the use of synthetic chemicals  
 ( ) Other definition \_\_\_\_\_

2. Rate your knowledge on Organic farming

	Very high (5)	High (4)	Moderate (3)	Low (2)	No Knowledge (1)
Organic farming is effective in pest control					
Organic farming is effective in soil fertilization					

3. Sources of information on organic farming

- ( ) DA Technician ( ) Seminars / Trainings  
 ( ) Radio Programs ( ) Organizations  
 ( ) Fellow Farmers ( ) Others (specify) \_\_\_\_\_  
 ( ) Reading Materials (Pamphlets, Brochures, etc.)  
 ( ) Neighbors and relatives



#### 4. Perception on Organic Farming

Please put a check mark on the corresponding rating scales on the items to indicate your perceptions on organic farming.

##### A. TECHNICAL ASPECTS

STATEMENT	Fully Agree (5)	Mostly Agree (4)	Neutral (3)	Totally Disagree (2)	Mostly Disagree (1)
Farm wastes can be process as fertilizer.					
Animal wastes (Unprocessed) can be readily /directly applied to the soil.					
Soil microorganisms are more active in soils applied with organic fertilizer than applied synthetic.					
Organic fertilizers improve the physio-chemical characteristics of the soil.					
Organic fertilizer has a very slow effect on the crops performances.					
The conversion period of organic farming is 3-5 years.					

##### B. SOCIO ECONOMIC ASPECTS

STATEMENT	Fully Agree (5)	Mostly Agree (4)	Neutral (3)	Totally Disagree (2)	Mostly Disagree (1)
Organic farming is expensive					
Preparation of organic input is laborious and time consuming					
Lower yield is obtained with organic farming during the conversion period					
Land /use farm resources is maximized with organic farming					
Optimum production levels is obtained with organic farming					
Organically produced products demands higher price					
Organically product produced is hard to sell					
Conversion to organic farming does not give economic rewards to farmers.					



## C. ENVIRONMENT /HEALTH ASPECT

STATEMENT	Fully Agree (5)	Mostly Agree (4)	Neutral (3)	Totally Disagree (2)	Mostly Disagree (1)
Organic farming promotes cleaner/safer environment by minimizing air, soil and water pollution					
Organic farming produce safer food products					
Soil fertility is enhanced in organic farming					
Organic farming helps balance the ecosystem					
Organic farming promotes good human and animal health.					
Organic farming promotes sustainable agriculture					
Organic products are healthier because of the presence of natural nutrients.					

6. Please indicate your perceptions on consumers' behavior in consuming organically grown strawberry.

Frequency of consumption	Not at all (5)	Rarely (4)	Occasional (3)	Often (2)	Very frequent (1)
Organic produce strawberry					

6a. For consumption that is "occasional" to "not at all", what is the reason?

- Unaffordable or expensive price
- Unavailable in the market
- No knowledge on organic strawberry
- Strawberry is not a usual part of the household diet
- Unsure if organic strawberry sold is truly organic
- Other reasons (specify) \_\_\_\_\_

6b. For consumption that is "often" to "very frequent", what is the reason?

- Assurance of healthy food/safer foods
- To avoid illnesses
- More nutritious
- Other reasons (specify) \_\_\_\_\_



7. What are your constraints in adapting strawberry organic farming?

- Requires considerably more skills to farm organically
- More labor/work-intensive
- Less production
- Organic produced is expensive
- Odorous
- Lack of available materials
- Others (specify) \_\_\_\_\_

THANK-YOU. GOD BLESS YOU ALWAYS

