

PROUD 4™ Demonstrates Broad-Spectrum Control of Plant Diseases

CONDUCTED BY: Ag Metrics Group - Florida Ag Research

HUMA® PRODUCT: PROUD 4™

OBJECTIVE

PROUD 4, an upgraded formula of PROUD 3®, was tested against various pathogens in a lab assay to determine effectiveness of control.

MATERIALS & METHODS

In an independent, on-site laboratory in Florida, petri-disks inoculated with pathogens were prepared: alternaria (*Alternaria solani*), anthracnose (*Colletotrichum sp.*), botrytis (*Botrytis cinera*), fusarium (*Fusarium sp.*), macrophomina (*Macrophomina phaseolina*), neopestalotiopsis (*Neopestalotiopsis sp.*), phytophthora (*Phytophthora cactorum*), pythium (*Pythium sp.*), rhizoctonia (*Rhizoctonia solani*), citrus canker (*Xanthomonas citri*), citrus greening (CLAS, *Candidatus Liberibacter asiaticus*), and bacterial canker (*Pseudomonas syringae*). Petri-disks were treated once with Proud 4 at rates 1% v/v, 2% v/v, and 4% v/v. An untreated check was also included for reference. Plots were replicated eight times in a randomized complete block design.

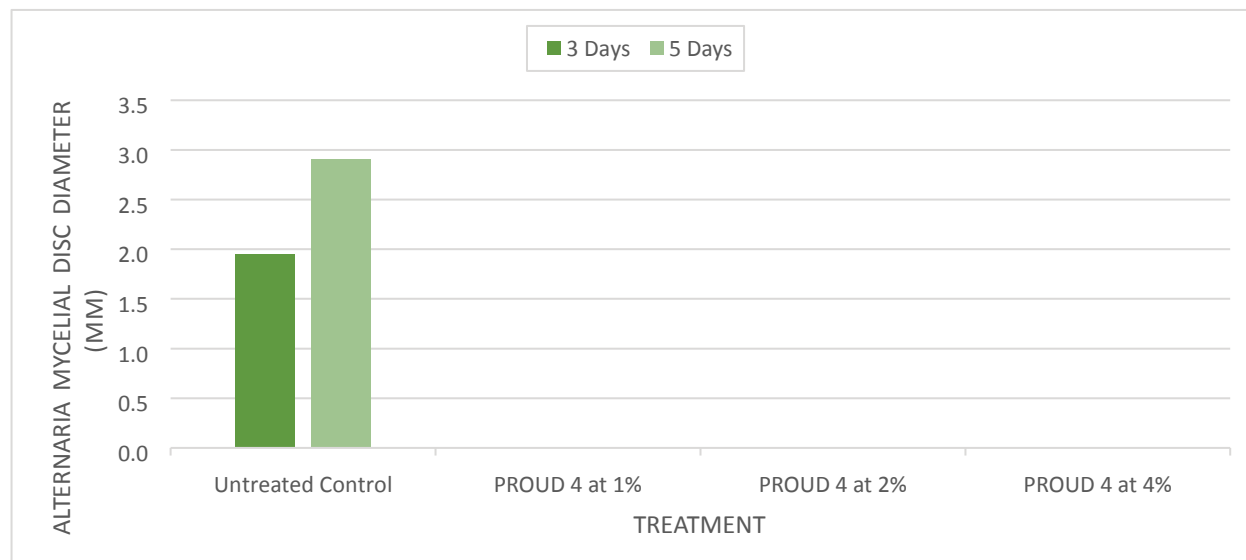
For mycelial disk diameter assays, product was applied to the media, with inoculation following to measure growth (mm) (See bar graphs below).

For CFU assays, pathogens were inoculated via streaking. Product was directly added to the media before CFU (#/plot) counts. All data was recorded and analyzed in ARM Rev. 2026.1. Statistics were analyzed using ANOVA mean comparison with LSD test, $\alpha=0.05$.

RESULTS

PROUD 4 exhibited complete control for Alternaria, Anthracnose, Fusarium, Macrophomina, Neopestalotiopsis, Pythium, and Rhizoctonia. It had a very positive effect on Botrytis, Citrus Greening Canker, Citrus Canker, and Bacterial Canker.

PROUD 4 vs. ALTERNARIA



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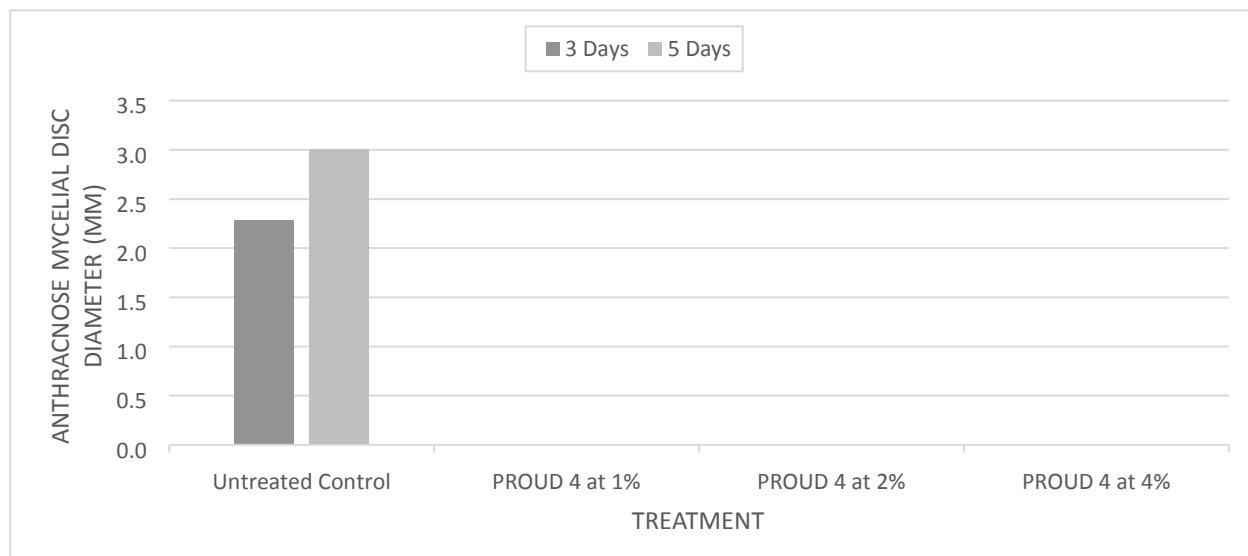


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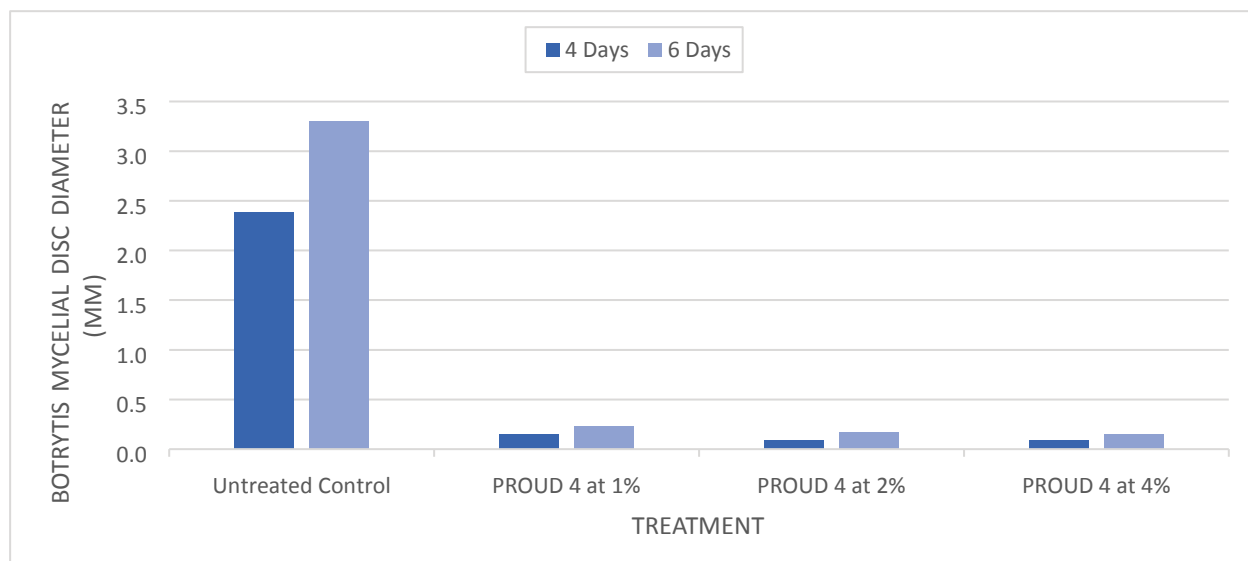
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PROUD 4 vs. ANTHRACNOSE



PROUD 4 vs. BOTRYTIS



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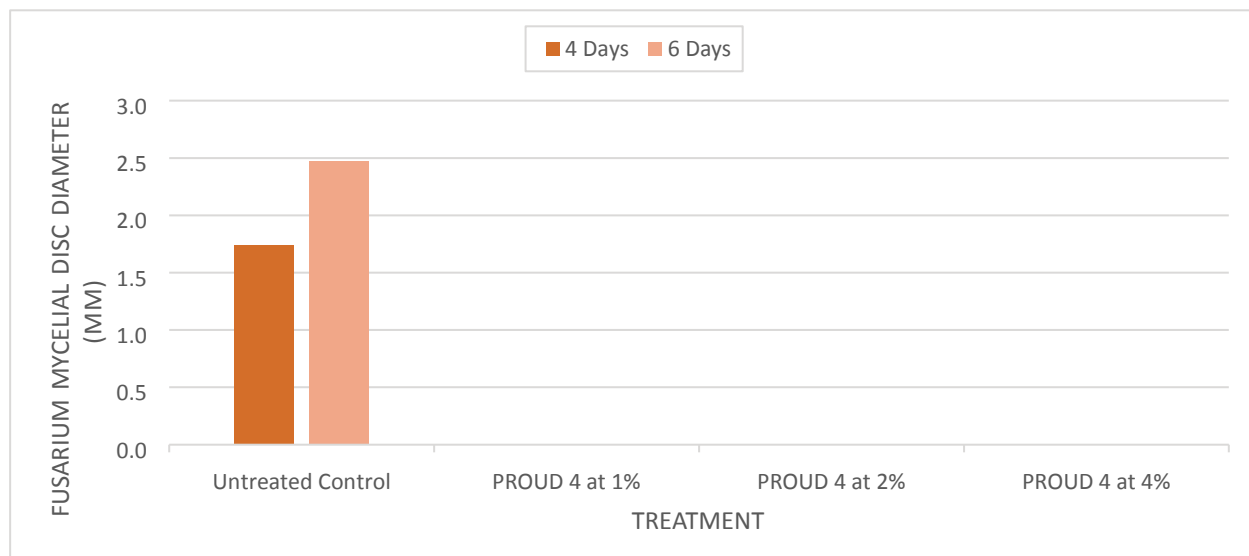


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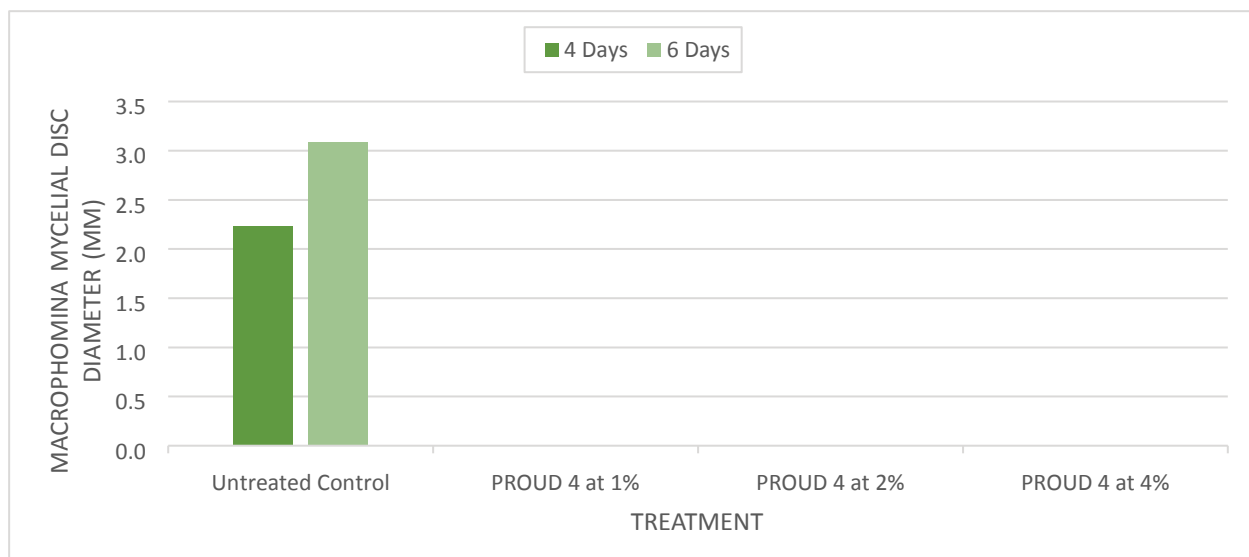
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PROUD 4 vs. FUSARIUM



PROUD 4 vs. MACROPHOMINA



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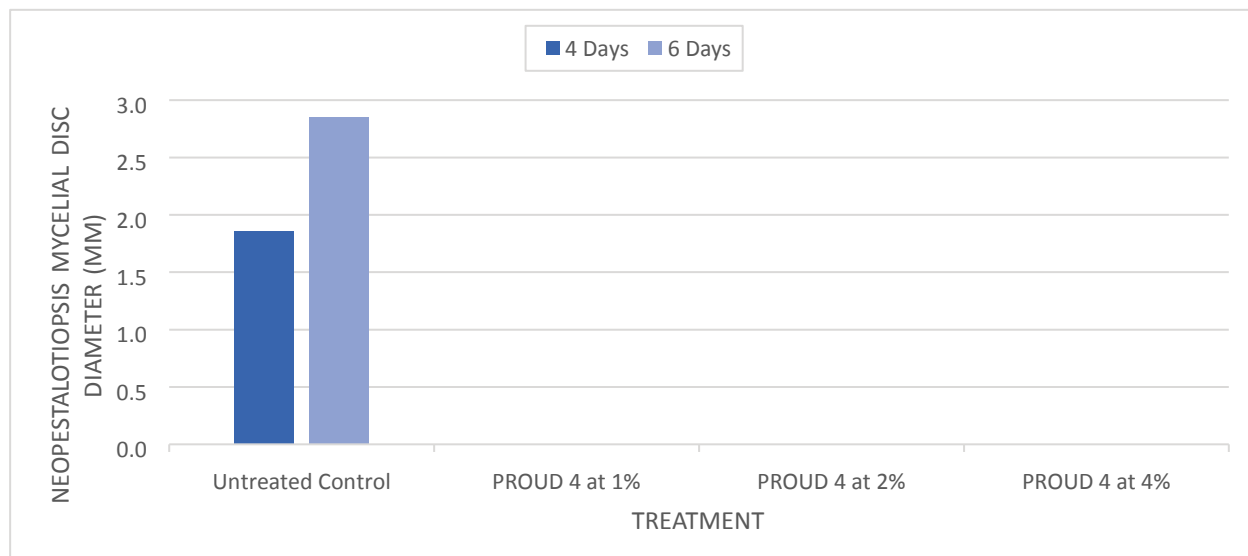


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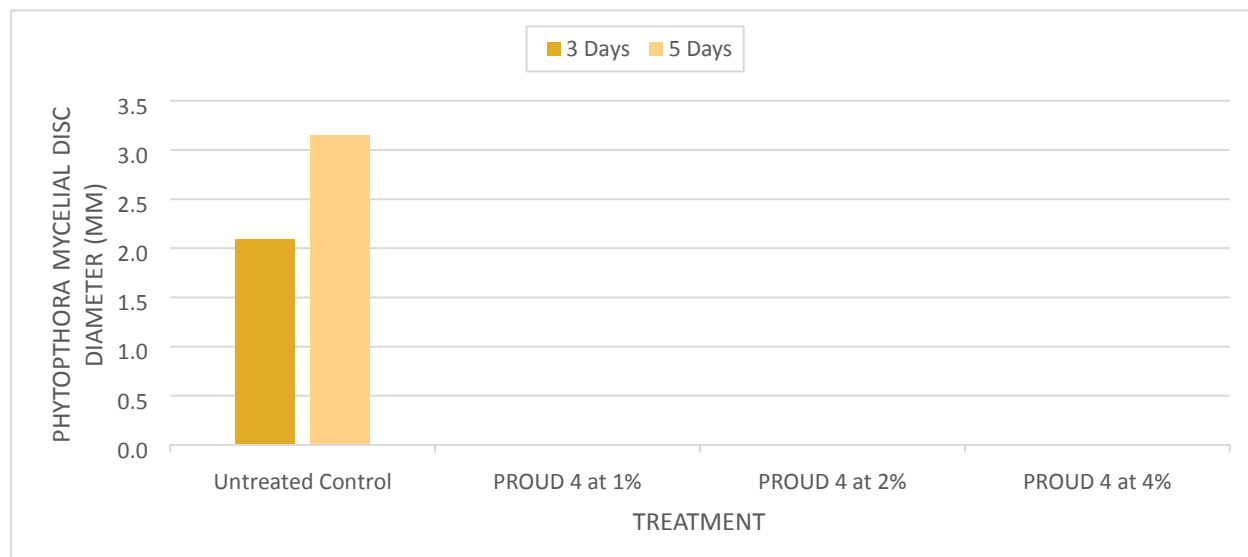
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PROUD 4 vs. NEOPESTALOTIOPSIS



PROUD 4 vs. PHYTOPHTHORA



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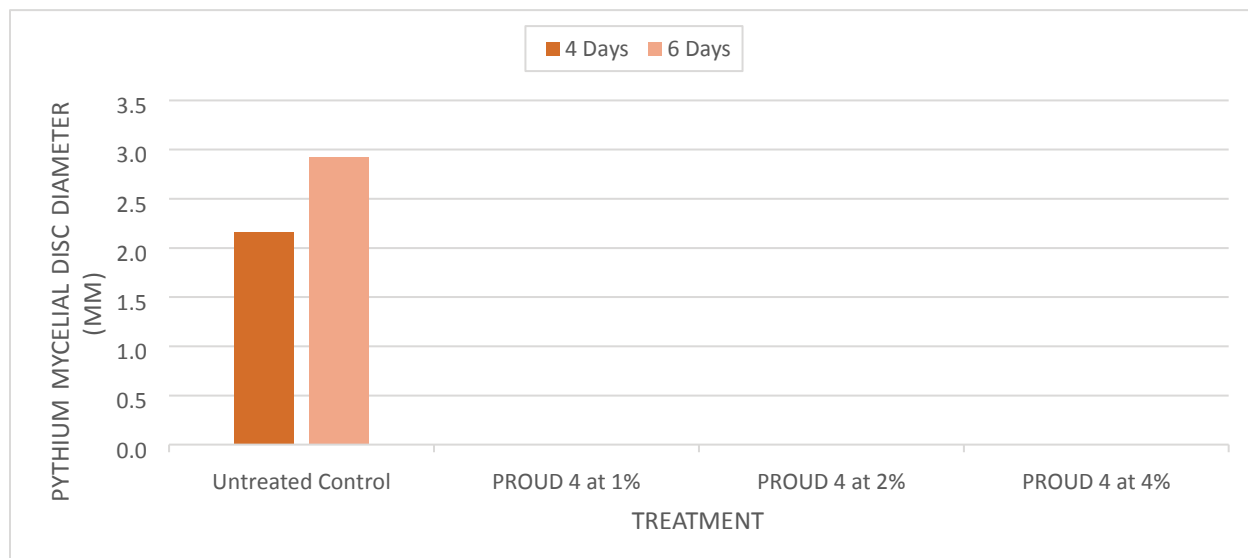


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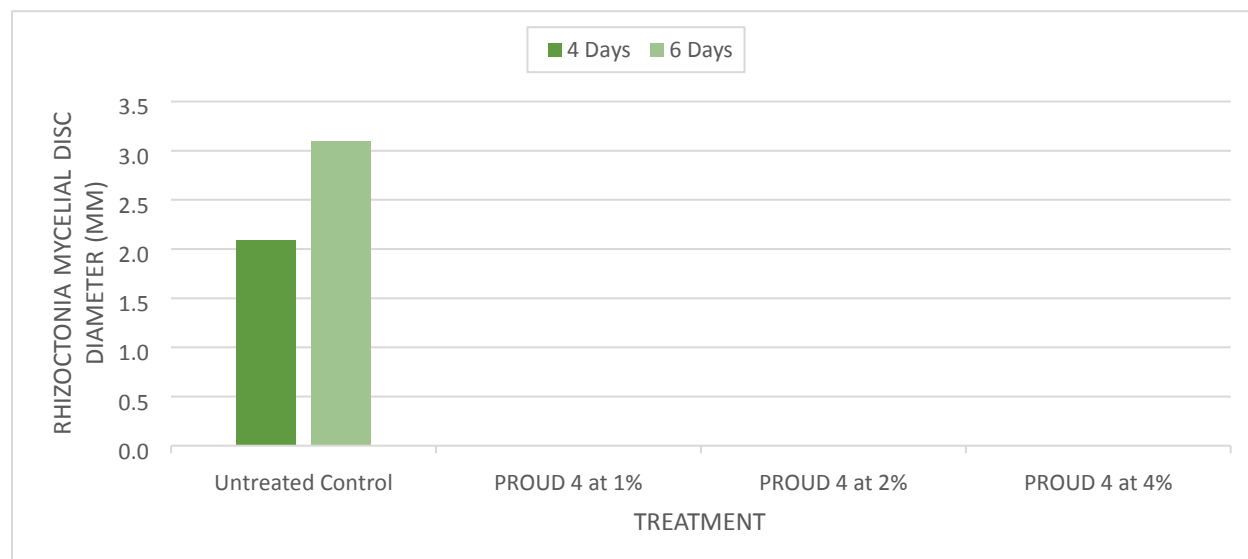
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PROUD 4 vs. PYTHIUM



PROUD 4 vs. RHIZOCTONIA



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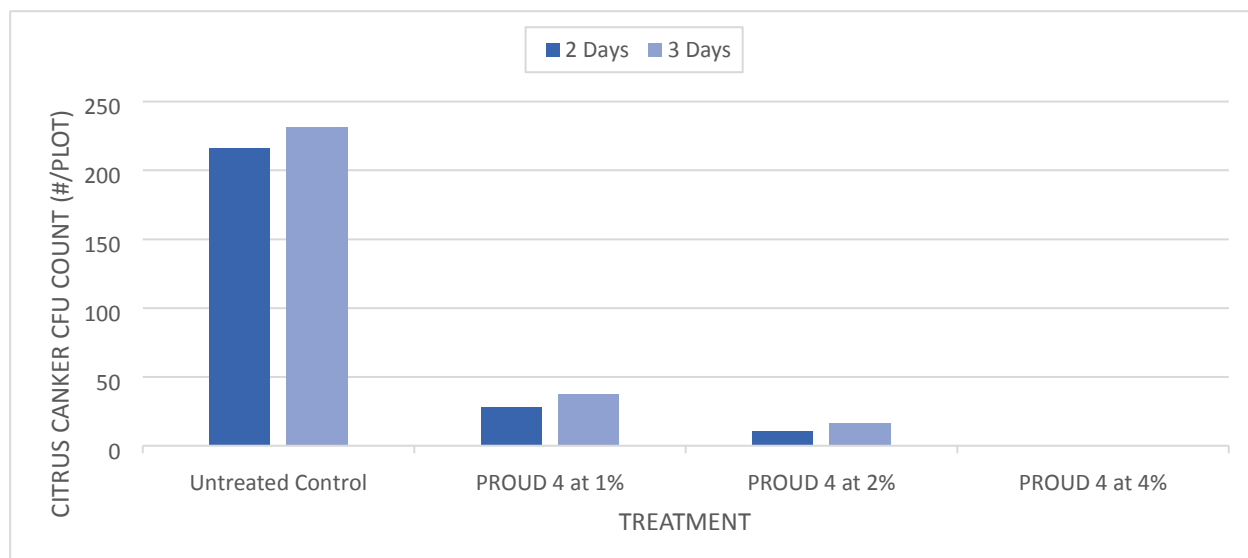


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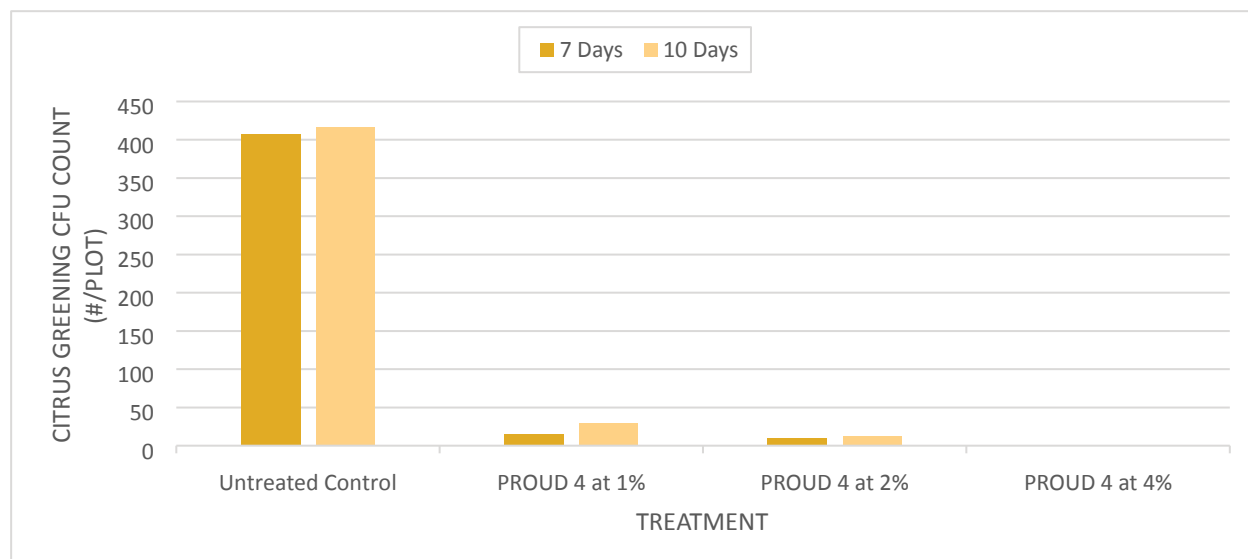
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PROUD 4 vs. CITRUS CANKER



PROUD 4 vs. CITRUS GREENING



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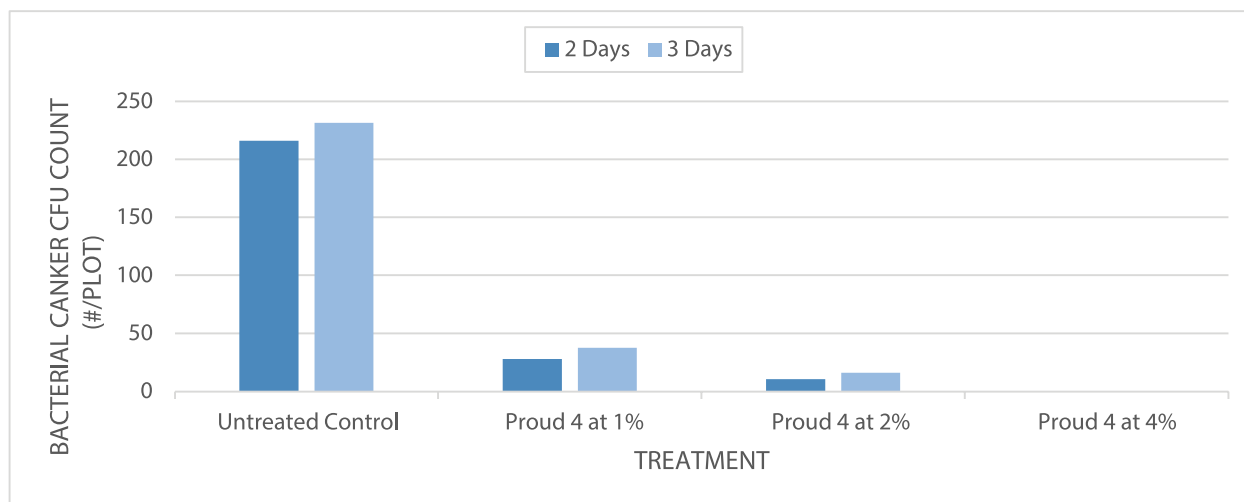


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PROUD 4 vs. BACTERIAL CANKER



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