

Effect of postharvest dip treatments on *Rhizopus* soft rot of sweetpotato

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INTRODUCTION

This study investigated the effectiveness of decay control products against a common postharvest disease, *Rhizopus* soft rot. This fungal disease can be a serious problem during shipping as it quickly causes a very soft watery rot with characteristic white whiskery growth and powdery black spores.

Botran®, the industry standard for *Rhizopus* control, performed very well in this experiment. However, certain markets are no longer accepting Botran®-treated sweetpotatoes leaving packers searching for alternatives.

MATERIALS & METHODS



Roots (cv. Hernandez) were gently washed with tap water. An impact bruise injury (8 mm diam × 1 mm deep) was made to opposite sides of the mid-section of each root (two injuries per root) with the sharp impact of a wood dowel.



Treatments were applied by completely submerging roots in treatment solutions and gently agitating for 30 sec.



Inoculum was introduced by brushing a spore suspension (10⁶ spores/ml) of *Rhizopus stolonifer* over the wounded area with a foam paintbrush.



Treated roots were allowed to air dry, placed in plastic storage crates (15 per crate; four crates [replicates] per treatment) and evaluated after 10 days of storage at 55 to 60F.

RESULTS

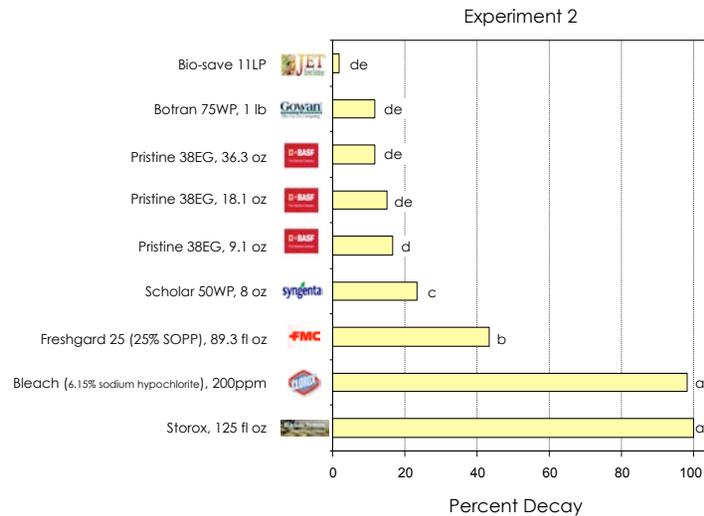
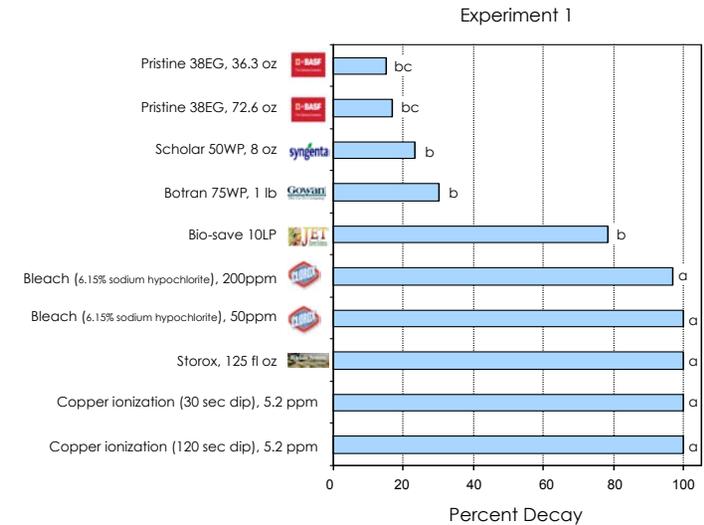


Demonstration at 2004 NC Field Day showing decayed roots (bottom row) and healthy roots (top row) for each treatment.

CONCLUSIONS

The inoculation method produced extremely high levels of disease (100%) in non-treated roots. Therefore, treatments were evaluated under conditions very favorable to disease development. Bio-Save® 111P, a biopesticide, and Pristine® (BASF), reduced-risk chemistry, both provided very high levels of decay control. Other products such as Scholar® (Syngenta) and Freshgard 25® (FMC) were marginally effective, while copper ionization, chlorine (bleach), and Storox® were ineffective against *Rhizopus* soft rot. Future research will focus on improving efficacy of Bio-Save, Pristine and Scholar. IR-4 is pursuing registration of these products with the support of the manufacturers.

RESULTS (cont.)



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