

Prevent bean rust using fungicides

Recognize the problem

Bean rust is a fungal disease of beans and other legumes. It can cause yield losses up to 30%. It affects vegetative, flowering and fruiting stages of the bean plant. The disease symptoms are yellow to yellowish-brown spots scattered over leaves. The symptoms are a little similar to those of anthracnose of beans, but usually smaller and not so orange-brownish.

Background

The disease thrives in damp conditions and temperatures of 20-25°C. Chlorothalonil is a non-systemic broad spectrum fungicide. It is a short term protectant so sprays need to cover all leaves well and need to be repeated for continued protection of the crop. As it is a protectant, it can only reduce the spread of bean rust but cannot cure the disease. Chlorothalonil is WHO toxicity class U, thus relatively safe if used with protective equipment. Consider spray when you see 2-5 spots on about 5 leaves per 5-10 plants out of 100. If you see many spots on many plants, then most plants are infected and it is too late to use sprays.

Management

- Buy a Chlorothalonil-based product at a reliable agro-input dealer (Bravo 720 SC, Diamond, Chloroflo 500SC; and many others)
- Wear protective clothing when mixing and spraying the chemical
- Dissolve Chlorothalonil in 16L water according to dosage info on the label.
- First make a paste in a small container before putting into the 16L sprayer to help with dissolving
- Fill the sprayer with ¼ or ½ of final volume of water.
- Add the paste to the sprayer
- Then add the remaining water. Do NOT completely fill the container to avoid overflow. Close the container well.
- Mix well by shaking the container
- Spray uniformly to cover all leaves and stems well.
- Make sure you spray all of the solution and have no rests in the sprayer
- Do not re-enter the field for at least 1 day after spray.
- After 1 week, if there is no sign that symptoms are spreading, spray the second protective spray 14 days after the first spray.
- Repeat spray 14 days after the second spray if new symptoms appear.
- Do not spray when crop is maturing (at least 7 day pre-harvest interval)
- When you have finished spraying, clean the sprayer and the containers you used to mix the chemical.
- Do NOT clean the sprayer and containers near a well, stream or any other water body because it is toxic to fish
- To prevent resistance, don't always use Chlorothalonil, but switch to Difenoconazole, Azoxystrobin, Boscalid, Cyproconazole, Pyraclostrobin, Mancozeb, Metconazole, Tebuconazole, or Fenpropimorph

Symptoms of rust *Uromyces appendiculatus* (Photo by Howard F. Schwartz, Colorado State University, Bugwood.org)



Rust on bean leaf. (Photo by AgrEvo)



When using a pesticide, always wear protective clothing and follow the instructions on the product label, such as dosage, timing of application, and pre-harvest interval.

Scientific name(s) > *Uromyces appendiculatus*

The recommendations in this factsheet are relevant to: Zambia



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