

# 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 whiskey 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



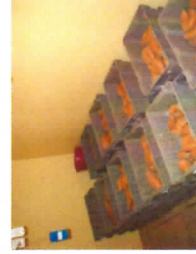
Roots (cv. Hernandez) were gently washed with tap water. An impact bruise injury (8 mm diam, 1 mm deep) was made to opposite sides of the mid-section of each root (two injuries per root) with the sharp impact of a wood dowel.



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



Inoculum was introduced by brushing a spore suspension ( $10^8$  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 60°F.

## RESULTS

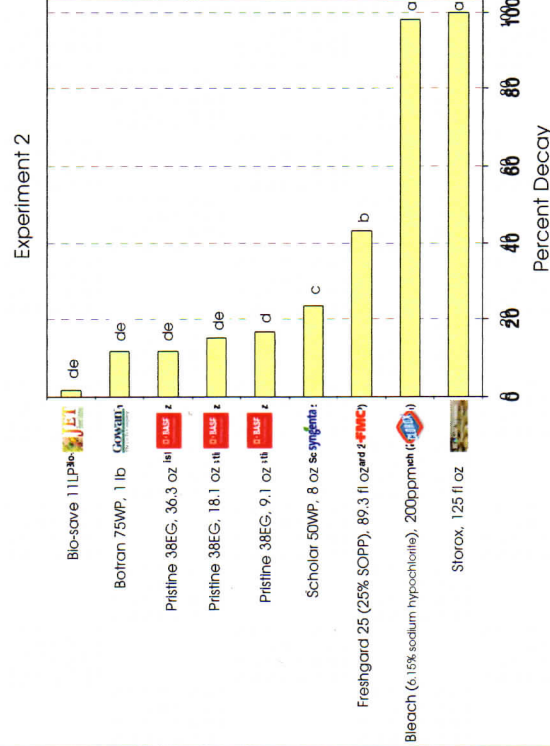
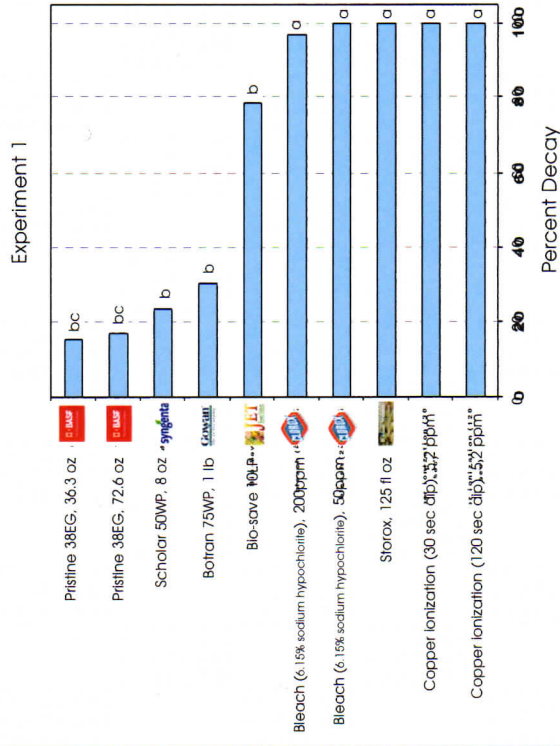


Demonstration at 2004 NC Field Day showing decayed roots (bottom row) and healthy roots (top row) for each treatment.

## 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® 11LP, 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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