

# Soybean Phytophthora Seed Treatment Trial

Dennis Mills, Extension Associate, Plant Pathology

Tony Nye, Agriculture and Natural Resources Extension Agent

James Wiedenheft, Agriculture and Natural Resources Extension Agent

Chris Bruynis, Agriculture and Natural Resources Extension Agent

Anne E. Dorrance, Assistant Professor, Plant Pathology

## Objective

To evaluate the efficacy and economics of utilizing seed treatments for management of early season Phytophthora seed rot and damping off.

## Background

Cooperator:	Ralph Hertlein	Joe Bailey	Craig Blausey	Bob Millinger	Gary Walter
Town:	Martinsville	Blanchester	Martin	Graytown	Upper Sandusky
County:	Clinton	Clinton	Ottawa	Ottawa	Wyandot
Soil Type:	Avonburg silt loam	Avonburg silt loam	Nappanee silty clay loam	Toledo silty clay	Pewamo silty clay loam
Plot Size:	40' x 765'	40' x 900'	45' x 1547'	25' x 750'	40' x 800'
Planting Date:	5-May	19-Jun	20-Jun	10-May	14-May
Harvest Date:	1-Oct	30-Oct	8-Nov	1-Nov	2-Oct
Moisture (avg.):	10.00%	12.40%	10.80%	12.80%	11.60%

## Methods

This study was conducted on farmers' fields at five locations in Ohio. One fungicide seed treatment was evaluated — Rival XL (4 fl oz/cwt) plus Allegiance (1.5 fl oz/cwt) and an untreated control at each location. The soybean variety, Resnik, with moderate (5) partial resistance, was used. The study design was side-by-side comparisons used across the fields with a minimum of four to 14 replications per farm. Seed was treated by Ohio Foundation Seeds prior to purchase. Plot size varied per farm based on field size, equipment widths, and seed available (10A). Early and mid-season population stand counts were taken from eight to 14 subplots that measured 3 feet x 3 feet.

## Results

**Table 1. Soybean stand Count and Yield**

Cooperator	Treatment	Stand		Yield
		Early Season (plants/9 ft <sup>2</sup> )	Mid Season (plants/9 ft <sup>2</sup> )	
Hertlein	untreated	30.4	26.4	50.5
	treated	24	24.4	51.9
	LSD (0.05)	NS	NS	NS
Bailey	untreated	30.6	29.8	37.7
	treated	33	32.8	39.7
	LSD (0.05)	NS	NS	NS
Millinger	untreated	31.7	32.7	*
	treated	34.4	38.2	*
	LSD (0.05)	NS	3.8	
Blausey	untreated	50.7	49.8	*
	treated	47.3	47	*
	LSD (0.05)	NS	NS	
Walter	untreated	26.3	26	38.1
	treated	28.5	29.2	39.3
	LSD (0.05)	NS	NS	NS

\* Missing data

## Summary and Notes

Seed treatments did not negatively impact yield nor did they significantly benefit yield at these five locations. In the Millinger, Ottawa County, trial, mid-season stand counts were significantly different. Weather conditions following planting did not favor development of *Phytophthora* or *Pythium*. Planting was delayed due to wet conditions early at the Blausey and Bailey locations, but soils dried out following planting and were unfavorable for disease development. A seed treatment will only be effective if environmental conditions for disease develop within the first three weeks after planting.

For additional information, contact:

Dennis Mills  
The Ohio State University Extension  
mills.255@osu.edu