

Source: Korean Natural Farming System



Republic of the Philippines
Department of Agriculture
AGRICULTURAL TRAINING INSTITUTE
Regional Training Center-Cordillera Administrative Region
BSU Compound, La Trinidad, Benguet
TeleFax. No.: (074) 422-2375
e-mail: ati_car@yahoo.com;
URL: ati.da.gov.ph/ati-car

Mother Nature's Verdant Combination

Organic Concoctions

for Health and Eco-Friendly Farm

For more information, visit or call:



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Website : ati.da.gov.ph/ati-car
TeleFax : (074) 422-2375
E-mail Address : rtccar.dcc@ati.da.gov.ph

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INTRODUCTION

Modern agriculture or chemical farming has damaged our environment by contaminating our rivers, lakes, drinking water and clouds forming rain. These poisonous chemicals has killed not only insects but also fish, birds, useful small animals, microorganisms and some plants. These agricultural chemicals are killing humans too. Without microorganisms, the soil, will be lacking in other micronutrients needed by the body such as calcium, magnesium, iron, zinc, copper, selenium, manganese, vitamin C, vitamin A, vitamin B6, Folecin, vitamin E, potassium, etc. These are 23 elements needed for human health that come from the soil.

On the other hand, Organic Farming is the production of crops and livestock without the use of synthetic chemicals and inorganic fertilizers. Organic agriculture is healthy for the farmers who produce our foods, to the environment because it avoids poisonous chemicals, for consumers who eat the organic food. Organic Farming creates "Living Soil" full of life with microorganisms, fungi, worms and termites, very rich in macro and micro-elements, trace elements, and vital energy. Likewise, very rich in organic matter which are needed by plants.

Moreover, Organic Agriculture do not use pesticides. Because of this, the food produced are now called "Power Charged" foods. Organic foods contain more phyto-chemicals that are called "Medicinal Foods." Scientists from the Department of Food Science and Technology of the University of California-Davis discovered that fruits and vegetables grown organically can reduce the risk of heart disease, cancer and other diseases (Journal of Food Chemistry 57(5), 2003). According to these scientists, crops grown organically contain more polyphenolics than conventional crops possibly because they are not sprayed with any pesticides.

Releasing of Worms

- Release 1 kg of worms per square meter
- Reproduction rate: 2 fold after 30 days
- Avoid individual handling of worms
- Release a handful of materials rich in worm clusters into the bed



Care and Maintenance

- Watering is needed when necessary (but not too wet)
- Covering bedding with plastic sheet or banana leaves
- Practice proper feeding or organic matter (for easier reproduction/multiplication and to avoid out migration of worms)

Harvesting and Processing

- Vermicompost can be harvested 30-45 days after stocking with the appearance of black granules on top of the mound.
- Harvest on time to avoid loos due to build up waste and migration.
- Use screen sift the vermicast or separate earthworms manually
- Air dry your compost.



VERMICOMPOSTING

Vermicomposting is the process of producing organic fertilizer (vermicompost) using agricultural wastes through the digestive action of earthworms. It helps to avoid the environmental pollution and expenditure of resources to treat the organic waste. Vermicompost improves soil texture and enhances water-holding capacity of the soil.

Site Selection

Consider the following:

- Proximity to source of materials
- Availability of water
- Flood free
- Accessibility

Designed and Construction of Vermi Bed



- Ideal measurement: 5m x 2m x 0.2m (size and height varies depending on the area available)
- Hollow blocks, wood or stones, can be used as wallings.
- Provide protection against rain and direct sunlight

Preparation of Bedding and Coarse Materials

- Sawdust, rice husk, coffee husk, shredded paper or sacks may be used as bedding
- Finely chop organic materials such as crop residues, sawdust, grass/weeds, leaves of leguminous trees, banana trunk, etc. then place it over the beddings. Add animal manure preferably from cow, horse, rabbit, sheep, or goat. Kitchen waste could also be included except fats and oil, meat chlorinated water, citrus, peeling and the like.
- Add a little amount of soil or sand to enable the worms to digest their food.

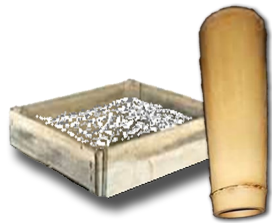
WHY ORGANIC?

- Organic systems recognize that our health is directly connected to the health of the food we eat. Going organic is not just food – it is a way of life. Do you know why more people are choosing organic?
- Many people think that organic food tastes extremely good.
- Organic systems aim to avoid the use of artificial chemicals, pesticides and fertilizers.
- Organic food is produced without the routine use of antibiotics
- Organic food is produced without genetically modified organisms (GMOs) which are prohibited in the Philippine National Standards (PNS) for organic food and farming.
- Organic systems reduce dependence on non-renewable sources.
- Organic systems rely on modern and scientific understanding of ecology and soil science, while also depending on traditional methods of crop rotations to ensure fertility and weed and pest control.
- Organic systems recognize that our health is directly connected to the health of the food we eat.
- Going organic is not just organic food – it is a way of life.
- For farmers: Organic farming is safe to the farmers and to the environment. Because of savings on external inputs and medical expenses, organic farming is more profitable in the short and long term.

INDEGENOUS MICRO ORGANISM (IMO)

- Revive soil nutrients
- Serves as foliar fertilizer
- Speeds up growth of plant
- Speed up composting
- Arrest foul odor and minimizes flies proliferation in poultry and piggery houses
- Additive for drinking water of livestock and pets
- Serves as probiotics to prevent diseases, pathogens and epidemic development in poultry and livestock thereby reducing the use of biologics and antibiotics.

How to make the concoction

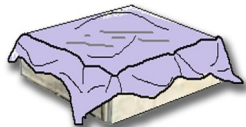
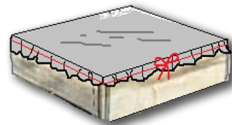


1

Put cooked/steamed rice, sweet potato, cassava or gabi in a wooden box or perforated plastic tray that is 8.5" x 11" x 3" or length of a bamboo pole open or split open on one side. Make sure there is enough moisture in the box. Fill half of the container. Do not compress.

2

Cover the box, tray or bamboo with a clean sheet of paper and tie with a string. Label the box indicating when the concoction was prepared and the day it will be harvested.



3

Cover and wrap with plastic to keep out rainwater, protect from wild rats or small rodents that may interfere or destroy its contents.

4

Bring box or collect molds from forest floors, bamboo plantation, rice paddy, banana or coconut plantation.



FUNGICIDAL PLANTS

Papaya (*Carica papaya*)

Parts to be used: Leaves

Mode of Preparation and Application

- ✓ Pound, soak in water and use infusion as spray.

DISEASES CONTROLLED

- | | |
|------------|---|
| Cercospora | Leafmold, leaf spot, early blight, frog-eye |
| Diplodia | Fruit and stem rot |



Garlic (*Allium sativum*)

Parts to be used: Cloves

Mode of Preparation and Application

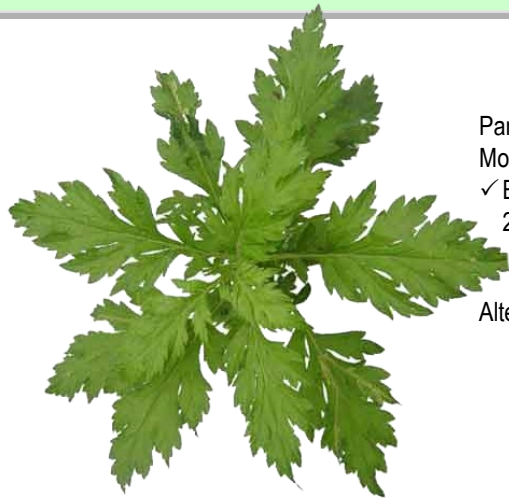
- ✓ Chop finely, soak in 2 tablespoons of oil for one day then mix with half a liter of soapy water and filter.
- ✓ Mix 1 part solution with 20 parts water, then spray.

DISEASES CONTROLLED

- | | |
|------------------|---|
| Alternaria | Fruit rot, early blight, purple blotch, leaf spot |
| Cercospora | Leafmold, leaf spot, early blight, frog-eye |
| Colletotrichum | leaf spot, anthracnose, fruit rot, smudge |
| Curvularia | Leaf spot, leaf blight |
| Diplodia | Fruit and stem rot |
| Pestalotia | Leaf spot |
| Fusarium | Damping-off, stem and root rot, early blight |
| Helminthosporium | Leaf blight |



FUNGICIDAL PLANTS



Damong Maria (*Artemisia vulgaris*)

Parts to be used: Leaves
Mode of Preparation and Application
✓ Extract juice and use as spray at a rate of 2—5 tablespoon juice per liter of water.

DISEASES CONTROLLED
Alternaria Fruit rot, early blight, purple blotch, leaf spot

Sambong (*Blumea balsamifera*)

Parts to be used: Leaves
Mode of Preparation and Application
✓ Extract juice of 1 kg leaves, then mix juice with 3 tablespoon juice per liter of water.

DISEASES CONTROLLED
Cercospora Leafmold, leaf spot, early blight, frog-eye



Lagundi (*Vitex negundo*)

Parts to be used: Leaves
Mode of Preparation and Application
✓ Extract juice of 1 kg leaves, then mix juice with 3 liters of water and use as spray.

DISEASES CONTROLLED
Cercospora Leafmold, leaf spot, early blight, frog-eye



5 In 3-5 days, take the rice along with the white molds that formed on top of it. Disregard the black molds.



6 Place in an earthen jar the moldy rice and mix with 1 kilo of molasses or crude sugar.

7 Cover the jar with a clean sheet of paper and tie with a string. Place in a cool and shaded place. After 7 days this will yield a mud like juice.



How to use the concoction

- Mix 2 tbsp of the juice to 1 liter of water.
- Spray on soil and plants.

Note: Spray early in the morning at 4:00AM to 6:00AM or in the afternoon at 5:00PM until sunset when organisms are most active.



ORIENTAL HERBAL NUTRIENT (OHN)

- ⦿ Natural pest repellent and a very important input in natural farming.
- ⦿ It can be used from vegetative until fruiting (reproductive stages) of the plant.
- ⦿ Used for the treatment for fungal problems of plants such as downy mildew, powdery mildew.
- ⦿ Helps develop the immune system and used as natural anti-biotic for animals.



Ingredients/Materials:

- ⦿ 3 kilos peeled & chopped ginger (1 kg), garlic (1 kg), and bulb onions (1 kg)
- ⦿ 3 kg muscovado sugar or crude sugar
- ⦿ 1.5 L of 20-40 proof gin/liquor or home made vinegar
- ⦿ Ceramic or glass jar

How to make the concoction

1 Mix peeled & chopped ginger, garlic & bulb onions and put in a ceramic or glass jar. Add 3 kilograms muscovado/ crude sugar and 1.5 liters of 20-40 proof gin/liquor or home-made vinegar.



2 Cover and seal the ceramic or glass jar. Label the cover with name, date prepared and date of harvest (extraction). Ferment for 7 to 10 days.



FUNGICIDAL PLANTS

Sensitive Plant (*Mimosa pudica*)

Parts to be used: Leaves
Mode of Preparation and Application
✓ Pound whole plant, soak in water and use infusion as spray



DISEASES CONTROLLED
Diplodia Fruit and stem rot

Kakawate (*Gliricidia sepium*)

Parts to be used: Rhizomes
Mode of Preparation and Application
✓ Extract juice of 1kg leaves, then mix juice with 3 liters of water and use as spray



DISEASES CONTROLLED
Cercospora Leafmold, leaf spot, early blight, frog-eye

Ginger (*Zingiber officinale*)

Parts to be used: Rhizomes
Mode of Preparation and Application
✓ Extract juice and use as spray



Mayana (*Coleus scutellarioides*)

Parts to be used: Leaves
Mode of Preparation and Application
✓ Extract juice of 1kg leaves, then mix juice with 3 liters of water and use as spray.



DISEASES CONTROLLED
Cercospora Leafmold, leaf spot, early blight, frog-eye

FUNGICIDAL PLANTS

Buniao (*Gendarussa vulgaris*)

Parts to be used: Leaves
 Mode of Preparation and Application
 ✓ Extract juice of 1kg leaves, then mix juice with 3 liters of water and use as spray.

DISEASES CONTROLLED
 Colletotrichum leaf spot, anthracnose, fruit rot, smudge
 Alternaria Fruit rot, early blight, purple blotch, leaf spot



Mana (*Jatropha multifida*)

Parts to be used: Leaves
 Mode of Preparation and Application
 ✓ Extract juice of 1 kg leaves, then mix juice with 3 liters of water and use as spray.

DISEASES CONTROLLED
 Diplodia Fruit and stem rot
 Fusarium Damping-off, stem and root rot, early blight, wilt, curly top



Acapulco (*Cassia alata*)

Parts to be used: Leaves
 Mode of Preparation and Application
 ✓ Extract juice and spray at a rate of 1 cup juice per liter of water.

DISEASES CONTROLLED
 Alternaria Fruit rot, early blight, purple blotch, leaf spot
 Cercospora Leafmold, leaf spot, early blight, frog-eye
 Colletotrichum leaf spot, anthracnose, fruit rot, smudge
 Curvularia Leaf spot, leaf blight
 Diplodia Fruit and stem rot
 Fusarium Damping-off, stem and root rot, early blight
 Pestalotia Leaf blight, Leaf spot
 Helminthosporium Wilt, curly top, leaf blight



3

After 7-10 days, extract liquid and place it in a separate container.

- This can be used for both human, plants and animals.
- For plant use, you can add fresh and dry chili, neem fruit, makabuhay and marigold to make it more potent/effective.

4

After extraction, add again the same weight of ingredients and let it ferment again for 7-10 days before extraction. Discard ingredients after second extraction.

How to use the concoction

- Mix 2 tbsp of OHN to 1 liter of water and spray mixture into leaves or soil.
- Add to the IMO and FPJ mixture and spray together on the leaves and soil every week when they weaken or start to flower.
- Use as natural anti-biotic for plants and animals.
- Treatment for fungal problems of plants: downy mildew and powdery mildew. Garlic has high level of sulfur which is a good fungicide.
- Spray to plant leaves to fortify phyllosphere microbes.
- Spray every 3-7 days.
- On humans: used as a remedy for rheumatism, coughs, fever and flu.

Note: Spray early in the morning at 4:00AM to 6:00AM or in the afternoon at 5:00PM until sunset when organisms are most active.



CALCIUM (Eggshell and Edible Shells)

- Helps in flowers and fruits setting and development
- Prevents overgrowth and promote sweetening of fruits
- Helps maintain chemical balance in the soil, reduces soil salinity and improve water penetration

How to make the concoction



1 Crush eggshells finely.



2 Pan fry the eggshells until reddish brown, set aside to cool.



3 Put 2 - 3 tablespoon of fried eggshell in a 1 Liter of homemade coconut or sugarcane vinegar.

4 Wait till the tiny bubbles disappear. Transfer the mixture into a separate. Cover, label and ferment for 30 days in a cool dark place.



5 After 30 days, filter the mixture and discard solid contents. Transfer the liquid in an airtight container and store in a cool dry place away from direct sunlight.

How to use the concoction

- Apply using 2 tbsp is to 1 liter of water
- Apply directly to the plants or soil/ground
- Spray on leaves during fruit setting up to a week before harvesting. Add seawater or OHN for better taste and aroma of the fruits.
- Spray/Apply every 3-7 days

FUNGICIDAL PLANTS

Kamantigi (*Impatiens balsamina*)



Parts to be used: Leaves

Mode of Preparation and Application

- ✓ Extract juice of 1kg leaves, then mix juice with 3 liters of water and use as spray.

DISEASES CONTROLLED

- | | |
|------------|---|
| Cercospora | Leafmold, leaf spot, early blight, frog-eye |
| Altenaria | Fruit rot, early blight, purple blotch, leaf spot |

Drumstick/Horseradish (*Moringa oleifera*)

Parts to be used: Leaves

Mode of Preparation and Application

- ✓ Extract juice of 1kg leaves, then mix juice with 3 liters of water and spray.

DISEASES CONTROLLED

- | | |
|----------------|---|
| Colletotrichum | leaf spot, anthracnose, fruit rot, smudge |
| Pestalotia | Leaf spot |
| Diplodia | Fruit and stem rot |
| Altenaria | Fruit rot, early blight, purple blotch, leaf spot |



Takip-Kuhol (*Centella asiatica* leaves)

Parts to be used: Leaves

Mode of Preparation and Application

- ✓ Extract juice of 1 kg leaves, thenmix juice with 3 liters of water and use as spray.

DISEASES CONTROLLED

- | | |
|----------------|---|
| Fusarium | Fruit rot, early blight, purple blotch, leaf spot |
| Colletotrichum | Leaf spot, leaf blight |



FUNGICIDAL PLANTS



Red Onion (*Allium cepa*)

Parts to be used: Bulb

Mode of Preparation and Application

- ✓ Chop finely, soak in two teaspoon of oil for 1 day, then mix with half a liter of soapy water and filter.
- ✓ Mix 1 part solution with 20 parts water, then spray.

DISEASES CONTROLLED

Cercospora	Leafmold, leaf spot, early blight, frog-eye
Colletotrichum	leaf spot, anthracnose, fruit rot, smudge
Curvularia	Leaf spot, leaf blight
Fusarium	Damping-off, stem and root rot, early blight, wilt, curly top
Pestalotia	Leaf spot
Helminthosporium	Leaf blight

Ipil-ipil (*Leucaena leucocephala*)

Parts to be used: Leaves

Mode of Preparation and Application

- ✓ Pound, soak in small amount of water and use. Infusion as spray

DISEASES CONTROLLED

Colletotrichum	leaf spot, anthracnose, fruit rot, smudge
Curvularia	Leaf spot, leaf blight
Pestalotia	Leaf spot
Helminthosporium	Leaf blight
Alternaria	Fruit rot, early blight, purple blotch, leaf spot
Cercospora	Leafmold, leaf spot, early blight, frog-eye



Amaranth (*Amaranthus gracilis*)

Parts to be used: Leaves

Mode of Preparation and Application

- ✓ Extract juice of 1kg leaves, then mix juice with 3 liters of water and spray.

DISEASES CONTROLLED

Cercospora	Leafmold, leaf spot, early blight, frog-eye
Colletotrichum	leaf spot, anthracnose, fruit rot, smudge
Curvularia	Leaf spot, leaf blight
Pestalotia	Leaf spot
Alternaria	Fruit rot, early blight, purple blotch, leaf spot
Helminthosporium	Leaf blight



CALCIUM PHOSPHATE (CalPhose) Animal Bone

- ⦿ Induces flowering and prevents excessive flower production that results to smaller fruits.
- ⦿ Increases calcium factor on roots and leaves for older plants.
- ⦿ Can be used as feeds to animals during pregnancy or breeding time at 200 times dilution.
- ⦿ As soil amendment/conditioner, it helps maintain chemical balance in the soil, reduces soil salinity and improve water penetration.

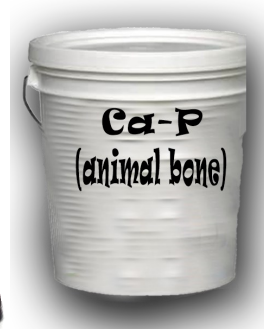
How to make the concoction

1 Boil animal bones, preferably cow bones, to separate meat and fat.



2 Burn the bone until charcoal black.

3 Pulverized the bone. Add 2 to 3 tablespoon of pulverized bone in a 1 liter container of pure coconut or sugarcane vinegar or any homemade vinegar. Cover (do not airtight) and ferment for 30 days.



4 Strain the preparation and put it in bottles.



How to use the concoction

- ⦿ Dilute the juice with a ration of 1 tbs to 1 liter of water
- ⦿ Spray mixture into leaves or soil preferably 4:00AM to 6:00AM or late in the afternoon at 5:00PM to 6:00PM when the microorganism are most active.
- ⦿ Spray/Apply every 3-7 days.

LACTIC ACID BACTERIA SERUM (LABS)

- ⦿ Converts waste into organic matter and basic materials. I
- ⦿ Prevents growth of harmful or pathogenic bacteria and improves immune system.
- ⦿ Contains antioxidants.

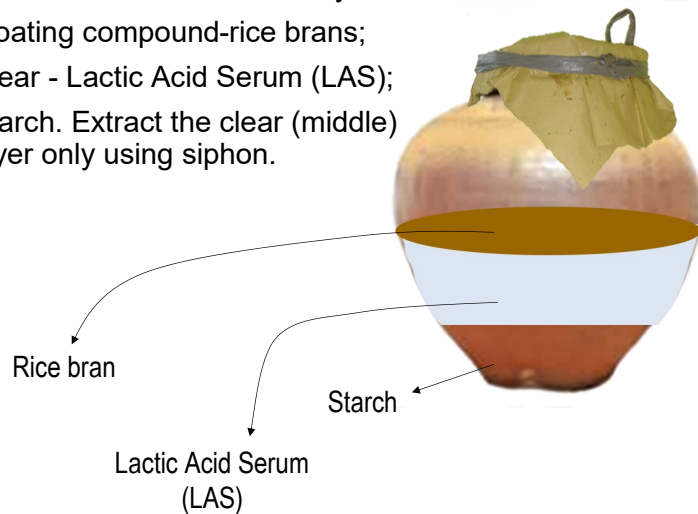
How to make the concoction



1 Collect the first rice wash and place in a jar. Cover with a clean sheet of paper, tie it and place the container in a shaded area for seven days.

2 After seven days, it will develop a sour smell and will form three layers:

1. Floating compound-rice brans;
2. Clear - Lactic Acid Serum (LAS);
3. Starch. Extract the clear (middle) layer only using siphon.



INSECTICIDAL PLANTS



Custard Apply/Anonas
(*Annona reticulata*)

Parts to be used: Seeds
 Mode of Preparation and Application
 ✓ Chopped thinly, mix with water (ratio 1:1) leave mixture for 12-24 hrs. Strain and spray.
 ✓
 Target Pest: Rice pests, fruitfly repellent and oviposition deterrent



Trumpet Lily (*Lilium longiflorum*)

Parts to be used: Leaves and under developed flower
 Mode of Preparation and Application
 ✓ Pound, extract juice and spray at a rate of 24 tbsp per 16L of water.
 Target Pests: Diamondback moth, Hoppers, Caterpillars



Sugar Apply/Atis (*Annona Squamosa*)

Parts to be used: Vines
 Mode of Preparation and Application
 ✓ Chopped thinly, mixt with water (ratio 1:1) leave mixture for 12-24 hrs. Strain and spray.

Target Pests: Diamondback moth, Cabbage Aphid, Green Scale, Cotton Stainer, Whitebacked Planthopper, Common Cutworm, Sawtooth Grain Beetle. Hairy Caterpillar, Tobacco Caterpillar



China Berry (*Melia azedarach*)

Parts to be used: Leaves, fruits & seeds
 Mode of Preparation and Application
 ✓ Pound leaves, fruits and seeds, mixed to small amount of water. Extract concoction and use as spray.
 ✓ Powdered dried leaves and seeds to be used for dusting infested plants.
 Target Pest: Migratory Locust, Corn earworm, Yellow stem borer, Rice green leafhopper, Cabbage White butterfly, brown planthopper

INSECTICIDAL PLANTS



Black Pepper (Paminta) (*Piper nigrum*)

Parts to be used: Fruits

Mode of Preparation and Application

- ✓ Pulverize seeds, mix with water and spray.
- ✓ Powdered seeds, spread around stored grains.

Target Pest: Diamondback moth, Cotton stainer, Common cutworms, Corn weevil



Madre de Cacao/Kakawate
(*Gliricidia sepium*)

Parts to be used: Leaves and Barks

Mode of Preparation and Application

- ✓ Chopped thinly the leaves and bark, mix with water at a ratio of 1:1 leave the mixture for 12-24 hrs. Strain and spray.

Target Pests: Planthoppers, Cutworm, Caseworm, Diamonback moth



Carrots (*Daucus carota*)

Parts to be used: Roots and tubers

Mode of Preparation and Application

- ✓ Pound roots and tubers, Soak in water. Extract concoction and use as spray

Target Pest: Planthopper



Tomato (*Lycopersicum esculentum*)

Parts to be used: Any parts of the plant

Mode of Preparation and Application

- ✓ Pound fruits, leaves and stem to extract juice. Spray at a rate of 1 part juice to 3 to 5 parts of water.

Target Pests: Beetles, Aphids, Caterpillars



Kalingag (*Cinnamoni mercadoi*)

Parts to be used: Leaves, bark and fruits

Mode of Preparation and Application

- ✓ Oil extract from leaves, bark and fruit. Mix 2 tbsp with 1L of water and spray.

Target Pest: Fruit fly, weevil, beetle



Hot Pepper (*Capsicum frutescens*)

Parts to be used: Fruits

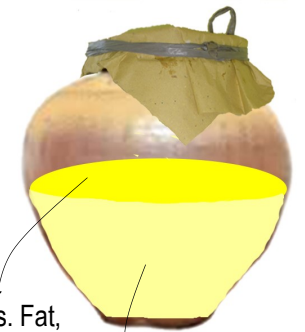
Mode of Preparation and Application

- ✓ Pound, extract juice and spray at a rate of 2 to 3 tbsp per liter of water.

Target Pest: Rice moth, aphids and other insects in larval stage

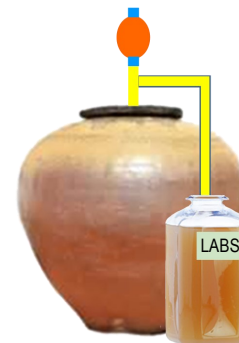
3 Secondary culture: Mix 1 part clear liquid LAS to 10 part of fresh milk. Put rice brans evenly on top of the milk to keep it in anaerobic stage. Do not stir.

4 In 5 to 7 days, carbohydrate, protein and fat will float leaving yellow liquid (serum) or whey which contains lactic acid bacteria (LAB).



Cheese like material rises. Fat, protein and carbohydrates will float

LABS (light yellow or whey)



5 Extract by siphoning only the yellow liquid and add crude sugar for preservation or same amount of LAS. Keep in clean cool dry place. The whole process should take place at room temperature.

How to use the concoction

- ☉ Mix 2 tbsp of LABS to 1 liter of water. Spray to soil and compost to build-up colonies of good microorganisms every after 3-7 days.
- ☉ Use 2-4 tbsp per gallon of water and spray or add to water and feeds for animals.

Note: Spray early in the morning at 4:00AM to 6:00AM or in the afternoon at 5:00PM until sunset when organisms are most active.



FERMENTED PLANT JUICE (FPJ)

- ⦿ Helps maintain vigor in plants and resistance against pests.
- ⦿ Can be sprayed on pig pens and poultry houses to minimize odor.

☞ How to make the concoction ☜



1 Use any vegetable shoots such as kangkong, kamote, squash, alugbati tops, and other edible plants. Young bamboo shoots, banana stem, and duck weed or azola can also be used. Cut young banana trunk (cardava) before sunrise and avoid collecting after excessive rain. Immature (newly developed) fruits can also be used.

2 Finely chop 1 kilo from the plants gathered.



3 Place it in a container and mix in 1 kilo of muscovado or crude sugar.

INSECTICIDAL PLANTS



Damong Maria (*Artemisia vulgaris*)

Parts to be used: Leaves
 Mode of Preparation and Application
 ✓ Pound, extract juice and spray at a rate of 24 tablespoon per 16L of water.
 Target Pest: Corn borer



Lantana (*Lantana camara*)

Parts to be used: Leaves
 Mode of Preparation and Application
 ✓ Pound, extract juice and spray at a rate of 24 tablespoon per 16L of water.
 Target Pest: Corn borer



Tubli (*Derris philippinensis*)

Parts to be used: Roots, Leaves and Bark
 Mode of Preparation and Application
 ✓ For extracted juice: Spray at a rate of 5 cups juice per gallon of water.
 ✓ For powder: Mix with detergent and spray at a rate of 120 grams powder + 250 to 300 grams detergent per gallon of water.
 Target Pest: Diamonback moth



Wild Sunflower (*Tithonia diversifolia*)

Parts to be used: Leaves
 Mode of Preparation and Application
 ✓ Pound, extract juice and spray at a rate of 1 part juice per 3 to 5 parts of water.
 Target Pests: Diamondback moth and Hoppers



Marigold (*Tagetes erecta*)

Parts to be used: Roots and Leaves
 Mode of Preparation and Application
 ✓ Pound, extract juice and spray at a rate of 24 tablespoon juice per liter of water.

Target Pests: Rice green leafhopper, diamondback moth, brown planthoppers, black bean aphid



Makabuhay (*Tinospora rumphii*)

Parts to be used: Vines
 Mode of Preparation and Application
 ✓ Pound, extract juice and spray at a rate of 15-20 tablespoon juice per 5 gallons of water.

Target Pests: Diamondback moth, Rice-green leafhopper

HOT PEPPER and LEMON GRASS EXTRACTS

- hot pepper and lemon grass extracts are good to control aphids, thrips and other sucking insects. Also, it affects the digestive system of insect larvae and

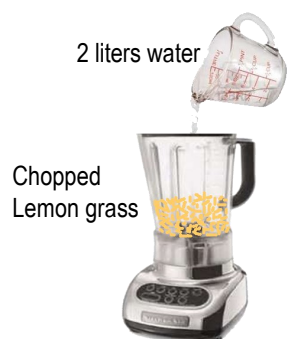


Materials:

- 1 kg hot pepper or siling labuyo
- 1 kg lemon grass (preferably stems)
- 3 liters tap water
- Blender or mortar and Pestle
- Coco-cloth or Flour cloth

How to make the concoction

- Pound or blend hot pepper then add 1L of tap water. Extract the juice using a coco cloth or flour cloth. Do not discard yet the pounded hot pepper. Instead, put this back in a container then add another liter of tap water. Repeat the extraction process then add second extract to the first.



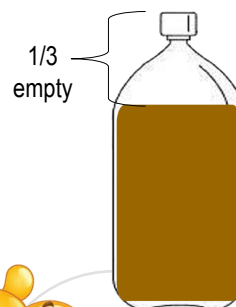
- Chop lemon grass finely (about 0.2 to 0.5 inch). Place 1 kilo of chopped lemon grass in a blender, add 1 liter water and blend. Extract the juice using coco-cloth or flour cloth.

- Thoroughly mix the hot pepper extract and the lemon grass extract. This can be used within 15 - 30 days. Refrigerate the mixture to prolong its usable life for another month.

Dosage, Application, and Utilization

- Add 0.5 liter of the hot pepper and lemon grass mixture to 16-20 liter of water.
- You may add 1 sachet (20ml) of pride to the solution as sticker.
- Spray on the leaves or on the soil every after 3-7 days.

- Cover with clean sheet of paper, label with its name, date prepared and date of harvest/extraction. Ferment for 7-10 days in a cool dark place (avoid direct sunlight)



- After 7-10 days, strain and transfer the solution in a clean container. Always leave about 1/3 of the bottle empty to enable micro-organisms to breath.



How to use the concoction

- Apply using 2 tbsp of FPJ per liter of water.
- Apply directly to the leaves of plants before sunrise or two hours before sunset every after 3-7 days.
- If prepared cleanly, FPJ should have a pleasant smell and sweet, tangy taste.
- Use within 6 months from production date.

Points to Remember

- Do not tighten bottle lid for 2 weeks to allow gasses to escape and avoid explosion.
- Wait till tiny bubbles disappear before closing the cover tightly. If you observed undissolved sugar at the bottom, it means the fermentation did not took place. Extend for another day and add a little water to reactivate it.

FERMENTED FRUIT JUICE (FFJ)

- Sweeten the fruit (Potassium).
- Helps maintain vigor in plants and resistance against pests.
- Increases plant nutrition through leaves and roots with potassium factor.
- Promotes build-up of good colonies of microorganisms thereby contributing to soil fertility

How to make the concoction



1 Prepare 1 kilo of ripe fruits and 1 kilo crude (brown sugar/molasses or muscovado sugar).

Suggested materials include: banana, papaya, mango, jack fruit, star fruit, pumpkin, etc. (citrus fruits are not recommended because of their acidic nature).



2 Peel the fruits and remove seeds if any. Finely slice or mash fruits and place in a container with a ratio of 1 part fruit to 1 part crude sugar or muscovado sugar then mix thoroughly. It is best to prepare in the evening to prevent from flying insects.



3 Cover with a clean sheet of paper. Tie with a string and label indicating the date it was prepared. Ferment for 7-10 days in a cool shaded place.

GINGER or TURMERIC EXTRACT

- Ginger or turmeric extract is used to control insect pest and diseases. The insect pest will dehydrate when it gets in contact with the extract.



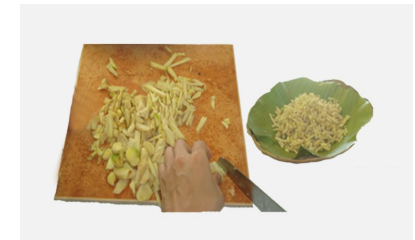
Materials:



- 1 kg Ginger or Turmeric
- 2 liters Tap Water
- Blender or Mortar and Pestle

How to make the concoction

1 Wash, peel and chop or slice 1 kg ginger or turmeric



2 liters water

Chopped ginger/turmeric



2 Place the chopped ginger or turmeric in the blender and add 2 liters of tap water. Blend and extract the juice using coco-cloth or flour cloth

3 Store at room temperature for 10-15 days. Refrigerated extracts can last for 2 months.

Dosage, Application, and Utilization

- Spray on leaves of plants at a ratio of 1 liter ginger or turmeric with 1 gallon of water or 4 liters of tap water every after 3-7 days.

TOMATO PLANT EXTRACT

- Used to control various insect and pest such as beetles, caterpillars, and aphids



Materials:



How to make the concoction



1 Chop tomato plants (leaves and stem) finely. Preferably, tomato plant at vegetative state or those that did not bear fruit yet.

2

Put 1 part chopped tomato plant in a pot and add 1 part tap water. Simmer the mixture for 5 minutes.



3

Let the boiled mixture cool down and extract the juice using a strainer.

Dosage, Application, and Utilization

- Spray on leaves of plants at a ratio of 1 liter tomato plant extract with 5 liters of tap water every 3-7 days.
- Tomato plant extract can be combined or mixed with native ginger extract or hot pepper and lemon grass extract.

4

This will make approximately 1.5 liters of juice. Drain the liquid and place in bottles, always leave about 1/3 of bottle empty so microorganisms can breath.



How to use the concoction

- Mix 2 tbsp of FFJ to 1L of water, spray on the leaves of plants or on the soil every after 3-7 days.
 - On Rice: from panicle initiation until a week before harvesting
 - On Corn: as soon as tassels appear until a week before harvesting
 - on Banana: as soon as blossoming starts until a week before harvesting
 - On animals: Mix 2 tablespoons of the juice to 1 liter of water. This is also good for human consumption.
- Use FFJ to reduce latrine smell. Use 3 spoons per 10 liters of water while cleaning. Pour 2-4 spoons directly down the toilet to help septic system.

Note: Spray early in the morning at 4:00AM to 6:00AM or in the afternoon at 5:00PM until sunset when organisms are most active.



FISH AMINO ACID (FAA)

Good source of nitrogen. It contains abundant amount of nutrients for plant growth and development.

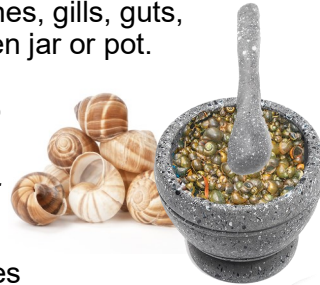
How to make the concoction

1

Chop 1 kilo of fish including the bones, gills, guts, scales, and tails. Place in an earthen jar or pot.



Snail or Kuhol can also be used. Wash then crush and place in the container.



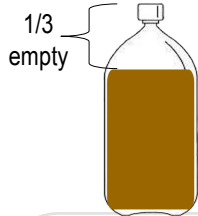
2

Add 1 kilo of molasses or muscovado sugar.



3

Cover and keep in a cool place or shaded area. Label the cover with its name (FAA), date prepared and date of harvest (extraction).



4

Extract liquid after 10 to 15 days and transfer it into clean bottles. Wait till tiny bubbles disappear before sealing the cover and storing. Always leave about 1/3 of bottle empty so microorganisms can breath.

How to use the concoction

- For foliar spray, use 2 tbsp of FAA to 1 liter of water.
- Spray every 7 days on newly planted seedlings until fruiting stage.
- Spray on the leaves or on the soil.

Note: Spray early in the morning at 4:00AM to 6:00AM or in the afternoon at 5:00PM until sunset when organisms are most active.



NATURAL ATTRACTANT for FLYING INSECTS and BUTTERFLIES

Elimination of flying insects

1

Boil 1 gallon of coconut vinegar or coconut wine (tuba) mixed with 1/2 kg of crude sugar. Cool and add 1/3 liter of FPJ concentrate.

2

Put some of the mixture in containers and hang to fruit-bearing trees.



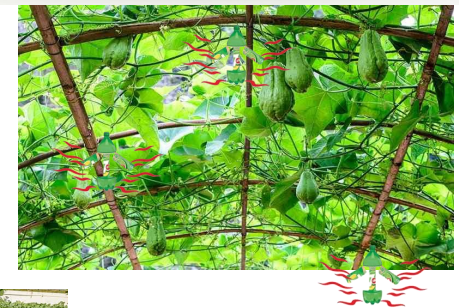
INSECTS ARE ALCOHOLICS

Insects are attracted, come by and have a drink, gets drunk, fall and die.

Dead insect/s cannot multiply

3

Put some of the mixture and hang on vegetable trellises.



4

Put some of the mixture in a container and place near vegetable plots

