

How to use eggs to ward off pests, diseases in plants

Adoptable ideas

By Noah Jagwe

There is increased advocacy for the use of organic fertilisers and pesticides. This is largely because they do not pose health threats and are more affordable than inorganic ones.

One such organic pesticide is an egg yolk mixture, which can be used to treat fungal diseases in plants and the eggshell mixture that increases the calcium content in plants.

Dr Onesmus Semalulu, principal research officer of National Agricultural Research Organisation (NARO), says the pesticide and fertiliser is now available.

He adds that as researchers, they have discovered that the egg products are more effective than inorganic pesticides.

Dr Semalulu says the pesticide is especially effective against whiteflies, which attack tomatoes and cucumber.

The project

The egg fertiliser technology is part of the project that is being funded by Korea at the National Agriculture Research laboratory in Kawanda in Wakiso district under the project themed "Development and Promotion of Low Input Technologies for Sustainable Production of Vegetables in Uganda."

Diseases treated by egg yolk

Blossom end rot in tomatoes can be controlled with the use of the egg yolk mixture. End rot is a black spot common in tomatoes and egg plants. In



Dr Shim teaching farmers and scientists how to make a pesticide from egg yolk. Photo by Noah Jagwe

most cases, it causes the fruit to rot.

The mixture also treats leaf necrosis in cabbages.

In addition, the egg yolk keeps away pests and insects, such as termites.

Applying the pesticide

Apply the pesticide or fungicide before the diseases and pests infest the field.

Neem oil is added to the mixture to control insects, such as whiteflies and mites.

Caution

Keep the pesticide out of reach of children and direct sunlight.

Too much heat can cause a change in its properties.

Adding calcium to the soil using eggshells

Calcium is one of the nutrients required in the soil in small quantities, but its absence can

be destructive to plants.

Some of the effects of calcium deficiency in the soil are defoliation and rotting of young fruits.

Cabbages, tomatoes, passion fruits, cauliflowers as well as berries are especially affected by the deficiency of calcium in the soil.

Preparation

Processing the eggshell calcium requires as many shells as possible.

The shells are collected and dried in the sun for at least two days for easy crushing to get a powder or particles.

Extracting the calcium

Mix 1kg of crashed eggshells in 20 litres of vinegar in a container and keep the contents at room temperature for seven days. There will be no more solid eggshells

floating in the vinegar. This means that the calcium has been fully extracted from shells.

The liquid is then drained and ready to be used on the farm.

Application

Use a sprayer to apply the liquid solution to the roots of the plant. Apply this solution once a week.

Dr Shim Chang Ki from Korea Programme on International Agriculture (KOPIA) says farmers should apply the calcium to the holes as soon as the seedlings have been planted.

In case there are symptoms of calcium deficiency, mix 80ml of liquid soluble calcium in 20 litres of water and then spray on roots every seven days.

Dr Shim adds that a farmer

can start applying this organic liquid calcium two weeks after transplanting or before the crops start flowering up to harvest.

"The liquid is neither a pesticide nor a fungicide, it is

only a source of calcium," he explains.

Shim assures that when the liquid is used on the farm, all calcium deficiency-related diseases and disorders will not affect the plants.

HOW TO MAKE EGG YOLK PESTICIDE

- 1 litre of water
- 1 egg
- 100ml of cooking oil
- 5g of copper sulphate
- 5ml of neem oil

All of the material can be bought from agro chemical stores around Kampala

The recommended eggs are for local chicken with yellow yolks. Yolk from exotic breeds is not good as most of the breeds are kept in cages. For the egg yolk to be yellow, the chicken must be feeding on greens.

A small weighing scale is required to take proper measurements.

Method

- Pour the water in the cooking oil



Cooking oil is one of the ingredients of the pesticide

and one egg yolk into a jar and mix.

- Use a blender to mix the materials thoroughly.
- Add the copper sulphate and neem oil. Continue mixing until all

the ingredients are dissolved.

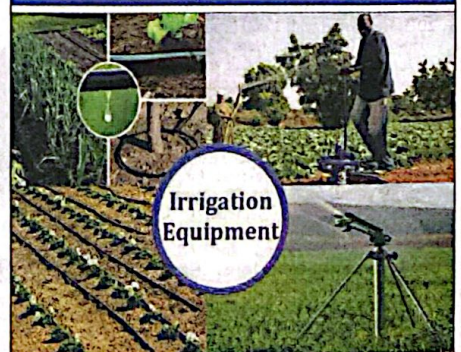
Add the solution to 20 litres of water and spray on plants. Apply every after seven to 14 days.

Fungicides like copper oxide/copper sulphate control fungal diseases, like down mildew, powdery mildew and insects like mites.

However, Dr Shim Chang Ki of the Korea Programme on International Agriculture, says the above mixture is recommended for preventive purposes only. In case of severe infections, he advises farmers to increase the concentration of copper and sulphur to 20g and neem oil to 50ml. The pesticide is most effective within eight hours after mixing.

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