

# Optimizing Fungicide Use for Disease Management in Soybean

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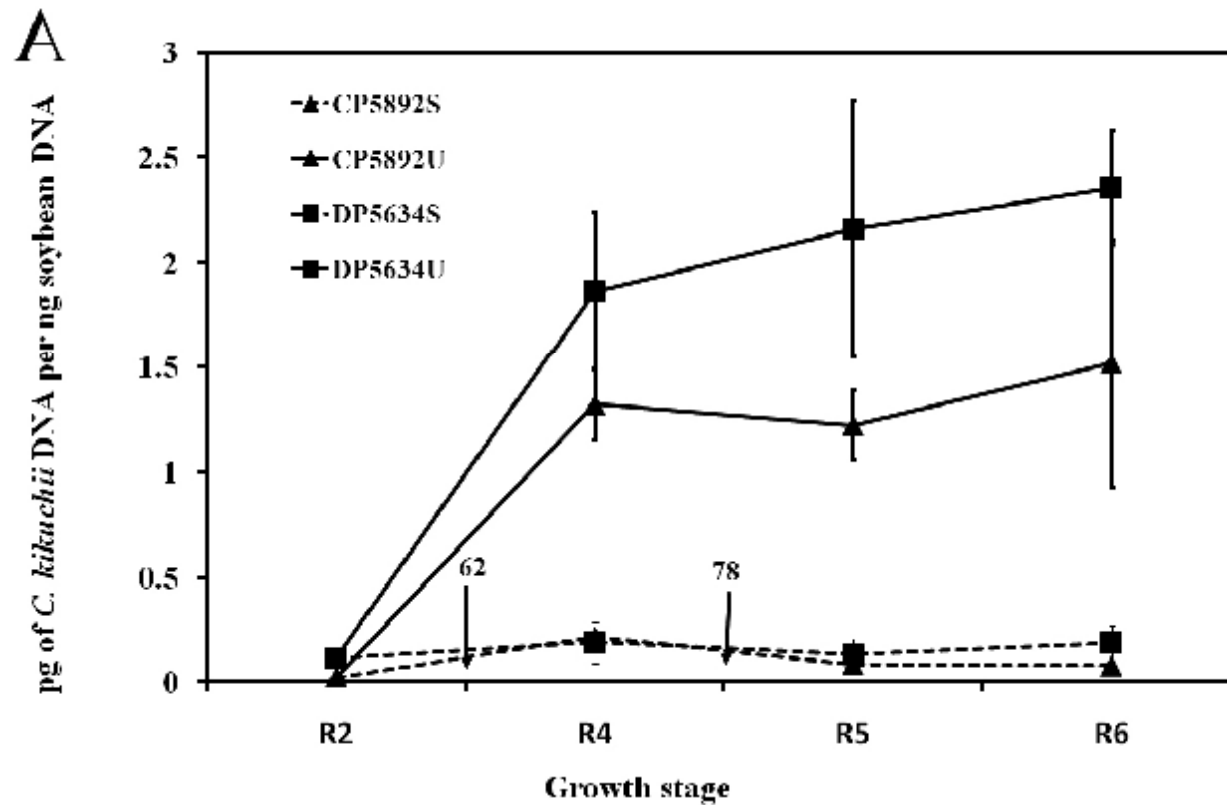
Department of Plant Pathology & Crop Physiology



# Cercospora Leaf Blight



# Infection Dynamics (qPCR) and Fungicide Applications



Z. Chen and A. Chanda

Infection occurs long before symptoms appear.

# Evaluation of Possible Commercial Protocols

Growth Stages at Time of Application

V5

V5, R1

R1

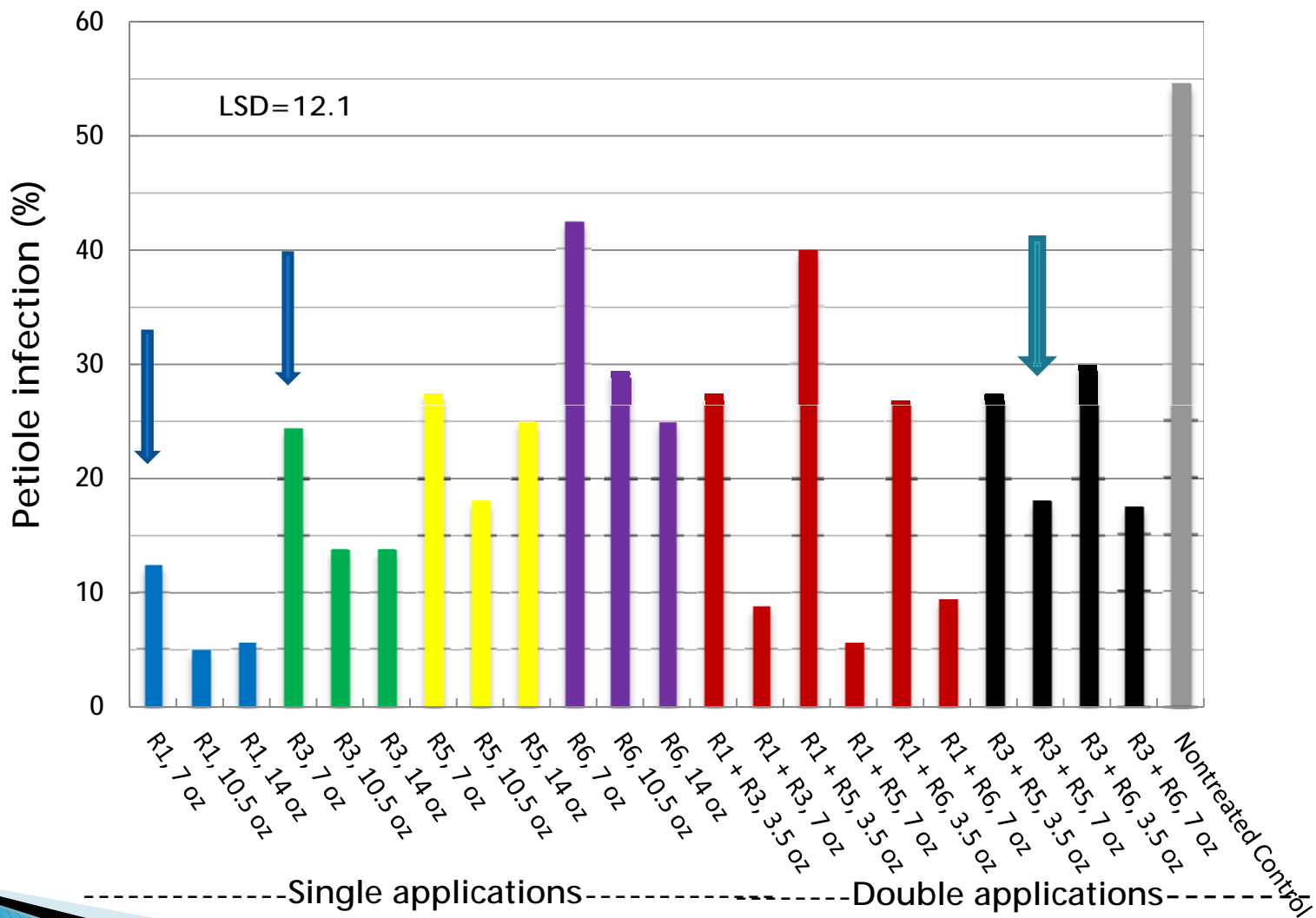
R1, R3

R3

R3, R5

R6

Nonsprayed

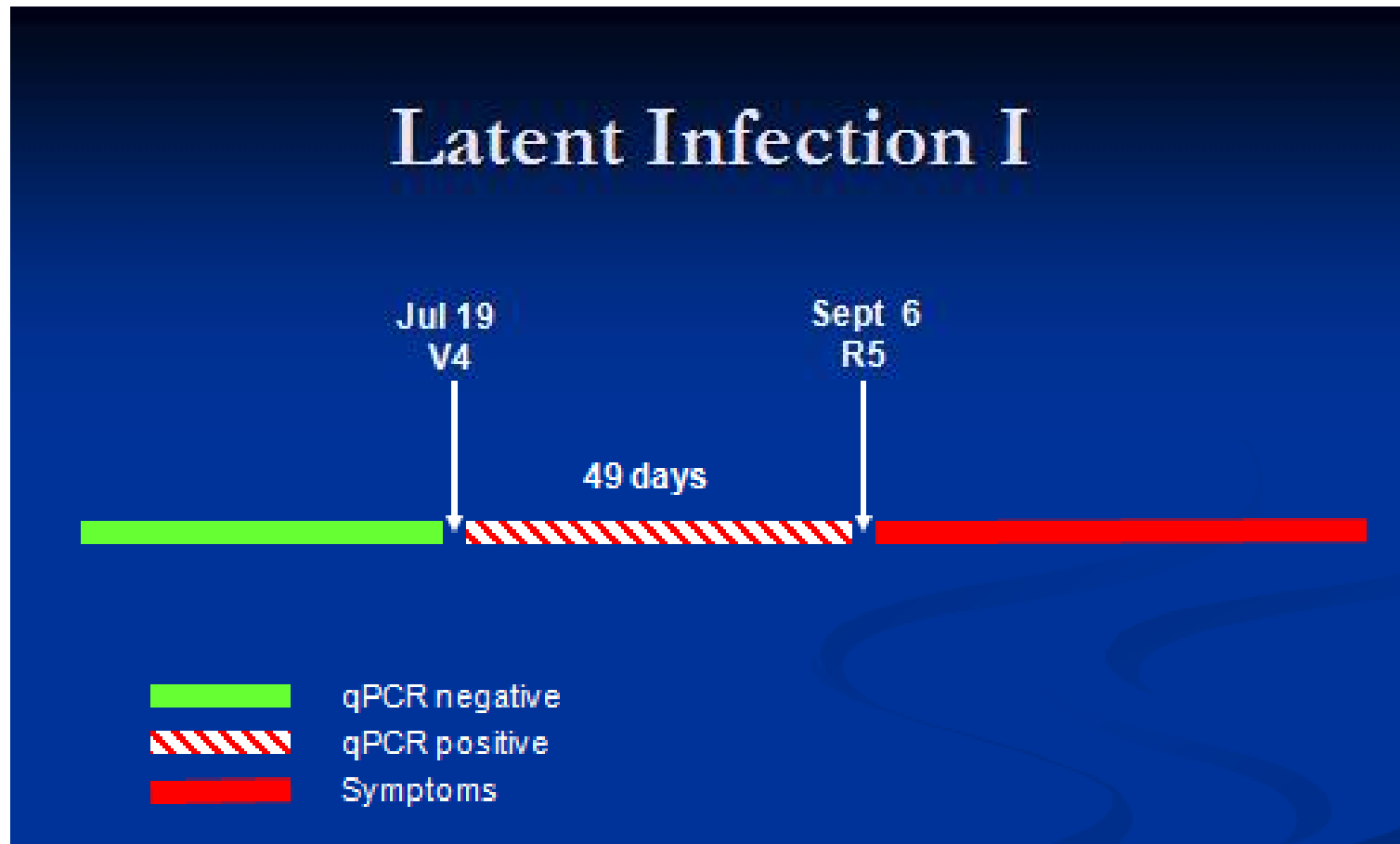


# Objectives for 2012 Field Trials

- } Intended to repeat and expand 2011 field protocols for management of CLB.
- } Intended to evaluate protocols for grain quality.
- } Planted late (mid to late June) in 2012 with a late MGV to increase chances of getting severe CLB.
- } **RUST!**
- } Provided opportunity to evaluate CLB protocols for management of soybean rust.

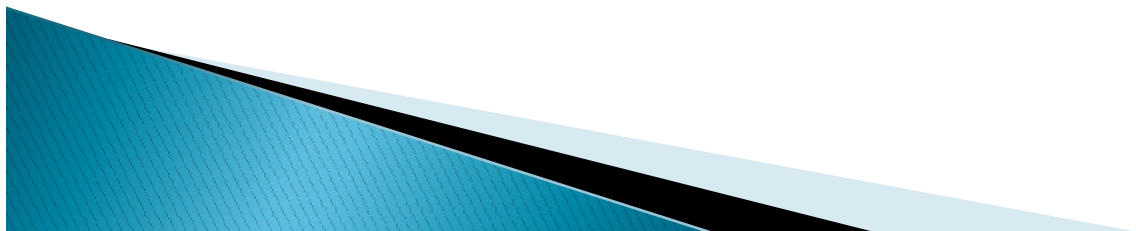


# Latent Infection with Soybean Rust



# Selected Topguard Protocols

Chemical	Rate of Application (oz/A)	Time of Application	Disease Severity (%)	Yield (bu/A)	100 Seed Weight (g)
Control	--	--	83.5	30.7	14.5
Topguard	7	R1	17.0	58.4	16.4
Topguard	10.5	R1	1.0	63.3	17.3
Topguard fb Topguard	7 5	R1 R5	5.3	53.0	16.9



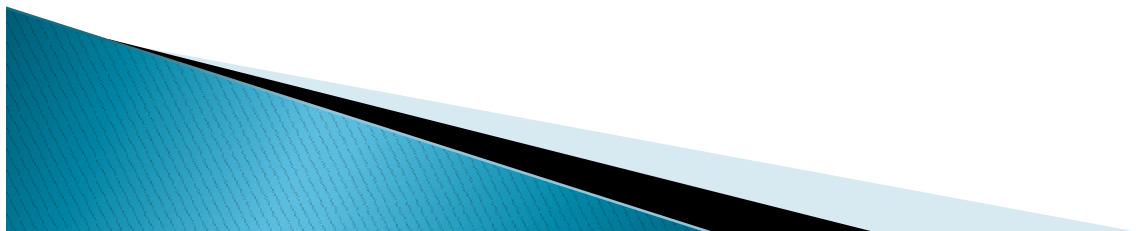


# Topguard and Quadris Protocols

Chemical	Rate of Application (oz/A)	Time of Application	Disease Severity (%)	Yield (bu/A)	100 Seed Weight (g)
Control	--	--	91.5	31.6	14.0
Topguard	7	R1	0	51.0	16.4
Topguard	7	R1 fb 21 days later	0	54.7	16.7
Topguard + Quadris	7 6	R1	16.9	50.5	16.9
Topguard + Quadris	10.5 6	R1	1.9	56.6	16.9
Topguard + Quadris fb Topguard + Quadris	7 6 7 6	R1 fb 21 days later	0	60.1	17.2
Quadris fb Quadris	6 6	R1 R5	69.8	42.7	15.4

# What About Topsin?

Chemical	Rate of Application (oz/A)	Time of Application	Disease Severity (%)	Yield (bu/A)	100 Seed Weight (g)
Control	--	--	100	31.2	13.0
Topsin fb	14	R3	95.8	33.3	13.9
Topsin	14	R5			
Topsin + Quadris fb	14 6	R1 R1	78.3	41.8	14.5
Topsin + Quadris	14 6	R5 R5			
Topguard	10.5	R1	7.0	54.5	18.3



# Preservation of Grain Quality

Chemical	Rate of Application (oz/A)	Time of Application	Disease Severity (%)	Yield (bu/A)	100 Seed Weight (g)
Control	--	--	91.5	32.7	14.2
Topguard	10.5	R1	1.2	55.5	16.8
Quadris	6	R5.5	25.0	43.2	15.8
Headline	7	R5.5	16.2	38.9	16.9
Topguard fb Quadris	10.5 6	R1 R5.5	1.0	47.2	17.7
Topguard fb Headline	10.5 7	R1 R5.5	1.0	52.1	18.1

Seed quality was generally very good.

# Competitive Tests with Named Compounds

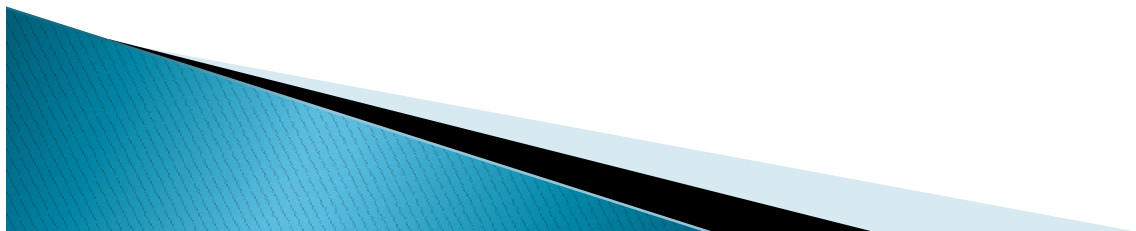
Chemical	Company	Rate of Application (oz/A)	Time of Application	Disease Severity (%)	Yield (bu/A)	100 Seed Weight (g)
Control	--	--	--	83.5	33.9	12.7
Aproach	Dupont	6	R1	55.5	43.6	13.6
Aproach	Dupont	9	R1	74.0	43.1	13.8
Quilt Xcel	Syngenta	10.5	R3	35.1	35.5	15.8
Priaxor	BASF	4	R1	51.0	40.9	15.0
Priaxor	BASF	4	R1 fb R5	3.8	62.3	17.1
Headline	BASF	6	R1	36.4	48.7	15.9
Headline	BASF	6	R1 fb R5	5.6	63.5	17.4
Domark	Valent	5	R1	3.7	45.1	17.9
Domark	Valent	5	R1 fb R5	1.9	58.8	17.6
Topguard	Cheminova	10.5	R1	1.5	55.1	17.4

# Images from Field Plots



# Conclusions

- } Single R1 application of triazole (Topguard) was effective in completely controlling rust under very heavy disease pressure.
- } This protocol also was effective in managing CLB in late MGV varieties.
- } Some evidence that late application of strobilurin (Quadris or Headline) preserves grain quality.
- } Numbered compounds from DuPont and Syngenta are very effective at low rates (not shown).



# Plans for 2013

- } Simulate commercial conditions with early planted MGs IV and V.
  - Early and continuous flowering may affect the shift from latent infection to symptom expression.
  
- } Include multiple planting dates with appropriate varieties for low and high risk rust and CLB situations.
  - Our work during past 4 years has emphasized high risk situations.



# Thank you

- } Clark Robertson
- } Al Coco
- } Boyd Padgett
- } Harold Lambert
- } Chris Roider and others at research farm
- } Graduate students and student workers
- } Louisiana Soybean and Grain Research and Promotion Board
- } Chemical companies

