Title: Controlling pests using Tephrosia

Author: Florence Namulindwa Ddumba – Kulika Uganda. (Master Trainer)
Country: Uganda
Date April 2021.
Knowledge Product: Bio-pesticide
Category: Crop Production
Language: English

Summary

Tephrosia pesticide can be used to controlling pests such as Army worm, Aphids, and Mites. *Tephrosia* plant grows naturally in most parts of Uganda, it is a legume with pods and seeds that are easy to germinate. The leaves of *Tephrosia* are quite hard in texture and even difficult to pound, therefore some water can be added to soften the materials during pounding. The active ingredient in *Tephrosia* is rotenone which is not harmful to human beings, but if poured in fishpond, it can paralyse the nervous system of fish.

Description

The leaves of *Tephrosia* are picked and pounded in a local wooden mortar until they are completely soft then mixed with a sticker like

Molasses, pounded sweet potato wines, Cassava or soapy water. It can be fermented for three days, boiled or can be used directly. The fresh one works better than the fermented one but the fermented one can be stored for long time.

Figure 1. *Tephrosia* shrub

©Kulika Uganda/Florence Namulindwa Ddumba

1. Process of making the pesticide

The following describes the process for making bio-pesticide from *Tephrosia*

1. Plucking the leaves from the plant: the leaves are plucked by hands and put into a clean container. They are weighed to determine the quantity.
2. Pounding the leaves: the plucked leaves are put in a clean mortar and pounded using a pestle.

Figure 2. Women pounding *Tephrosia* leaves

Implemented
In cooperation

©Kulika Uganda/Florence Namulindwa Ddumba

2. Preparation of sticker

A solution of soapy water is prepared using white soap or molasses, cassava, sweet potatoes. The white soap is good because it does not scotch, it has mild caustic which does not burn the plants.

1. Peeling small pieces of soap into water: the soaps quantity depends on the amount of *Tehprosia* leaves prepared. For 2 kg of *Tephrosia* leaves, put 50 g of white soap. Soap is cut and scrapped using a sharp knife into clean water (9 litres). Leave it to soak overnight, or dissolve the soap by mixing with water until the foam is seen. Figure 3 shows the preparation of soapy water. **Figure 3. The process mixing soap in water**

©Kulika Uganda /Florence Namulindwa Ddumba

2. Mixing the soapy water with pounded leaves: add the *Tephrosia* leaves to the soapy water as shown in Figure 4.

Figure 4. Pounded *Tephrosia* is being mixed with soapy water

©Kulika Uganda /Florence Namulindwa Ddumba

3. Filtering the bio-pesticide: the Bio pesticide is filtered using either cotton piece of cloth, sisal bag or nylon bag. Filtering is done to easespraying while using knapsack sprayers to prevent blockages of pump nozzle sprayer.

Figure 5. Filtering the bio-pesticide

©Kulika Uganda /Florence Namulindwa Ddumba

3. Spraying using bio-pesticide

After filtering properly using one of the above materials, the filtered bio-pesticide is put in the sprayer, and can be applied to different kinds of crops affected with pests. The figure below shows affected Kale.

Figure 6. Affected Kale plant

©Kulika Uganda /Florence Namulindwa Ddumba

Figure 7. Dead pests after spraying with *Tephrosia*

©Kulika Uganda /Florence Namulindwa Ddumba

Figure 8. Healthy plant after being treated with *Tephrosia*

©Kulika Uganda/Florence Namulindwa Ddumba

Figure 6 showed a Kale plant that was sprayed using *Tephrosia,* and after spraying for three times the plant improved and generated new leaves as shown in figure 8.

Figure 9. Spraying in the field

©Kulika Uganda/Florence Namulindwa Ddumba

Dried *Tephrosia* leaves are used in grains to control stored pests as seen below. Grains can be kept up to one year without being affected with any storage pest.

Figure 10. Dried *Tephrosia* leaves are used in grains to control storage pests

©Kulika Uganda/Florence Namulindwa Ddumba

4. *Tephrosia* dry leaves as storage pesticide

Tephrosia leaves are picked and dried under shade. The dry leaves are pounded into powder form and put into grains boxes to prevent the storage pests from attacking the stored grains.

Tephrosia as pesticide can be used as well in nursery beds to control pests as seen below. Figure 11 shows a young farmer who uses *Tephrosia* in her nursery bed and the seedlings are doing so well.

Figure 11. Regina, a young farmer, uses *Tephrosia* in her nursery bed to control pests

©Kulika Uganda/Florence Namulindwa Ddumba

Another farmer below also uses *Tephrosia* to control pests in a nursery bed. *Tephrosia* pesticide is prepared as described above and can be used whenever it is needed.

Figure 12. Applying the *Tephrosia* pesticide in a nursery bed

©Kulika Uganda/Florence Namulindwa Ddumba

Implemented

In cooperation