



# Update on Screening of Sunflower Hybrids for Resistance to Sclerotinia Head Rot

Agriculture

from

Everything



**D.K. Lee**  
**Blaine G. Schatz**  
**Char Hollingsworth**  
**Khalid Rashid**  
**Scott Halley**

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# Sclerotinia Head Rot

## The Most important disease of sunflower

- Airborne spore
- *Sclerotinia Sclerotiorum*
- Very destructive fungus-  
white mold

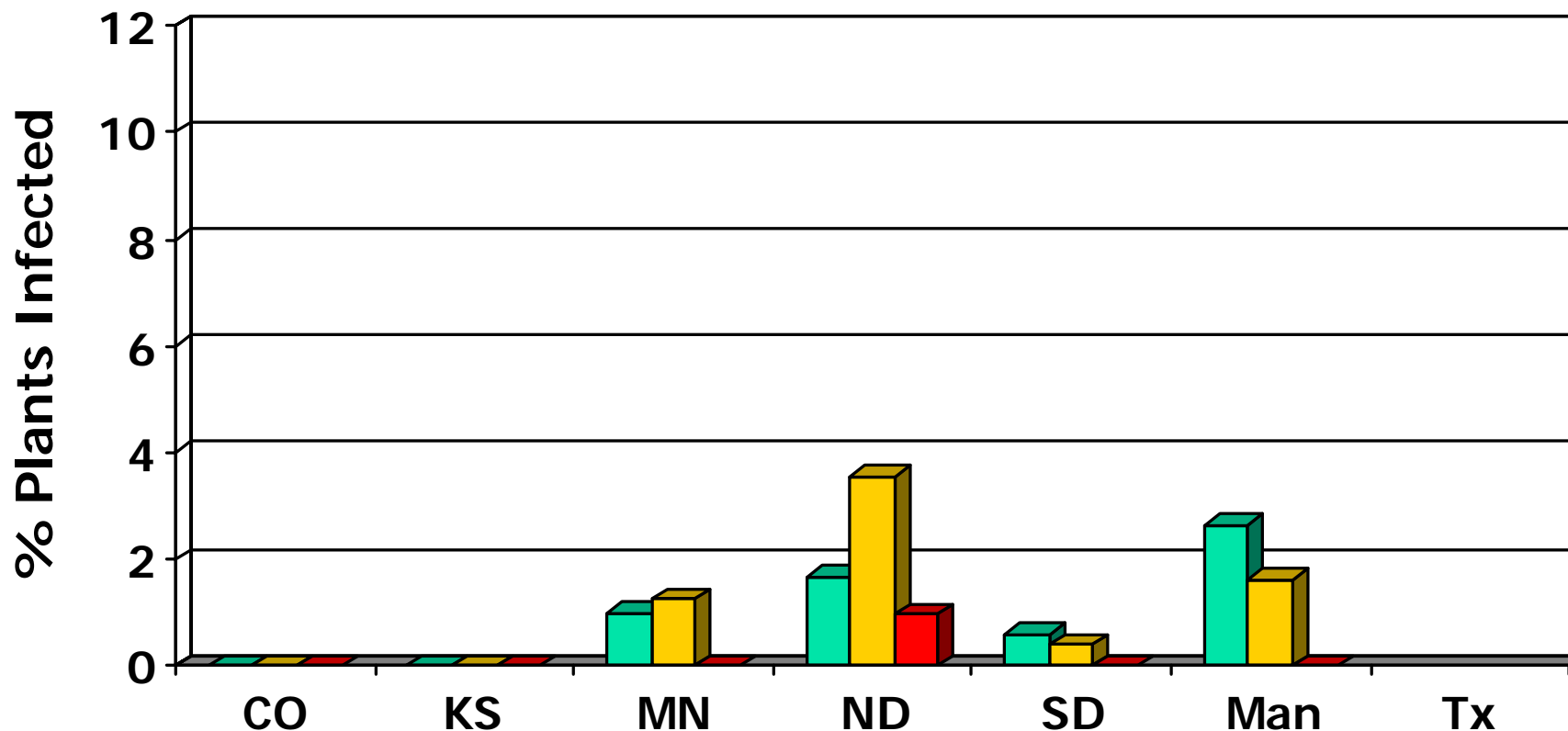






# 2007 Sunflower Sclerotinia Field Survey

■ Wilt ■ Head Rot ■ Mid Stalk



Source: Dr. Duane Berglund, NSFA Survey

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# Screening Sunflower Hybrids for Head Rot Resistance, 2007

## □ “Initial Screening”

- 75 hybrids tested at Carrington, Crookston, & Morden.
- 14 companies represented

## □ “Repeat Screening”

- 20 best hybrids from “2006 Initial screen”
- Carrington, Langdon, Oakes, & Morden.
- 8 companies represented.



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# Sunflower Sclerotinia Head Rot

## Procedures and Rating System



**Inoculation:**  
**15 heads per hybrid**

**Incidence:**  
**Counted infected heads**



**Severity: 1-5 scale**

**1 (12.5%)**

**2 (25%)**

**3 (50%)**

**4 (75%)**

**5 (100%)**





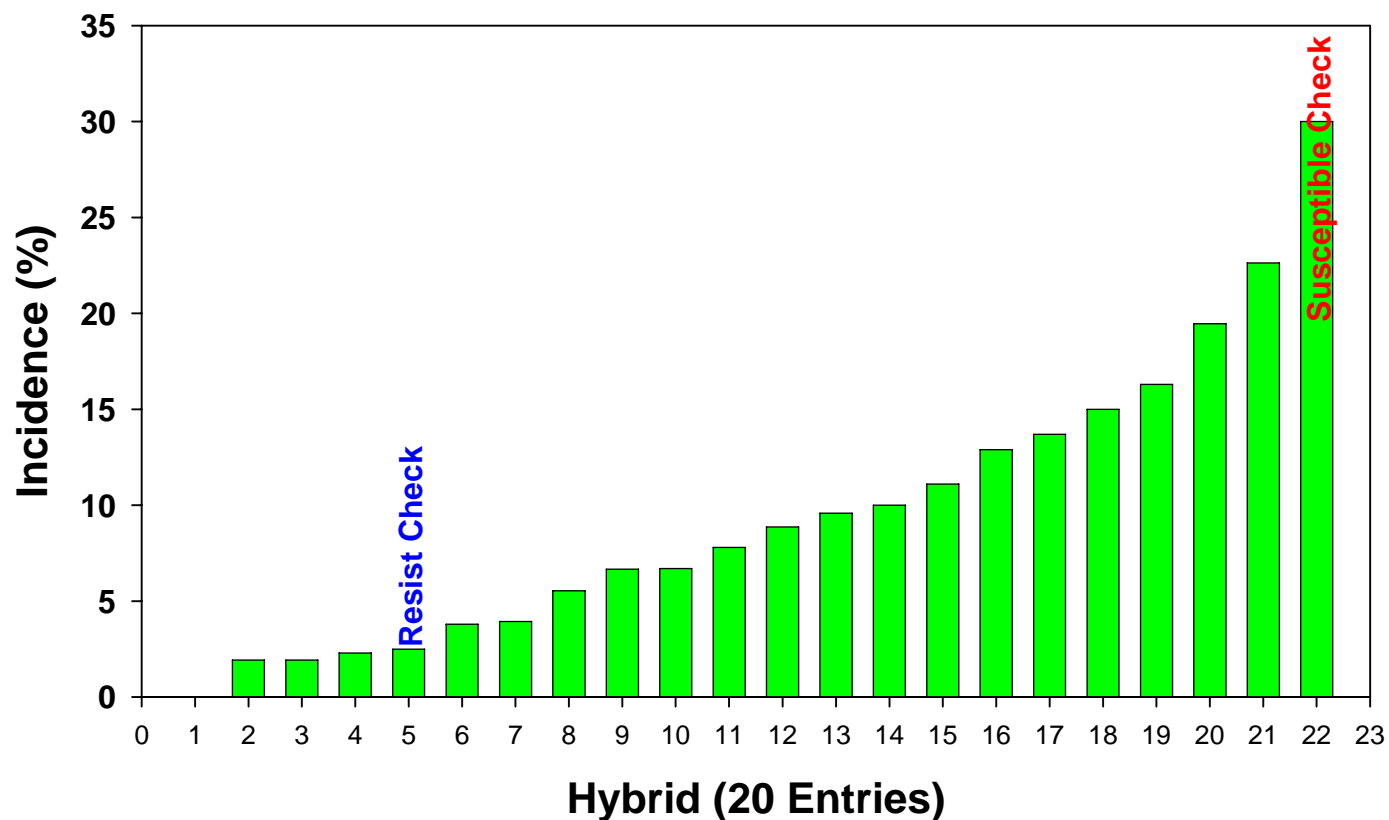
# 2007 Overview of Sunflower Sclerotinia Head Rot Research

Location	Incidence		Severity	
	Mean	Range	Mean	Range
<b>Carrington</b>	<b>12.6</b>	<b>0 – 46</b>	<b>4.7</b>	<b>0.0 – 5.0</b>
<b>Crookston</b>	<b>71.3</b>	<b>20 – 98</b>	<b>3.5</b>	<b>0.9 – 5.0</b>
Langdon	4.5	0 – 9	2.3	0.0 – 3.5
Morden	1.5	0 – 18	2.5	0.0 – 4.0
<b>Oakes</b>	<b>93.9</b>	<b>77 - 100</b>	<b>3.3</b>	<b>3.0 – 4.2</b>



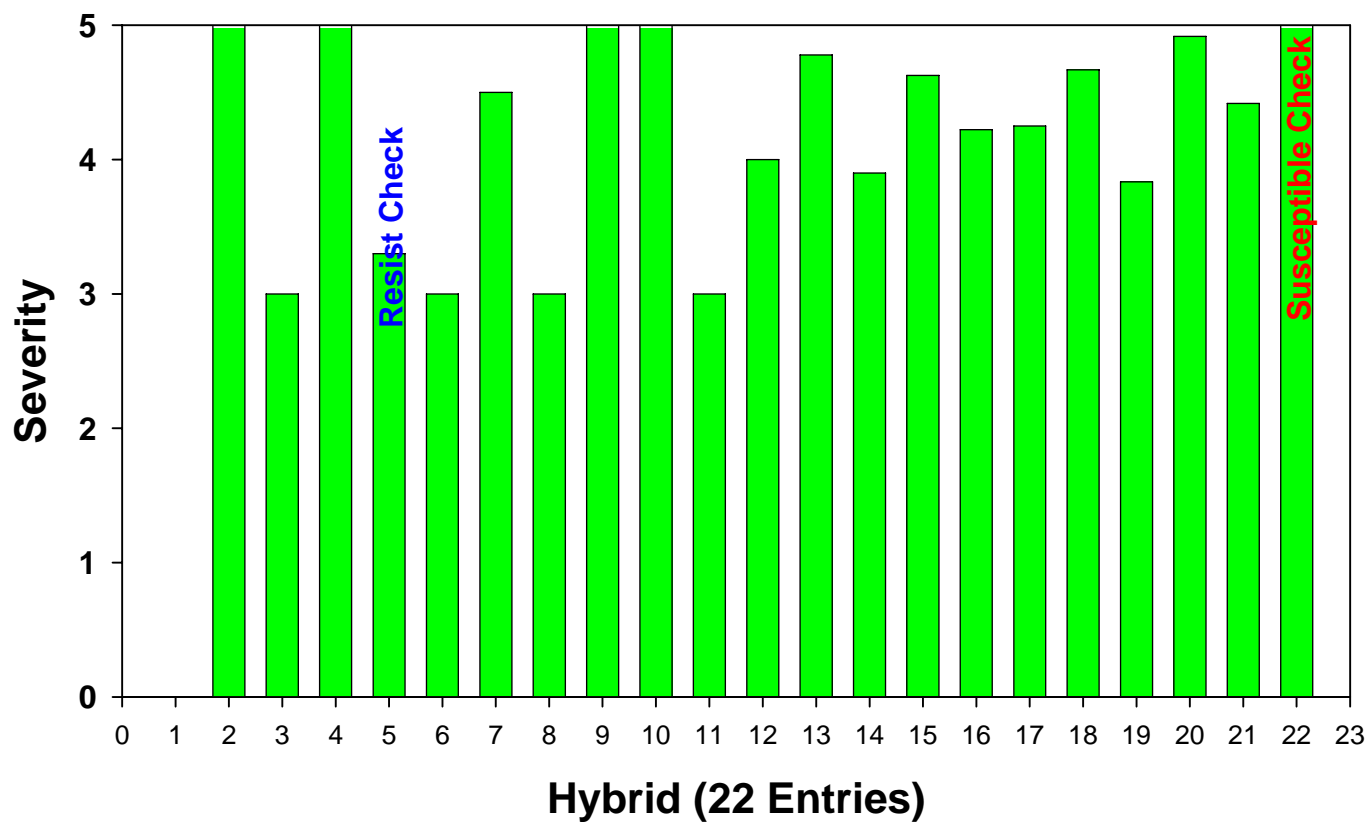


# Incidence of Sclerotinia Head Rot: 2007 “Repeat Screening” at Carrington





# Severity of Sclerotinia Head Rot: 2007 “Repeat Screening” at Carrington

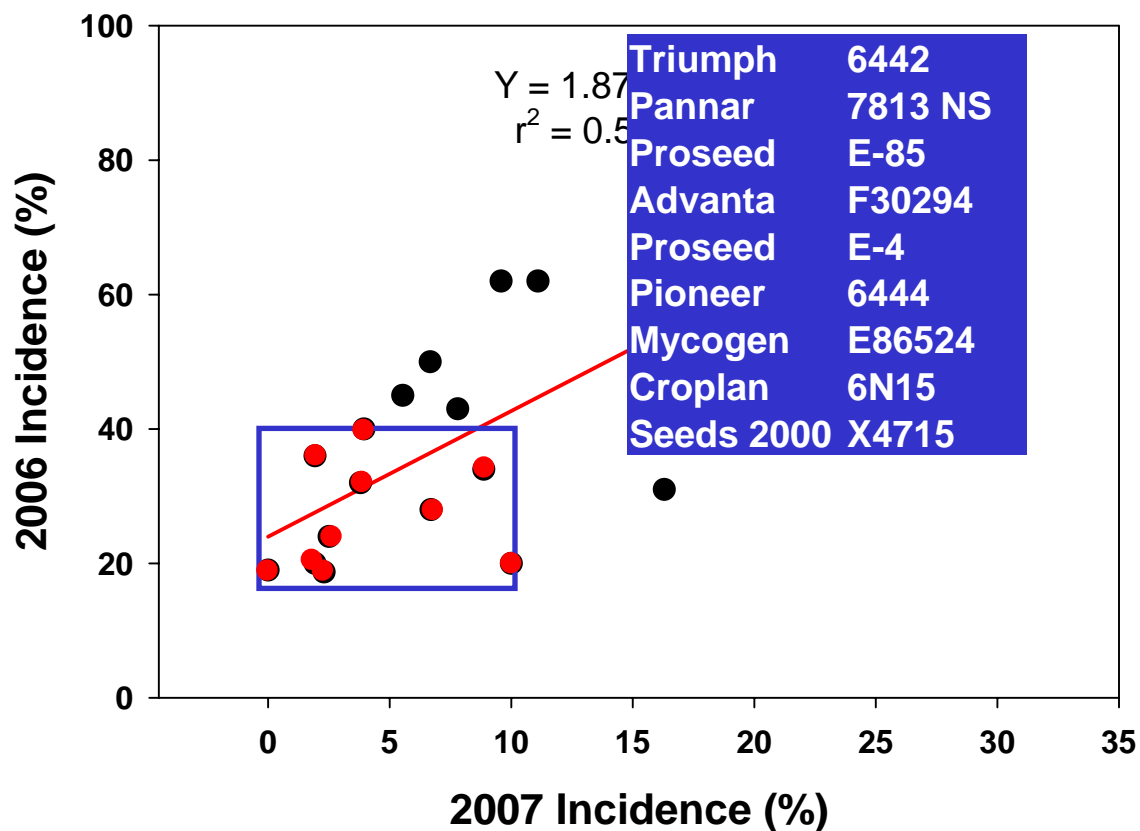






# Potential Hybrids for Sclerotinia Head Rot

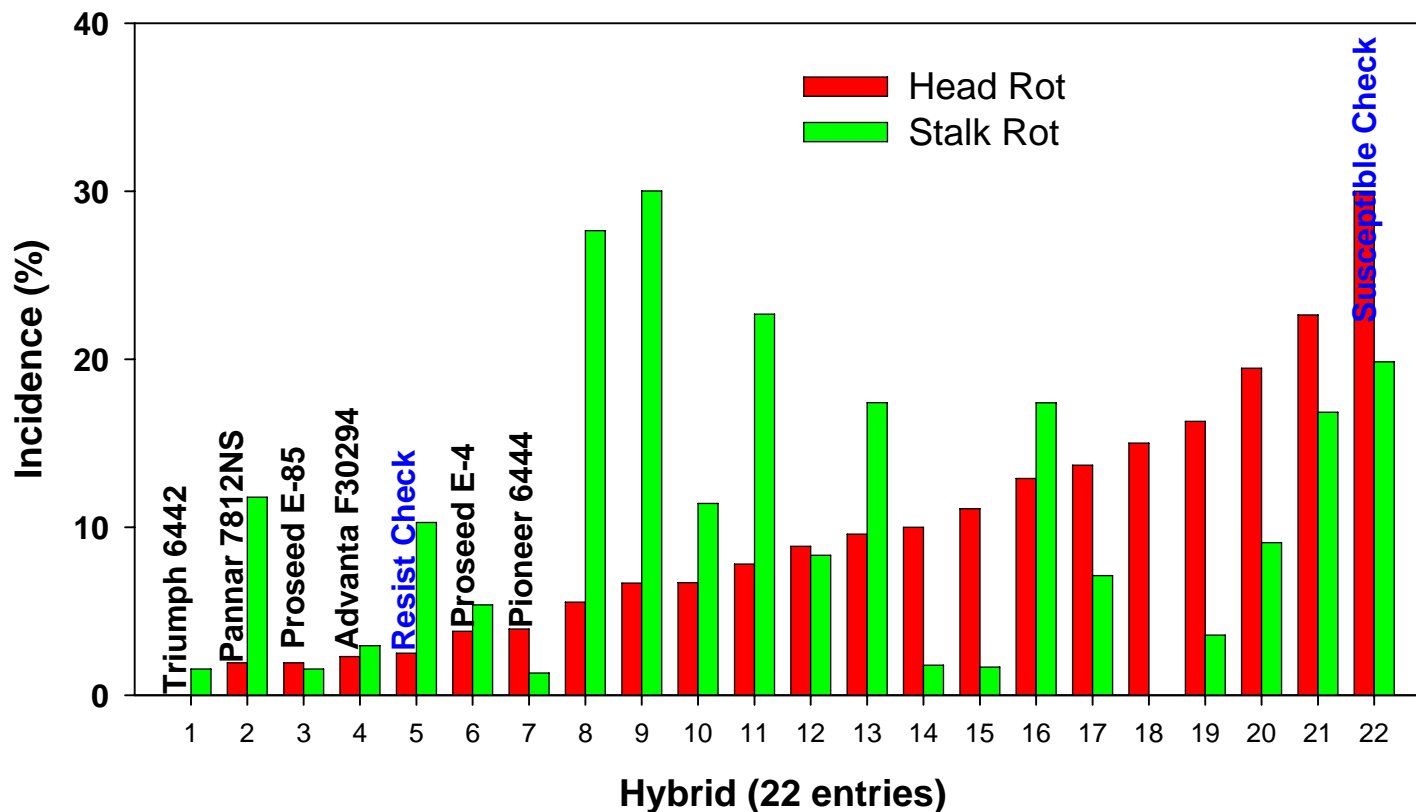
## 2007 “Repeat Screening” at Carrington





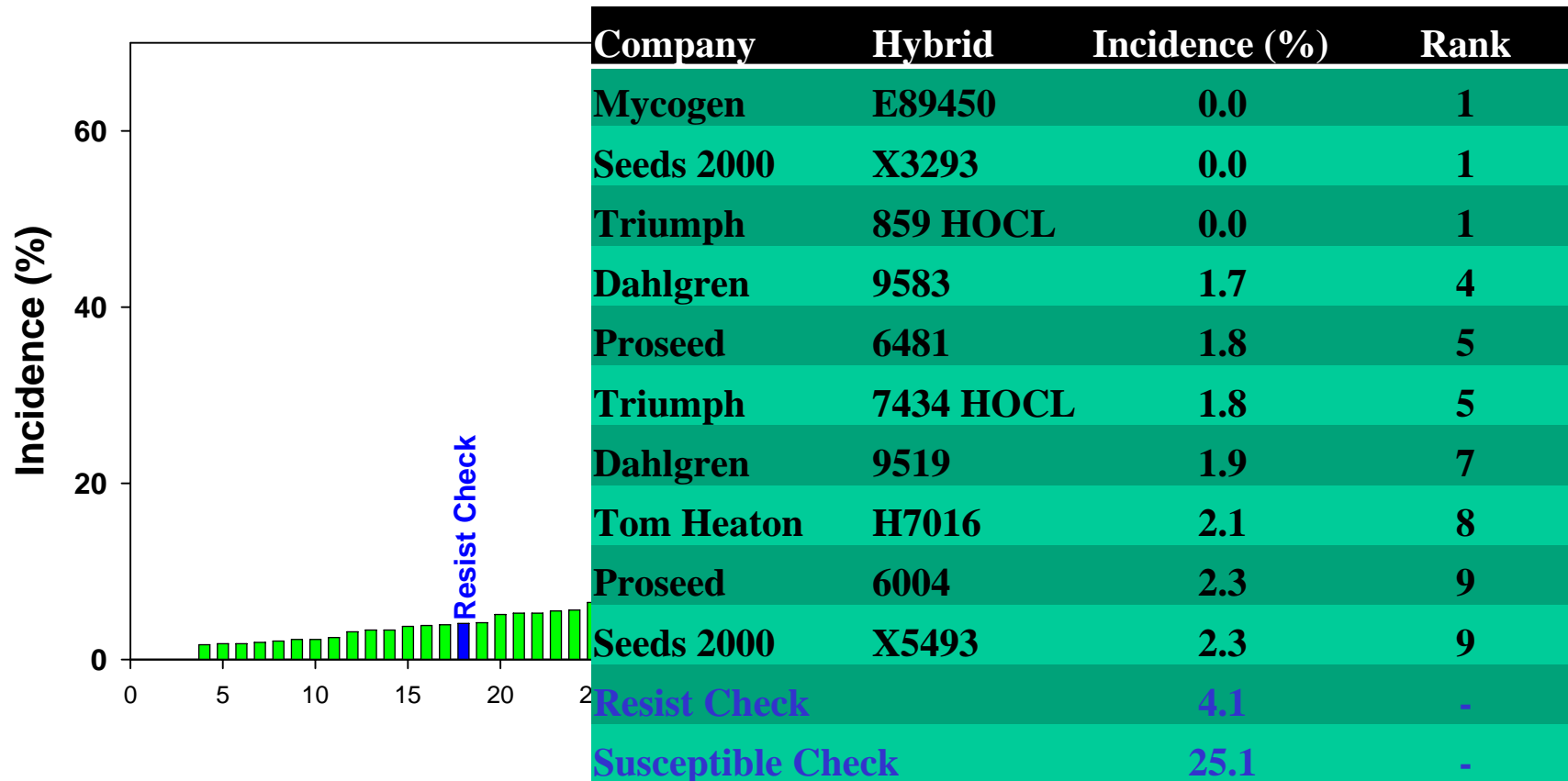
# Sclerotinia Head Rot and Stalk Rot

## 2007 “Repeat Screening” at Carrington





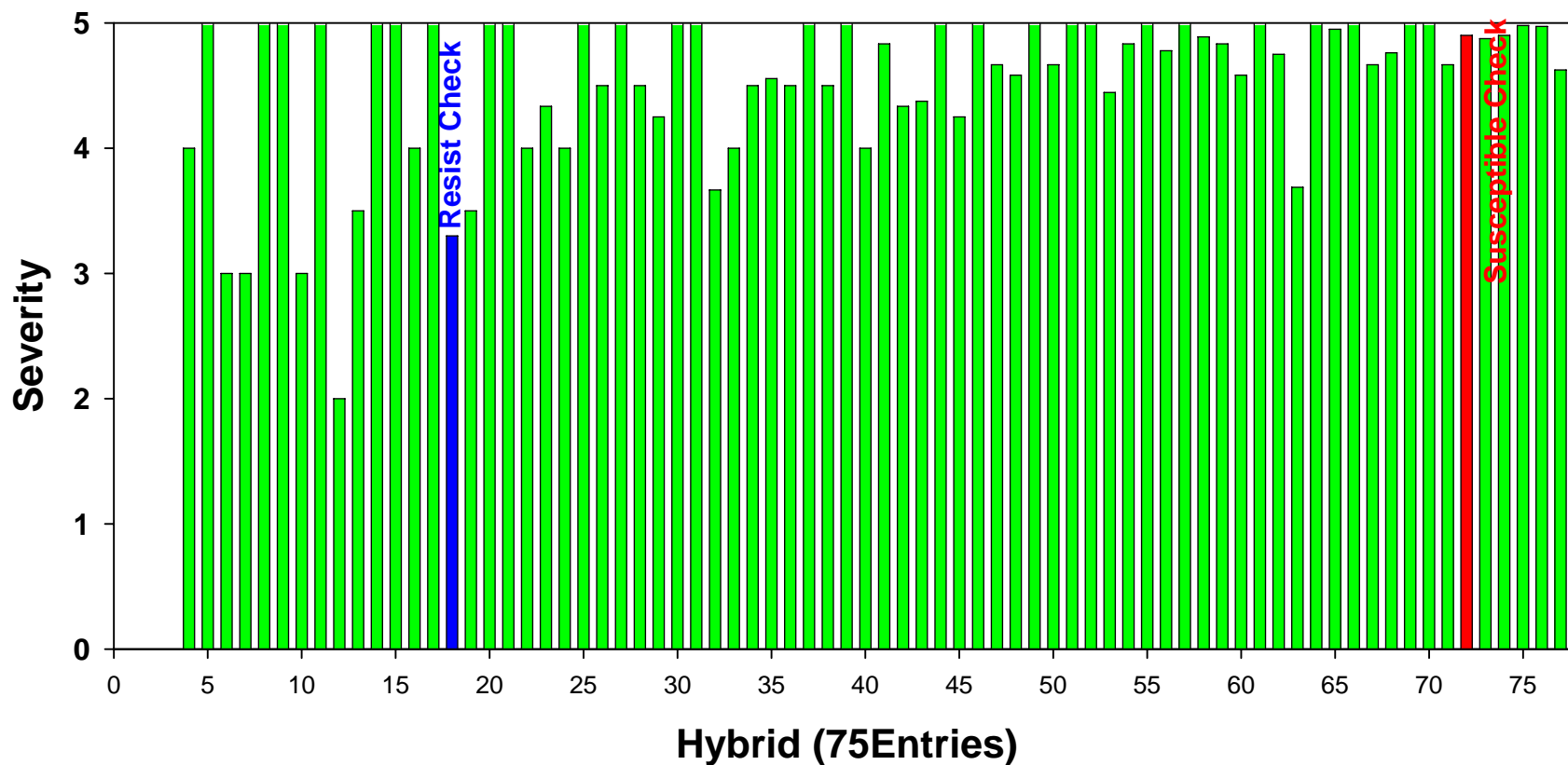
# Incidence of Sclerotinia Head Rot: 2007 “Initial Screening” at Carrington







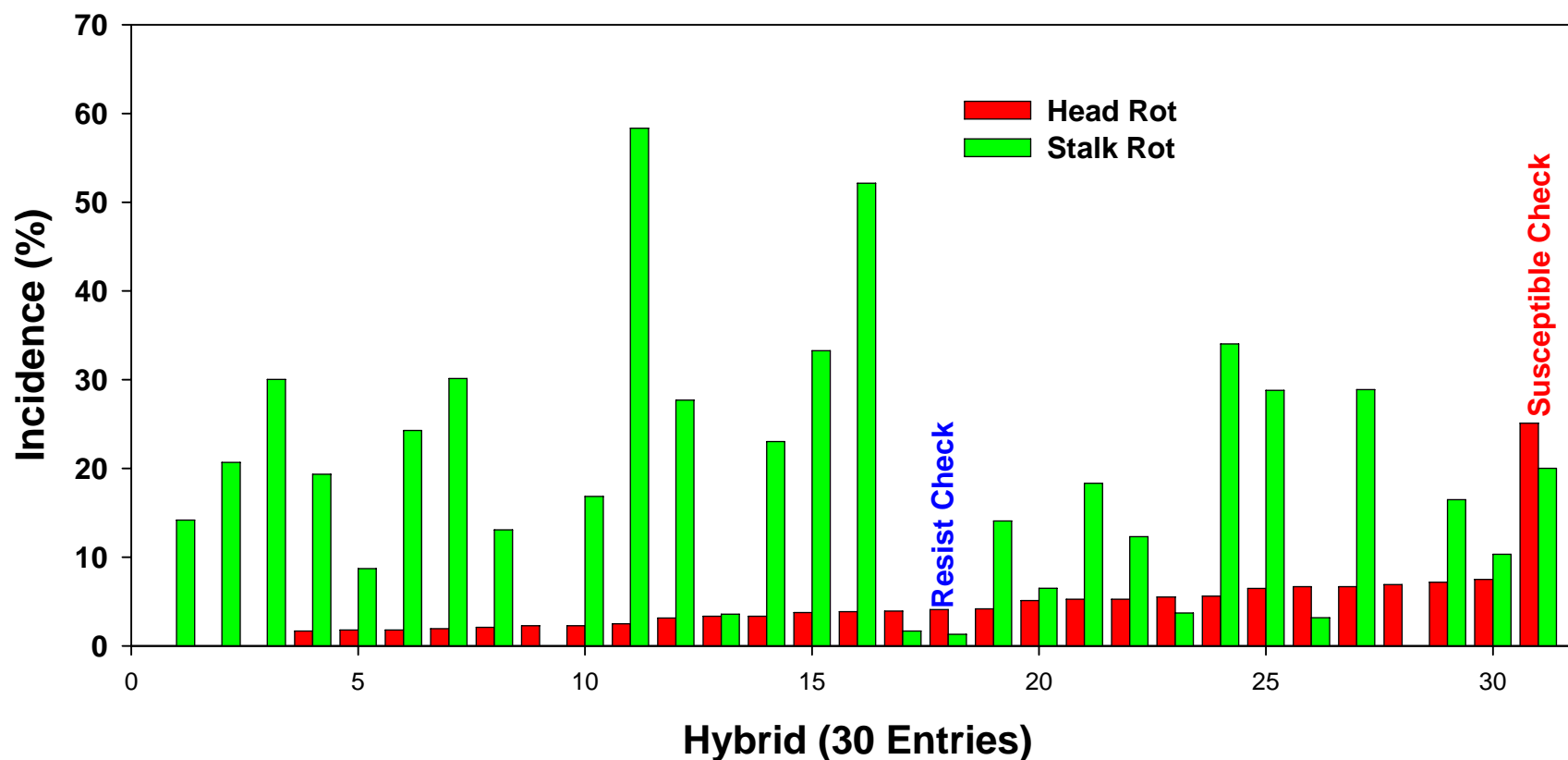
# Severity of Sclerotinia Head Rot: 2007 “Initial Screening” at Carrington





# Sclerotinia Head Rot and Stalk Rot

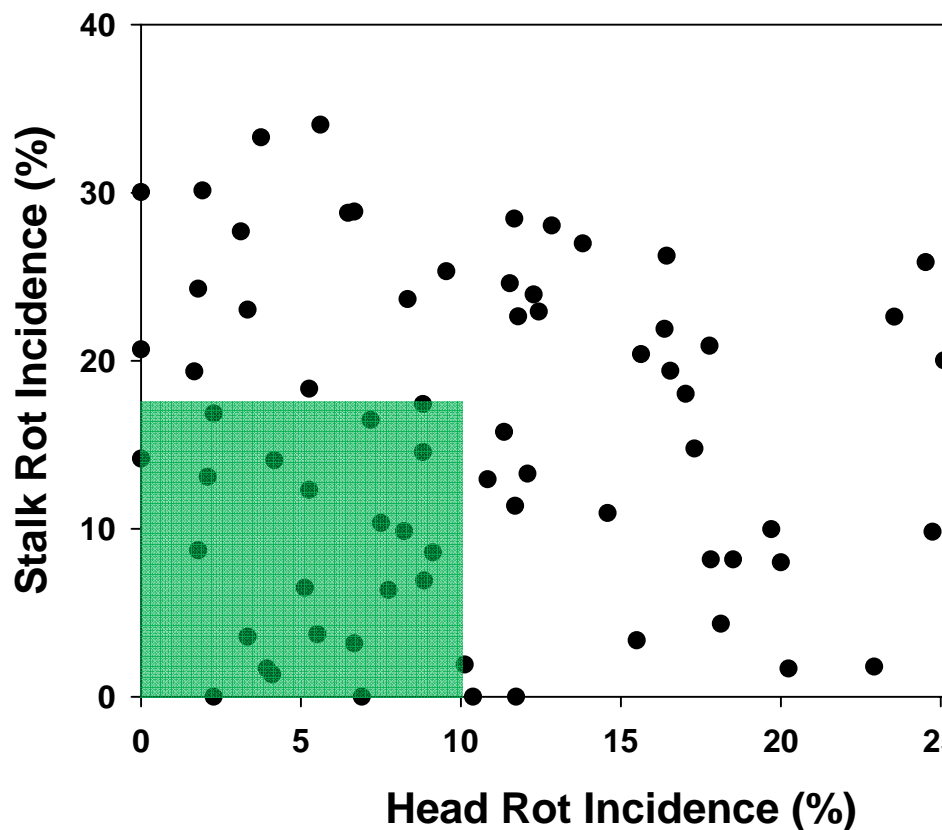
## 2007 “Initial Screening” at Carrington





# Selection of Candidates for Repeat Screening

## 2007 “Initial Screening” at Carrington



Company	Hybrid	Head Rot (%)	Stalk Rot (%)
Mycogen	E89450	0.0	14.2
Proseed	6481	1.8	8.7
Tom Heaton	H7016	2.1	13.1
Proseed	6004	2.3	0.0
Seeds 2000	X5493	2.3	16.9
Proseed	EE-2	3.3	3.6
Tom Heaton	H7020	3.9	1.7
Seeds 2000	X5331	4.2	14.1
Croplan	H7026	5.1	6.5
Seeds 2000	X9478	5.3	12.3
Triumph	7441	5.5	3.7
CHS	07EXP02	6.7	3.2
Mycogen	8H419 DM	6.9	0.0
Mycogen	E89350	7.2	16.5
Red River Com.	2216	7.5	10.3
Croplan	H7025	7.7	6.4
Tom Heaton	H7017	8.2	9.9
Interstate	MH 6643	8.8	14.6
Interstate	MH 6641	8.8	6.9
CHS	07EXP05	9.1	8.6
<b>Resistant Check</b>		<b>4.1</b>	<b>1.3</b>
<b>Susceptible Check</b>		<b>25.1</b>	<b>20.0</b>





# Developments in Sunflower Hybrid Resistance to Sclerotinia

## Summary

- ❑ Importance of the misting systems to project
- ❑ “Repeat Screening” confirmed “2006 Initial Screening”
- ❑ Results from “Initial Screening” trial suggest many good hybrid candidates for continued evaluation.
- ❑ Sunflower seed companies in cooperation with USDA geneticists are making positive advances in developing hybrids with improved resistance.
- ❑ Research results are now available to growers due to advanced and expanded research efforts.

# Thank You!

## Acknowledgements:

- Dr. Tom Gulya
- Mr. Walt Albus
- Dr. Jerry Miller
- Mr. Scott Radi
- Mr. Ezra Aberle
- Mr. Leonard Besemann
- Mr. Ryan Swanson

