

## Cucurbit powdery mildew (*Podosphaera xanthii*) control with Organic Materials Review Institute (OMRI)-listed products

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### Products Tested

Treatment (active ingredient)	Rate	2019	2016	2012	2011
<b>Actinovate AG<sup>1</sup></b> ( <i>Streptomyces lydicus</i> WYEC108 0.04%)	12 oz/A		X		
<b>Double Nickel LC</b> ( <i>Bacillus amyloliquefaciens</i> strain D747)	32 fl. oz/A		X		
<b>MB-110 (now Stargus)</b> <i>Bacillus amyloliquefaciens</i> strain F727	3 qt/A		X		
<b>Microthiol Disperss</b> (Sulfur)	25 lb/A	X	X		
<b>Milstop WP</b> (Potassium bicarbonate)	2.5 lb/A		X	X	X
<b>M-Pede</b> (potassium salts of fatty acids)	2% v/v				X
<b>Oxidate 2.0</b>	128 fl. Oz/100 gal		X	X	X
<b>Oxidate + Pomcho</b>	128 fl. Oz/100 gal + 1% v/v		X		
<b>Oxidate + Yucca Ag Aid</b>	128 fl. Oz/100 gal + 0.125 % v/v			X	X
<b>Percarb</b> (sodium carbonate peroxyhydrate)	2 oz/5 gal	X			
<b>Pomcho</b> (food grade coating)*	1% v/v		X		
<b>Pvent</b> ( <i>Gliocladium catenulatum</i> strain J1446)	6.6 oz/A	X			
<b>Regalia EC<sup>1</sup></b> (extract of <i>Reynoutria sachalinensis</i> )	4 qt/A		X		
<b>Regalia EC<sup>1</sup> + Actinovate<sup>1</sup></b>	4 qt/A + 12 oz/A		X		
<b>Serenade</b> QST 713 strain of <i>Bacillus subtilis</i>	3 lb/A				X
<b>Serifel</b> <i>Bacillus amyloliquefaciens</i> strain MBI600)	3 qt/A	X			
<b>Sonata*</b> <i>Bacillus pumilus</i> (QST 2808)	4 qt/A			X	X
<b>Sporatec AG</b> (essential oils)	3 pt/A				X
<b>SuperSafe Insecticide and Fungicide</b> (citric acid)	7 oz/gal	X			

<sup>1</sup> Plant activator product

\*Not OMRI listed

## Trial results

### **What is “Area Under the Disease Progress Curve?”**

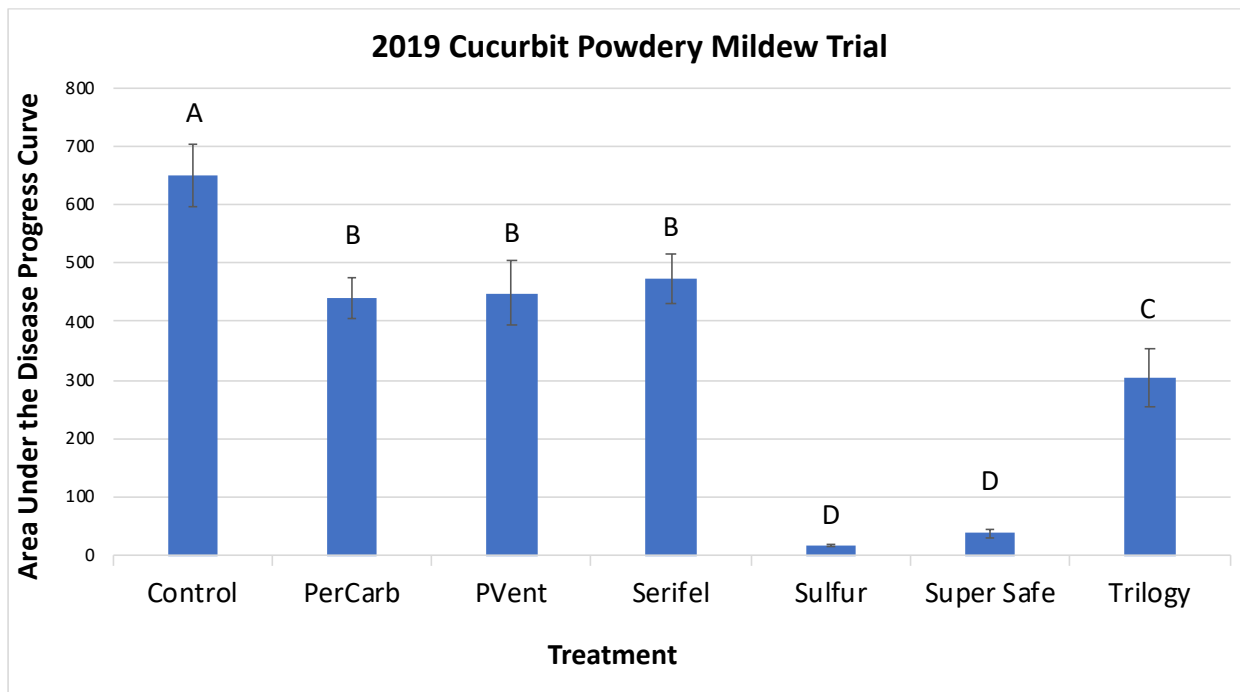
The area under the disease progress curve (AUDPC) is a quantitative summary of disease over time, for comparison across years, locations, or management tactics. A lower AUDPC indicates lower levels of disease.

**What do the letters mean?** Treatments associated with the same letter are not significantly different (statistically) from each other in the trial.

**What do the error bars (at the top of the chart bars) mean?** The error bars reflect the variability among replications of a treatment.

**What is the “control” treatment?** The control treatment is unsprayed.

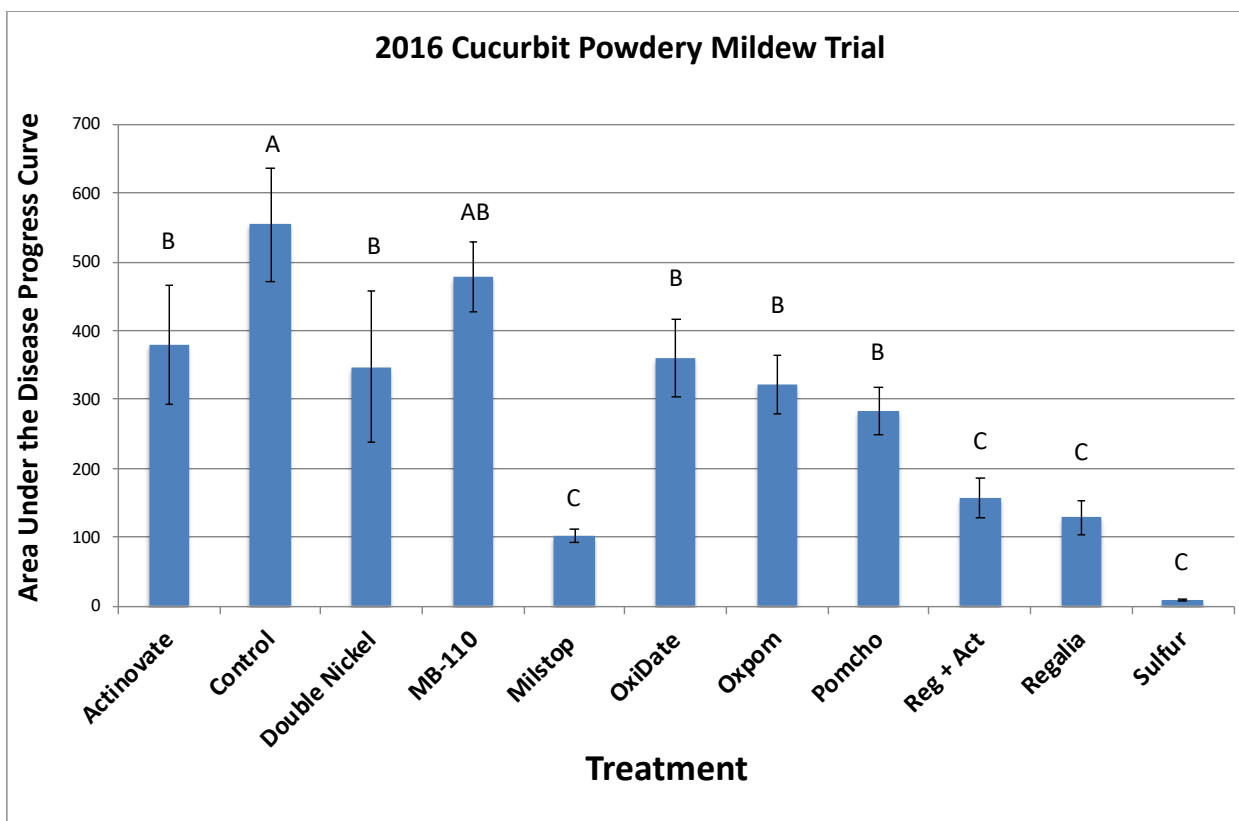
All treatments in these trials were applied with a CO<sub>2</sub> pressurized backpack sprayer at 40 psi delivering 40 gal/A through two TeeJet 8002VS flat fan nozzles spaced 19 in apart.



Three applications: 8/12, 8/26, and 9/3. The trial was inoculated 8/21 by placing infected leaves in the plots. Average maximum temperature for August was 78°F, and 72°F for September 1-9. Average minimum temperature for August was 60°F and 55°F for September 1-9. Total precipitation was 5.23 inches and 1.05 inches for August and September 1-9, respectively.

**Table of Results for 2019 Cucurbit Powdery Mildew Trial**

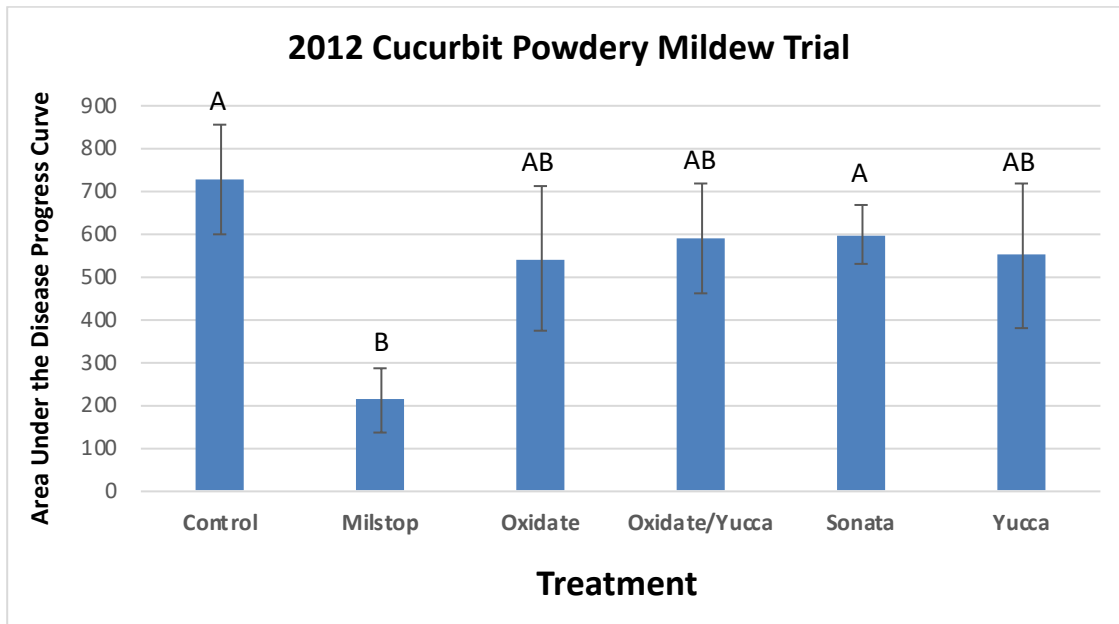
Treatment	Mean AUDPC
Control	648.8 a
PerCarb	441.3 b
PVent	448.8 b
Serifel	472.5 b
Sulfur	16.5 d
Super Safe	37.8 d
Trilogy	303.8 c



Four weekly applications starting August 1 before disease was detected. Percent leaf area covered with lesions evaluated for three weeks between August 17 and September 1. Average maximum temperatures for July and August were 83°F; average minimum temperatures were 61, and 63°F. Rainfall amounts (in.) were 1.5 and 5.8 for July and August, respectively.

**Table of Results for 2016 Cucurbit Powdery Mildew Trial**

Treatment	Mean AUDPC
Actinovate	379.8 b
Control	554.3 a
Double Nickel	347.8 b
MB-110	478.3 ab
Milstop	102.8 c
OxiDate	360.5 b
Oxidate + Pomcho	321.5 b
Pomcho	283.5 b
Regalia + Actinovate	156.5 c
Regalia	129.3 c
Sulfur	9.0 c

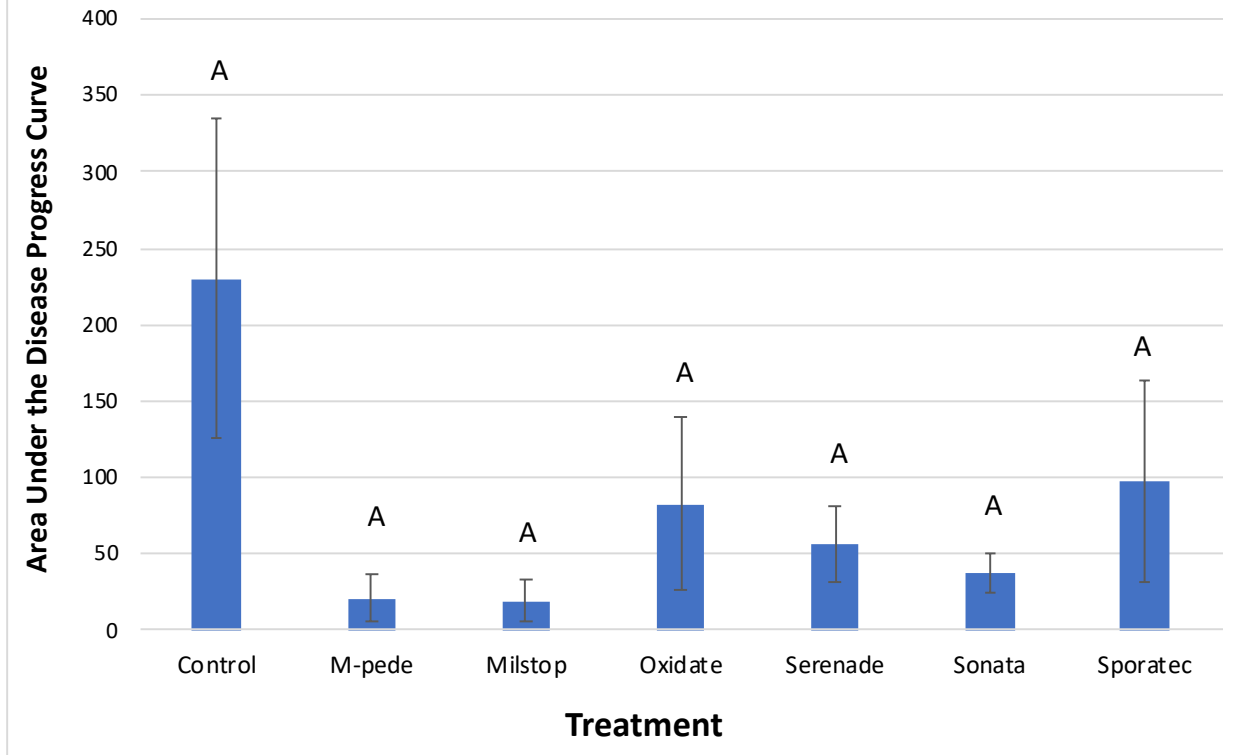


The first spray was applied 9 July after the first powdery mildew lesion was noted in the field. Two more sprays were applied on 16 and 23 August. Average maximum temperatures for July and August were 84 and 81°F; average minimum temperatures were 64, and 60°F. Rainfall amounts (in.) were 2.8 and 2.3 for July and August, respectively.

**Table of Results for 2012 Cucurbit Powdery Mildew Trial**

Treatment	Mean AUDPC
Control	726.0 a
Milstop	212.2 b
Oxidate	541.5 ab
Oxidate/Yucca	588.8 ab
Sonata	596.6 a
Yucca	548.5 ab

## 2011 Cucurbit Powdery Mildew Trial



The first spray was applied July 5 after the first powdery mildew lesion was noted in the field. Two more sprays were applied on July 14 and 21. Average maximum temperatures for Jun and Jul were 77 and 84.7°F; average minimum temperatures were 58.1, and 63.8°F. Rainfall amounts (in.) were 2.2 and 0.72 for June and July, respectively.

### Table of Results for 2011 Cucurbit Powdery Mildew Trial

Treatment	Mean AUDPC
Control	230.0 a
M-Pede	20.9 a
Milstop	19.2 a
Oxidate	82.7 a
Serenade	56.4 a
Sonata	37.7 a
Sporatec	96.9 a