

Innovations

Strengthening Adoption of Organic Agricultural Practices through Women Empowerment

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Abstract

Strengthening Adoption of Organic Agricultural Practices through Women Empowerment, an extension project funded by the Bulacan Agricultural State College (BASC) was initially carried out in Barangay Sumandig, San Ildefonso, Bulacan from June 28, 2018, to December 31, 2020. This project generally aims to involve women in the adoption of organic agricultural practices. These women were members of the association whose primary source of income is the provision of related services in agriculture because they do not have an arable area to cultivate. This project specifically aims to provide technical knowledge and skills on making organic concoctions and vermicompost; promote the organic agricultural practice in the community through the establishment of a demo-trial farm and vermicompost area; document the number of women who will able to adopt organic agriculture practices; and document the increase in income in adopting organic agriculture practice through cost and return analysis. The project consisted of three (3) phases: Conduct of Seminar-training Workshop; Establishment of Science and Technology Community-Based Trial; and turn-over of the project. Seedling dispersal was also carried out in order to make participants apply what they had learned about the capacity training they had undergone and to help them raise their profits. Monitoring was conducted regularly to ensure good production management and economic returns among participants. Vermicomposting area has been developed mainly to encourage the use of organic fertilizers in order to minimize the use of synthetic fertilizers, which may cause soil fertility depletion in the long term, and to promote a healthier environment by reducing contamination by the use of resources in the region, such as manure and leaf litter, which can be used as a substrate. Women have learned how to make their own vermicompost through training and seminars. To date, the farmer's partner has been encouraged to use it as a basal fertilizer for their crops and has increased its income through the production of vermicompost. Finally, it was encouraging to see that appropriate technologies and interventions were encouraging women's formal participation. Empowering them through the adoption of organic agricultural practices will benefit not only their own health but also the health of their families, while also providing a healthier environment for the community and sustaining agricultural productivity.

Keywords: 1.adoption, 2.concoctions, 3.empower, 4.organic, 5.vermicompost

Introduction

Overall, agriculture in the Philippines contributes 17% of the country's GDP and employs 33% of the labor force. More than half of the poorest people in the country work in this sector, which employs an estimated 66 percent of the workforce. The deterioration of the environment has increased the vulnerability of the agricultural sector as a whole, particularly to extreme weather events. The dominance of chemical-intensive farming has contributed to at least 33% of the country's greenhouse gas emissions (Cabigas and Morala, 2011).

Nowadays, the use of synthetic inputs is commonly involved in crop production. Moreover, the use of chemical or synthetic inputs is one of the most publicized and controversial issues in crop production. Synthetic or manufactured chemicals usage on crops presents a threatening image of abrupt and long-term health problems. Also, utilization of such inputs contributes to negative effects on the environment; as well as an increase in the cost of production. There are risks involved such as contamination of crop products with harmful chemical residues, contamination of soil and groundwater, development of crop pest populations that are resistant to agrichemical treatment, and health risks to those who apply agrichemicals. In the case of synthetic fertilizer application, since the nutrients are readily available, there is a danger of over-fertilization. This not only can kill plants but distressed the entire ecosystem. Chemical fertilizers tend to leach or filter away from the plants, requiring additional applications. Repeated applications may result in a toxic buildup of chemicals such as arsenic, cadmium, and uranium in the soil. These toxic chemicals can eventually make their way into your fruits and vegetables. Long-term use of chemical fertilizer can change the soil pH, upset beneficial microbial ecosystems, increase pests, and even contribute to the release of greenhouse gases.

Organic agriculture promotion in the Philippines faces numerous challenges, including policy gaps, a lack of production support, promotion and awareness activities, fragmented and inadequate research and development, extension, and capability-building activities, and poor market systems. One of the most difficult challenges in organic agriculture is competing with conventional farming systems (organic.da.gov.ph).

Women are important players in agricultural development. According to Food and Agriculture Organization (FAO) studies, both men and women play critical roles in agriculture around the world by producing, processing, and supplying the food we eat. Rural women, in particular, are responsible for the world's production (50 to 80 percent of global food production); however, despite their contribution to global food security, women farmers are frequently underestimated and ignored in development strategies (Alarcon 2012-2016).

In developing countries such as the Philippines, women are generally invisible workers in agricultural activities. They provide much of the labor for agricultural production and perform a variety of household-related tasks. Despite the fact that women work as long as men, there is a real and visible gender bias, with only a few policies aimed at correcting the situation (IFOAM, 2007).

Organic agriculture has the potential to create a more gender-balanced agriculture development situation because principles of fairness and the enforcement of social justice laws minimize discrimination in agricultural production under organic systems. Organic and sustainable farming has the potential to create new structures that actively work to achieve women's empowerment and protection. Through their economic and household activities, women's and men's different roles and responsibilities are inextricably linked to environmental change, and the resulting environmental changes affect people's well-being.

Many women all over the world are taking the lead in the development of organic agriculture, which has a positive impact on their empowerment. Organic agriculture results in more diverse crops grown and different livestock species raised on a farm at the production scale. The diversity requires women to play a more diverse role in the household economy and to perform more responsible tasks. The increased responsibility boosts their self-esteem and decision-making power, promoting empowerment within their family and community. Furthermore, because organic agriculture necessitates specialized knowledge and skills, women are exposed to more educational and skill development opportunities, such as on-farm and off-farm training as they gain specialized skills (IFOAM, 2006).

Currently, farmers, particularly those in rural areas, are using agrichemicals in order to increase production and profit. This is why farmers and people engaged in agricultural production are encouraged to use organic/natural-based inputs. This project targets to promote organic agriculture to women and enable to empower them by educating them on making organic concoctions and producing organic fertilizer. This project is in accordance to the Republic Act No. 9710 or the Magna Carta for women, particularly on Rights and empowerment of Marginalized sectors, specifically, Section 20; paragraph B on Right to Resources for Food Production states that:

The State shall guarantee women a vital role in food production by giving priority to their rights to land, credit, infrastructure support, technical training, and technological and marketing assistance. The State shall promote women-friendly technology as a high-priority activity in agriculture and shall promote the right to adequate food by proactively engaging in activities intended to strengthen access to, utilization of, and receipt of accurate and substantial information on resources and means to ensure women's livelihood, including food security.

The recipients were members of an association whose primary source of income is the provision of agricultural-related services, as most of them do not have enough arable land to cultivate. The participants come from economically poor families with very little land and must rely on their husbands' earnings for all of their day-to-day needs. They have been displaced since the beginning of the government's farm mechanization and modernization program.

Moreover, this project will encourage the women of Barangay Sumandig San Ildefonso, Bulacan to engage in organic farming as support to the Republic Act 10068 which aims to strengthen the state's policy to promote, propagate, develop further and implement the practice of organic agriculture.

In this light, the ability of organic agriculture to empower women in the community has additional benefits for food security. Women that have responsibility for resources such as land and other productive resources such as livestock have a greater capacity to optimize their use, increasing food production and improving their families' nutritional health.

Objectives

This project generally aims to involve women in the adoption of organic agricultural practices in Brgy. Sumandig San Ildefonso, Bulacan.

Specifically, it aims the following:

1. Provide technical knowledge and skills in making organic concoctions and vermicompost;
2. Promote the organic agricultural practice in the community through the establishment of a demo-trial farm and vermicompost area;
3. Document the increase in income in adopting organic agriculture practices through costand return analysis.

Review of literature

Organic agricultural practices are thought to be more environmentally friendly than intensive agriculture, which is reliant on the routine use of herbicides, pesticides, and inorganic nutrient applications in crop and animal production.

Adoption of Organic Agriculture

Several studies have looked at the factors that influence farmers' decisions to switch from conventional to organic practices in both developed and developing countries. Access to government subsidies for organic farming is thought to be important (Brenes-Munoz et al. 2016).

Government subsidies, on the other hand, can increase policy risk and, in some cases, reduce adoption (Kuminoff & Wossink 2010).

Organic farming may be associated with higher production risk in addition to policy risk because certain risk-reducing inputs are not permitted (Serra et al. 2008).

According to Kallas et al. 2010, and Serra et al. 2008, chemical pesticides, for example, aid in pest control but are prohibited in organic agriculture. Indeed, studies have shown that farmers who use organic practices are more willing to take risks than farmers who do not use organic practices.

Access to information and high-value certified markets, where buyers are willing to pay significant price premiums for organic products, are also important adoption determinants (Läpple 2010, Wollni & Andersson 2014).

Yield Effects

The authors used data from a variety of sources to conclude that organic agriculture had 33% higher average crop yields than conventional agriculture on a global scale. Organic yields were 9% lower than conventional yields in developed countries, but the authors claimed that organic practices would increase crop yields by 74% in developing countries (Badgley et al. 2007).

Here is evidence that the yield gap widens as conventional yields rise (de Ponti et al. 2012).

Under best management practices for both systems, yield gaps between developed and developing countries do not appear to be significant (Ponisio et al. 2015).

Longer-term research into the productivity effects of organic farming in developing countries has recently begun (Forster et al. 2013).

Effects of Vermicompost on Bell pepper

The ability of earthworms to consume a wide range of organic residues results in vermicompost. It has the potential to improve plant growth due to a number of factors, including its physicochemical properties (Edwards and Borrows 1988).

Vermicompost may also promote the proliferation of symbiotic organisms as a stimulator (i.e.) of mycorrhizal colonization of roots in the early stages of the plant (Cavender et al. 2003).

After 173 days, fruit production was significantly more in plants raised in vermicompost. Vermicompost significantly enhanced the highest weight (23.4g), height (26.7 cm), and production of leaves per plant (20.6 leaves per plant) (Huerta E., Sanchez AJ., Geissen V.2010).

Effects of Vermicompost on Eggplant

The promoted plant growth and increases in yields could not be explained by the availability of N, P, and K, because vermicompost treatments should be supplemented with inorganic fertilizers, to equalize macronutrient availability at growing time (Anarcon et al.2003).

Accordingly, as the dose increase, P and K contents improve for both plants. Both plant's vegetative mass improvement and generative organs could be clearly seen when they were in viols before harvest, which means that as the doses increase, the plant grows high and produce more leaves. Some studies support the results of the pepper and eggplant experiment (Huerta et al.2010).

Effects of Vermicompost on Tomato

Yang et al (2015) findings revealed that fertilizer treatments had a significant impact on tomato quality, regardless of the number of years of continuous cropping. The sugar/acid ratio and nitrate content were higher and lower, respectively, in vermicompost-treated plants than in plants treated with the other fertilizer treatments.

Potassium is abundant in vermicompost (Hanc and Vasak, 2015; Mondal et al., 2015), and Colpan et al. (2013) discovered that potassium increased tomato yield and fruit quality.

Effects of Vermicompost on Lady's Finger

Vermicompost had a greater positive effect on lady's finger germination as well as plant growth and development (Sarma, B & Gogoi, N. 2015).

Effects of Vermicompost on Corn

The application of Full RRIF + 1ton Vermicompost ha-1 significantly influenced the plant height of sweet corn at 20 DAS. Soil's negative logarithm of hydrogen ions present or pH was greatly affected by the application of inorganic fertilizer alone. Moreover, the application of ½ RRIF + 2 tons of Vermicompost ha-1 caused significant effects towards the organic matter content (%) of the soil at harvest. On the other hand, the yield of sweet corn measured by the number of ears expressed in per hectare basis shows to be highly affected by the application of Full RRIF along with 1ton Vermicompost ha-1 (Canatoy R.2018).

Because crop responses to vermicompost applications are dependent on a number of factors, it is difficult to explain their effects. Vermicompost has the potential to influence plant growth directly or indirectly via a variety of chemical, physical, and biological mechanisms. Vermicompost, for example, has a variety of indirect effects on plant growth, such as the mitigation or suppression of plant diseases (Lazcano C. et al.2011).

Methodology

The extension project was conducted at Barangay Sumandig San Ildefonso, Bulacan from June 28, 2018 to December 31, 2020. Mrs. Cecilia C. Ramos, the chairperson of the Samahan ng Manggagawang Bukid ng Sumandig, whose members were mostly women, owned the land used for the crop and vermicompost establishment.

The methodologies that were adopted by the project team included the four major phases.

Phase I. Conduct of FGD

The first step of the project conducted benchmarking through FGD. The participants were asked about personal information and their usual practices in farming/gardening. The information that was generated from the interview served as the basis for comparison before and after the adoption of organic farming. The participants were informed that the information they provided would be used as baseline data, and their signatures served as proof that they gave full authority and consent to the project team.

Phase II. Conduct Seminar-training Workshop.

The second step was the conduct of a seminar-training workshop for the participants which consists of lectures and hands-on training. The lecture discussed agricultural practices which include organic concoction, vermin-compost fertilizer, vegetable production, and basic record keeping.

Phase III. Establishment of Science and Technology Community-Based Trial.

After the seminar workshop was conducted, a minimum area of 120 m² was established and developed as a science and technology community-based site in which all the organic agricultural technologies were applied.

The land that was used was thoroughly prepared, and plastic mulch was used. The first setup consisted of 12 plots measuring 1x10m that were divided into two groups representing the treatments. Three crops were planted: bell peppers, eggplants, and tomatoes. Each crop had four plots that were divided into two treatments: Treatment 1-Farmer's Practices (FPs) and Treatment 2-Organic Agricultural Practices (OAPs). Treatment 1 (FPs) used the farmer partner's traditional farming practices and Treatment 2 (OAPs) used only 3 kilos of Vermicompost as a basal fertilizer for the entire duration of the study. The crops were planted in August 2019 and stood and harvested for six months, from November 2018 to April 2019.

The second setup required a minimum of 100m² and consisted of 10 plots measuring 1x10m² divided into two treatments, with Lady's Finger as the crop established. The area was meticulously prepared, and no plastic mulch was used. The treatments were made up of 5 plots each. Farmer's Practices (FPs) as Treatment 1 and Organic Agricultural Practices (OAPs) as Treatment 2. (OAPs). Treatment 1 (FPs) used the farmer partner's traditional farming practices, whereas Treatment 2 (OAPs)

used only 3 kilos of Vermicompost as a basal fertilizer throughout the study. The crop was planted in July 2019 and stood for three months, from September 2019 to January 2020.

The third setup required a minimum of 100m² and consisted of ten 1x10m² plots divided into two treatments, with Corn as the established crop. The field was thoroughly prepared and no plastic mulch was used. Each treatment consisted of five plots. Farmer's Practices (FPs) were treated as Treatment 1 and Organic Agricultural Practices (OAPs) were treated as Treatment 2. (OAPs). Treatment 1 (FPs) used traditional farming practices of the farmer partner, whereas Treatment 2 (OAPs) used only 3 kilos of Vermicompost as a basal fertilizer throughout the study. The crop was planted in May of 2020 and harvested in July of that year.

The said area was a vegetable farm near the barangay road that showcased the effect of adopting the technology. The vermicompost area was also a part of the demo site. Parameters such as yield and pest occurrence were monitored and recorded. The vermicompost produced in the community was analyzed in the Soil Laboratory DA-RFO3 for the nutrient contents. Cost and return analyses were done to assess the profitability of conducting organic agricultural practices. The site was monitored on a weekly basis by the project team.

The participants who completed the seminar training were provided with seedlings and vermicompost for them to apply what they have learned. These adapters were monitored by the project team during their establishment.

Phase IV. Turn-over of the project.

Assessments of the project were done at the end of the implementation to know if the project has an influence on the community and recognize if the women participants were able to adopt the technology introduced to them. The extent of adoption was determined from their individual establishment after the seminar/training was conducted. To sustain the project, the women participants continued to produce vermin-compost and that gave them additional income. Part of the project was to empower women in the community and make them instruments in promoting organic agriculture practices in Brgy. Sumandig, and other nearby barangays.

The turnover ceremony of the vermi-beds was conducted through the signing of the deed of acceptance of the farmer partner and awarding of garden tools to the adopters of organic agricultural practices.

Data collection and analysis

Prior to the start of the project, a baseline survey was conducted. After the training, a one-on-one interview was done among participants to assess their views on the project, especially the training. Findings from the baseline survey and interview were presented and arranged through percentages. Open-ended questions were also asked the participants.

Observations were recorded during the project's implementation by site visits to the project beneficiaries to validate their adoption of the organic agriculture practices that were taught to them.

Results and discussion

Technical knowledge and skills in vermicompost, making organic concoctions, vegetable production, and basic record-keeping

According to the findings of the analysis as shown in Table 1 of the four (4) seminars/training held, females participated at a rate of 63.07 percent, while males participated at a rate of 36.93 percent. The knowledge gain was measured using a pre-test and post-test, with female participants performing well in their post-test for all seminars/training conducted and receiving the highest average percentage score of 88.72 percent, compared to male participants with 9.03 percent.

Vermicompost establishment and Techno-demo farm (vegetable production)

With regards to the vermicompost production, it was observed that there was an increase in the production following the technical knowledge and skills learned from the seminar/training held as presented in Table 2.

In line with the establishment of the three techno-demo trials as illustrated in Table 3, with three crops, it was observed that the farmer's practice obtained a higher yield as compared to the organic agricultural practices. The three crops on the first set-up of the plot with no basal application (FPs) of vermicompost yielded 15 kilos of bell pepper (60 percent), whereas the plot with 3 kilos of vermicompost application per plot yielded 10 kilos of bell pepper (40.00 percent). Based on the result of the percentage scores there was a 20 percent yield difference of FPs to OAP; the plot with no basal application of vermicompost (FPs) resulted in a yield of 45 kilos (56.25 percent) of eggplant, whereas, the application of 3 kilos of vermicompost per plot resulted in a yield of 35 kilos (43.75 percent) of eggplant.

According to the percentage score results, there was a 12.50 percent yield difference between FPs and OAP; Tomatoes with no basal application of vermicompost (FP) yielded 85 kilos (56.67 percent) while the plot with 3 kilos application of vermicompost yielded 65 kilos (43.33 percent). According to the percentage score results, there was a 13.33% yield difference between FPs and OAPs.

As to the yield of the second set-up as presented in Table 4, it was revealed that the farmer's practice obtained a higher yield of 210 kilos (52.50 percent) whereas the application of vermicompost attained a yield of 190 kilos (47.50 percent). In addition, 20 kilos (5.00 percent) were the difference in yield and it is evident that it is comparable to the OAP.

As regards the third set-up as presented in Table 5, Farmers' practices resulted in a higher yield of 70 kilos (58.33%), while the application of vermicompost resulted in a yield of 50 kilos (41.67%). The farmer's practice yielded the highest yield from larger corn ears with more kernels. The yield difference was only 20 kilos (16.66 percent), and based on the percentage scores, it is clear that it was comparable to FP's. In addition, no major pests or diseases were observed during the establishment.

Furthermore, in relation to the cost and return on investment of vermicompost from October 12, 2018, to December 31, 2021, as illustrated in Table 6a, it obtained a net income of 48,038.00 with an ROI of 104.64 percent. Aside from the vermicompost fertilizer produced, the farmer partner earned an additional 4,200.00 from the sale of African Night Crawler (ANC).

As shown in Table 6b, it obtained a net profit of PhP10,302.00 with an ROI of 50.87 percent in connection with the first crop establishment. Lower ROI but no deficit, which could be attributed to the fact that it incurred high expenses due to the purchase of plastic mulch and the number of times it was irrigated.

The highest ROI was found in the second crop establishment, which had a 144.36 percent ROI and a higher net income of 18,905.00. This was due to the fact that it did not use plastic mulch and did not irrigate as much as the first establishment did.

The third establishment had the lowest net income and ROI, with 4.62 percent and PhP265.00, respectively. The lower cost of corn sales contributed to the lower ROI and net income.

Conclusion

This extension project was not intended to compare the gender extents in conventional/traditional practices against organic agricultural practices, yet it was encouraging to see that women's formal involvement was being heartened through appropriate technologies and interventions.

1. The proponents concluded that by providing technical knowledge and skills for making organic concoctions and vermicompost, women demonstrated eagerness and appreciation during the activities. They understood and learned the importance of making decisions about land use and technology adoption.

2. The proponents concluded that by establishing a demonstration farm and producing vermicompost, they were able to showcase and promote organic agricultural practices in the community. It was also discovered that through the crop establishment, beneficiaries adopted the intercropping pattern because they had been using monocropping for the longest time. Farmers in nearby barangays are promoting and using vermicompost fertilizer for their seedlings and as basal fertilizers for other crops. They understand the effects and benefits of using organic fertilizer, as evidenced by the overwhelming sales of the produced vermicompost fertilizer. As evidenced by their individual crop establishments, women were empowered by applying what they had learned during seminars/training that was conducted without any discussions or debates from other members of the family and community as a whole.
3. Through a cost-benefit analysis, the proponents concluded that adopting organic agriculture practices resulted in an increase in income. Prior to the start of the project, the farmer partner, in particular, had no idea about vermicomposting and did not have the necessary facilities. The additional income of PhP48,038.00 and ROI of 104.64 percent derived from the vermicomposting itself demonstrates that it assists the farmer partner in earning additional income, given that the materials required for the facility's sustainability are already available in the area. Proper segregations of wastes and utilization of animal manure for vermicomposting will help in minimizing pollutants that may harm the environment. Appropriate soil feeding with vermicompost and proper resource cycling will also feed the crops, resulting in higher productivity and a safer environment. Thus, through intercropping, the farmer partner obtained additional income from crop establishment and recognizes that practicing organic agriculture practices and intercropping will empower her and enable her to contribute additional income to the family.

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Table 1. Pre-test and Post-test

Participa nts	Training 1		Training 2		Training 3		Training 4	
	No. of Participa nts	% Score increme nt						
Male	9	11.11%	8	25.00%	7	0.00%	7	0%
Female	18	66.66%	17	88.23%	15	100.00 %	13	100%
Total								

Table 2. Vermicompost production

Year	Production
Oct.-Dec., 2018	720kls
Jan.-Dec., 2019	3,200kls
Jan.-Dec., 2020	4,000kls
Total	7,920kls

Table 3. First crop establishment in 120m² area with vermicompost as basal fertilizer

Crop	Pest occurrence	Yield (kgs)	Percentage
Bell pepper		25 kilos	
Farmer’s Practice	0	15	60.00%
OAP	0	10	40.00%

Eggplant		80 kilos	
Farmer's Practice	0	45	56.25%
OAP	0	35	43.75%
Tomato		150kilos	
Farmer's Practice	0	85	56.67%
OAP	0	65	43.33%

* 20% yield difference of FPs to OAP (bell pepper)

*12.50 yield difference of FPs to OAP (eggplant)

*13.33yield difference of FPs to OAP (tomato)

*OAP-Organic Agricultural Practices

Table 4. Second crop establishment

Lady's Finger	Pest occurrence	Yield	Percentage
Farmer's Practice	0	210kilos	52.50%
OAP	0	190kilos	47.50%
Total	0	400 kilos	

*5% yield difference of FPs to OAP

*OAP-Organic Agricultural Practices

Table 5. Third crop establishment

Green corn	Pest occurrence	Yield	Percentage
Farmer's Practice	0	70 kilos	58.33%
OAP	0	50 kilos	41.67%
Total		120	

*16.66 yield difference of FPs to OAP

*OAP-Organic Agricultural Practices

Table 6a. Cost and return on investment of Vermicompost production

I. INPUT	AMOUNT (Php)
A. Labor cost	
Construction of 3 vermi-beds	
3 man @ 300/day x 3 days	2,700.00
Substrate preparation	
1man @300/dayx45days	13,500.00
Harvesting	
1man @300/dayx15 times	4,500.00
B. Materials	
Construction materials	17,062.00
African Knight Crawler	8,400.00
Total Expenses	46,162.00
II.OUTPUT	
A. Production	
Vermicompost @ 40 kls.per bag	225
African Night Crawler	6
B. Gross sale	

Vermicompost @Php400.00/bag	90,000.00
African Knight Crawler @ 700.00/kilo	4,200.00
Total Gross sale	94,200.00
III. NET INCOME (Php)	48,038.00
IV. RETURN ON INVESTMENT (%)	104.64 %

Table 6b. Cost and return on investment of the three (3) crop establishments

Particulars	First establishment	Second establishment	Third establishment
I. LABOR COST			
A. Land preparation 2-man/day @300/day	600.00	300.00(1 man)	600.00
B. Transplanting 3-man/day@300/day	900.00	300.00(1 man)	900.00
C. Trellising 3-man/day@300/day	900.00	-	-
D. Irrigation 1man/day@300/dayx16times	4,800.00	1,600.00	1,600
E. Fertilization 1man/day@300/dayx3times	900.00	900.00	900.00
F. Harvesting 1man/day@300/dayx30times	9,000.00	9,000.00	600 (2man)
Sub-Total	17,100.00	12,100.00	4,600.00
II. INPUTS			
A. Seedlings Tomato- 1tray@Php180.00/tray	180.00	N/A	N/A
Bell pepper- 1tray@Php180.00/tray	180.00	N/A	N/A
Eggplant 1tray@Php180.00/tray	180.00	N/A	N/A
Lady's Finger 2tray@Php180.00/tray	N/A	360.00	N/A
Corn Vermicompost 12 kilos@Php9.00/kilo	N/A	N/A	500.00
Knapsack Sprayer	108.00	135.00(15kls)	135.00 (15kls)
Plastic mulch	500.00	500.00	500.00
	2,000.00	N/A	N/A
Sub-Total	3,148.00	995.00	1,135.00
Total Expenses	20,248.00	13,095.00	5,735.00
II. OUTPUT			
Total Yield Bell pepper	25kilos	N/A	
Eggplant	80kilos	N/A	N/A
Tomato	150kilos	N/A	
Lady's Finger	N/A	400kilos	
Corn	N/A	N/A	120kilos

Gross sale			
Bell pepper @ Php150/kilo	3,750.00		
Eggplant @ Php110/kilo	8,800.00		
Tomato @ Php120/kilo	18,000.00		
Lady's Finger @ 80/kilo	N/A	32,000.00	
Corn @ 50/kilo	N/A	N/A	6,000.00
Total Gross sale	30,550.00	32,000.00	6,000.00
III. NET INCOME (Php)	10,302	18,905.00	265.00
IV. RETURN ON INVESTMENT (%)	50.87%	144.36%	4.62%