# THE ILOCOS SUR ORGANIC FARMING PROGRAM

*Avelino B. Felicitas, Jr., Ed. D.*

## RATIONALE

Tho frequent application of commercial inorganic fertilizers in our field has brought a tremendous depletion and degradation of the soils fertility and quality.

Barrera in his book, 'The Soil Around Us" claimed that Sahara Desert, once a fertile land in the early days, served to be the source of the food stuff of the Romans, but the inhabitants and owners were unable to preserve and conserve the productiveness of their land that led to its present status as the widest desert in the universe."

Aware of the detrimental effect of the continuous application of chemically manufactured inorganic fertilizers, the Governor then, Hon. Mariano "Marianing" M. Tajon initiated the launching of the Ilocos Sur Organic Farming Program on March 14, 1991. This program aimed to restore the organic matter content of our soils improving its texture and structure making it more porous and friable for increased fertility and water-holding capacity, This step was intended for greater productivity.

## PROGRAM IMPLEMENTORS

After the formal launching of the program, the Governor then convened a meeting of all Municipal Mayors, Municipal Chainnen of Agriculture and Fishery Council, and Heads of the different Provincial and National Government Agencies on March 26, 1991 to explain the rationale of the program.

After the deliberation with the Provincial Executive, there was a Memorandum of Agreement prepared and signed by twenty-five agency heads who committed their unending support by designating a representative/s of their respective agency to assist the Provincial. Government in the successful implementation of the program.

## ORGANIZATIONAL STRUCTURE

The present organization structure of the Ilocos Sur Organic Farming Program comprises the following:

A. Executive Board

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|---|---|
| Chairman | Gov. Luis "Chavit" Singson |
| Members | Vice Gov. Deogracias "Victor" Savellano |
| | Ist Dist. Cong. Mariano M. Tajon |
| | 2nd Dist. Cong. Eric D. Singson |
| | Mayor's League Pres. Grace D. Singson |
| | Vice Mayor's League Pres. Jeremias Singson |

## B. Board of Directors

Chairman..... SP Member Efren Rafanan, *Chairperson, Committee on Agriculture*

Vice Chairmen..... SP Member Eva Marie S. Medina, *Co Chairperson, Committee on Agricuinure*
Mr. Teodoro T. Salvador, Jr., *Provincial Agricultural Officer*

Members Chairman, Provincial Agriculture and Fishery Council Vice President,Mayor's League Vice Pres., Vice Mayor's League

## C. Action Officer

Mrs. Virginia C. Rabaca,
*Assistant Provincial Agriculturist, Provincial Agriculture Office (PAO)*

## D. Secretariat

Provincial Agriculture Office

## E. Technical Working Group

Overall Chairman .... Mr. Maximo T. Villafuerte, *Supervising Agriculturist, PAO*

Sub-Committee on Green Manuring (GM)
Chairman Dr. Avelino B. Felicitas Jr. *Professor II/Agri-Business Research Coordinator, UNP*
Member..... Mr. Gerardo R. Rabe, *Agricultural Development Staff, PAO*

Sub-Committee on Legume Inoculation (LI)
Chairman Dr. Arnoldo U. Racadio, *Vocational Instruction Supervisor III, ISAC*
Member Mr. Primitivo Agbisit, *General Education Supervisor I, DECS-DO*

Sub-Committee on Bio-Pest Management (BM)
Chairman **Mr.** Constante Botacion, Jr. *Agriculturist II, PAO*
Member **Mr.** Pedro M. Ricablanca, *Associate Professor III, UNP*

Sub-Committee on Rapid Composting (RC)
Chairman Ms. Imelda **A.** Recaido, *Chief, Soils Laboratory, PAO*
Member Mr. Ricardo P. Raguindin, *Instructor I, ISAC*

## F. Monitoring and Evaluation Committee

Overall Chairman Mr. Carlos Cachola, *Supervising Agrarian Reform Program Officer, DAR-PO*

**Team A -** (Sinait, Cabugao, San Juan, Magsingal, Sto. Domingo, San Ildefonso, San Vicente, Santa Catalina, Bantay, Vigan and Caoayan)

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|---|---|
| Team Leader | Mr.' Constante Botacion Jr., PAO |
| Members | Mr. Jose Paet, IPHO |
| | Ms. Noemi Susan Tecson, NFA |
| | Archt Benigno Alejandrino; DPWH I |
| | Mr. Alfonso Mendoza, PAO-BSP |

**Team B -** (Santa, Narvacan, Sta. Maria, San Esteban, Santiago, Candon, Santa Lucia, Santa Cruz and Tagudin)

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| Team Leader | Mr. Manuel Pascua, PAO |
| Members | Ms. Imelda A. Recaido, SL-PAO |
| | Ms. Eugenia Raguindin, DSWD |
| | Ms. Cecilia Reburon, PAO |

**Team C–** (Banayoyo, Lidlidda, San Emilio & Nagbukel)

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|---|---|
| Team Leader | Mr. Ricardo P. Raguindin, ISAC |
| Members..... | Mr. Maximo T. Villafuerte, PAO |
| | Dr. Arnoldo U. Racadio, ISAC |
| | Mr. Ben Pacris, PIA |
| | Ms. Florence Soria, PDS |
| | Ms. Nena Galamgam, DENR-V |

**Team D -** (Galimuyod, Salcedo, Sigay & Del Pilar)

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|---|---|
| Team Leader | Mr. Salvador Gines, NIA |
| Members | Dr. Avelino B. Felicitas Jr., UNP |
| | Mr. Vicente Reyes, Jr., NTA-V |
| | Mr. Conrado Racacho, Jr. PBO |
| | Mr. Renato Aquino, NTA-C |
| | Mr. Rufino Gaerlan. DENR-C |

**Team E -** (Burgos, Alilem and Sugpon)

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|---|---|
| Team Leader | Mr. Gerardo Rabe, PAO |
| Members | Mr. Primitivo Agbisit, DECS-DO |
| | Mr. Antonio Nolasco, DTI |
| | Mr. Pedro M. Ricablanca, UNP |
| | Mr. Henry Foronda, DENR-V |

Team F - (Suyo, Cervantes and Quirino)

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|---|---|
| Team Leader | Mr. Carlos Cachola, DAR-PO |
| Members | Mr. Joseph Tuzon, DILG |
| | Engr. Reynaldo Ablog, DPWH-II |
| | Ms. Virginia C. Rabaca, PAO |
| | Ms. Elsa Chan, DOST |

G. Municipal Mayors

H. Municipal Agricultural offer

I. Municipal Organic Farming **Program** Coordinators

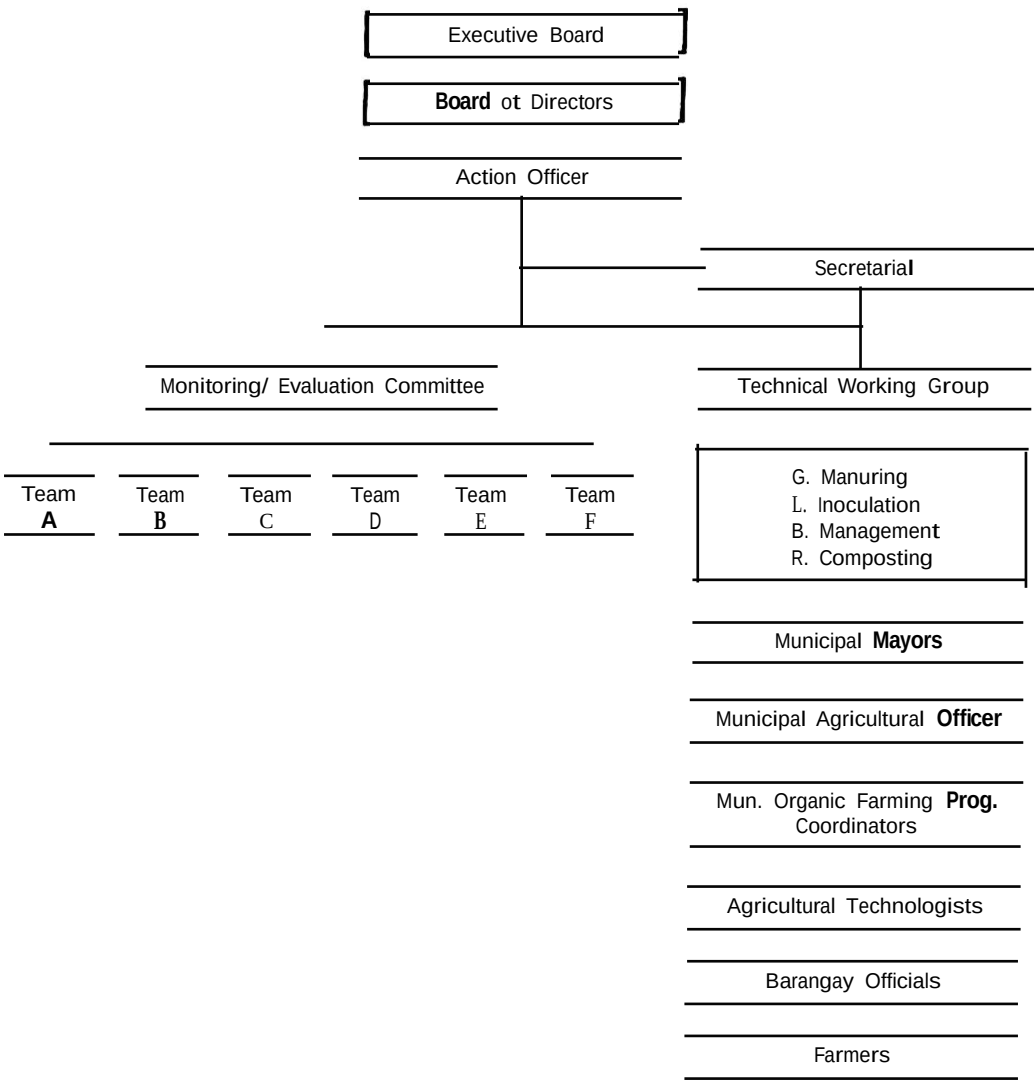
J. Agricultural Technologists

K. Barangay officials

L. Farmers

## FUNCTIONAL CHART

The functional chart of the Ilocos Sur Organic Fanning Program is illustrated as follows:



## COMPONENTS OF THE PROGRAM

There are four components of the program being implemented, namely: rapid composting, green manuring, legume inoculation and bio-pest management.

### I Rapid Composting

This is a process of enhancing or facilitating the decomposition of grasses, rice straw, animal manures, stubbles and other farm wastes with the use of a Compost Fungus Activator (CFA) or mold known as Trichoderma.

This improved composting method hastens the availability of organic fertilizer at a very low cost for a period of three to five weeks only as compared to the traditional method of composting which takes organic matter three to five months to decay.

Besides, rapid composting using CFA no longer requires the use of soil as source of microorganisms. In addition, filing of wastes in our backyard is minimized, and compost preparation is more easily done.

Materials Needed in Rapid Composting

I) Compost Fungus Activator (Trichoderma); (2) Farm wastes (leaves/twigs of trees, rice straw, rice hull, sugarcane bagasse and grasses); (3) Kitchen wastes (peelings of fruits/vegetables); (4) Animal manures

**Plants** Rich in Nutrients Tnat Are Used in **Rapid** Composting

In order to produce a compost rich in nutrients, there is a need to use a combination of plants rich in carbon and nitrogen.

I. Plants rich in carbon: rice straw, cogon, talahib, sugarcane bagasse, grasses such as, kulape, napier and paragrass.

2. Plants rich in **Nitrogen:** ipil-ipil, katuday, kakawate and acacia leaves, azolla, hagonoy (bolasting), indigo (tayum), katkatuday, legumes (string beans, lima beans, soybeans, hyacinth bean, winged bean, rice bean, mung-bean and peanut), fresh water weeds (baging ilog or ballaiba).

3. Wastes rich m Nitrogen, Phosphorous and other Minerals: animal wastes, bones, feathers.

Steps to Follow in Rapid Composting

I. Construct a platform (papag/ballitang) with a guardrail out of local materials available in your surroundings like wood, bamboo, bayog, bikal, bulo, etc. A one-foot clearance from the ground level should be provided for aeration to facilitate decomposition. Construct the platform near the area where you are to use the compost. In rice paddies, utilize one comer for the said purpose. If you are to use the compost to fertilize bearing fruit trees, construct your composting platform in the orchard or near the trees to be applied.

2. Collect grasses, straws, leaves, twigs, and other stubbles just after the downpour of rain or early in the morning when they are still wet. This will minimize time and labor in soaking the substrates before piling them. If the substrates are dry, soak them in water for at least 6 to 12 hours in orfer to induce the multiplication of micro-organisms that help hasten decomposition.

3. Cut the grasses, straws, leaves, twigs, and other wastes into small pieces. Although cutting **the** substrates is not compulsory, this may be helpful because the smaller the substrates are cut, the easier will they decompose.

4. Pile the substrates in the platform. Substrates rich in carbon and nitrogen or animal manures should be piled one after the other. This method of piling hastens decomposition of substrates and increases the nitrogen content of the compost or finished product.

5. Spread the compost fungus activator (CFA) or trichoderma thinly over the surface

of the pile of substrates and arurnal manure. Repeat the same procedure until the composting platform is completely filled as illustrated hereunder following the ratio of 80 kg. substrates rich in carbon (c) and 20 kg. substrates rich in nitrogen .(n) to a 1 kg. of trichodenna.

**Legend:**

= - cover of the compost file
- trichoderma (compost fungus activator)·
nnn - substrates rich in nitrogen (animal manure, leaves of ipil-ipil, kawkawate, katkatuday, sunflower, hagonoy, legumes, etc.)
cc - substrates rich in carbon (straw, grasses, water lily, etc.)
BBB - basement of platform
- ground level

6. After filling the platform, cover the side and top with coconut/banana leaves or plastic/sacks to prevent the rapid evaporation of moisture thereby reducing the frequency of watering the pile.

7. If the pile gets *dry* because of high temperature that causes rapid evaporation of moisture, it is advisable to water the pile at least once a week.

8. After two weeks, when about one third of the pile was left, turn the pile to hasten uniform decomposition of the different materials.

9. After 28 to 32 days, the temperature of the pile has already subsided which means that the compost is ready for use. It has a blackish-brown color and without foul odor. A 50 to 60 percent compost will be obtained or produced from a 100 kilogram mixture.

10. If the compost is not utilized immediately, you can dry them under the sun or pile in a dry shed for future use. You may also place or stock the compost in sacks ready for future application. Based on researchers, the nutrient composition of the compost is stable within a period of six months.

How to. Use Compost

1. Rice, corn and other cereals. Apply basally the compost during pudling or final land preparation so that it will be mixed thoroughly into the soil.

2. **Annuals.** Apply the recommended amount of compost in furrows during hilling-up in order to supply ample nutrients for the growth and development of the crops.

3. **Fruit trees.** Prepare holes around each tree and place the compost which is adequately suppliesthe needed nutrients for each plant

**Reminders in the Use of** Compost.

1. In the first year of compost utilization, do not apply pure compost. You may still use inorganic fertilizer, but reduce the amount by 25% making the ratio 0f 25% compost and 75% inorganic fertilizer.

2. During the second year, when the available nutrients present in the compost applied during the first year has come out, make use of the ratio of 50% compost and 50% inorganic fertilizer.

3. With the continuous utilization of compost mixed with inorganic fertilizer, employ a ratio of 75% compost and 25% inorganic fertilizer in the third year. In the fourth year you may now safely shift to the use of pure compost in your field.

Nutrients Obtained from Compost

*As* source of important food nutrients, a compost has an analysis of 3.99% nitrogen, .65% phosphorous, and 4.48% potassium. Aside from the three essential elements, it also contains iron, aluminum, manganese and zinc.

Compost likewise provide food nutrients of useful microorganisms in the soil.

**Where** to Secure Trichoderma for Rapid Composting

In Ilocos Sur, Trichodermna or Compost Fungus Activator (CFA) for rapid composting can be secured at P 8.00 per kilogram from the following Production Centers:

1. Provincial Agriculture Office, Vigan, Ilocos Sur;

2. Ilocos Sur Agricultural College, Santa Maria, Ilocos Sur,

3. Candon Multipurpose Cooperative, Candon, Ilocos Sur; and

4. Tagudin Credit Cooperative, Tagudin, Ilocos Sur.

## II Green Manuring

Green manuring refers to the planting of leguminous plants or other indigenous plants rich in nitrogen in the field and plowing them under during their blooming stage.

Terms Related to **Green** Manuring

1. **Green** Manure. Any part of a plant (leaves, vine, twigs, flowers or fruits) plowed under or mixed with the soil when still green then decomposed to improve the quality and fertility of the soil.

2. Intercropping. It is the planting of leguminous plants in between the primary crops in order to restore the nitrogen content of the soil.

3. Relay Cropping. It is the planting of short season crops preferably legumes in between 'the major crops before they mature in order not to leave the field bare or vacant but instead increases income due to additional production from the secondary crops.

4. Cover Cropping. It is the planting of creeping plants in the field like sweet potato and lima beans in order to prevent the rapid evaporation of moisture and lost of soil particle due to strong wind and run-off water.

5. Crop Rotation. It is the planting of different crops in the same field in succession every year or every cropping season.

6. Multiple **Cropping.** It is the planting of different crops in the same field for **a** variety of production and higher income.

Importance of Green **Manuriag**

1. Green manuring supplies the soil with nitrogen.

2. It increases the organic matter content of the soil making it more friable and fertile, and increases its water-holding capacity.

3. There is no need of hauling the fertilizer because this is already in the field.

4. It does not require much capital. Youonly need an amount to buy seeds or planting materials.

5. The plants will act as much of the field, hence, moisture and organic matter content of the soil are conserved and preserved.

6. Soil erosion is prevented or minimized.

7. Plants used as green manure supply foods for microorganisms useful in converting carbon, nitrogen and other nutrients into available form.

8. Green manure crops like legumes maybeused as intercrops without affecting the yield of the major crops like com, tobacco and others.

9. Planting green manure crops during the dry season instead of leaving the soil idle will conserve the fertility and moisture content of the soil.

**Plants** Recommended for Green Manuring

1. Legumes (string bean, lima bean, mungbean, peanut, swordbean, rice bean, soy bean, hyacinth bean, winged bean, kentucky bean, snap bean, etc.)
2. Indigo or tayum
3. Azolla
4. Hagonoy or bolasting
5. Sesbania rostrata (katkatuday)
6. Leaves of ipil-ipil, acacia, kawkawate, katuday
7. Sweet potato (camote)

Characteristics of Plants to be Used in Green **Manuring**

1. Plants for green manuring must have succulent stems and with a life span of one **year or** less for easier decomposition.

2. They are grown in soils with low fertility or it can be grown without applying fertilizer.

3. They are grown in unprepared field or even broadcast or drilled only.

4. They must be resistant to pest and diseases so that chemical spray loved to lessened.

5. If possible, they must cover the soil before climbing other plants or objects.

6. They can be grown even in pretty shaded areas.

7. They could be utilized for animal and human consumption if possible.

8. Seeds or planting materials should be easily procured or made available at planting time.

9. They should be easily incorporated into the soil for faster rotting decomposition.

Steps to be Followed in Green Manuring

1. Prepare the land thoroughly as practised by the farmers in the locality by plowing and harrowing the field two or three times depending on the type of soil.

2. Inoculate the legume seeds before planting in order to obtain higher germination percentage and better growth performance.

3. Plant the inoculated seeds in uniform distance and rate in the field with ample moisture.

4. Apply phosphorous and potassium **in** recommended rate. There is no need to apply nitrogen because legumes could produce the amount of nitrogen they need.

5. Plow under the plants at their blooming stage so as to incorporate them in the soil for faster decomposition.

Important Reminders in Green Manuring

1. In fields of scarce moisture, be careful in the use of green manure crops because they might utilize all the remaining soil moisture.

2. The best time to plow the field is when the plants are at their blooming stage because of the succulent stem. Hence, do not wait for the plants to mature.

3. If green manure crops are intended for rotation, care should be observed in order not to destroy the cropping pattern because legumes have different life span.

4. If plants are intended for green manuring, do not allow them to bear fruits or mature then uprooted for animal feeds.

## III Legume Inoculation

Legume inoculation is a process of treating the seeds of legume with microorganisms known as Rhizobia in order to enhance germination and resistance to pest and diseases. In short, it refers to the immunization of legume seeds.

Effects of Nitrogen to Plants

1. It enhances plant growth
2. It gives the dark green color of leaves of plants
3. It aids in the production of seeds
4. It makes the roots and stem of plants like lettuce and radish succulent

**Ways in Which Nitrogen is Lost from the Soil**

1. Volatilization (evaporation of fertilizer nutrients)
2. Leaching (downward movement of nutrients carried by percolating water)
3. Utilization of higher crops (fruit and forest trees)

Effects of Nitrogen Deficiency in the Soil

1. It turns the soil unproductive.
2. It lowers production.
3. It increases cost of production.
4. It destroys the soil.

Why do we need to Inoculate **Legume Seeds?**

We need to inoculate seeds of legumes before planting in order to utilize the 80% nitrogen found in the atmosphere.

How does Nitrogen in the Atmosphere **Utilized?**

1. Through the symbiotic relationship af legumes and microorganisms.

2. Legumes possess root nodules which serve as storage/living place of microorganisms.

3. Legumes produces sugar which serves as food of microorganisms during **the process** of photosynthesis.

4. Microorganisms absorb nitrogen in the atmosphere to be utilized by the plants.

**Advantages of Legume Inoculation**

1. Legume inoculation ensures the introduction of effective nitrogen-fixing bacteria specific to the legume to **be** planted and increases the quantity of beneficial microorganisms in the soil.

2. It enriches the soil with organic matter rich in nitrogen thereby improving the quality of the soil.

3. It prevents the early shortage of nitrogen in the soil.

4. It improves the quality of **crops and** increases grain yield.

5. It minimizes or even eliminates the need for the application of nitrogenous fertilizer.

6. It increases net profit per unit area cultivated.

**Steps** in **Inoculating Legume** Seeds

I. Place the seeds to be inoculated in a container wide enough for mixing.

2. Moisten the seeds with water just enough to wet them.

3. Add inoculant to the moistened seeds.

4. Mix the seeds and the inoculant thoroughly until all seeds are covered with inoculant. Be sure that the seeds are not exposed to sunlight

5. Plant the inoculated seeds immediately in **a moist** soil or within 24 hours after inoculation.

6. For better results, have your soil analyzed in order to determine the need to apply lime/fertilize r.

7. One packet of 100 grams inoculant is enough to inoculate 25-30 kilograms of legume seeds, while 10 grams packet is good for 2 to 3 kilograms seeds.

**Reminders** for **a** Successful Legume Inoculation

I. Use the right inoculant for every legume.

2. Store the inoculant in a cool dry place until it is used.

3. Follow directions in mixing the inoculant with the seeds.

4. Always inoculate legume seeds when planting on a newly opened area.

5. Remember to plant the inoculated seeds within 24 hours after inoculating.

Sources of **Legume** Inoculant

I. Bureau of Soils, Maria Orosa St., Ermita, Manila.

2. Bureau of Soils, Aguila Rd., San Fernando, La Union.

3. Regional Soils Laboratory, Department of Agriculture, San Fernando, La Union

4. Soils Laboratory, Dagupan City

5. Soils Laboratory, Baguio City

6. Soils Laboratory, Vigan, Ilocos Sur

7. Soils Laboratory, Batac, Ilocos Norte

## IV **Bio-Pest** Management

Bio-pest control and management refer to the utilization of living organisms to control or repel the attack of destructive organisms/pests/insects/diseases.

Principles of a Successful Bio-Pest Management Program

1. Maintain a minimal number of crop enemies so as to maintain field infestations.

2. Kill or paralize pest and insects that are very destructive without killing or paralyzing the beneficial and useful pest/insects.

3. Reduce farm inputs withoput sacrificing the yield in order to obtain higher profit

Different Ways of Controlling Pests

*I. Cultural*

a. Proper timing in planting
b. Thorough land preparation
c. Clean culture
d. Proper planting density

e. Crop rotation
f. Light trapping
g. Flooding
h. Settlement on uncultivated areas
i. Using certified seeds of imrnuned and resistant varieties

*2. Mechanical*

a. Use of scythe, bolo, grub hoe, rake in eradicating weeds
b. Use of rotary weeder
c. Hand picking of insects/pests
d. Catching insects/pests with a net or trap
e. Burning
f. Pruning infected parts of plants
g. Driving insects/pests into pits
h. Jarring affected plants

*3. Bio-ecological*

a. Determining the natural resistance of pests
b. Determining the economic threshold level
c. Knowing the economic injury level

*4. Biological*

a. Use of cat, dog and snake versus rats
b. Frogs and snakes versus insects
c. Birds versus insects
d. Parasites versus insects/pests
e. Ladybird beetles verus aphids/plants lice
f. Irachinid fly versus army worm
g. Trichograma versus com borer.

*5. Chemical*

Around us are plants that are good sources of pesticides when prepared and used properly such as the following:

a. Tomato. Extract fruits and sten juices, mix with small amount of water and use as spray to control beetles, aphids, and caterpillar in cabbage, cauliflower and roses.

b. Hot pepper. Smash matured fruits, add water, strain and use as spray or spread in storage area to control chewing insects, weevils and other storage pests.

c. Lagundi (dangla). Leaves are smashed and spread around where pest abound to control pest of arnpalaya, storage pests of garlic and onions, aphids, and repellant to mosquitoes and mites of chickens.

d. Madre de cacao (kawkawate). Fresh leaves are rubbed or massage against the body of animals to control lice or extract the juice of the leaves and barks of and spray to control plant hopper, flies and casewonns.

e. Makabuhay. Pound roots, stem and leaves to extract juice, mix with water and spray to control aphids, moths, worms, flies and some beetles.

f. Tobacco. Midribs, leaves and stem are soaked in water to extract juice and use as spray to repel or control chewing insects, aphids and mites:

g. Citrus. Leaves are smashed and spread around stored garlicm or mix the peelings with palay before storing to control weevils.

h. Marigold. Powder flower, roots and leaves then soak in water and spray or spread the powdered roots and leaves around stored garlic to control nematodes, flies, green hoppers, diamond black moth and other storage pests.

i. Red Onion. Pound the cloves and extract the juice. Add water and use as spray to control cercospora, colleotrichum, fusarium and helminthesporium species.

j. Garlic. Extract juice of cloves by boiling water and use as spray to control alterriara, cercospora, burbularia, diplodia, fusarium and helminthesporium species and other chewing insects.

k. Ginger. Pound rhizomes, soak in water and use as spray to control cercospora and colleotricum species.

I. Ipil-ipil. Pound leaves, soak in water and spray to control artenaria, helminthesporium, and pestalotia species.

m. **Papaya**. Pound leaves, soak in water and use as spray to control cercospora and diplodia species.

n. Horse radish (malunggay). Pound leaves, soak in water and use as spray to control diplodia, pestalotia and alternaria species.

o. Makahiya **(Bainbain).** Pound leaves, stems and roots, soak in water and use as spray to control diplodia and pestalotia species.

p. Herbabuena. Pound leaves and stem, soak in water and use as spray or pounded leaves are scattered around stored products to control cercospora species and other storage pests.

**q. Neem tree.** Pound 20 to 50 grams of neem kernels then soak in a liter of water overnight Filter and use the solution as spray to control leafhoppers and reduce rice tungro virus infection. The leaves are spread in food storage compartments to drive cockroaches, silverfish, moth and other storage insects. It could also control the following insects: Beetles, aphids, weevils, diamond back moth, stemborers, army worm, nematodes, mites, grasshopper, migratory locust, tobacco budworm, rice and corn borers, leafhoppers, termites, leafminer, fruitfly, cabbage webworm, bacterial wilt of cucumber, cotton strainer, rice leaf folder, rice brown plant hopper and bugs. A fair size of neem tree is enough to provide pest control materials for a hectare of ricefield.

**ACCOMPLISHMENTS**

(Year 1- 1991)

To enhance the promotion of the program during its first year of implementation, the Provincial Government sponsored a contest on-farm demonstration projects as rapid composting and utilization of compost as fertilizer. There were 454 demonstration farms established in the 34 municipalities of the province that were monitored and evaluated by **the** members of the Technical Working Group.

Awarding Ceremonies was held at the UNP Gymnasium on December 9, 1991 with Hon. Senen C. Bacani, Secretary of Agriculture as Guest of Honor. The awardees **were** the following:

A. Fanner-Cooperator Category

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|---|---|
| First Prize | Rogelio Dato<br>*Danglayan, Santa Maria* |
| Second Prize ..... | Luz Rosario<br>*Cabaroan, Santa maria* |
| Third Prize | Benjamin Anga-angan<br>*Caburao, Santiago* |
| Fourth Prize | Delfin Escobar<br>*Ambugat, Burgos* |
| Fifth Prize | Solomon Abella<br>*San Antonio, Narvacan* |
| | Bernardo Trinidad<br>*San Nicolas, San Esteban* |

**B. Barangay Category**

| | |
|---|---|
| First Prize | Muraya East, San Juan |
| Second Prize | Cabaroan, Santa Maria |
| Third Prize | Tinaan, Santa Maria |
| Fourth Prize | Laslasong, Santa Maria |
| Fifth Prize | Dunglayan, Santa Maria |

c. Agricultural Technologist's Category

| | |
|---|---|
| First Prize | Virginia Delirio<br>*Santa Marla* |
| Second Prize | Fortunata Siruno<br>*San Juan* |
| Third Prize | Resurreccion Dizon<br>*Santa Maria* |
| Fourth Prize | Melita Santiago<br>*Santa Maria* |
| Fifth Prize | Jose Romero<br>*Santa Maria* |

**D.** Municipal Agricultural Officer's Category

| | |
|---|---|
| First Prize | David Bacolod<br>*Santa Maria* |
| Second Prize | Avelino Andrada<br>*San Juan* |
| Third Prize | Josefa Borre<br>*Magsingal* |
| Fourth Prize | Samuel Vallejo<br>*Sinait* |
| Fifth Prize | Eleuterio Inovejas<br>*Cabugao* |

The Provincial Government generously gave cash prizes and a trophy each to the top five winners in each category. Likewise, Certificates of Recognition were awarded to 24 Support Agencies and 22 Agency Representatives.

Results of the on-farm demonstration showed an average increase of 15 percent in yield over that of the Canners practice. Most of the demonstration farms yielded a computed production of more than 100 cavans per hectare.

Trainings in Rapid Composting were conducted in the 34 municipalities of the province. These were attended by 822 farmer-leaders, 255 agricultural technologists, 34 Municipal Agricultural Officers, and 34 Municipal Agriculture and Fishery Council Chairmen. Re-echo trainings were conducted by the Agricultural Technologists in their respective Barangay coverages.

At the end of 1991, there were 7,915 **k** of produced by four (4) Compost Fungus Activator Production Centers. These include the 1,000 kilograms procured from Bacnotan, La Union. About 4,975 kilograms were distributed in the 34 municipalities of the province. These were used in demonstration farms monitored and evaluated by the Committee on Monitoring and Evaluation.

Year 2 - 1992

In its second year of implementation, **the** Organic Farming Program in Ilocos Sur showed an aura of success. The Technical Working Group achieved remarkably **in** its scheme of implementing the program such that **farmer** leaders participated actively and religiously in the promotion campaign.

During the first regular meeting in January, 1991 the Organic Farming Program Technical Working Group (OFP-TWG) have included the following in their 1992 Workplan the following:

1. Training of Industrial Arts teachers, allied agencies and other farmer leaders and agricultural students;

2. Conduct of Organic Farming Program School-on-the-Air to be highlighted with Daniw and Question and Answer contests;

3. Establishment of a 3-year comparative study on the use of compost versus farmer fertilizer practice, re: 1st year - *50%* compost + *50%* chemical fertilizer; 2nd year - 75% + 25% chemical fertilizer; and 3rd year - 100% compost, no chemical fertilizer;

4. Establishment of a Mini-Compost Processing Plant; and

5. Monitoring and Evaluation of Research Demonstration Farms.

Training. Five strategically located municipalities (Magsingal, Vigan, Santa Maria, Candon and Tagudin) were chosen as training venue to cover the 34 municipalities of the province. Trainings were conducted on Febuary 17-21, 1992 to disseminate the technology of the four components of the program, namely: rapid composting, green manuring, legume inoculation and bio-pest management. There were 407 participants, of which 174 were farmer-leaders, 111 Parctical Arts Teachers, 53 Agricultural Technologists, and 69 College students.

School-on-the-Air **Program.** Airing the Organic Farming Program was launched on April 18, 1992 at Radio Station DWRS from 12:00 noon to 1:00 in the afternoon every Saturdays and Sundays, and at Radio Station DZXE from 12:00 noon to 1:00 in the afternoon every Friday.

There were 2,563 enrolees, 2,100 were rice farmers; 311, tobacco growers; and 63 college students.

Phase 1 of the contest was the Theory portion of the competition which comprises 30% of the total points for the Grand Prize Winner. Questions were aired by lecturers weekly for the participants to answer. Members of the Technical Working Group have to convene every Thursday of the week to select the winner.

Phase 2 was the Practicum where every enrolee in the radio program established a demonstration farm implementing the four components of the Organic Farming Program as aired: rapid compositing and compost utilization, gree manuring, legume inoculation, and bio-pest management. The practicum phase comprised 70% of the total points for the Grand Prize.

Likewise, each participant was encouraged to develop a "daniw" relevant to Organic Farming. Weekly winners were also determined every Thursday of the week when the members of the Technical Working Group convened.

The Provincial Government allocated **P** 21,000.00 in cash for the Grand Prize Winners up to the 4th runner up. A **P** 500.00 cash prize for each participating municipality was also appropriated.

After thorough monitoring and evaluation of the participants, the Committee, declared the following winners:

| | |
|---|---|
| Grand Prize | Raul Corpuz, *Santa, Ilocos Sur* (P 10,000.00 cash prize + Trophy) |
| 1st Runner-up ..... | Conrado Tamargo, *San Vicente* (**P** 5,000.00 cash prize + Trophy) |
| 2nd Runner-up ..... | Roger Realinam, *San Vicente* (**P** 3,000.00 cash prize + Trophy) |
| 3rd Runner-up ..... | Jesus Lacasandile, *Tagudin* (P 2,000.000 cash prize + Trophy) |
| 4th Runner-up | Cipriano Navarro, *San Vicente* (P 1,000.00 cash prize + Trophy) |

Thirteen enrolees were awarded **P** 200.00each as weekly winners for the Question and Answer portion. For the Daniw Contest, eight weekly winners won **F** 200.00 each.

Aside from the stated weekly winners **in** the question and answer portion of the OFP School-on-the-Air, 150 consolation prizes of **F** 100.00 each were also awarded, 50 each for the months of May, June and July, 1992. Similarly, 12 participants were individually awarded a consolation prizes of **F** 100.00 for the Daniw Contest.

Twenty-four farmers from participating municipalities were also awarded P 500.00 each as consolation prizes, while Miss Gina Cambel, student of the Ilocos Sur Agricultural College, Santa Maria, Ilocos Sur pocketed the **P** 1,000.00 Grand Prize for the student category.

Plaques of Recognition were likewise awarded to the different support agencies and their representatives and a similar award was handed to former Sangguniang Panlalawigan Member Jose C. Divina as the past Chairman of the Committee on Agriculture in the province who did his best in the first year of implementation of the program.

The Awarding Ceremonies was held at the Farmers Training Center, Ilocos Sur Agricultural College, Santa Maria, Ilocos Sur on December 16, 1992 where Director Rogelio V. Signey of the Department of Agriculture, Vice Governor Deogracias Victor Savellano and SP Member Heredio O. Bello, Jr. were some of the honored guests.

The implementation of the Organic Farming Program in the province in its second year showed a significant impact for it yielded 1,151 farmer-adaptors of compost as fertilizer utilized in rice, com, vegetable and fruit tree production. One hundred fifty-five (155) farmers implemented green manuring; 1367 practised bio-pest management; and 99 legume growers inoculated their seeds.

The three-year comparative study on the use of compost fertilizer from that of the farmers fertilizer practice started in 1992. The study embraced five project cooperators with a 1000 square meter fann in every municipality. Five hundred square meter area was utilized for the farmer fertilizer practice, while the remaining 500 square meter was applied with 50% compost and 50% chemical fertilizer. The growth and yield performance of the crop was compared.

Results of the first year of the research project showed a very promising outcome and hopefully with the viable data gathered, farmers could already shift to pure organic farming venture on the fourth or fifth year of the program.

Initially, there were three Compost Fungus Activator Production Centers in the province, namely; DA Vigan Soils Laboratory in Vigan, Ilocos Sur Agricultural College in Santa Maria, and the Candon Consumers Cooperative in Candon. In addition, the Tagudin Mulit-Purpose Cooperative Inc. in Tagudin and the BAExt Building of the DA in Bantay were lately activated to help bolster the production of CFA to cope up with the needs of the province.

Production of CFA lagged during the rainy months in some of the production centers which were supported by the production of some centers as shown in the data of production and distribution hereunder:

| CFA Production Centers | Production | Distribution |
|---|---|---|
| DA Soils Laboratory | | |
| Vigan, Ilocos Sur | 7640 kg. | 4463 kg. |
| ISAC, Santa Maria | 825 kg. | 1546 kg. |
| CCI, Candon | 100 kg. | 187 kg. |
| MPCI, Tagudin | 2872 kg. | 1644 kg. |
| BAExt. Bldg, Bantay | 2855 kg. | 1150 kg. |

The most common feedback aired by farmers relative to composting processes is the laborious procurement of substrates, watering of piles, and storing. Farmers were somewhat reluctant to spend the needed time and effort in making compost because of their multifarious activities on their farms. Hence, a Mini-Compost Plant was envisioned to be constructed at the vicinity of the Provincial Agriculture Office in Bantay to cater to the compost fertilizer needs of the farmers in the province.

All projects relative to the program were thoroughly monitored and evaluated. Agency representatives or members of the Technical Working Group were divided into six teams to cover the entire province as enumerated in the organizational structure of the program. Teams A and B covered the coastal municipalities, while Teams C, D, E and F covered the inland/upland (interior) municipalities.

The Ilocos Sur Organic Farming Program Technical Working Group and the Monitoring and Evaluation Committee scheduled their monthly

regular meeting every second Tuesday of the month which was usually chaired by the Sangguniang Panlalawigan Chairman for Agriculture: In the absence of the Chairman, the OFP Action Officer took his place. Special meetings were called every Thursday during the duration of the school-on-the-air program to streamline lectures, trace out and solve problems, and select winners of the different contests.

Year 3 - 1993

Members of the OFP Technical Working Group during their first regular meeting in January, 1993 have identified the following to be achieved for the third year of the Ilocos Sur Organic Fanning Program:

I. Completion of the Min-Compost Plant;

2. Production of quality compost fertilizer for use in the OFP research-demo projects;

3. Information dissemination through further training and radio programs;

4. Continuation of the Research Demonstration project in compost utilization by municipalities;

• *5.* Intensification of Compost Fungus Activator (CFA) production;

6. Establishment of Mini-Compost Processing Plants to be managed by Cooperatives; and

7. Monitoring and evaluation of demonstration-research projects of farmer-cooperators/ adoptors.

Mini-Compost Processing Plant

The OFP Mini-Compost Processing Plant excluding the compost racks was completed in February, 1993. racks. Compost production, however, was started in January, 1993 outside the plant. However with typhoon Goring in June, 1993, the Compost Plant was blown down, and reconstructed later with sturdier materials, and is now operational. About 150 bags of 50 kilograms per bag were produced during the year and 85% were distributed to Agricultural Technologists in support of the research/demonstration farms under their supervision/area of coverages. Production is on-going to support the Rice Action Program (RAP). Negotiation is also on-going for Tagudin Multi-Purpose Cooperative to establish a Mini-Compost Processing Plant using sturdy light materials. Likewise, the Provincial Government is vying to establish one **(l) Mini-**Compost Plant at Cervantes, Ilocos Sur and hope to be achieved in the Year 1994.

## TRAINING/SEMINARS

A total of 173 farmers, practical arts teachers, housekeepers, and out-of-school youth were trained in Organic Farming in Candon, and Vigan simultaneously on July 14, 1993. A batch of 116 participants composed of copperative members, barangay captains, SK Federated chairmen, and SB Agriculture chairmen attended a one-day Organic Farming Training on October 12, 1993 at the Girl Scout Building, Vigan, Ilocos Sur. Forty-two (42) Municipal Organic Farming Coordinators and members of the OFP Technical Working Group attended a 3-day training on Post-Harvest Technologies on November 9-11, 1993 sponsored by the Provincial Government in cooperation with the Agricultural Training Institute, Batac, ILocos Norte and the National Post-Harvest Institute for Research and Extension.

## RADIO PROGRAM

With the blessings of the Provincial Board, the Organic Farming Program School-on-the Air which was funded by the Provincial Government started on July 4, 1993 and ended on December 19, 1993. Airing time was 30 minutes per week (11:30AM-12:00N) at DZNS Radio Station every Sunday. Addi-

tional airing time of 30 minutes which started August to December, 1993 was done from 5:00PM-5:30PM every Friday at DZXE Radio Station. Funding of the said additional radio program come from the Countryside Development Fund of Hon. Mariano M. Tajon, Congressman of the First District of Ilocos Sur.

## RESEARCH/DEMONSTRATION FARMS

In 1993, 50% of the municipalities in Ilocos Sur established the second set of their research/demo. projects utilizing 75% compost and 25% inorganic fertilizer practice. The study was expected to end in the third year (1994) utilizing 100% compost for a more accurate assessment of compost on the productivity and profitability of our croplands. Research/demonstration projects were regularly monitored and evaluated by the members of the Technical Working Group.

The 1993 Harvest Festival was held in Rizal, Santa, Ilocos Sur on October 19, 1993 at the research/demonstration farm of Mr. Raul Corpuz, 1992 Organic Farming Program Grand Prize Winner. The affair was attended by Mr. Benjamin Ronduen of the Department of Agriculture, Regional Office-I, SP Member Efren Rafanan, Chairman, Committee on Agriculture, SP Member Orlino Tesoro, Ms. Margarita Fortuna, Superintendent of the ATI-FTC, Batac, members of the OFP Technical Working Group and Municipal Organic Farming Coordinators.

Utilization of 75% compost + 25% inorganic fertilizer made by Mr. Corpus in his demonstration farm yielded more than 100 cavans of palay which exceeded the potential yield of rainfed ricefields.

It is therefore conclusive that using compost produced through the utilization of CFA (Trichoderma) is beneficial and productive as compared to the farmers fertilizer practice. Hence, the campaign for the shifting from the farmers fertilizer practice to Organic Farming is gaining an accelerated momentum. Members of the Technical Working Group is expecting higher appropriation from the Provincial Government in the years to come for more reliable and viable results.