CROP PROTECTION FACTSHEET

Beneficial nematodes against weevils in beans

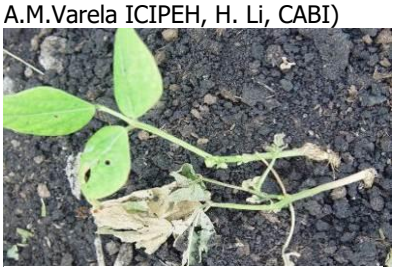
Diagnose the problem

Different snout weevils feed on leaves of beans or peas. They are called "*imungu*" in Kinyarwanda. The adults are 1 to 1.5 cm and have a long nose (=snout). Most are brown or black; some have light long stripes. Adult weevils chew leaf edges and cut out circular discs. The larvae of the weevils live in the soil. They are ½ a cm to 1 cm whitish-creamy c-shaped grubs with a brown head. The larvae do not have long legs as other grubs, and are also not so big. Note that bean fly larvae also live in stems, but do not have a brown head. The weevil larvae bore into roots and stem bases. The stem bases swell, and break easily. Plants are stunted, wilt, and may die.

1 cm weevil larvae and pupa, 1 to 1.5 cm adult (sources H. Li ; A.M.Varela ICIPEH, H. Li, CABI)

Background

The larvae of bean weevils live in the soil, roots and stem bases of beans and cowpeas. In the soil also live very tiny worms that kill these larvae. They are called beneficial nematodes. They are not pests like plant nematodes. However, beneficial nematodes are often not enough to naturally control pests. Therefore, they need to be sprayed against soil pest. 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. Nematodes can be applied when field vegetation is dense or soil surface is wet. Bare soil is not good. Nematodes are safe.

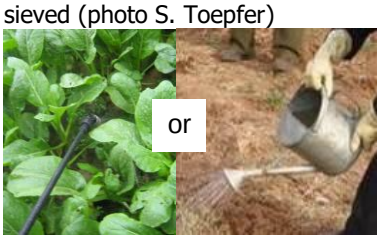


Wilting due to larval feeding (Photo by A.M.Varela ICIPE)

What to do

- Apply nematodes on young plants
- Obtain beneficial nematode *"H. bacteriophora RW14-N-C4a"* or others from RAB Rubona; keep them cool.
- You get them formulated in sponges.
- Work on a cloudy day and after rainfall or irrigation so that the soil surface is wet.
- Prepare a sprayer with a large nozzle or take nozzle out. Or take a can.
- Dilute sponges in a bucket of water, squeeze them for a minute, so that nematodes go into water. Then take or sieve sponge out.
- Prepare 6 to 18 million nematodes (= 15 to 45 sponges) for a 20 litre knapsack sprayer for 0.2 acres (=10 x 70 metres). This is enough for 500 to 700 plants. This equals 10000 – 30000 nematodes per plant, or 30 - 90 million per acre. Place the mix in a shadowed cool place until use.
- **Spray nematodes into dense vegetation near stem bases.**
- Much more water is needed if you spray along the stem base of non-dense crop rows, to wetten the soil. You may ridge soil up immediately after spraying. Dry soil surface must be a bit opened before spraying.

Sponges with beneficial nematodes diluted in water, and sieved (photo S. Toepfer)



Spray into dense vegetation, if soil is wet Dry soil surface must be opened before spraying. (Photo: S. Toepfer)

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 name ▶ ***Alcidodes spp.; Sitona spp.*** Country: **Rwanda**

AUTHORS: Joelle Kajuga [1], Bancy Waweru [1], Athanase Hategekimana [1], Didace Bazagwira[1], Christine Umulisa [1], Xun Yan [2], Li Cao [2], Kebin Li [3], Hongmei Li [4], Stefan Toepfer [5]

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

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

October 2015

Supported by DFID`s AgriTT