

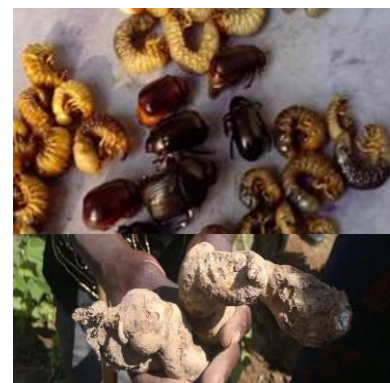
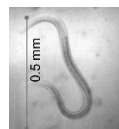
Good nematodes against grubs in irish potato

Diagnose the problem

White grub larvae, called '*Ibishorobwa*' in Kinyarwanda, feed on tubers such as potato, sweet potato and cassava. Larvae are creamy-whitish, very thick, and c-shaped. They have brown heads. They can be small but grow up to half the length of a middle finger. They are seen when digging up soil around plants. Tubers have chewing damage. Affected plants are scattered across the field. Plants may wilt. The roundish adult beetles are 1 to 2 cm and have a black or brown hard back. Adults are common March to June.

Background

Grub larvae are soil pests. In the soil also live very tiny worms that kill these grubs. They are called "*beneficial nematodes*". They are not pests like plant-nematodes. However, beneficial nematodes are often not enough to naturally control a pest. Therefore, they are sprayed against grubs. Obtain them from the Biocontrol Factory at Southern RAB Rubona (contact Joelle Kajuga, 0727801614 / 0788525794; toll free call 4675). As they are alive, transport them quickly, and hold them in a cool area (in food cool boxes, fridges, shadow). You can keep them for 1 week only. Apply directly after mixing with lots of water. Nematodes work very good against small grubs, and good against large grubs. Nematodes are not toxic and safe to humans and the environment.



1-2 cm grub larvae in soil, 1-2 cm, feeding damage on tubers (Photo by K. Li, N. Phiri)



Dilute sponges with nematodes in water, and sieve (by S. Toepfer)



Open furrow, spray nematodes into furrow, plant potatoes, immediately close soil (by S. Toepfer)

What to do

- Obtain beneficial nematode "*Steinernema carpocapsae RW14-G-R3a-2*" "*Steinernema sp. RW14-M-C2b-1*" or others from RAB Rubona.
- You get them formulated in sponges. Keep them cool.
- Work on a cool cloudy day, preferably an evening with no full sunshine.
- Dilute sponges in a bucket of water, squeeze them for a minute, so that nematodes go into water. Then take or sieve sponge out. Nematodes stay in the water.
- Prepare 10-20 million nematodes (=10 to 20 sponge pieces or 5 to 10 gram sponges) in 8 to 10 litres of water for 400 to 600 plantings (on 200m²). This equals 15000 – 45000 nematodes per planting, or 60 – 150 million per acre. Put nematode mix into cool shadowed place.
- Open soil furrows for planting.
- Immediately **spray nematode-water mix into furrow** before the soil in the furrow becomes dry.
- Add fertilizers if needed.
- Plant tuber or tuber pieces.
- Immediately close the soil, so that the nematodes do not dry out.

When using beneficial nematodes, no specific protective clothing is needed as they are safe. But wear at least gloves. There is no pre-harvest interval, or restricted re-entry interval. Follow instructions. Double-check for status of beneficial nematode regulations in Rwanda, this is with RALIS and the Directorate of Agriculture and Livestock Inspection and Certification service.

Scientific names ► *Anomala spp.*, *Melolonthini spp.*, *Hoplochelus sp.*, *Trochalus sp.*

Country: Rwanda



AUTHORS: Joelle Kajuga¹, Bancy Waweru¹, Athanase Hategekimana¹, Didace Bazagwira¹, Christine Umulisa¹, Xun Yan², Li Cao², Kebin Li³, Hongmei Li⁴, Stefan Toepfer⁵

¹Rwanda Agricultural Board RAB, Huye, Rwanda; ²Guangdong Entomological Institute, Guangzhou, China; ³IPP-CAAS, Beijing, China; ⁴CABI China, ⁵CABI Switzerland

email: jokajuga@yahoo.fr, bancywaweru@yahoo.com

October 2015

Supported by DFID's AgriTT

