

Organic Pest-Busters

Farmers are re-discovering the use of so-called bio-sprays or organic insecticides. These prove to be efficient alternatives for synthetic pesticides, which often have disastrous effects on ecology and on humans. One advantage of going organic is that the materials to be used are indigenous. Moreover, procedures for making organic pesticides are simple and do not require elaborate equipment.

Luya Luya-an Root Brew. This pesticide has been tested on rice crop pests.

Crush one kilogram of *luya luya-an* roots with a mortar and pestle. Soak the roots in water and squeeze out the juice completely. Dilute the extract in one gallon of water and spray on pests attacking rice crops.

Derris Powder-Soap Decortication-Derris or *tubli* plant, commonly found in Zamboanga, is a shrub with roots that yield a toxic substance called rotenone. Commercially produced rotenone contains arsenic that is detrimental to living things, while that produced by the *tubli* can be quickly decomposed by alkalis or nitrogen compounds.

The spray is effective against ring borers of citrus, sweet orange, grapefruit and pomelo.

Materials necessary for making this pesticide are: 300 grams of detergent soap (e.g., Tide or Superwheel), 120 grams of derris (*tubli*) powder, and 20 liters of rainwater.

Boil the derris powder in five cups of rainwater and add finely chopped soap. As the soap dissolves, pour four gallons of water. Remove from heat, and then strain the liquid. Let it stand for a few minutes.

To control rindborers, spray the liquid on the grass of cover crops surrounding the affected trees. These cover crops serve as shelter for the borers during daytime.

Red Pepper, Lemon Grass and Agdao Leaves Extract-Extracts of red pepper (*sili*), lemon grass (*tanglad*) and agdao leaves (*manunggal*) contain substances that repel pests.

Produce 5 cc (about 5 table spoons) of juice from each of the plants mentioned. Mix the 20 cc of juices with four liters of water. Shake gently before spraying on pests that attack rice crops.

This pesticide is said to be 87% effective.

Tobacco water brew-Extract from tobacco stems is effective against vegetable pests because of nicotine.

Cut the stems into pieces, and then place in boiling water just enough to submerge the pieces. Mix this brew with water-1 part brew to 4 parts water. Let stand for several hours to cool.

Spray on vegetables only if pest attack is serious. This spray may prove fatal to eggplant, tomato and pepper.

Metarhizium: The Mighty Fungus

It has been a common concept among ordinary people to associate fungus or molds to various health and food problems. Since, fungus is almost present everywhere, may it be in indoor or outdoor, fungus is widely considered as the “culprit” for many animal and human diseases and infections. But several studies on the “other use” of fungus conducted by scientists and biologists worldwide proved that not all fungus are harmful. In fact, fungus could be use to effectively control insect pests in crops; one good example is the *Metarhizium anisopliae*.

What is Metarhizium?

Metarhizium, also known as “green muscardine”, is a pathogenic fungus that kills major insect pests such as diamond-back moth, cabbage worm, Asian corn borer, coconut beetle, mango leafhoppers, rice black bug, oriental migratory locust, and nematode. It is available in powder or oil formulation.

How does Metarhizium work?

The primary “weapon” used by Metarhizium in attacking insect pests is its green spores. These living spores when get in contact to the insect’s skin germinate and start to penetrate the insect’s blood vessels. Once the fungus invades the insect body cavity, it produces toxins, which cause body paralysis. The infected insect starts drying in two days. It is also interesting to know that the fungus developed on the surface of the dead insect’s body initiatives a new round of infection to other insects. This remarkable “chain reaction” makes insect pest annihilation happen at a fast rate.

Advantages of Metarhizium over chemical pesticide

One inherent quality of fungus it is ability to grow and multiply rapidly. Do you know that one preparation of Metarhizium contains 2.5 trillion spores? Just enough to treat a hectare of cropland.

Since Metarhizium multiplies by itself, it only requires three applications per planting season as compared to chemical pesticides that need to be applied five to six times. Metarhizium is also much cheaper than chemical pesticides. A farmer would only

have to spend ₱250 per hectare as compared to using chemical insecticides, which costs him around ₱800 to ₱1, 200 per hectare.

Metarhizium is commonly applied through spraying. Spraying should be done in the late afternoon because the active spores are killed by direct sunlight.

Unlike chemical pesticides. Metarhizium does not leave any residual components that are hazardous to human health. It is also guaranteed safe to animals and beneficial insects such as bees, insect predators and spiders.

How do we grow Metarhizium?

A group of researchers headed by Dr. Dante Santiago of the National Crop Protection Center (NCPCC) in UP Los Baños has developed an efficient method of growing Metarhizium fungus. The fungus is grown on boil corn until spores germinated and are fully developed in about a week. The spores gathered are air dried and later stored in a freezer. The formulated fungus (powder or oil) remains viable for more than one year. (Mary Charlotte O. Fresco).

Source: MARID Agribusiness Digest, Vol. 13 No. 3, August 2002, pp 39 & 40