FACT SHEET: CHILLI ANTHRACNOSE DISEASE

Koronivia Research Station Plant Protection Unit

Common name: Chilli Anthracnose Disease

Casual organism: Colletotrichum spp; In Fiji only two species has been identified; *C. simmondsii* (previously acutatum), *C. trumcatum* (previously capsici).

Hosts: These are some hosts of Colletotrichum species in Fiji - Cucurbits, Solanaceous plants (including Eggplants, Capsicum, and Tomatoes), Mangoes and Yams.

Introduction

Chilli is an important crop in Fiji but the anthracnose disease seriously affects its yield. It can reduce the yield up to 50% (*Pakdeevaraporn et al.*, 2005). The fungus can survive in and on seeds. Affected fruits are deformed, white in color and lose their hotness and taste. Anthracnose is a major disease that appears on mature fruits and causes severe losses due to both green and red fruit are infected.

Different Colletotrichum species may also play an important role in different diseases of mature stages of chilli fruit as well. For example, *C. capsici* is widespread in chilli fruits, whereas *C. acutatum* and *C. gloeosporioides* have been reported to be more prevalent on both young and mature green.

Symptoms

Small black circular spots present on the fruits skin and spread in the direction of the long axis, more or less oval shaped. As the infection grows, the spots become greenish/greyish in color or they are clearly boarded by a thick, sharp black rings and a lighter black or straw colored area. In some cases, the spots are brown, and then turn black. Severe infection results in change of fruit color from red to straw or white. When a diseased fruit is cut open, the inner surface of the skin is black in color with seeds turning brownish to black. Finally, the diseased fruit shrinks and dries up (Figure 1). Typically anthracnose symptoms on chilli fruit include sunken necrotic tissues; with concentric rings of acervuli (see Figure 2). Fruit showing blemishes (Figure 3) have reduced marketability (*Manandhar et al.*, 1995).





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Figure 1:Figure 2: SunkenBongo chillinecrotic tissues,variety withwith concentricsymptomsrings of acervuli ofhave reducedjungle chillimarketability

Figure 2: SunkenFigure 3: Disease fruitsnecrotic tissues,shrivel and dries up-on Redwith concentricFire varietyrings of acervuli on

Management

1. Cultural Method:

These are some cultural practices that can be carried out to prevent, reduce and manage the disease.

- Disease free chilli seeds and seedlings ONLY should be planted.
- Keep crop weed free. Some weeds are hosts of the pathogen too.
- Chilli crops should be rotated every 2 3 years with non – hosts crops such as Dalo, Cassava, Sweet Potato, Beans, Cabbage, Okra and Maize
- The screen house, where seedlings are grown should be kept free of weeds and volunteers of solanaceous plants.
- The field should have proper drainage and all infected plants and fruits should be burnt away from the plantation.
- If the field was previously infected, do not plant solanaceous crops (tomatoes, eggplants, capsicum) there for at least two years.
- Avoid damaging the plants or keep it insect pest free as wounds can provide entry points for Colletotrichum and other plant pathogens.
- Remove all infected plants and plant debris by

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These are three locally available fungicides

Note: These are protectant fungicides and should be applied at flowering stage (before the disease occur on the fruit), spraying should continue at recommended interval till end of harvesting.

- Kocide 15g-20g/15L water, spray at early flowering stage as a protectant fungicide
- Manzate 30g/15L water, spray every two weeks.
- Agent 500-15ml/15L water, spray weekly after harvest



burning as soon as the disease appears on the

Chemicals with the use of recommended fungicides are the most common and practical method to

control anthracnose diseases. However, fungicide

tolerance often arises quickly, if a single compound

is relied upon to heavily (Staub, 1991). The disease

can be controlled under normal weather conditions

with a reasonable spray program. However, there

are negative effects of using chemicals on farmers'

income and health, and toxic contamination to the environment, particularly in developing countries

crop.

2. Chemical Method: