



2401 East Highway 83
Weslaco, Texas 78596
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Report on Research Fungicide Trial on Watermelon for Downy Mildew

Submitted to Grow More: Dr. Thomas Quick

Juan R. Anciso, Ph.D. **principal investigator**

Time period: **January 1, 2009 thru June 30, 2009**

Purpose: Evaluate fungicide combinations of differently labeled compounds with EZ Wet SE a non-ionic surfactant and PhosPro CA a foliar fertilizer in comparison to commercial standards for downy mildew control in seedless watermelons.

Results: The results indicate that adding a non-ionic surfactant such as EZ Wet SE increased the efficacy of Gavcl at the lower rate in comparison to the higher rate. However, this was not observed with Presidio at the lower rate in comparison to the higher rate. A non-ionic surfactant is highly recommended according to the Gavcl label while it is not mentioned in the Presidio label. The phosphite fertilizer PhosPro CA did not cause any phytotoxicity when combined with strobolurin such as found in Pristine which has been observed with other phosphate combinations with strobolurins in watermelons. Downy mildew can be a very destructive disease to seedless watermelons at any time during its growing cycle if significant rainfall occurs. Through most of the watermelon trial environmental conditions were very dry until showers occurred on May 16 (0.45 inches), May 24 (1 inch), and June 1 (.39 inches). The application of these products began on April 23 and continued on a 10-14 day interval with the following applications occurring on May 6 and May 18. A disease rating on a scale of 0-10 (0-no disease and 10- total loss of leaves) was taken 22 days after the last application and one day before harvest. Although the trial evaluated fungicides in tank mixtures and rotations, these products must be tanked mixed and rotated with other fungicides to prevent resistance build-up by the downy mildew fungus. No phytotoxicity was observed with any of the treatments and EZ Wet SE can be tank mixed without any phytotoxicity issues either with Bravo Weather Stik or the two fungicides under investigation. However, the lower rate of Presidio at 3 oz per acre which utilized this surfactant did not perform satisfactory. So it is possible this 3 oz rate of Presidio is too low given the disease pressure or the surfactant may have interfered with its activity. Also, mixing PhosPro CA with a strobolurin fungicide did not cause any phytotoxicity with the known sensitive seedless watermelon plants.

Table 1. Fungicide treatments for downy mildew in watermelons Weslaco, Tx. 2009

Treatment	Rate (product per acre)	Appl. Date	Rating on 6/9 ²
1. Gavel + Bravo + EZ Wet	1.5 lbs + 1 quart + 0.25% V/V	4/23	2.83 a
Pristine + Bravo + EZ Wet	12.5 ounces + 1 quart + 0.25% V/V	5/6	
Gavel + Bravo + EZ Wet	1.5 lbs + 1 quart + 0.25% V/V	5/18	
2. Gavel + Bravo	2 lbs + 1 quart	4/23	5.75 b
Pristine + Bravo	12.5 ounces + 1 quart	5/6	
Gavel + Bravo	2 lbs + 1 quart	5/18	
3. Presidio + EZ Wet	3 ounces + 0.25% V/V	4/23	6.67 bc
Pristine + Bravo + EZ Wet	12.5 ounces + 1 quart + 0.25% V/V	5/6	
Presidio + EZ Wet	3 ounces + 0.25% V/V	5/18	
4. Presidio + Bravo	4 ounces + 1 quart	4/23	3.0 a
Pristine + Bravo	12.5 ounces + 1 quart	5/6	
Presidio + Bravo	4 ounces + 1 quart	5/18	
Commercial standard			
5. Ridomil Gold Bravo	2 lbs	4/23	1.92 a
Pristine + PhosPro CAL	12.5 ounces + 2 quart	5/6	
Ridomil Gold Bravo	2 lbs	5/18	
6. Untreated control			8.5 c

²Disease rating based on scale 0-10 (0- no disease and 10- total loss of leaves)
Means within a column not followed by a common letter are significantly different (p=0.05) according to Duncan's New Range Multiple Test.

Presidio SC ^R	Valent	fluopicolide 39.5% or 4 pounds a.i. per gallon
Gavel 75 DF ^R	Gowan	mancozeb 66.7% and zoxamide 8.3% by weight
Bravo Weather Stik ^R	Syngenta	chlorothalonil 54% or 6 pounds a.i. per gallon
Pristine WG ^R	BASF	pyraclostrobin 12.8% and boscalid 25.2% by weight
Ridomil Gold Bravo WP ^R	Syngenta	mefenoxam 4.4% and chlorothalonil 72% by weight
PhosPro CAL ^R	Grow More	phosphite 16% and calcium 4%
EZ Wet SE ^R	Grow More	non-ionic surfactant with natural saponins