

Tomato leaf mold (*Passalora fulva*) control with Organic Materials Review Institute (OMRI)-listed products and varietal resistance

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Products Tested

Treatment (active ingredient)	Rate	2017	2016	2015 ¹
Champ 30 WG (Copper hydroxide 77%)	2 lb/A	X	X	
Nordox 75 WG (Cuprous Oxide 84%)	1.25 lb/A			X
Double Nickel LC (<i>Bacillus amyloliquefaciens</i> strain D747 99%)	6 qt/A	X	X	
Double Nickel	2 qt/A			X
Zonix (Rhamnolipid Biosurfactant 8.5%)	500 ppm	X	X	
Zonix	38 fl oz/50 gal			X
Actinovate AG² (<i>Streptomyces lydicus</i> WYEC108 0.04%)	12 oz/50 gal			X
Oxidate 2.0 (Hydrogen dioxide)	128 oz/100 gal	X	X	X
Regalia EC² (Extract of <i>Reynoutria sachalinensis</i>)	4 qt/A	X	X	
Regalia EC²	3 pt/50 gal			X
BW165N-0157 + Cohere³ (<i>Ulocladium oudemansii</i>)	3 lb/gal	X		

¹ 2015 trial conducted in the field. Others conducted in a high tunnel.

² Plant activator products

³ Not OMRI listed

Trial results

What is “Area Under the Disease Progress Curve?”

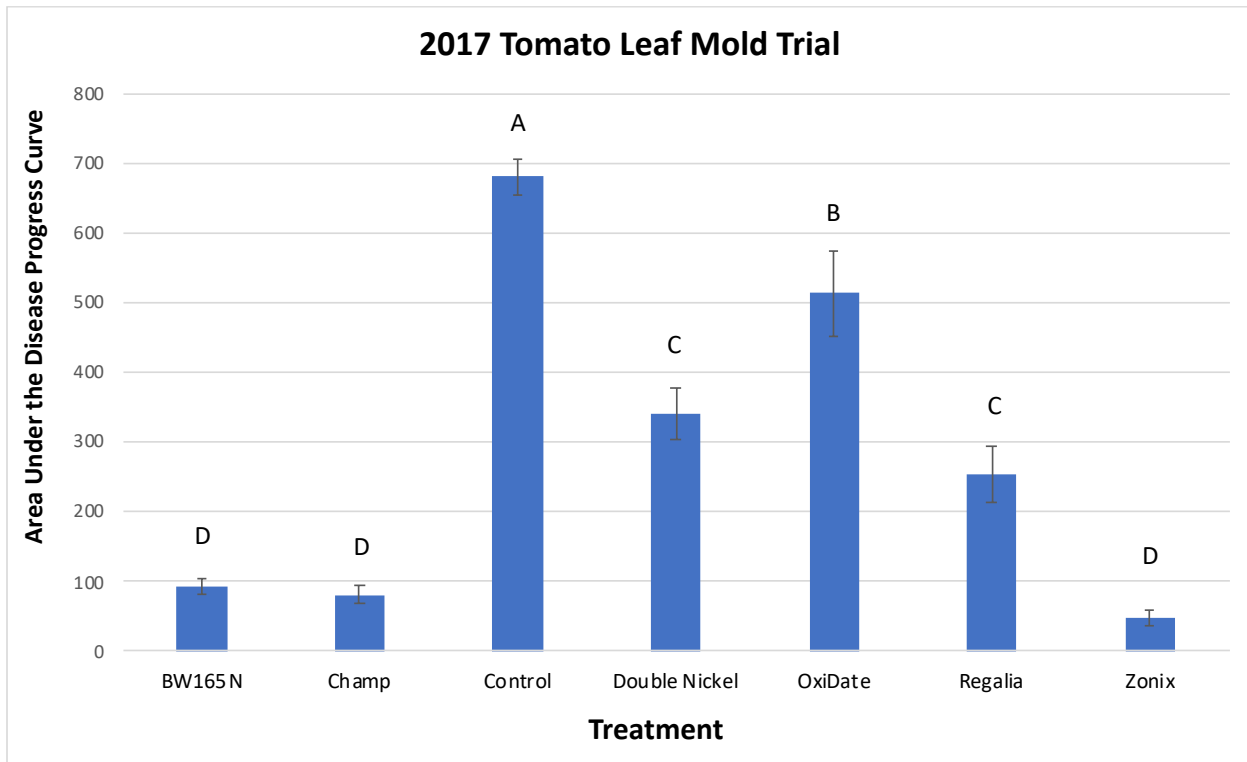
The area under the disease progress curve (AUDPC) is a quantitative summary of disease over time, for comparison across years, locations, or management tactics. A lower AUDPC indicates lower levels of disease.

What do the letters mean? Treatments associated with the same letter are not significantly different 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 untreated.

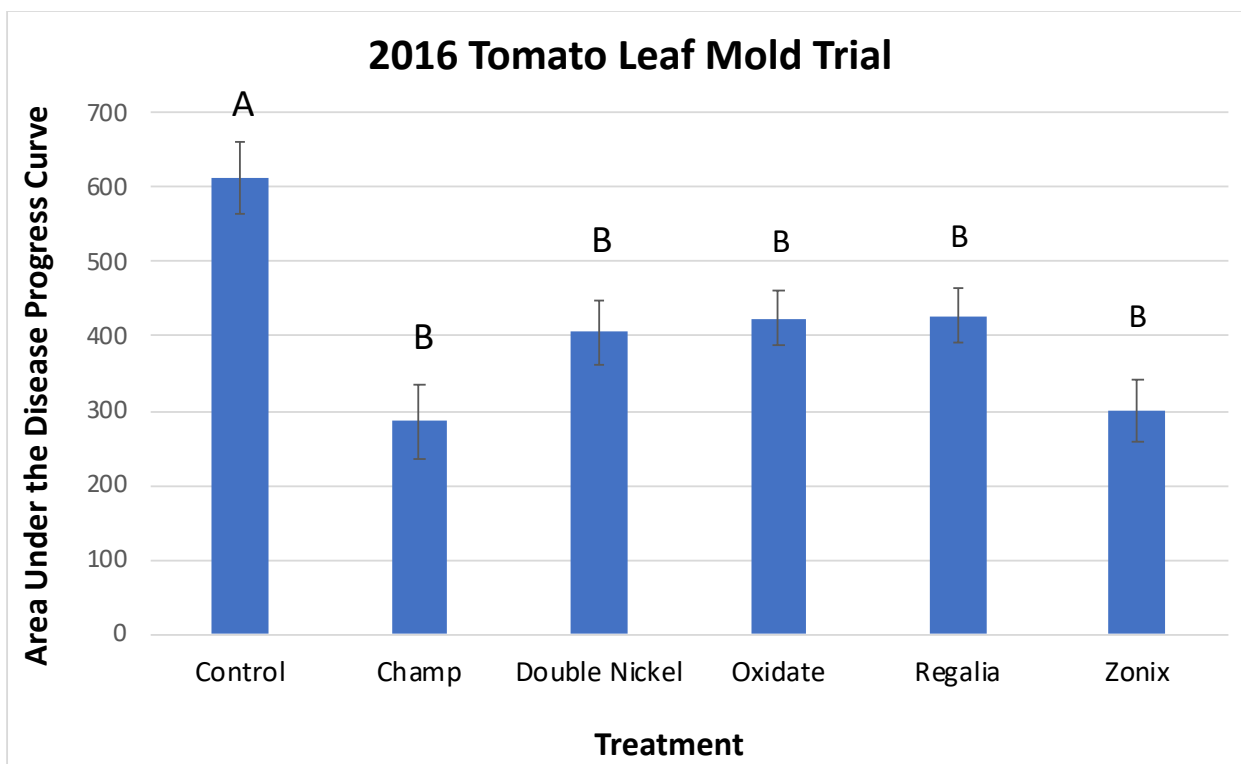
All treatments in these trials were applied with a CO₂ pressurized backpack sprayer at 40 psi delivering 40 gal/A through two TeeJet 8002VS flat fan nozzles spaced 19 inches apart.



Treatments were initiated on 11 July and continued every seven days on 18 and 25 July and 1 August. Plants were inoculated with a conidial suspension (6×10^4 spores/ml) generated from leaves with leaf mold on 12 July by spraying to runoff with a pump sprayer. Symptoms were first observed on 25 July.

Table of Results for 2017 Tomato Leaf Mold Trial

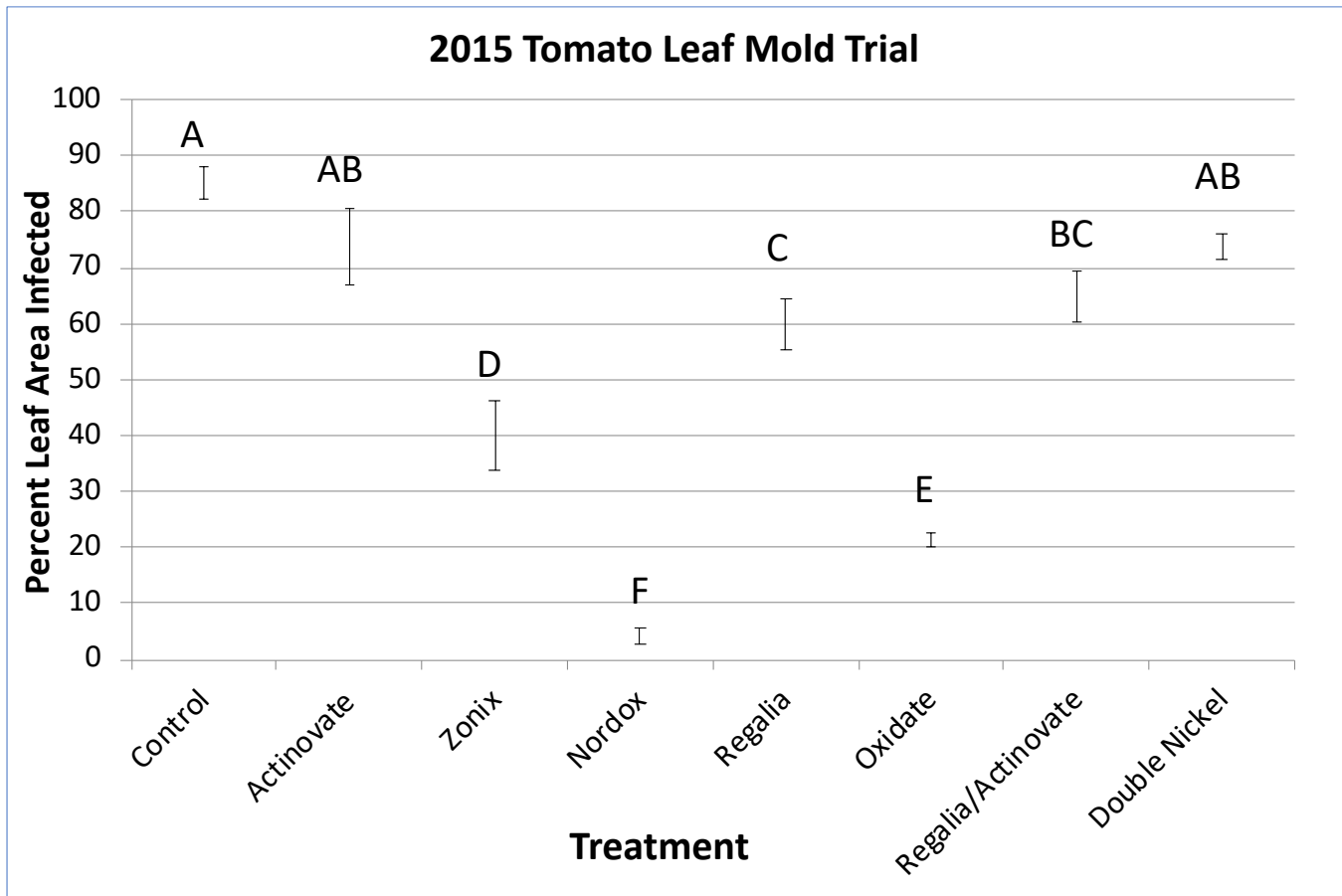
Treatment	Mean AUDPC
BW165N	92.3 d
Champ	80.4 d
Control	679.6 a
Double Nickel	340.5 c
OxiDate	513.3 b
Regalia	253.6 c
Zonix	48.1 d



Treatments were initiated on 9 August and continued every seven days on 16, 23, and 30 August. Plants were inoculated with a conidial suspension on 10 August (8.2×10^4 spores/mL) and 17 August (6.4×10 spores/mL) by spraying to runoff with a pump sprayer. The first leaf mold symptoms were recognized on 29 August and increased, averaging 50% in the untreated controls by 13 September.

Table of Results for 2016 Tomato Leaf Mold Trial

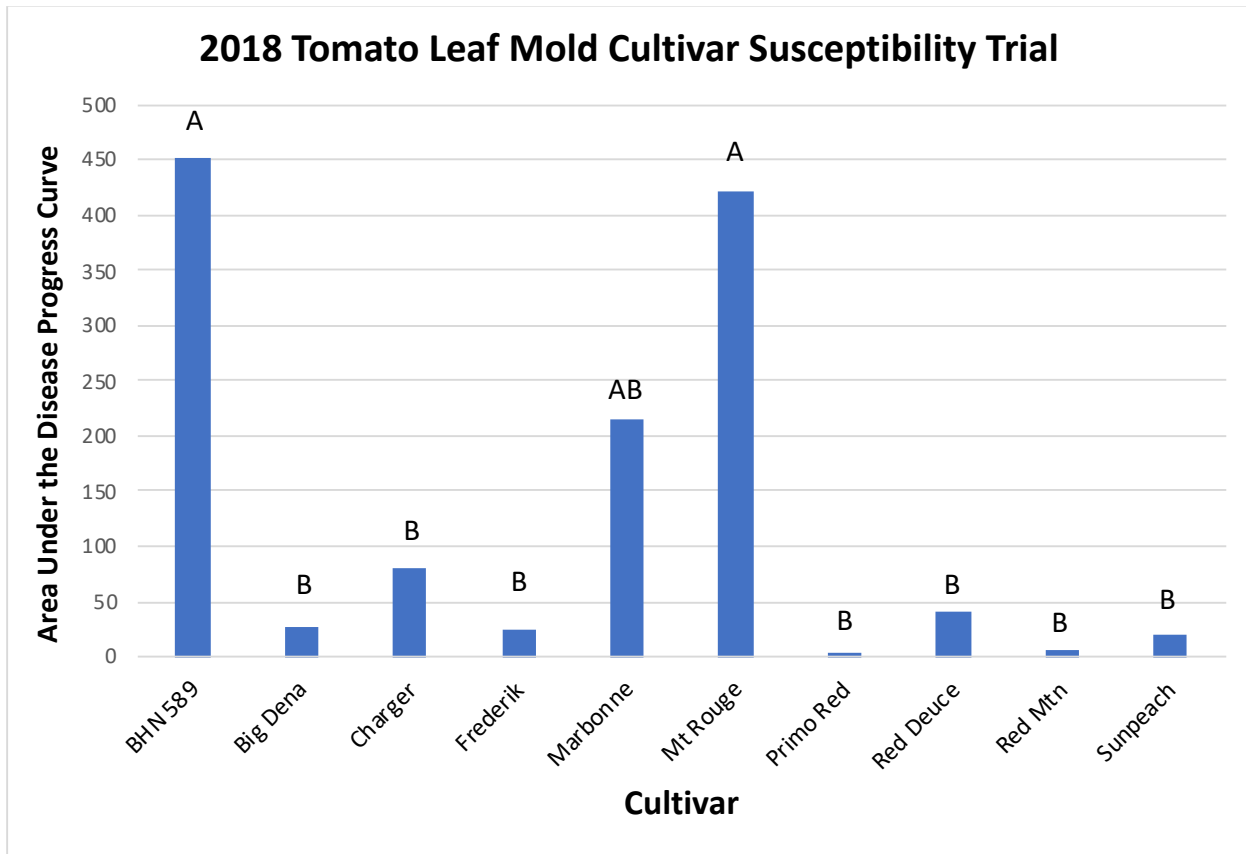
Treatment	Mean AUDPC
Control	612.1 a
Champ	285.6 b
Double Nickel	405.3 b
Oxidate	424.2 b
Regalia	426.8 b
Zonix	299.0 b



Treatments were initiated on 17 August and the plants were inoculated with a slurry of infected leaves on 19 August by spraying to runoff with a pump sprayer. Treatments were continued every seven days on 24 and 31 August and 9 September. Average maximum temperatures for July and August were 78.3 and 76.8° F; average minimum temperatures were 59.8 and 58.6° F. Rainfall amounts (in.) were 3.46 and 2.63 for July and August, respectively.

Table of Results for 2015 Tomato Leaf Mold Trial

Treatment	Mean Percent Leaf Area Affected
Control	85.0 a
Actinovate	73.8 ab
Zonix	40.0 d
Nordox	4.3 f
Regalia	60.0 c
Oxidate	21.3 e
Regalia/Actinovate	65.0 bc
Double Nickel	73.8 ab



Sunpeach is indeterminate. All other varieties included in the trial are determinate.

Potted tomato plants inoculated with two isolates of *Passalora fulva* collected in New York in 2017 were placed between plots 2 July. Additional inoculations were done on 17 August with a slurry made of infected leaves from the potted tomatoes and again with spores washed from plates of the same isolates on 24 August. Leaf mold symptoms were first observed on the inoculated potted plants on 13 July but did not spread to the plots until 17 August and were unevenly distributed. Symptoms of leaf mold were rated four times; 17, 22, 28 August and 4 September.

Table of Results from 2018 Tomato Leaf Mold Trial

Cultivar	Mean AUDPC
BHN 589 ¹	452.2 a
Big Dena	26.3 b
Charger	79.8 b
Frederik	24.4 b
Marbonne	214.3 ab
Mountain Rouge	421.4 a
Primo Red	4.7 b
Red Deuce	40.0
Red Mountain	5.8
Sunpeach	20.1 b

¹ Known susceptible variety