



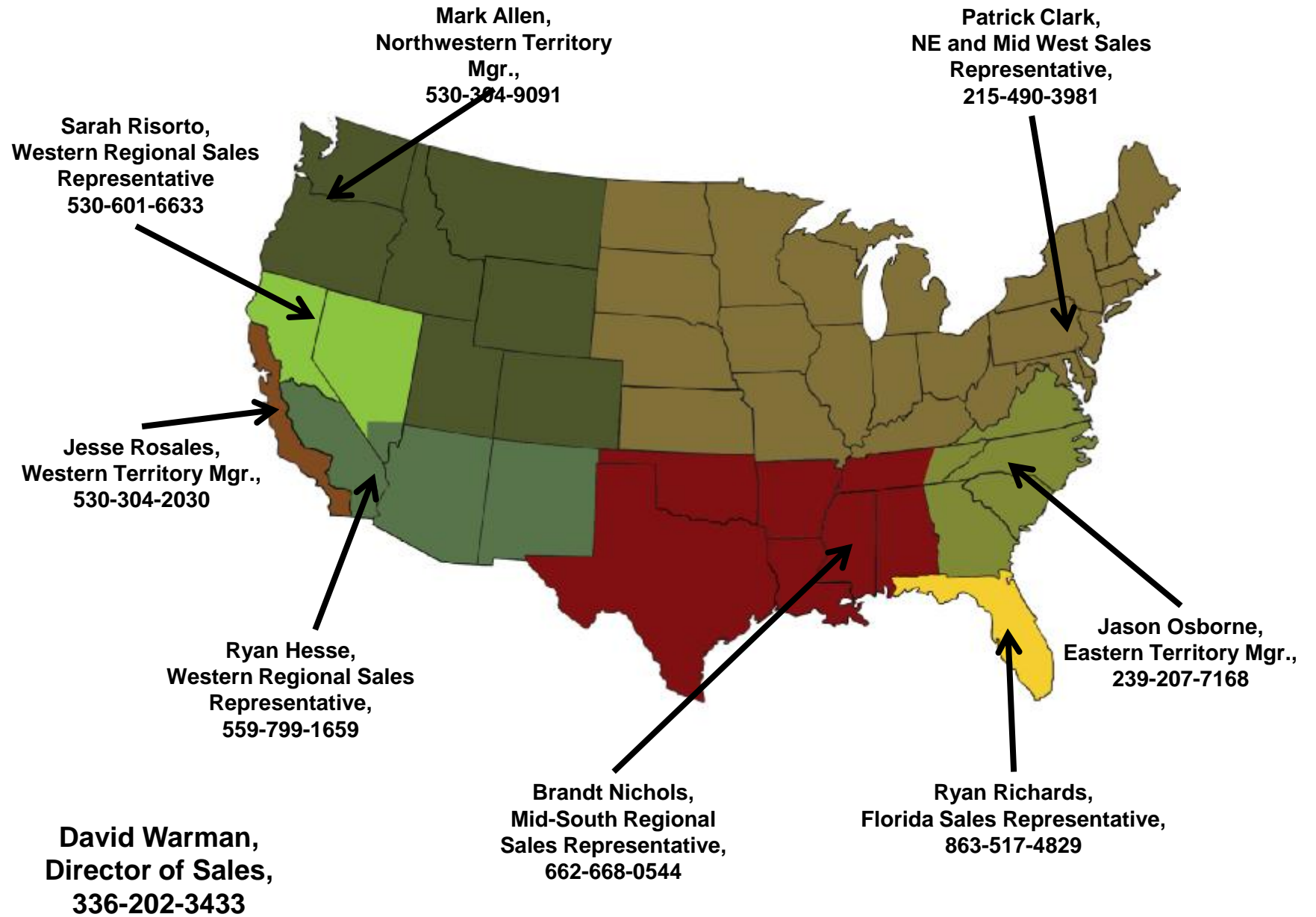
Guy Wilson
Southeastern Product Development Specialist



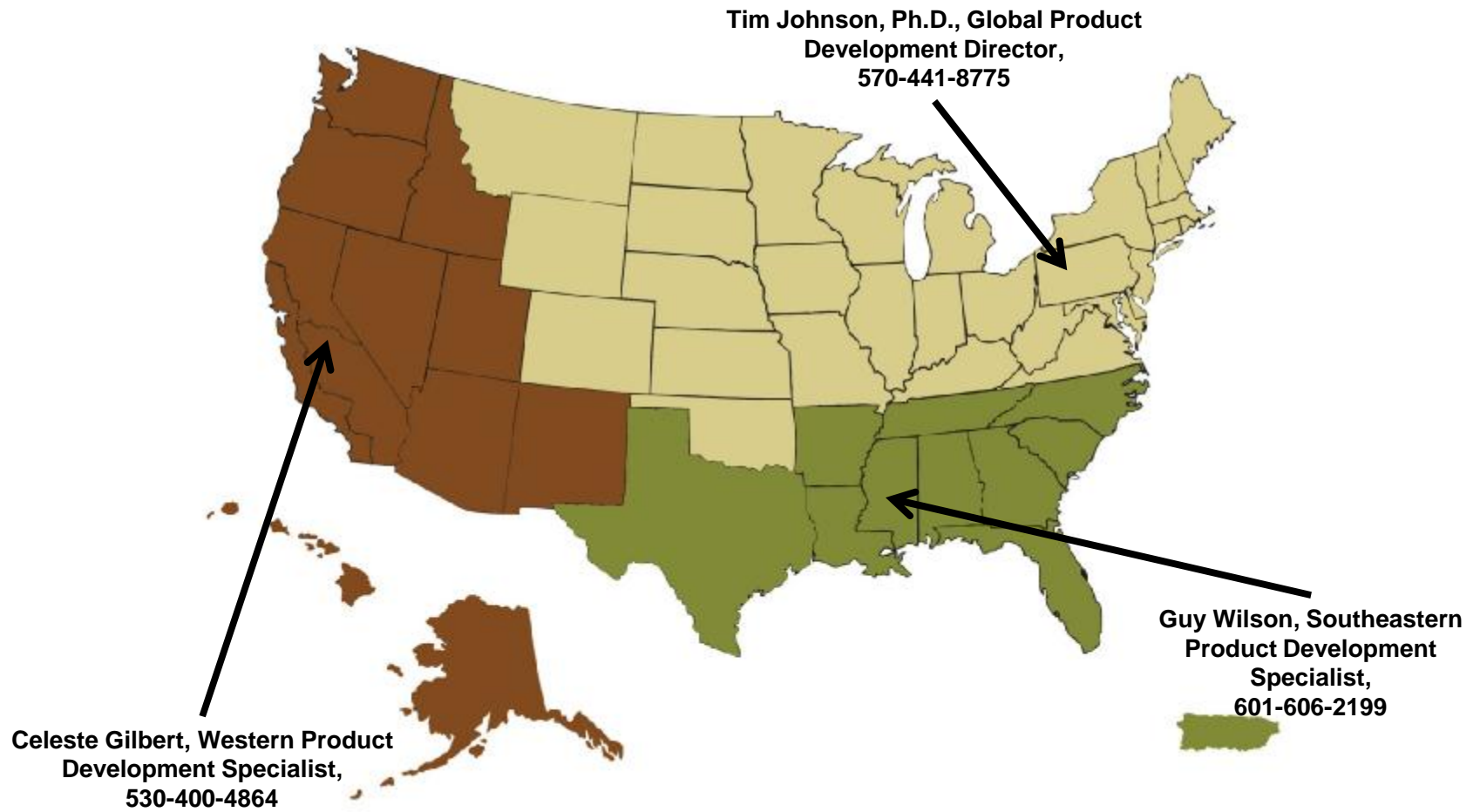
Natural Products For Pest Management



MBI Sales Territories

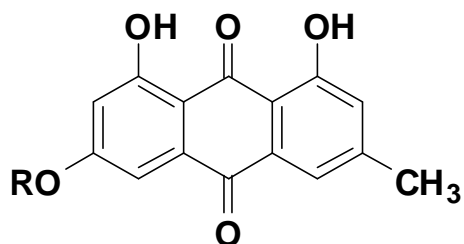


MBI Product Development Territories





- Active ingredient: Extract from giant knotweed *Reynoutria sachalinensis*



R=H
Emodin
R=CH₃O
Physcion



- Stimulates plant defense mechanisms
- Typical application rates of 50 – 100 gm/acre of plant extract
- Formulated as a micro-emulsion concentrate



MODE OF ACTION



Regalia Induces the Following Responses in Plants:

Induction of Plant Defenses

- Induces natural plant defenses to produce phytoalexins, phenolics, PR proteins, and reactive oxygen species (ROS)
- Induces production of glucanase enzymes that break down pathogen cell walls.

Cell Strengthening

- Induces production of ferulic acid for cell wall lignification.
- Induces production of papillae which are barriers to stop penetration of the fungus into the leaf surface.

Regalia – New FRAC Code

New FRAC Code for *Reynoutria*

Code:	P
Target Site and Code:	P5
Mode of Action:	Plant host defense induction
Group Name:	Plant extract
Chemical Group:	Complex mixture
Common Name:	<i>Reynoutria sachalinensis</i>
Comments:	Resistance not known



FEATURES AND BENEFITS



Features and Benefits

- **Fungal and Bacterial Disease Control** – Enables growers to control a broad spectrum of diseases with one powerful product.
- **Novel ISR Mode of Action** – Makes Regalia an ideal component in resistance management programs.
- **Tolerance Exemption** – Allows growers to manage residues on harvested produce.
- **Foliar and Soil Application** – Growers can now protect plants from foliar and soil borne diseases, and improve plant growth.



Features and Benefits (continued)

- **0-day Pre-harvest Interval (PHI)** – Short PHI lets growers manage disease up to the day of harvest.
- **4-hour Re-entry Interval (REI)** – Short REI lets workers get back in the field or greenhouse quickly.
- **Greenhouse Use** – Growers can protect plants from greenhouse to field.
- **Aerial Application** – Provides flexibility for applicators.
- **Rainfast in 1-hour** – Allows growers to protect crops even in inclement weather.

Crops and Uses

Field Crops and Diseases

(Partial List)

- Soybean
 - Cercospora Blight and leaf spot
(*Cercospora kikuchii*)
 - Asian soybean rust
(*Phakopsora pachyrhiza*)
- Corn
 - Gray Leaf Spot
(*Cercospora zea-maydis*)
- Wheat
 - Powdery Mildew
(*Blumeria graminis f. sp. tritici*)
(*Erysiphe tritici*)
- Rice
 - Sheath Spot
(*Rhizoctonia oryzae*)
- Peanuts
 - White Mold
(*Sclerotium rolfsii*)



Field Trial Data

Soybean

Replicated University Field Trials



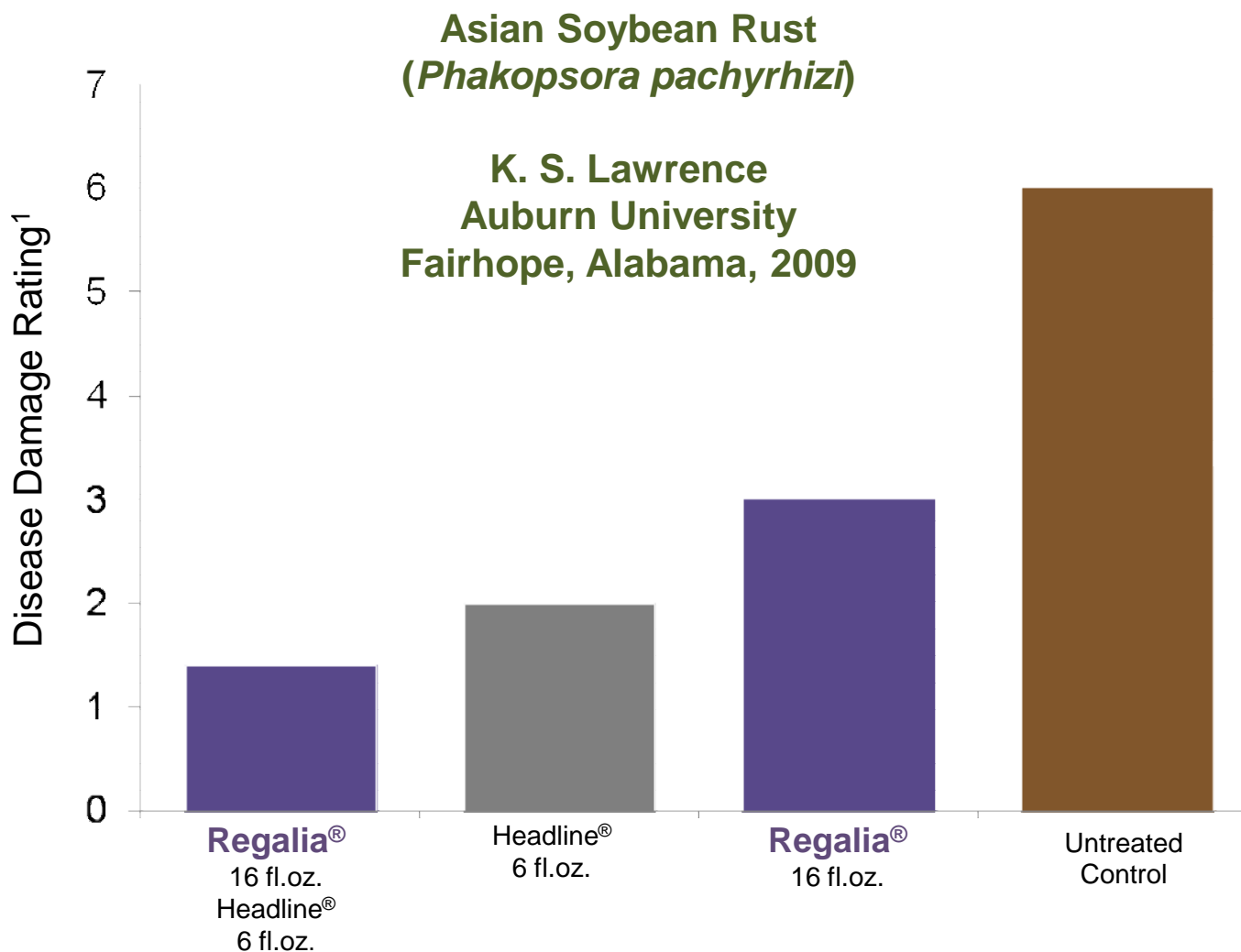
Regalia - Applications



Soybeans

- For soybean growers in the Southern U.S., Regalia controls Asian soybean rust and cercospora blight, and improves yield when applied with strobilurin's for plant health.

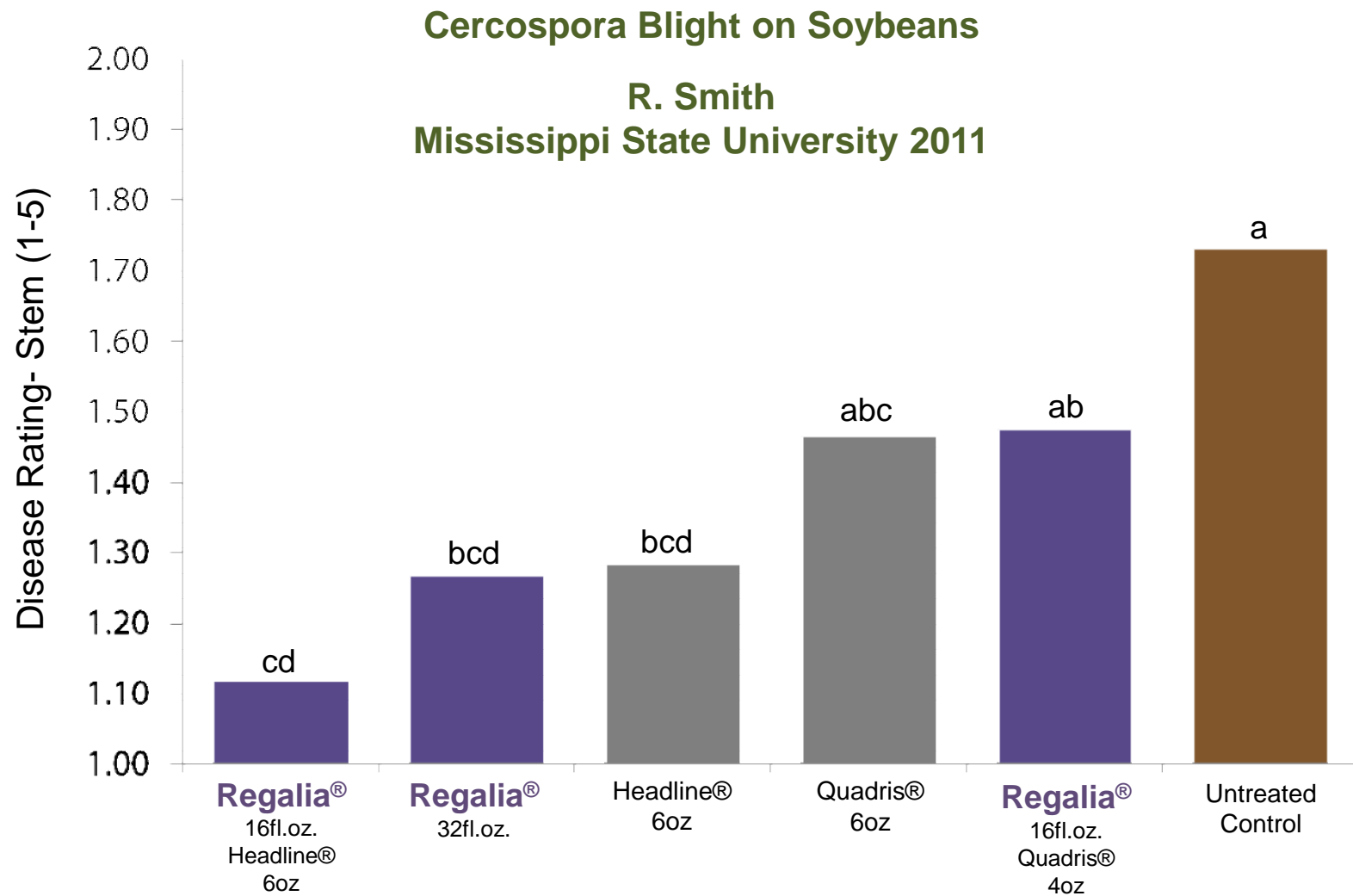
Regalia® plus Headline® (pyraclostrobin) provides better control of Asian Soybean Rust than Headline® alone.



¹ Damage Rating-Scale 1-8
- Disease evaluated on Oct 20.



Regalia® plus Headline® (pyraclostrobin) provides better control of Cercospora Blight than Headline® alone.



- Treatments applied on Aug 7 (R3).
- Soybeans planted on Jun 15.
- Disease evaluated on Aug 25 (final observation).
- Disease rated on a scale of 1 (best) to 5 (worst).

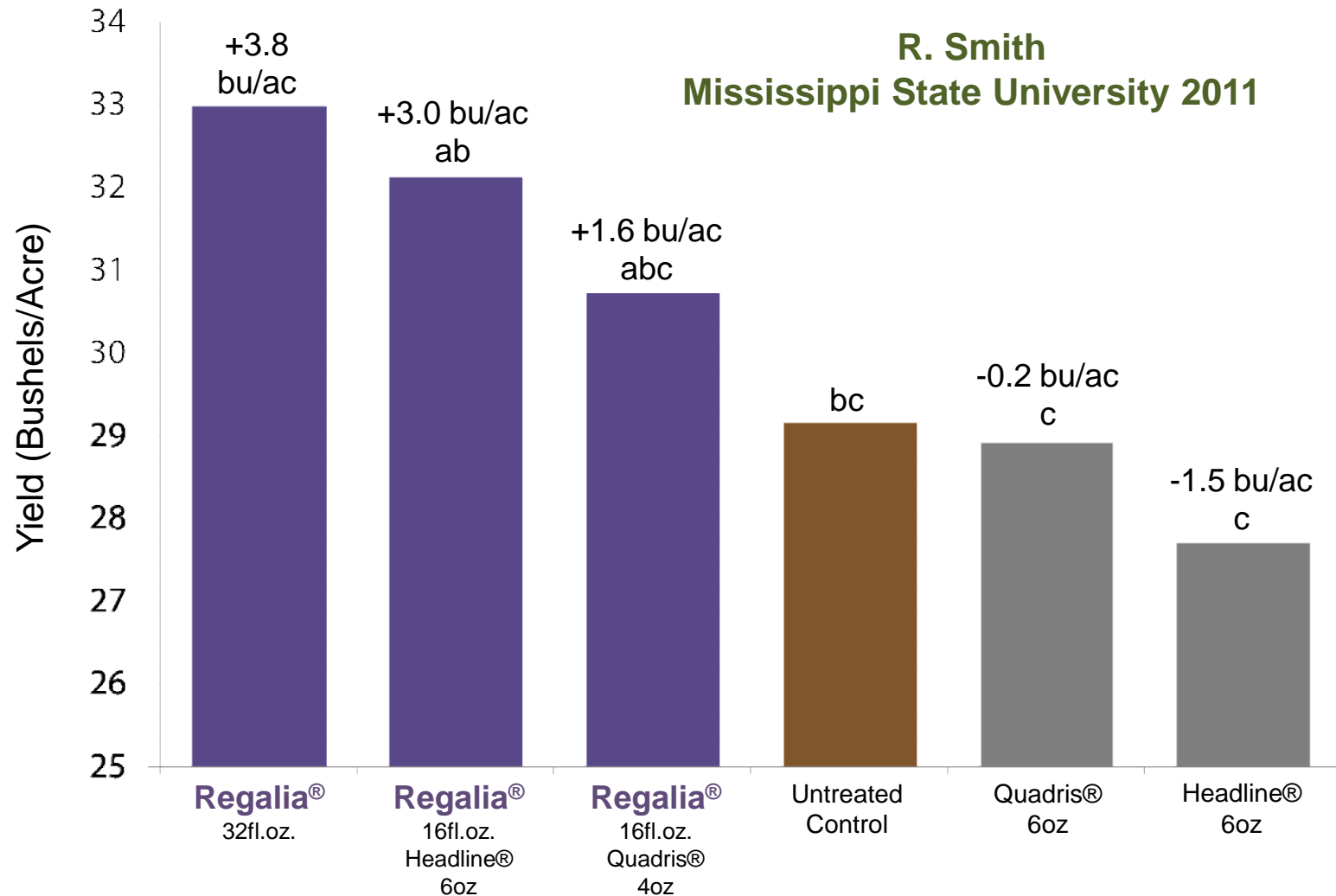
Regalia® plus Headline® (pyraclostrobin) increases yield more than Headline® alone.



Soybean Yield

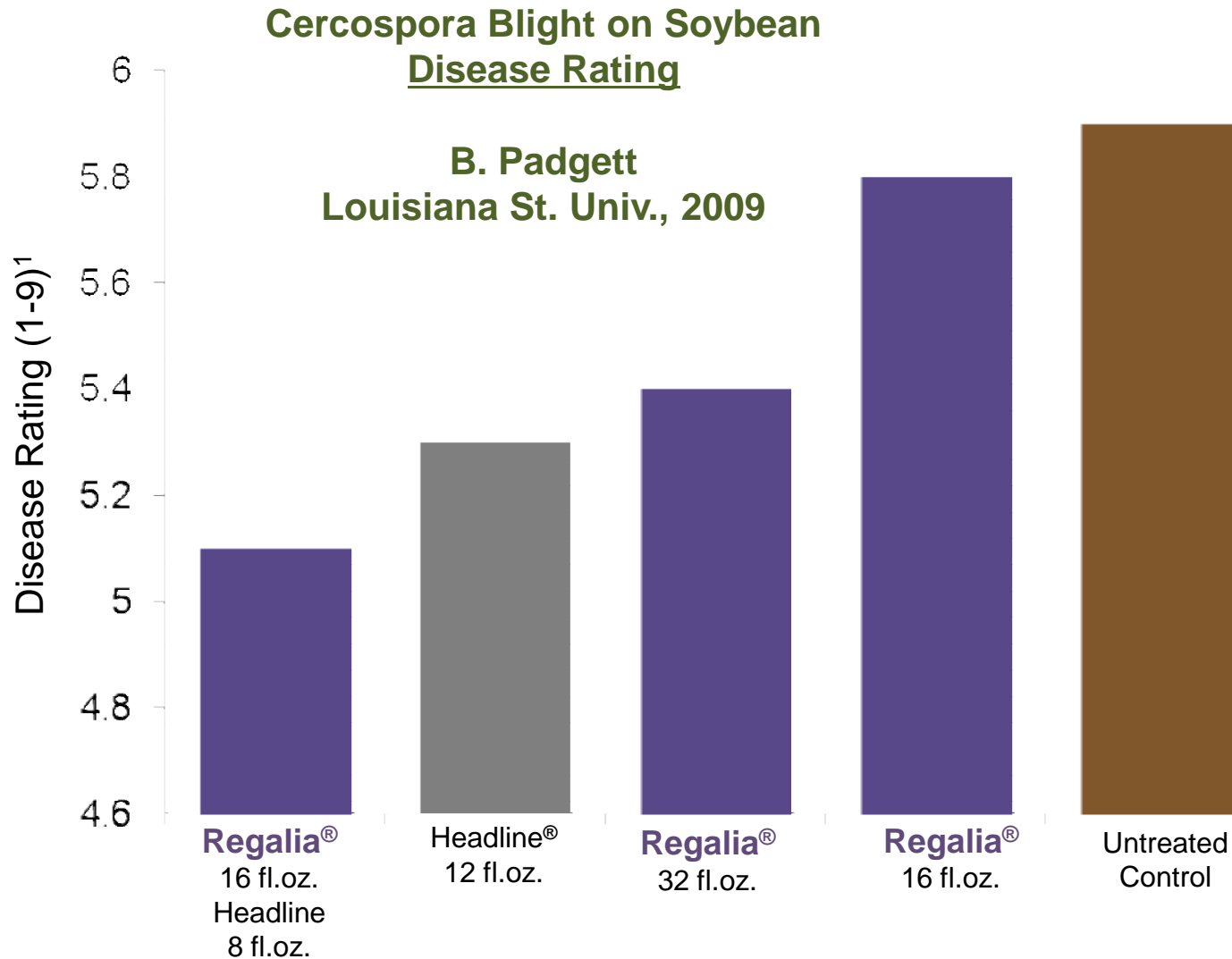
R. Smith

Mississippi State University 2011



- Treatments applied on Aug 7 (R3).
- Soybeans planted on Jun 15.
- Treatments evaluated on Oct 15.

Regalia® plus Headline® (pyraclostrobin) provides better control of Cercospora Blight than Headline® alone.



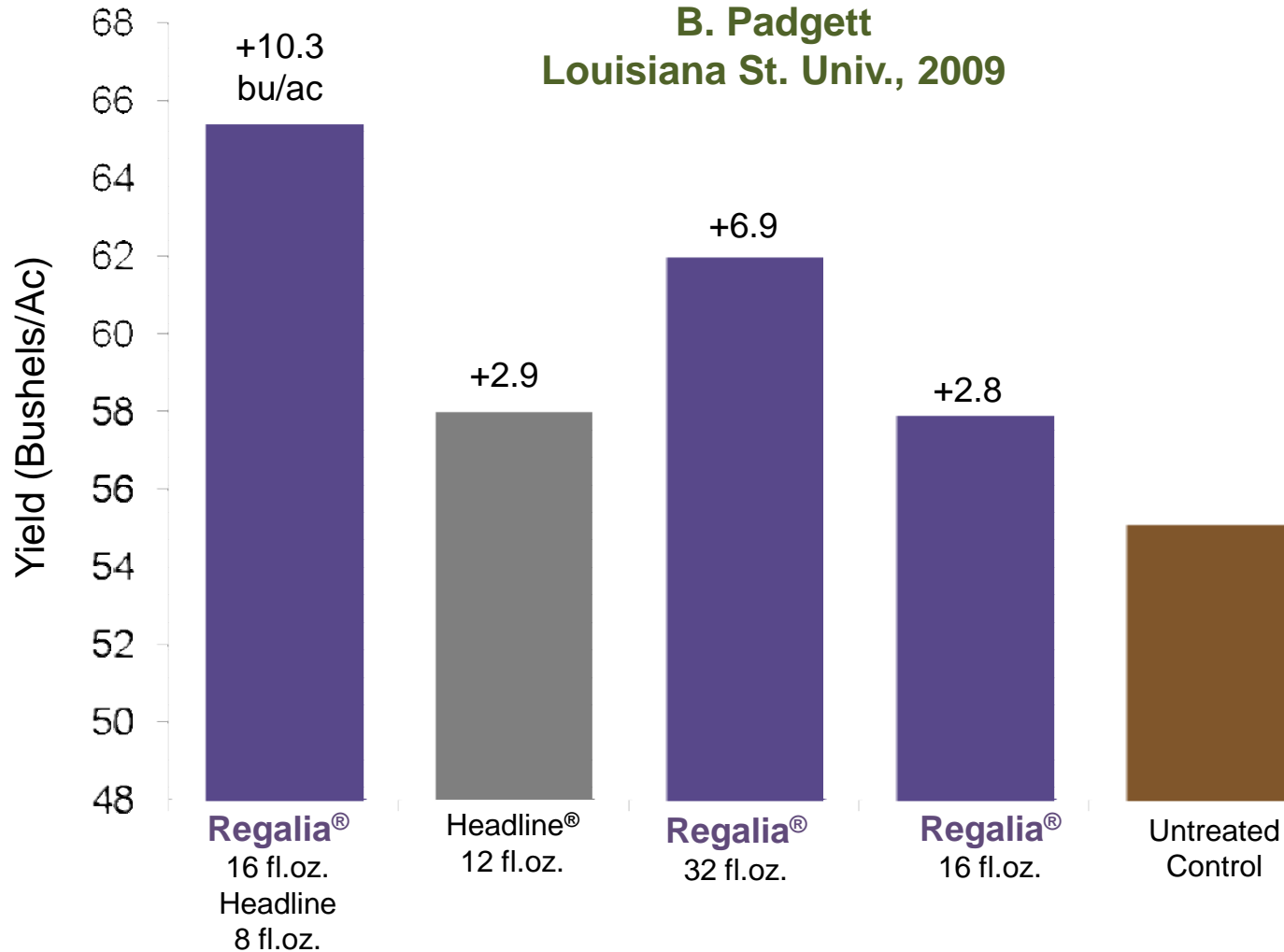
¹ Disease Rating measurement taken on September 8, 2009.
- Cercospora Blight: *Cercospora kikuchii*



Regalia® plus **Headline®** (pyraclostrobin) increases yield more than **Headline®** alone.



Soybean Yield
B. Padgett
Louisiana St. Univ., 2009



¹ Yield measurement taken on October 21, 2009.
- Cercospora Blight: *Cercospora kikuchii*



Regalia® plus Quilt® Xcel (azoxystrobin + propiconazole) increases yield more than Quilt® Xcel alone.

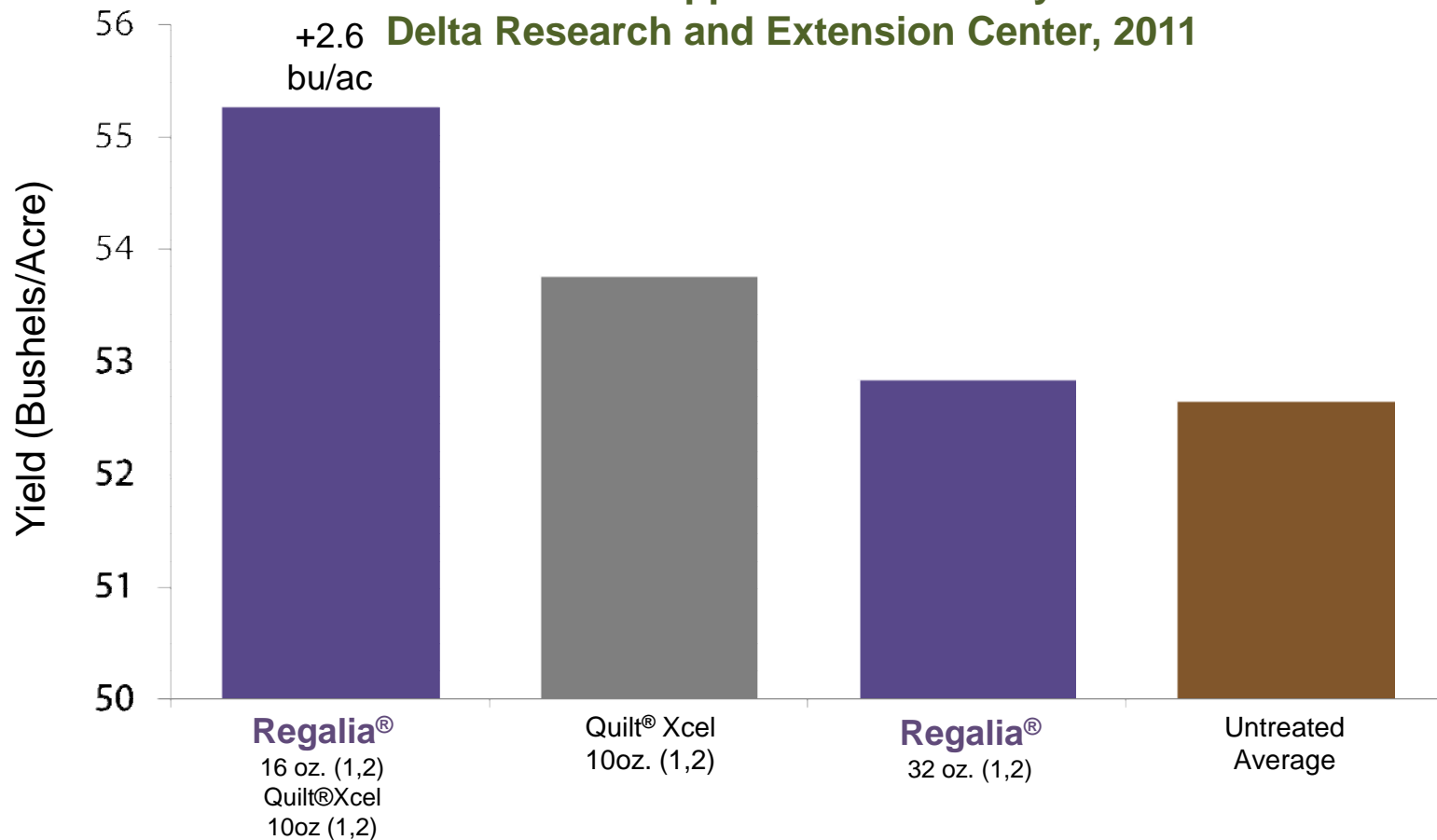


Soybean Yield

T. Allen

Mississippi State University

Delta Research and Extension Center, 2011



- Treatments applied at 1= R1 Jun 21 and 2= R3/R4 Jul 19.
- Treatments applied with 0.25% v/v of Penetrator® Plus at the desired growth state.
- Treatments evaluated Sep 23.





Field Trial Data

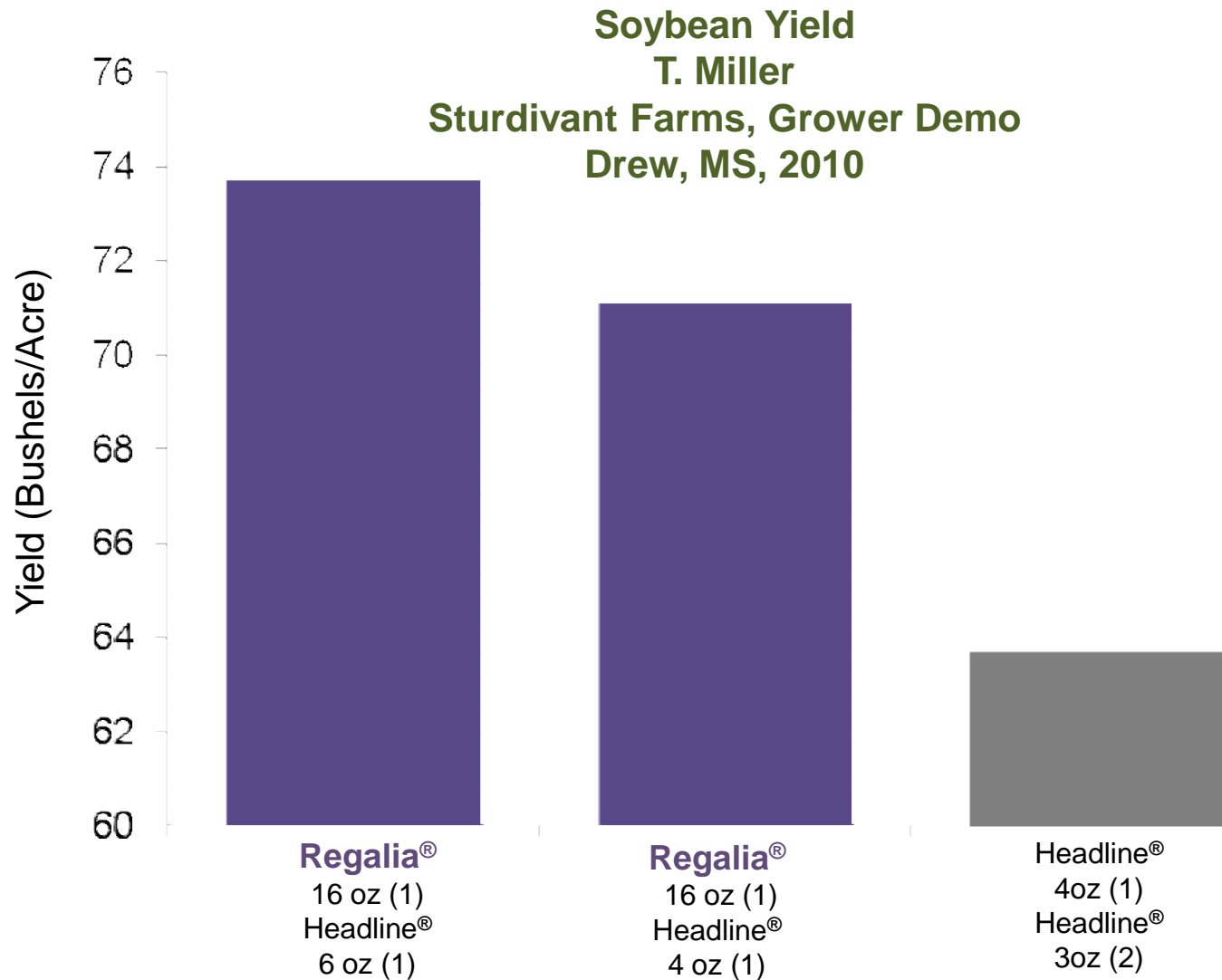
Soybean

Large Scale

Grower Demonstrations



Regalia® plus **Headline®** (pyraclostrobin) increases yield more than **Headline®** alone.



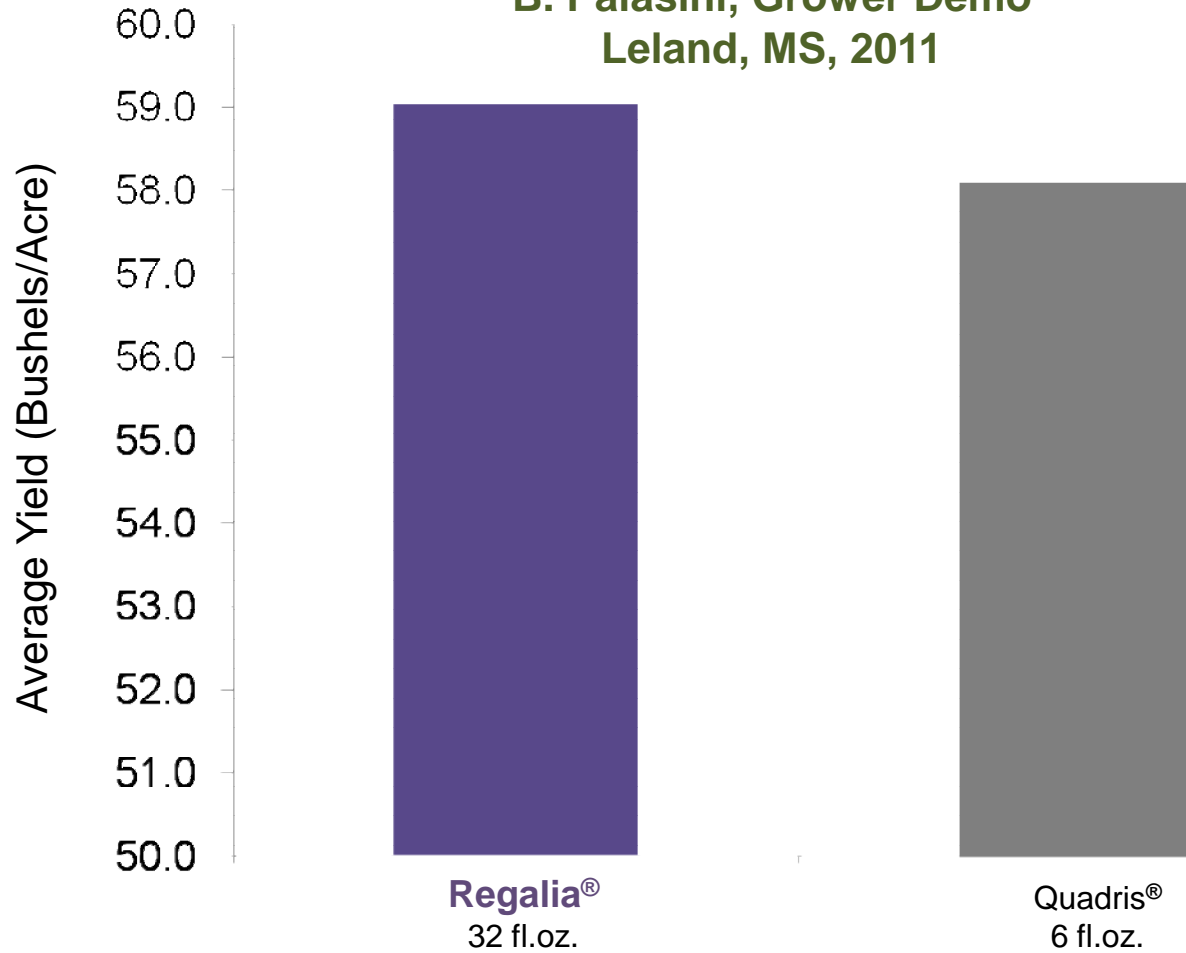
- Aerial application at 5GPA.
- Treatments applied at 1= R3 and 2= R5.



Regalia® is as effective as Quadris®
(azoxystrobin) at increasing soybean yield.



Soybean Yield
B. Palasini, Grower Demo
Leland, MS, 2011



- Treatments applied at R4 on Jul 26.
- Harvested Sept 26.





To Increase Yield and Control Disease in Soybeans



- **Rate**

Ground Applications:

Apply at a rate of 1 pint of Regalia in a minimum of 15 gallons of water per acre, in a tank mix with a triazole or strobilurin fungicide. For stand-alone use, apply Regalia at 1 quart per acre in a minimum of 15 gallons of water.

Aerial Applications:

Apply at a rate of 1 pint of Regalia in a minimum of 5 gallons of water per acre, in a tank mix with a triazole or strobilurin fungicide.

- **Timing** - For best results, use Regalia as a preventative treatment prior to the onset of disease. Make application at R4-R5 growth stage. For maximum disease control, begin applications at the first sign of disease pressure.

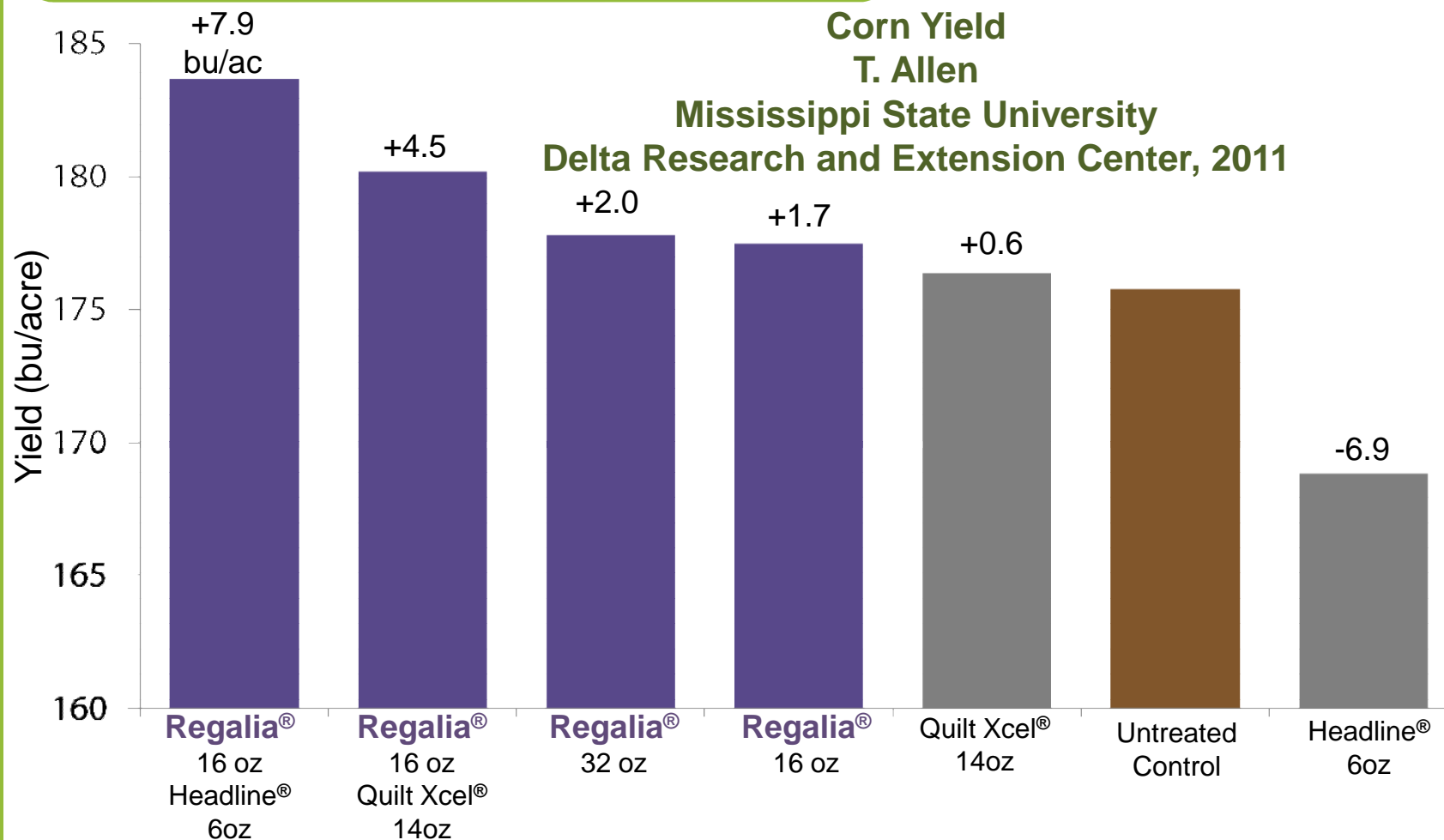


Field Trial Data

Corn

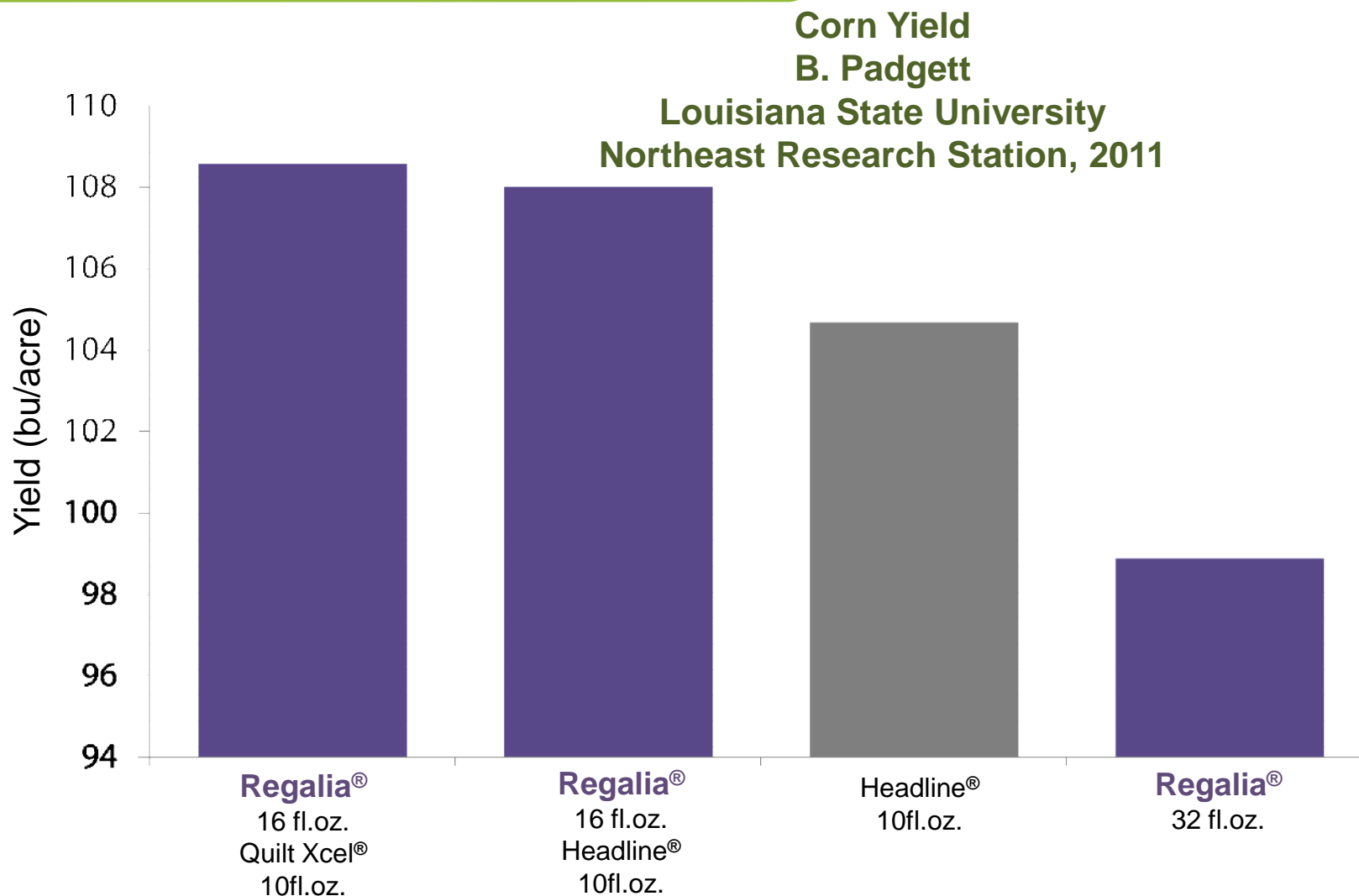


Regalia[®] plus Headline[®] or Quilt[®] increases yield more than Headline[®] or Quilt[®] alone



- Corn was planted on April 19.
- Treatments applied at VT/R1 on Jun 25.
- Penetrator Plus was added to all treatments at 0.25% v/v.
- Corn was harvested on Sep 9.
- Disease was rated on Jul 9 and Jul 23 however no disease occurred in plots due to high temps and lack of rainfall.
- Hybrid used was NK N78N.

Regalia[®] plus Headline[®] or Quilt[®] increases yield more than Headline[®] alone.



- Treatments applied on Jun 3.
- Penetrator Plus was added to all treatments at 0.25% v/v.
- Corn was harvested on Aug 10.



To Increase Yield and Control Disease in Corn

- **Rate**

Ground Applications:

Apply at a rate of 1 pint of Regalia in a minimum of 15 gallons of water per acre, in a tank mix with a triazole or strobilurin fungicide. For stand-alone use, apply Regalia at 1 quart per acre in a minimum of 15 gallons of water.

Aerial Applications:

Apply at a rate of 1 pint of Regalia in a minimum of 5 gallons of water per acre, in a tank mix with a triazole or strobilurin fungicide.



Regalia[®] Field Trial Data

Rice

Regalia - Market Positioning



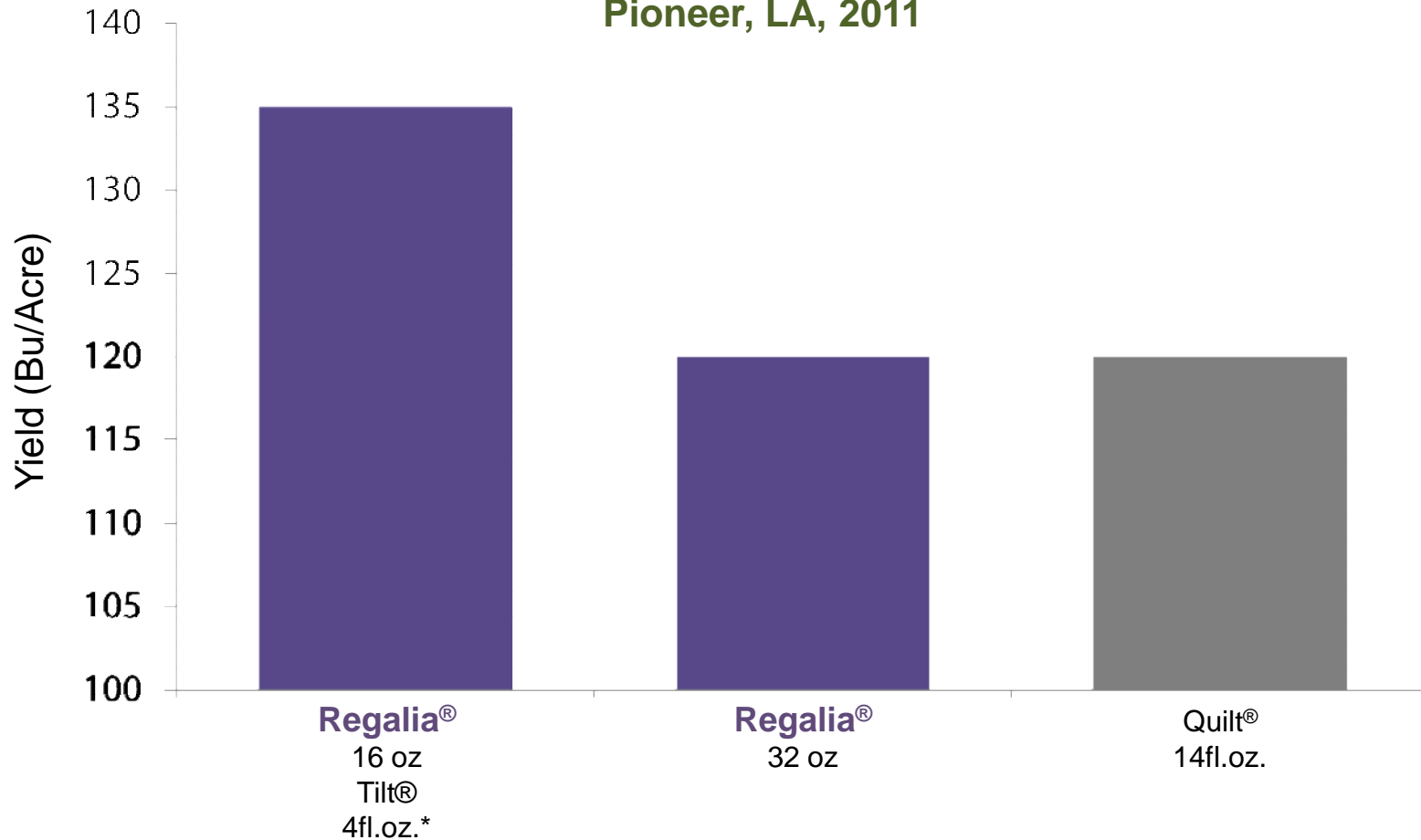
Rice

- For Mid-South rice growers, Regalia plus Tilt (propiconazole) improves yield more than Quilt (propiconazole + azoxystrobin).

Regalia® plus propiconazole (Tilt®) increases yield more than azoxystrobin plus propiconazole (Quilt®).



Rice Yield
Grower Demo
Pioneer, LA, 2011



- Tilt® is registered to be applied on rice at 6 – 10 fl. oz. per acre.
- Treatments applied on Aug 19 (split boot <20% headed).
- Treatments applied via aerial application at 10 GPA.
- Harvested on Sep 26.





To Increase Yield and Control Disease in Rice



- **Rate** - Apply Regalia at 1 pint per acre in a tank mix with a strobilurin or triazole fungicide. For stand alone applications, apply Regalia at 1 quart per acre. Apply Regalia in a minimum of 10 gallons of water by ground or 5 gallons of water by air.
- **Timing** - Apply Regalia at the first observation of disease symptoms. To maximize yields in rice, it is important to protect the flag leaf. Rice fields should be observed throughout the growing season for early disease symptoms.

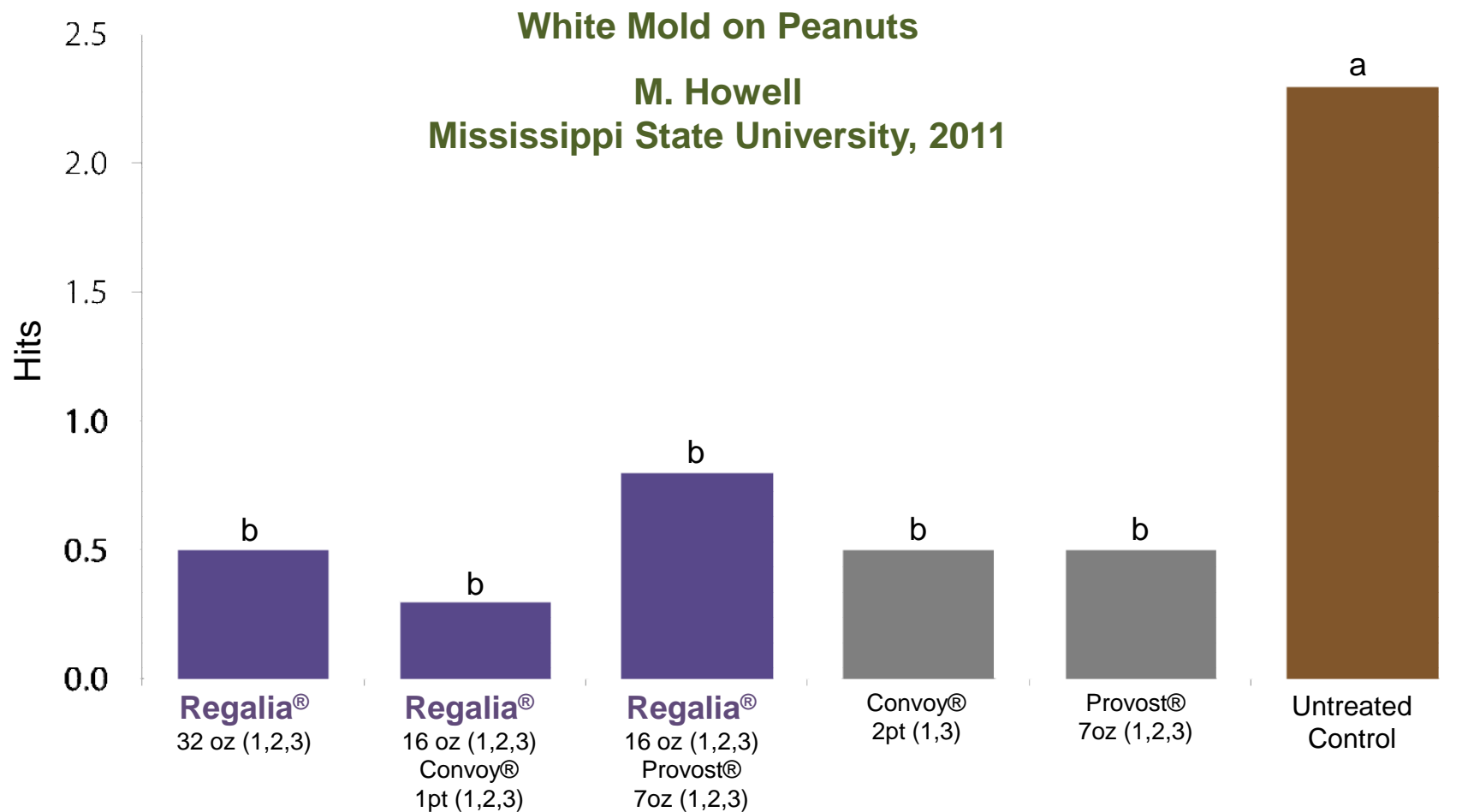


Field Trial Data

Peanuts



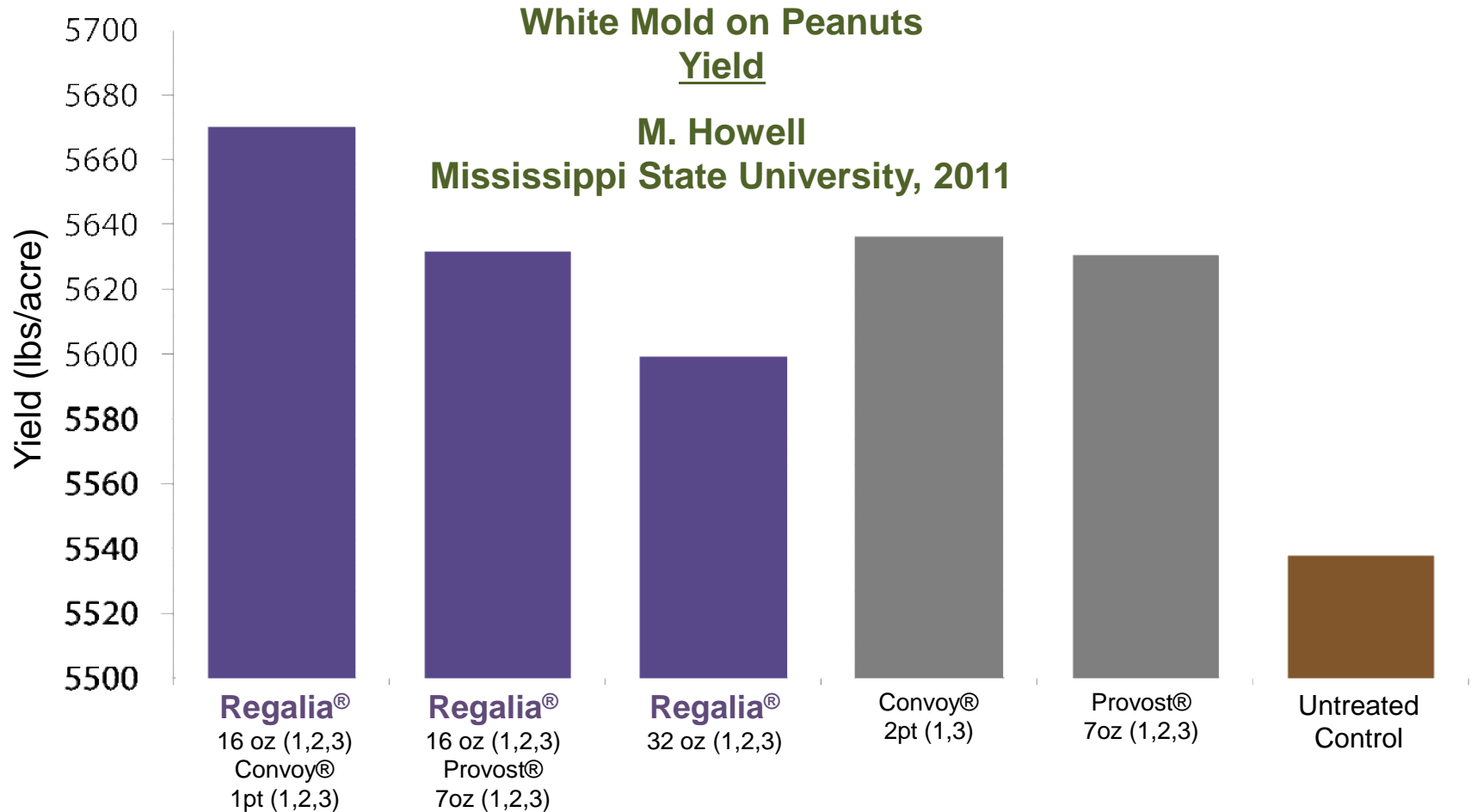
Regalia® controls White Mold on Peanuts as well as Convoy® and Provost®.



- All treatments included applications of Penetrator Plus® at a rate of 0.25% v/v.
- Treatments applied on 1= Jul 20, 2= Aug 3, 3= Aug 17
- Disease evaluated on Aug 1, Aug 10, Aug 24, Sep 12.
- Treatments applied at 15/GPA.
- White Mold: *Sclerotium rolfsii*.



Regalia® increases yield in Peanuts.



- All treatments included applications of Penetrator Plus® at a rate of 0.25% v/v.
- Treatments applied on 1= Jul 20, 2= Aug 3, 3= Aug 17
- Yield evaluated on Oct 5.
- Treatments applied at 15/GPA.
- White Mold: *Sclerotium rolfsii*.



MBI R&D Pipeline



Regalia™	Fungicide/Plant Health				
ZEQUANOX™	Invasive Mussel Control				
Grandevo™	Insecticide				
MBI 005™	Herbicide				
MBI 206	Insecticide/Nematicide				
MBI 011	Herbicide				
MBI 010	Herbicide				
MBI 205	Insecticide/Nematicide				
Haven™	Anti-transpirant				
MBI 302	Nematicide				
Others	Algaecide, Herbicide, Fungicide, Nematicide, Insecticide, Plant Health				



Guy Wilson

**Southeastern Product Development
Specialist**

Brandt Nichols

Mid-South Sales Representative

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