



## Efficacy Test of PROUD 3<sup>®</sup> and PROMAX<sup>™</sup> for the Control of Black Sigatoka Disease on Cavendish Banana

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### Field Report

#### Summary

A study was conducted to determine the potential of various fungicidal compounds to control Black Sigatoka disease afflicting Cavendish banana which is caused by the ascomycete fungus *Mycosphaerella fijiensis*. Different compounds were evaluated by single leaf testing under lowland conditions at Mabini CARP Beneficiaries Cooperative Inc. (MCBCI), Mabini, Philippines. PROUD 3<sup>®</sup> and PROMAX<sup>™</sup> demonstrated a delay in disease development at various stages.

#### Description

Five banana plants of the same age were randomly selected for each treatment and concentration in this trial. One leaf per plant was treated by one of the following: 1) Bio Huma Netics' (BHN) PROUD 3<sup>®</sup> at two concentrations of 3 cc/L or 5 cc/L, 2) BHN PROMAX<sup>™</sup> at two concentrations of 5cc/L or 8cc/L, 3) commercial practice, and 4) untreated control (UTC). The fully-open leaf of each sample plant was tagged for treatment application. A volume of 200 mL of fungicide solution was mixed and then immediately poured into an Orchid<sup>®</sup> hand-atomizer and sprayed within the 4" x 4" hole of a plastic board that was positioned near the tip of the first-fully open leaf of the test plant. The sprayed portion of the leaf was marked using a Pentel<sup>®</sup> pen. A color-coded ribbon was tied to the sprayed leaf for each treatment. Black Sigatoka measurements were taken from the treated leaf at two-day intervals until termination of the study. The number of days that elapsed between treatment application and occurrence of Black Sigatoka symptoms was determined at various stages of disease development (Stage 0-1: speck stage; Stage 2: first-streak stage, reddish-brown; Stage 3: second-streak stage, reddish-brown turning to brown; Stage 4: first-spot stage, black; Stage 5: second-spot stage, black spot surrounded by yellow; and Stage 6: mature spot-stage, chlorotic stage, gray). (See Figure 1)



Banana Plant Affected by Black Sigatoka Disease  
<http://bananaroots.wordpress.com/2014/07/19/spotting-panama-disease-on-the-fly/>



Banana Plant with Advanced Stages of Black Sigatoka Disease  
<http://www.agfax.net/radio/detail.php?i=224&s=t>

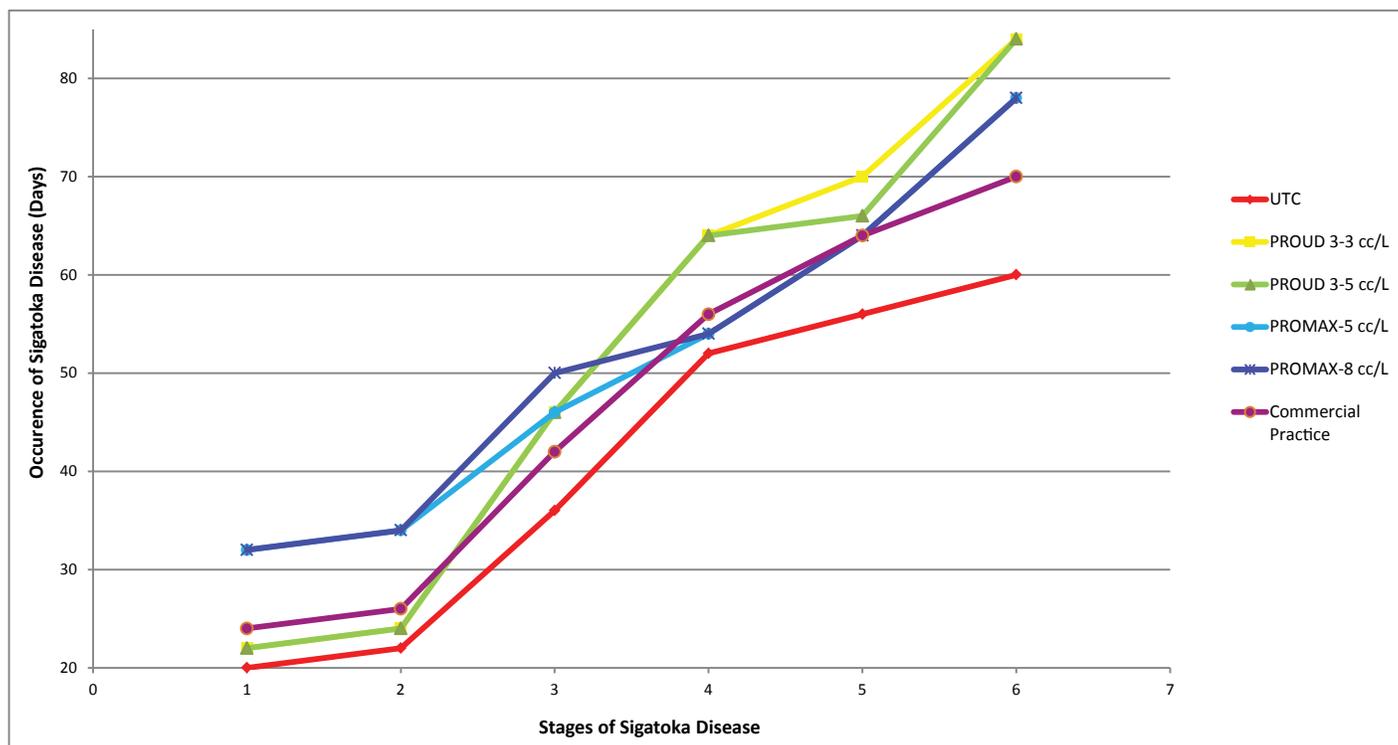


Figure 1. Number of days from treatment application to the occurrence of Black Sigatoka at various stages of disease development.

## Results

The OMRI-listed PROMAX™ treatment resulted with the most delayed infection of early visible streak (stage 2) occurring after 34 days. The OMRI-listed PROUD 3® treatment resulted in the longest symptom-evolution of disease developing into a mature leaf spot (stage 4) until 64 days. PROUD 3® clearly delayed development of the disease to stage 6 from 60 days in the UTC, to over 80 days.

Full research report available upon request.

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