

Effect of postharvest dip treatments on *Rhizopus* soft rot of sweetpotato, 2003.

The experiment was conducted at the Central Crops Research Station in Clayton, NC. Sweetpotato roots were harvested on 23 Oct 02 and stored at 55°F in a commercial sweetpotato storage facility until experiments were conducted in Nov 03 (nearly 13 mo). Roots were gently washed by hand with tap water and allowed to dry at room temperature. 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). Inoculum was introduced by brushing a spore suspension (10⁶ spores/ml) of *R. stolonifer* over the wounded area with a foam paintbrush. Treatments were applied by completely submerging roots in treatment solutions for 30 sec. Treated roots were allowed to air dry, then placed in plastic storage crates (20 per crate; four crates/replicates per treatment) and evaluated after 10 days of storage at 55 to 60°F. The experiment was repeated using freshly mixed treatment solutions.

Both experiments yielded similar results. The inoculation method produced extremely high levels of disease (100% and 89%) in non-treated roots. Therefore, treatments were evaluated under conditions very favorable to disease development. Botran, the industry standard for decades, performed extremely well in both experiments. Certain markets are no longer accepting Botran-treated sweetpotatoes and packers are searching for suitable alternatives. StorOx and Tsunami 100 were ineffective against *Rhizopus* soft rot. Maxim and Pristine were highly effective. Bio-Save 10LP reduced disease incidence significantly and produced greater disease control at the high rate. However, its performance dropped markedly in the second experiment.

Treatment, rate of product per 100 gal	Experiment 1		Experiment 2	
	Number of decayed roots per 20	% Decay	Number of decayed roots per 20	% Decay
Non-inoculated, non-wounded	0.0 e *	0.0	0.0 f	0.0
Non-inoculated, wounded.....	1.5 de	7.5	6.3 d	31.2
Inoculated and wounded.....	20.0 a	100.0	17.8 a	88.7
Botran 75WP, 1 lb.....	0.5 e	2.5	0.3 f	1.2
Bio-Save 10LP, 22 oz.....	9.3 b	46.2	13.0 b	65.0
Bio-Save 10LP, 70 oz.....	5.3 c	26.2	10.5 c	52.5
Storox, 15 fl oz	19.3 a	96.2	15.0 ab	75.0
Maxim 4FS, 1.6 fl oz.....	3.5 cd	17.5	3.8 e	18.7
Pristine 38WG, 72.5 fl oz.....	3.3 cd	16.2	1.5 ef	7.5
Tsunami 100, 6 fl oz.....	19.3 a	96.2	15.0 ab	75.0

* Values followed by the same letter within a column are not significantly different (*P*=.05, Student-Newman Keuls test).