

Cotton and Peanut Disease Update: What to think about in 2016

Panhandle Crop Short Course
March 3rd, 2016

Nicholas S. Dufault
Extension Specialist
Row Crops & Vegetables
Plant Pathology Department/IFAS
University of Florida



Bacterial blight was identified in Jay, FL during 2015 (An old foe).



<http://www.mississippi-crops.com/2014/07/08/scouting-cotton-for-bacterial-blight-in-2014/>



- Don't alter in-season management
- Irrigation may move pathogen, but consider crop need over disease
- **Do not use fungicides!** (bacterial pathogen)
- Consider resistant varieties & tillage for next season

Multi-state project with 7 states over 2 years from gulf coast to Virginia

- Virginia
- Tennessee
- Louisiana
- Mississippi
- Alabama
- Georgia
- Florida

● 2014

● 2015

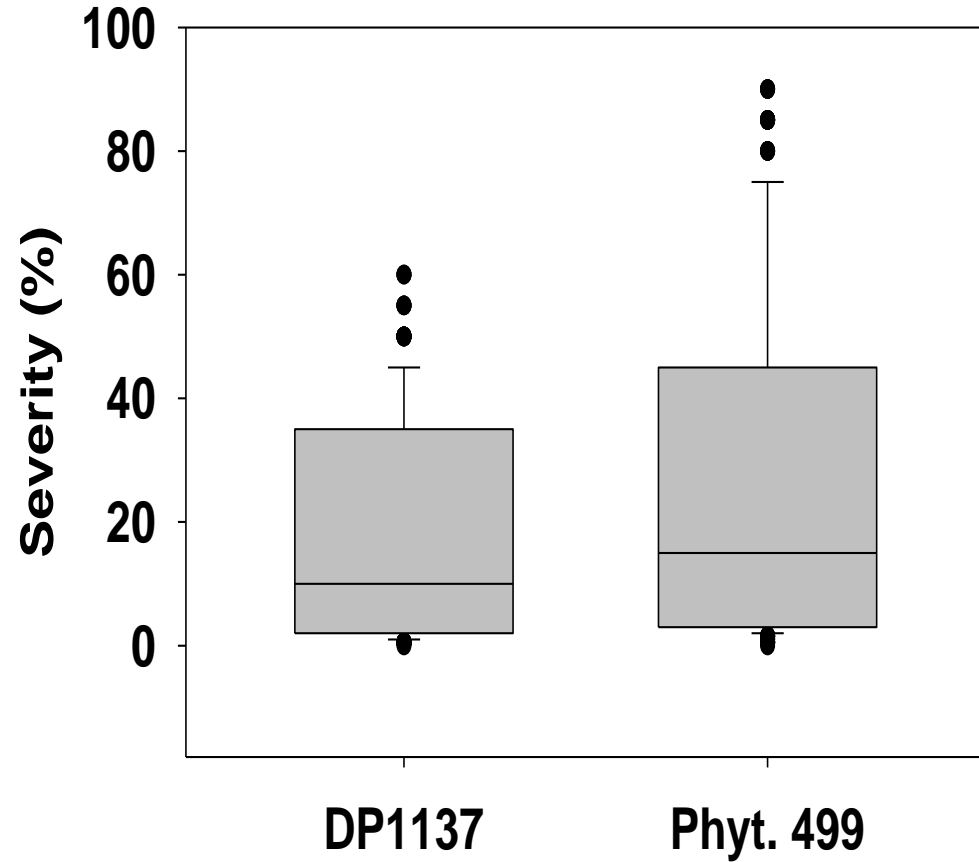
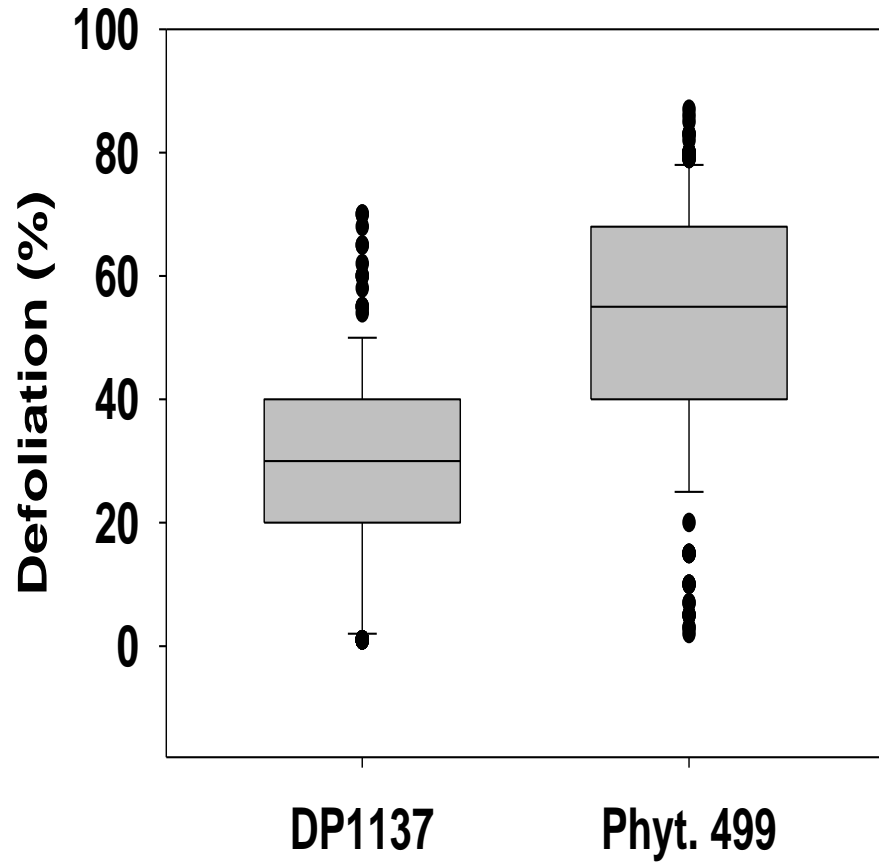
● 2014-2015



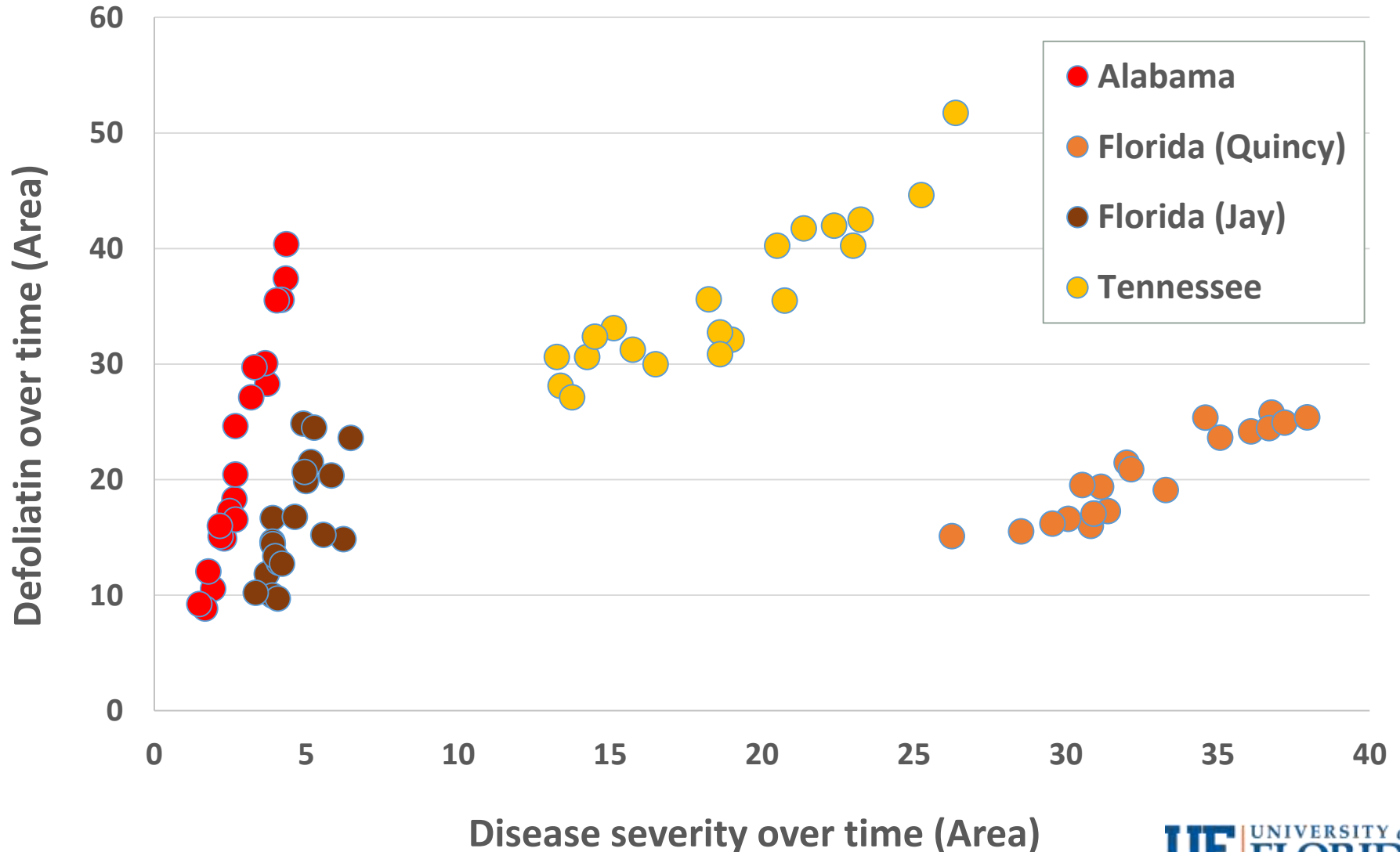
Variety & fungicide effects on disease



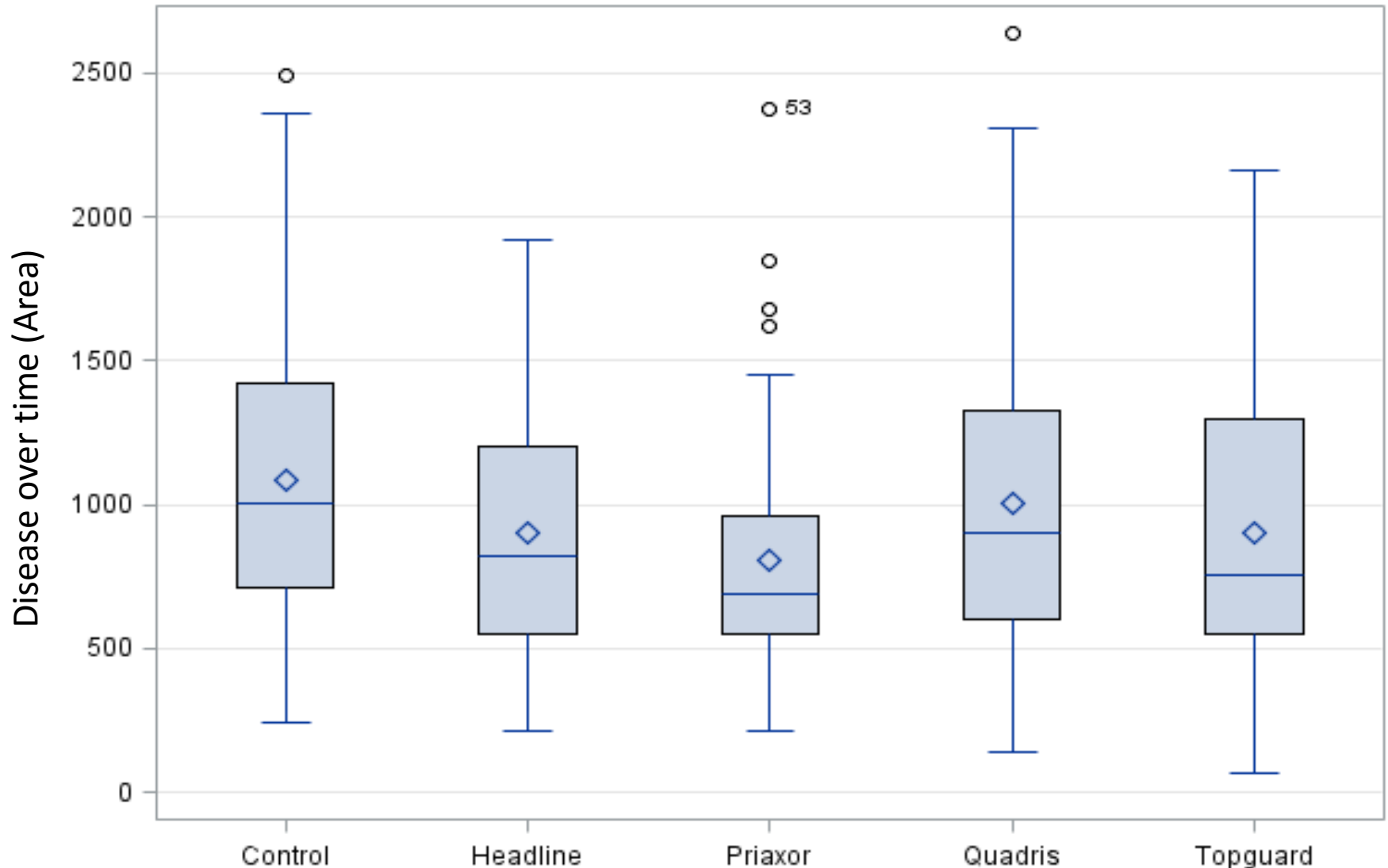
Significant effects of variety were observed across years & locations.



The development of *Corynespora* over time was often positively correlated with defoliation.



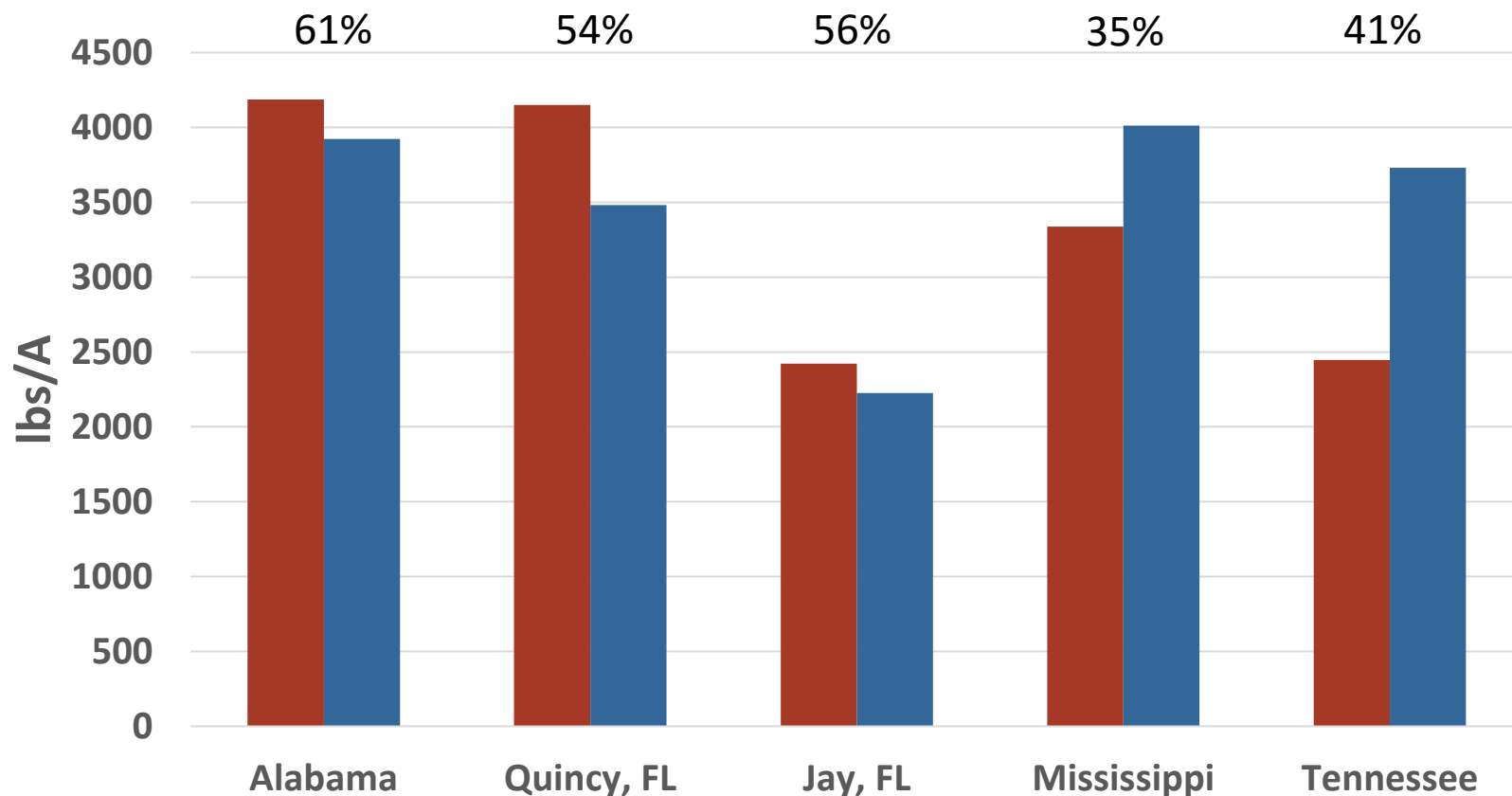
Priaxor (4 fl oz/A) was the most consistent at reducing defoliation across locations in 2015.



Effects of treatments on yield factors (lint & seed)



Variety can impact yield, but disease factors are not always driving the impacts.

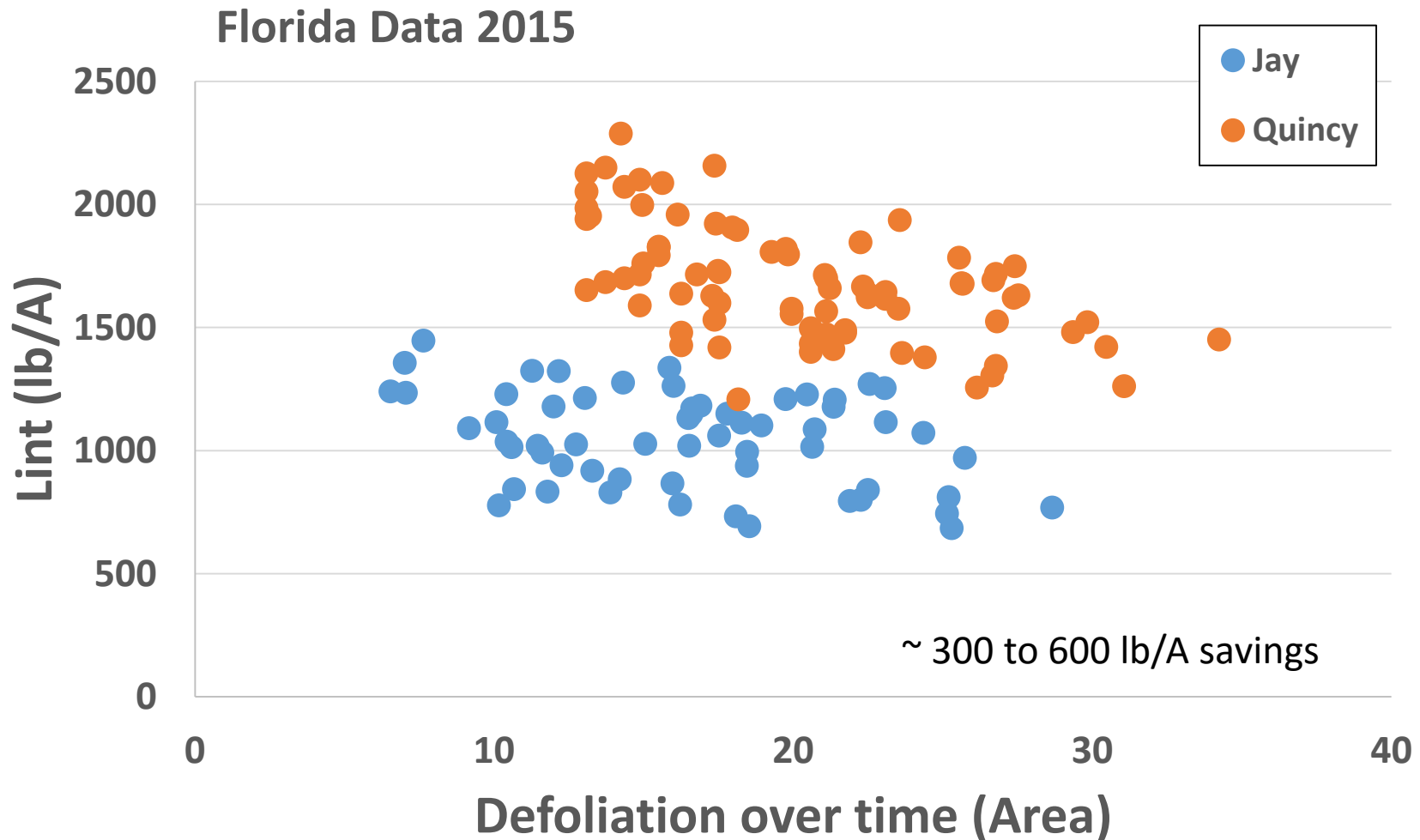


Seed Cotton Yield
2015

■ DP1137

■ Phyt. 499

At 6 out of 9 sites defoliation was negatively correlated to yield variables.



Target spot **CAN** be a problem.

- *Corynespora* target spot varied throughout the southeast
- Disease severity was generally higher on PHY499 than on DP1137.
- Fungicides generally to did not impact yields
- Fungicides had an effect on defoliation, which is correlated to yield.

Always assess your risk before applying a fungicide.

Assessing Risk to Target Spot in Georgia

A draft risk-management tool to be assessed and refined in Georgia
 R.C. Kemarait, Jr., PhD | Department of Plant Pathology, The University of Georgia

Score _____ **Factor with the HIGHEST potential impact on increased risk of target spot is field location:**
 SW Georgia, SE Alabama or NW Florida: **25 pts** Central or SE Georgia: **15 pts** Eastern Georgia: **5 pts**

Factors with MODERATE impact on increased risk of target spot:

1. **Field History**—Target spot risk is greater where it has been severe in the past
 Score _____ **Severe in the past: 10 pts** **Observed but not severe: 5 pts** **Never observed: 0 pts**

2. **Rank cotton growth**—Disease development and spread seems closely tied to extended periods of leaf wetness; a dense cotton canopy stays wet longer and is more prone to target spot
Rank growth with dense canopy: 15 pts **Complete row closure but growth well managed: 5 pts**
 Score _____ **Open canopy with good airflow: 0 pts**

3. **Irrigation**—Irrigation promotes cotton growth and extends periods of leaf wetness
Irrigation during the day greatly extends the dew period from previous night: 10 pts
 Score _____ **Irrigation at night or early morning minimizes leaf wetness period: 5 pts** **No irrigation: 0 pts**

4. **Extended periods of rainfall and cloudy weather**—Disease development is favored
Frequent rainfall and cloudy weather: 10 pts **Normal for the season: 5 pts**
 Score _____ **Drought Conditions: 0 pts**

Factors with LOW impact on increased risk of target spot:

1. **Tillage**. Target spot spores will survive in the crop debris from previous cotton crops; spore survival is likely longer in reduced-tillage and spores may also be splashed to cotton leaves easier from surface debris
 Score _____ **Conservation/reduced tillage: 5 pts** **Conventional tillage with deep turning: 0 pts**

2. **Crop rotation**. Although this remains to be proven, target spot will likely be more severe in continuous cotton fields since spores will survive in crop debris from the year before
 Score _____ **Continuous cotton: 5 pts** **Another crop the year before: 0 pts**

Factor that MAY impact risk of target spot:

Variety selection. Some cotton varieties may be more susceptible to target spot; however, it is not clear if increase in susceptibility is due to the ease of leaf infection or the growth habit of a variety tends to be more rank and thus prone to longer periods of leaf wetness. Also, the relationship between defoliation and yield loss is not completely understood. For example, a variety with more defoliation may not necessarily yield less.

Total Score _____

Your Risk

- 40 pts or more » High Risk:** Growers most likely to see a benefit from a fungicide program.
- 25 – 35 pts » Moderate Risk:** Growers may benefit from the use of a fungicide.
- 25 pts or less » Low Risk:** Growers need to consider other disease threats when considering fungicide use.



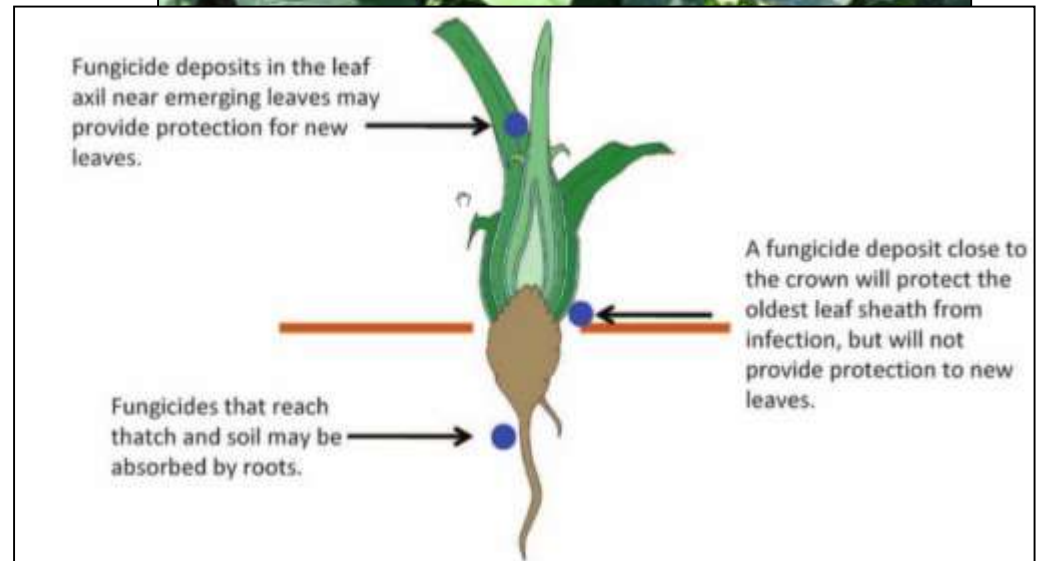
<https://sites.aces.edu/group/timelyinfo/Documents/2015%20Target%20Spot%20Control%20Options%20Timely%20Information.pdf>

What did we dig up on peanut diseases in 2015?



Why might a quality program still have disease?

- Cannot control all disease
- Sprays require
 - Good coverage
 - Bravo
 - Echo, Chloronil
 - Accurate timing
 - Diseases
 - Where
 - What



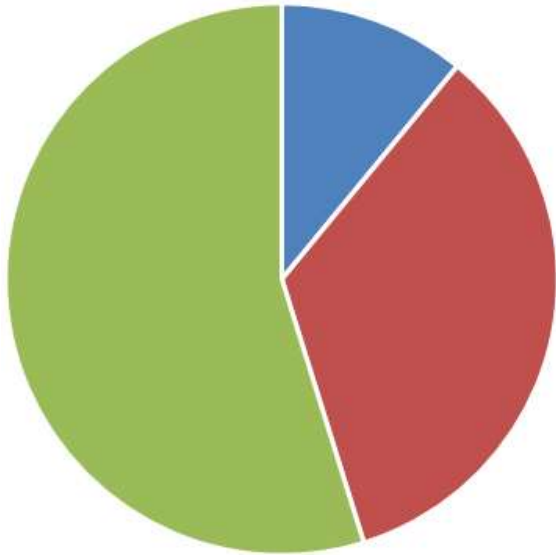
Leaf spot individual product trial

- Tebuconazole
- Azoxystrobin and Pyraclostrobin
- Propiconazole (2015)
- Planting date: after 6/1
- Variety: Georgia-06G

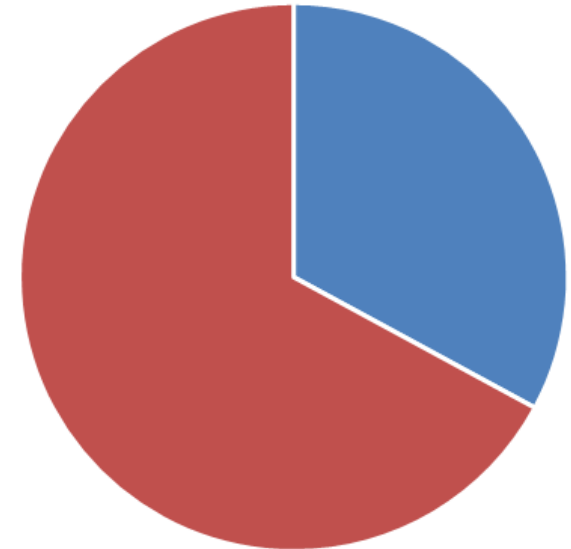


Rarely, are we dealing with only one pathogen, especially with leaf spots.

Quincy, FL

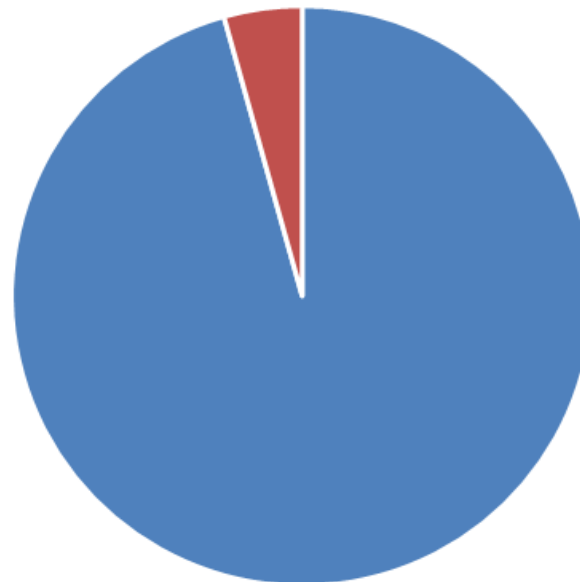


Marianna, FL



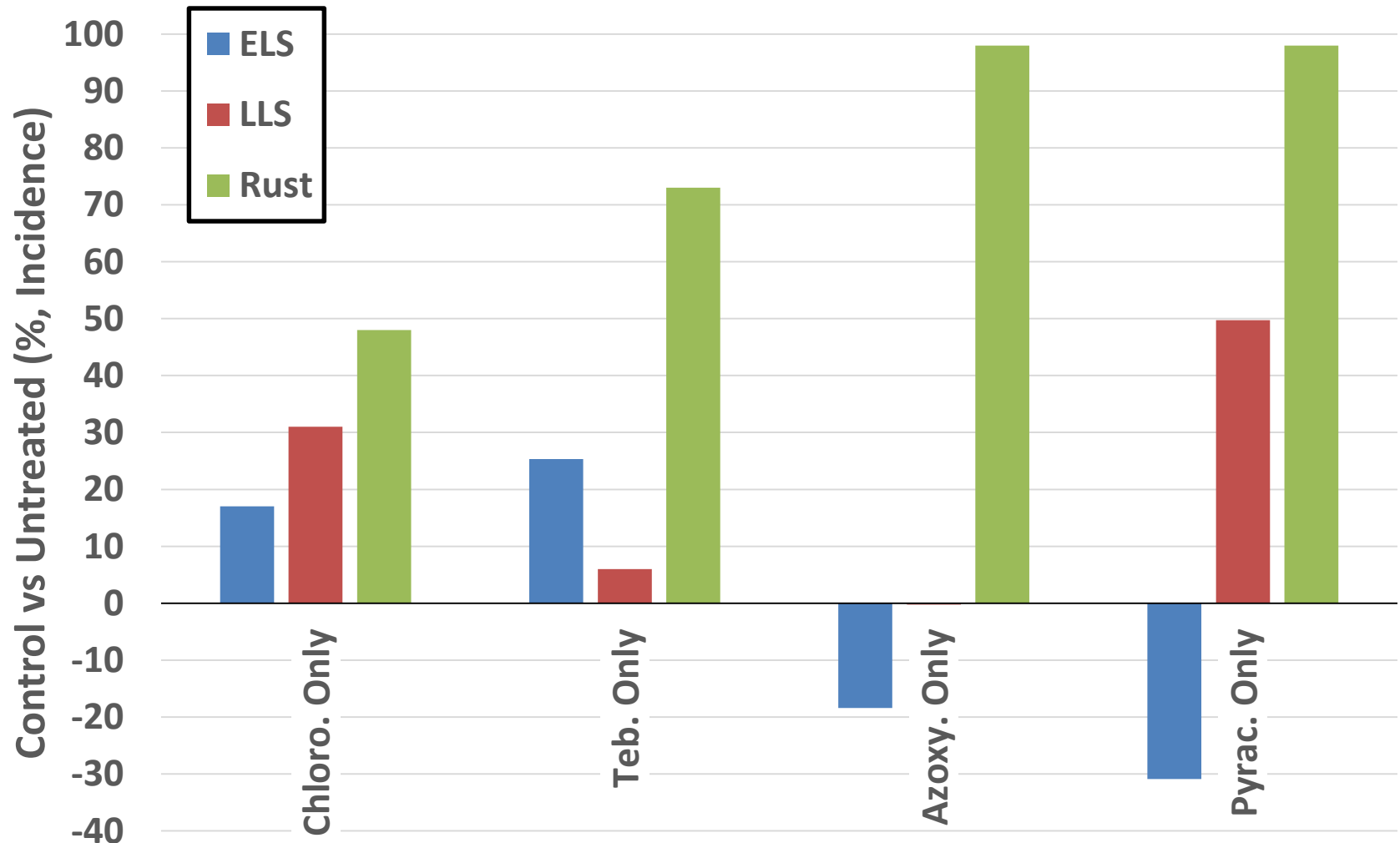
2015 Foliar
Pathogen Incidence

Citra, FL

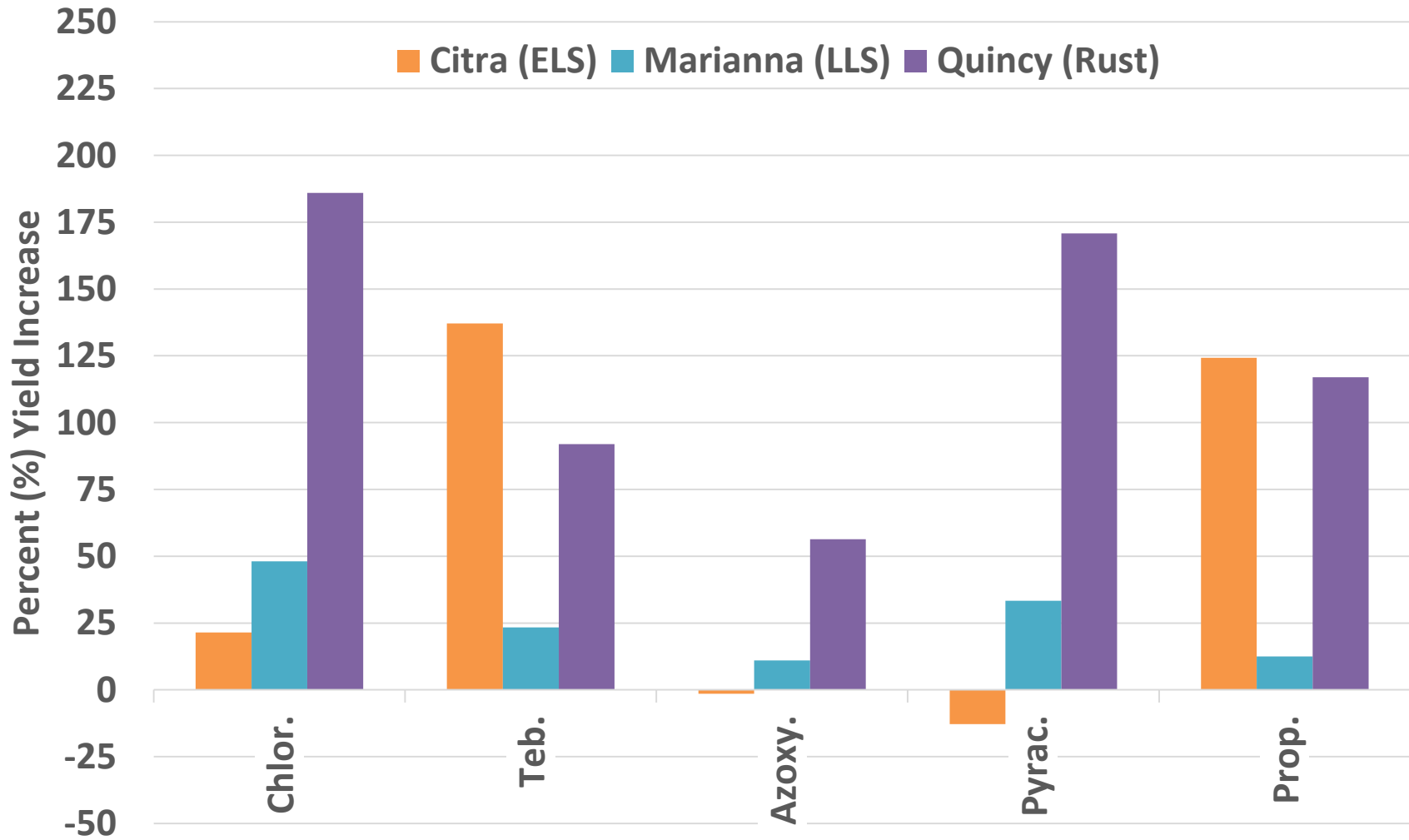


■ ELS ■ LLS ■ Rust

Products varied in their control of the various foliar pathogens (PSREU, 2014).



More separation between sites was seen in 2015 with lower increases overall.



Based on the 2014-15 data it seems:

Azoxystrobin

- Weak - ELS & LLS
- Strong - Rust



Pyraclostrobin

- Moderate - LLS
- Weak - ELS
- Strong - Rust

Tebuconazole

- Weak - LLS
- Moderate/Strong - Rust
- Moderate/Strong - ELS



Propiconazole

- Weak - LLS
- Moderate/Strong - ELS
- Moderate/Strong - Rust

Some product combinations to consider for foliar pathogen control.

- Early Leaf spot
 - Chlorothalonil (1.5 pts/A)
 - Tebuconazole (7.2 fl oz/A)
 - Propiconazole (Pre-mix)



**Restrict use, especially with exports.
Pay attention for products with the
fungicide in 2016.**



Rotating chemistries are critical for broad spectrum disease control.

Group 3



Group 7



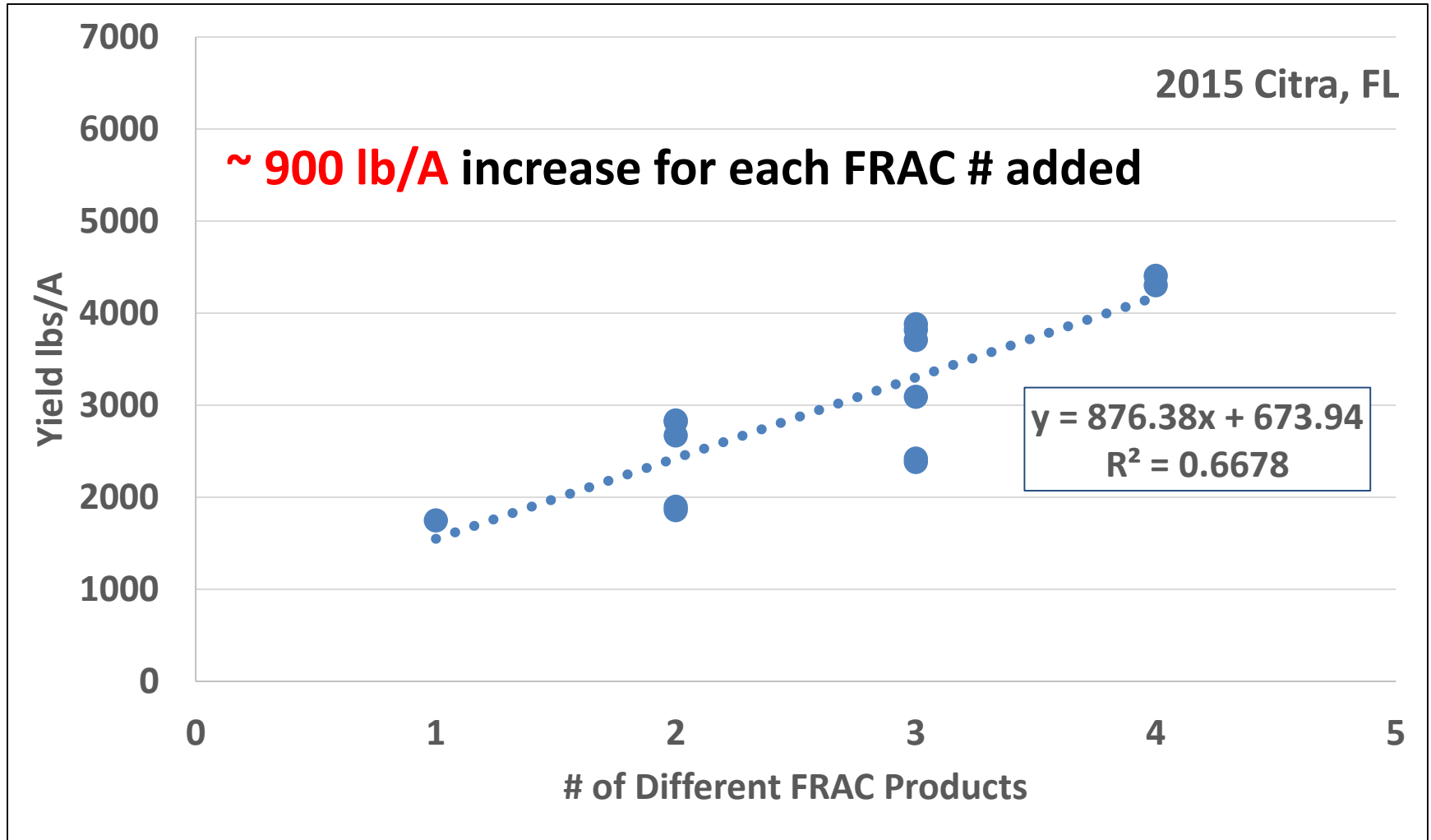
Group 11



Mixed



Small plot data indicates: Rotating fungicide MOAs, increases the likelihood of a yield savings.



How do you reduce costs with “Tight Margins”?

AgFax

Georgia Peanuts: Tight Margins Call for Evaluation of Production Practices

undefined

February 10, 2016

<http://agfax.com/2016/02/10/georgia-peanuts-tight-margins-call-for-evaluation-of-production-practices/>

Peanut margins are predicted to be tight this year. According to the [UGA Crop Comparison Tool](#), dryland peanuts will struggle to cover production costs. In tight years the importance of each management decision is magnified. All options should be carefully analyzed to determine the most economically viable production practices.



Thinking about next season?
Click Here.
Subscribe to our
FREE
AgFax 2016 Crop
Newsletters

Thinking about next season?

The predictions for 2016 crop prices are, let's just say, less than ideal. In years like this there is a natural tendency for farmers to look for corners to cut, in an attempt to keep production cost lower.

However, more often than not, cut corners lead to a reduction in yield; low prices and low yields are worse for the bottom line than low prices and solid yields. This is not news, we all know that skimping on inputs is not part of the formula for producing a good crop.

All that said, in peanuts there are some production factors that can be evaluated and tweaked on a field by field basis, which may allow for some cost savings without sacrificing yield.

Variety Selection

There are many factors to consider here. Yield is only part of the

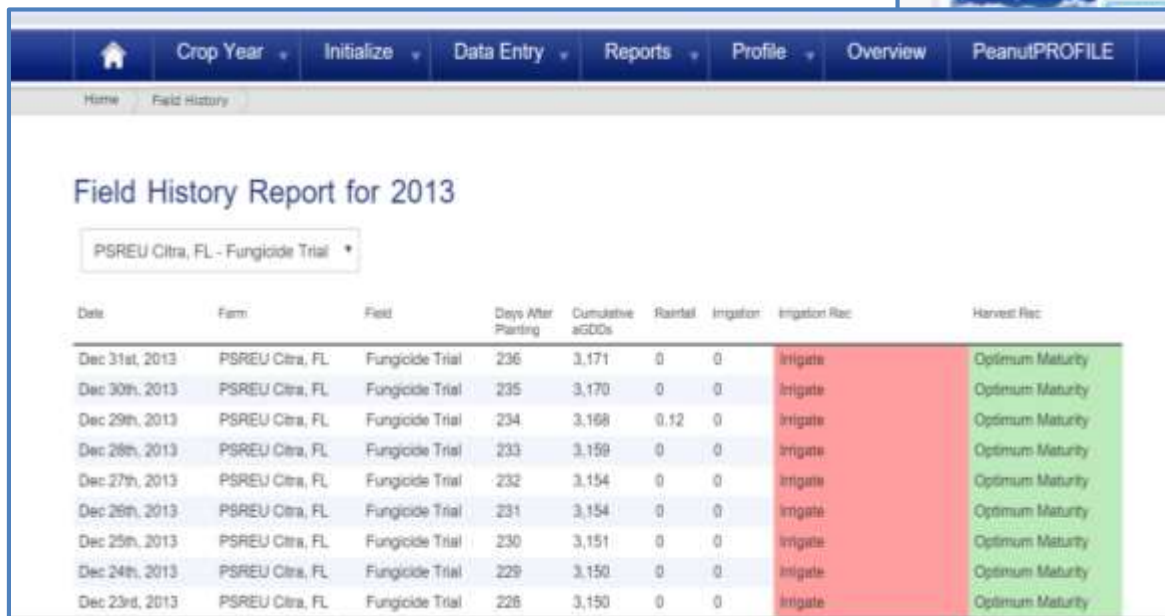
There are multiple tools available to help with manage the peanuts

PeanutFARM

(<https://agronomy.ifas.ufl.edu/peanutfarm/>)

Agroclimate

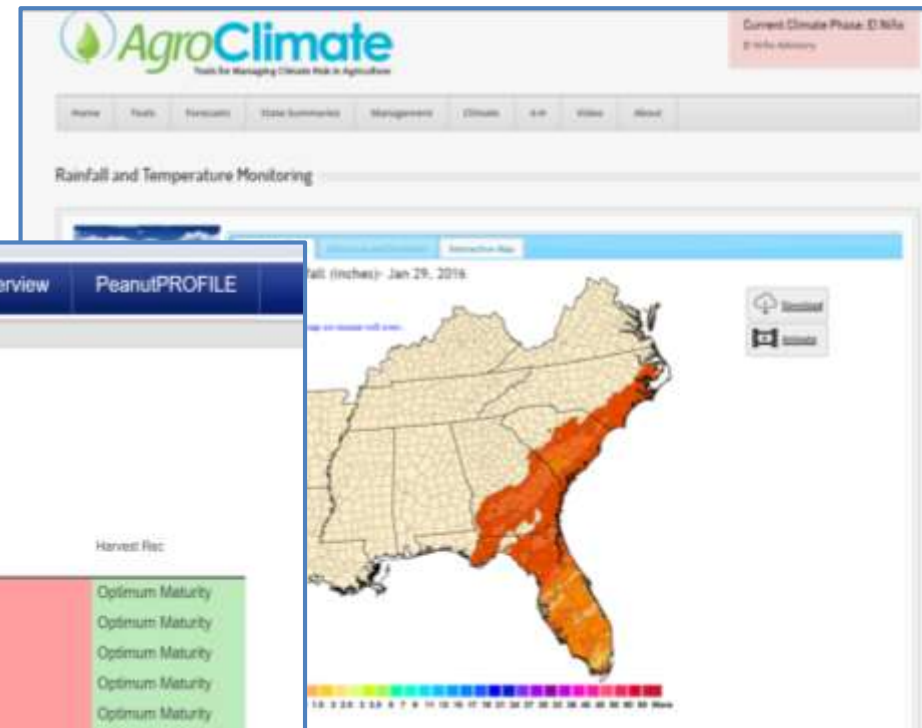
<http://www.agroclimate.org/>



Field History Report for 2013

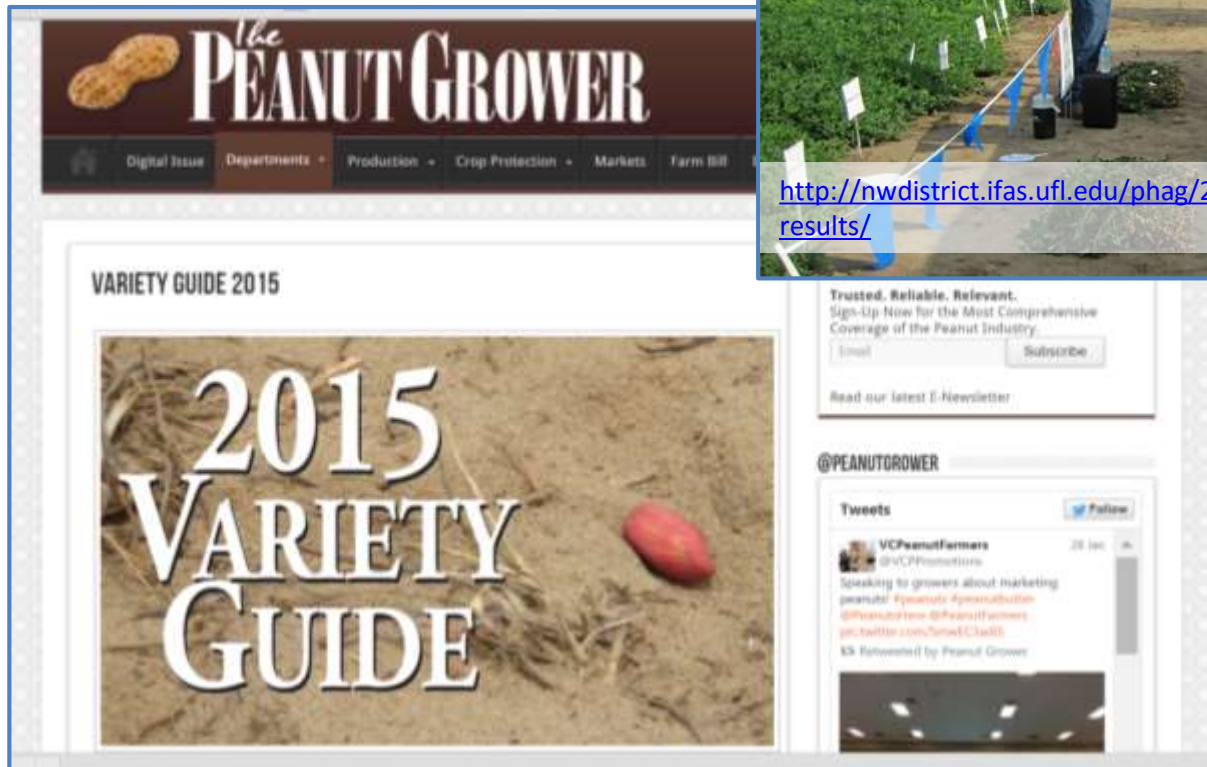
PSREU Citra, FL - Fungicide Trial

Date	Farm	Field	Days After Planting	Cumulative acDDs	Rainfall	Irrigation	Irrigation Rec	Harvest Rec
Dec 31st, 2013	PSREU Citra, FL	Fungicide Trial	236	3,171	0	0	Irrigate	Optimum Maturity
Dec 30th, 2013	PSREU Citra, FL	Fungicide Trial	235	3,170	0	0	Irrigate	Optimum Maturity
Dec 29th, 2013	PSREU Citra, FL	Fungicide Trial	234	3,168	0.12	0	Irrigate	Optimum Maturity
Dec 28th, 2013	PSREU Citra, FL	Fungicide Trial	233	3,159	0	0	Irrigate	Optimum Maturity
Dec 27th, 2013	PSREU Citra, FL	Fungicide Trial	232	3,154	0	0	Irrigate	Optimum Maturity
Dec 26th, 2013	PSREU Citra, FL	Fungicide Trial	231	3,154	0	0	Irrigate	Optimum Maturity
Dec 25th, 2013	PSREU Citra, FL	Fungicide Trial	230	3,151	0	0	Irrigate	Optimum Maturity
Dec 24th, 2013	PSREU Citra, FL	Fungicide Trial	229	3,150	0	0	Irrigate	Optimum Maturity
Dec 23rd, 2013	PSREU Citra, FL	Fungicide Trial	228	3,150	0	0	Irrigate	Optimum Maturity



Variety selection is also key to lowering costs related to fungicides!

Disease history



The screenshot shows the website for 'The PEANUT GROWER'. The top navigation bar includes links for Digital Issue, Departments, Production, Crop Protection, Markets, and Farm Bill. Below the navigation is a 'VARIETY GUIDE 2015' section with a large image of a peanut and the text '2015 VARIETY GUIDE'. To the right of the variety guide is a social media feed for @PEANUTGROWER, featuring a tweet from VCPeanutFarmers (@VCPromotions) dated 28 Jan. The tweet text is: 'Speaking to growers about marketing peanuts! #peanuts #peanutbusiness @peanutfarmers @PeanutFarmers go.twitter.com/5mwdC3adE'. Below the tweet is a 'Retweeted by Peanut Grower' section with a small image.



<http://nwdistrict.ifas.ufl.edu/phag/2015/01/09/2014-uf-peanut-variety-test-results/>

Varietal responses in reduced spray programs.

Planting Dates:

4/30 and 6/5 – 2014

5/18 – 2015

5 Varieties:

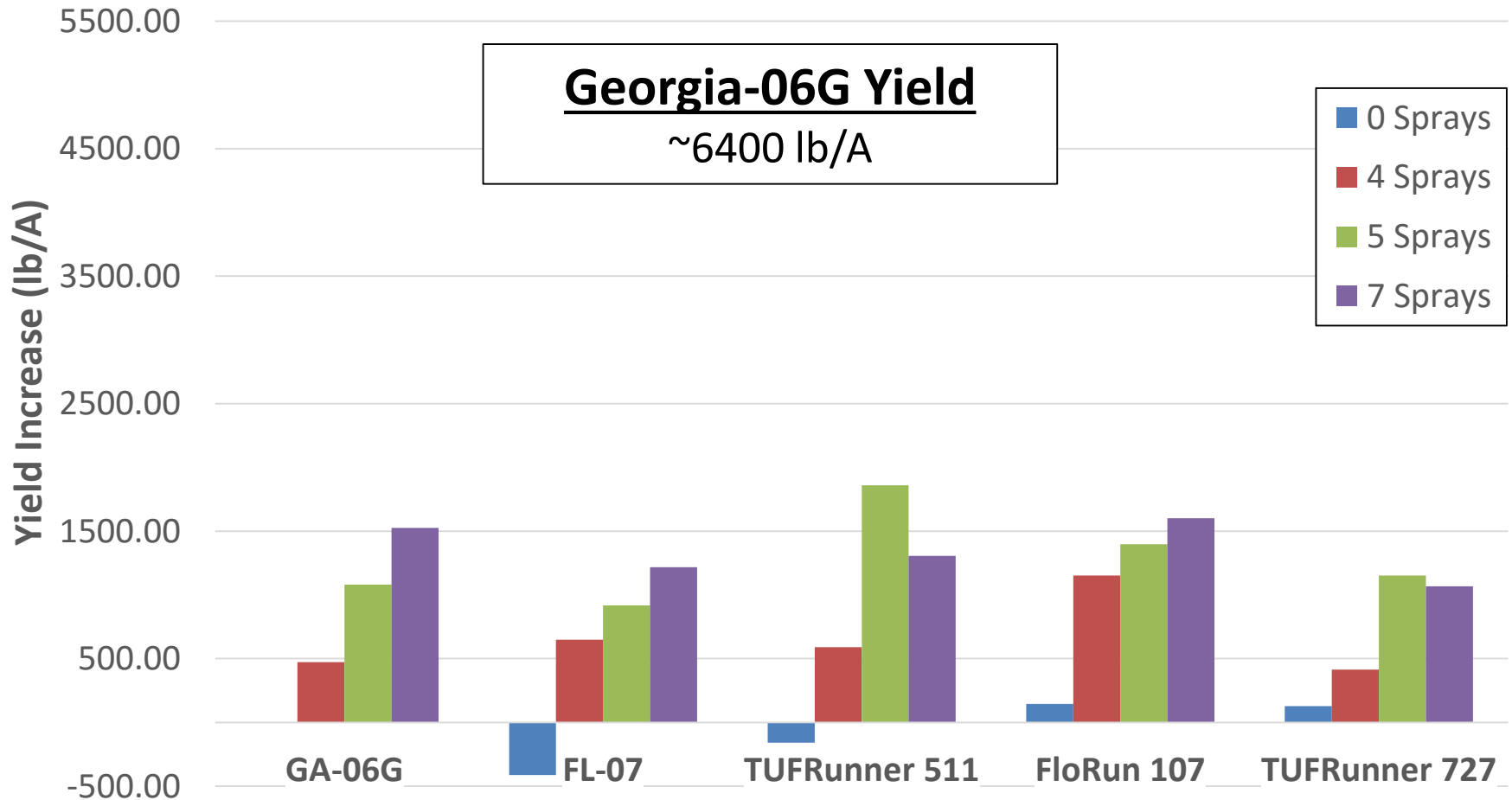
GA-06G, FL-07, FloRun107, TUFRRunner 511 & TUFRRunner 727

Very little stem rot

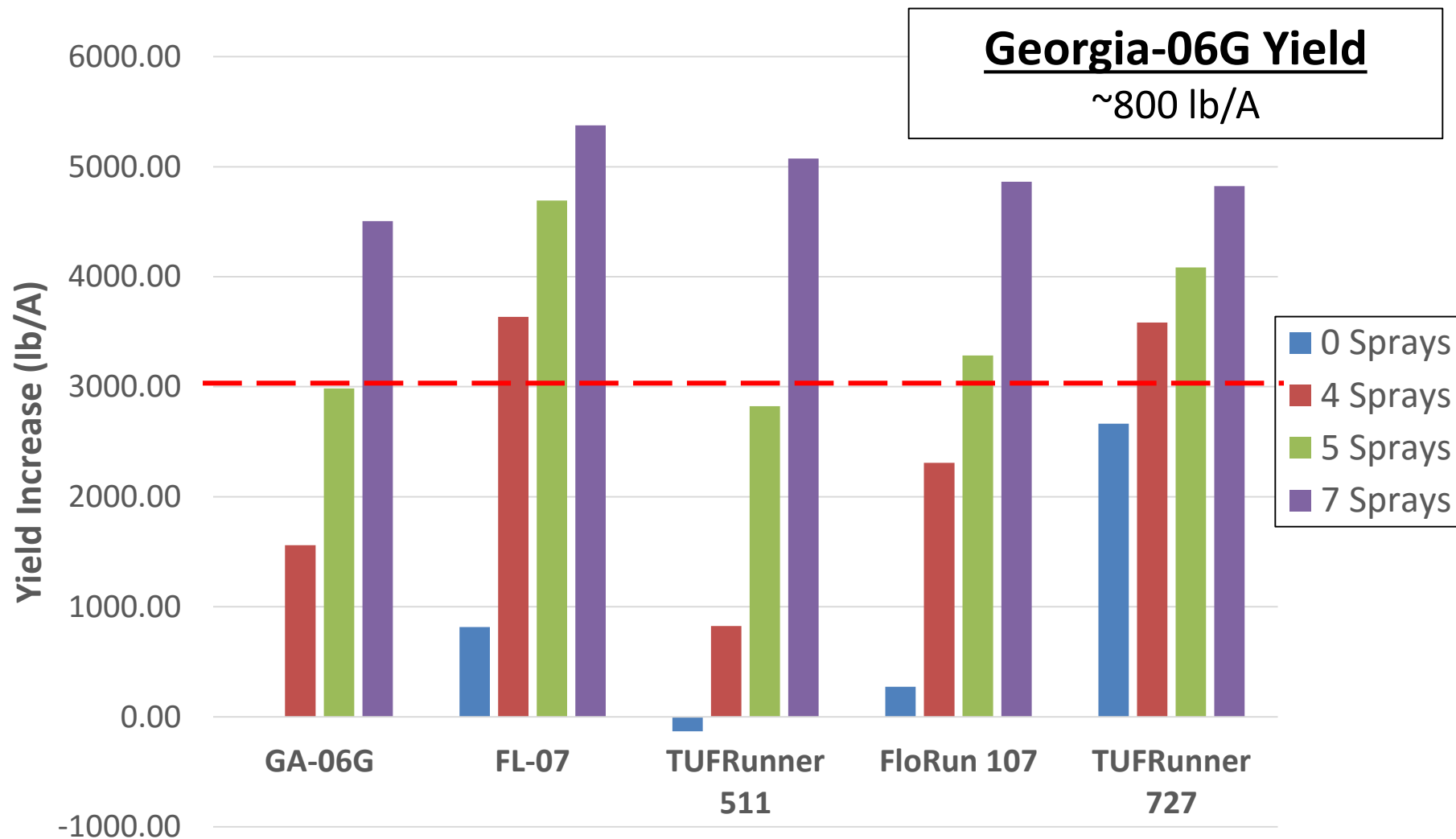
Days After Planting

	31	40	48	62	76	91	105	112	118
4 Sprays		Echo 720 @ 1.5 pt/a		TebuStar @ 7.2 fl oz/a + Echo 720 1 pt/a		Abound 2.08SC @ 18 fl oz/a + Echo 720 1 pt/a		TebuStar @ 7.2 fl oz/a + Echo 720 1 pt/a	
5 Sprays		Echo 720 @ 1.5 pt/a		TebuStar @ 7.2 fl oz/a + Echo 720 1 pt/a	Echo 720 @ 1.5 pt/a	Abound 2.08SC @ 18 fl oz/a + Echo 720 1 pt/a		TebuStar @ 7.2 fl oz/a + Echo 720 1 pt/a	
7 Sprays	Echo 720 @ 1.5 pt/a		Echo 720 @ 1.5 pt/a	TebuStar @ 7.2 fl oz/a + Echo 720 1 pt/a	TebuStar @ 7.2 fl oz/a + Echo 720 1 pt/a	Abound 2.08SC @ 18 fl oz/a + Echo 720 1 pt/a	TebuStar @ 7.2 fl oz/a + Echo 720 1 pt/a		Echo 720 @ 1.5 pt/a

In a low disease situation, varieties responded similarly to spray inputs for yield savings.

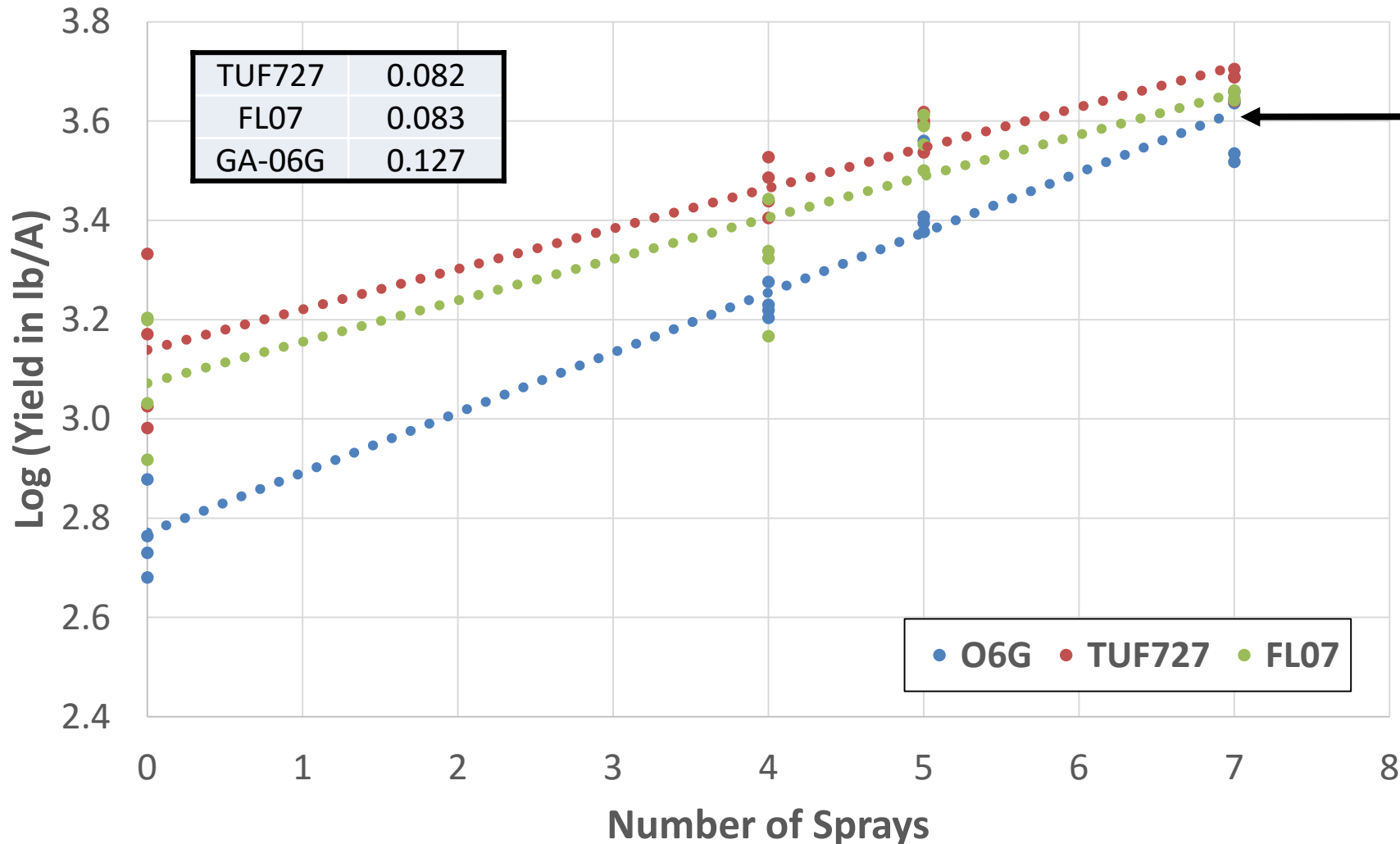


However, in a high disease situation, variety is critical to determining yield response from sprays.



TUFRunner 727 and FL-07 yields were high in reduced spray programs.

Data indicated certain varieties can yield as well with 1 to 2 less sprays in high disease.



All Florida varieties generally had comparable or even better yields than GA-06G.

- Variety is important for determining # of sprays
- TUFRunner 727 & FL-07
 - Significantly less disease than GA-06G
 - **Minimal** response to missed sprays
- FloRun 107 and TUFRunner 511
 - More susceptible to leaf spot
 - **Higher input** for late plantings

An aerial view from a drone looking down at a vast agricultural field. The field is divided into numerous rectangular plots, some of which are planted with crops, while others are bare or have sparse vegetation. The drone's propellers and frame are visible in the foreground, framing the view. A blue rounded rectangle is overlaid in the center of the image, containing white text.

Thoughts on 2016 Fungicides

Almost 20 years ago azoxystrobin hit the market for peanuts.

- ▼ CAES Home
- ▼ Commodities
- ▼ Fieldcrops
- ▶ **Peanuts**
 - Peanut Scientists
 - Peanut Production
 - Peanut Publications
 - Peanut Calendar
 - Peanut Links
 - Weather Links

Commodities: Fieldcrops: Peanuts: Peanut Production

1998 Peanut Update Abound - A New Peanut Fungicide

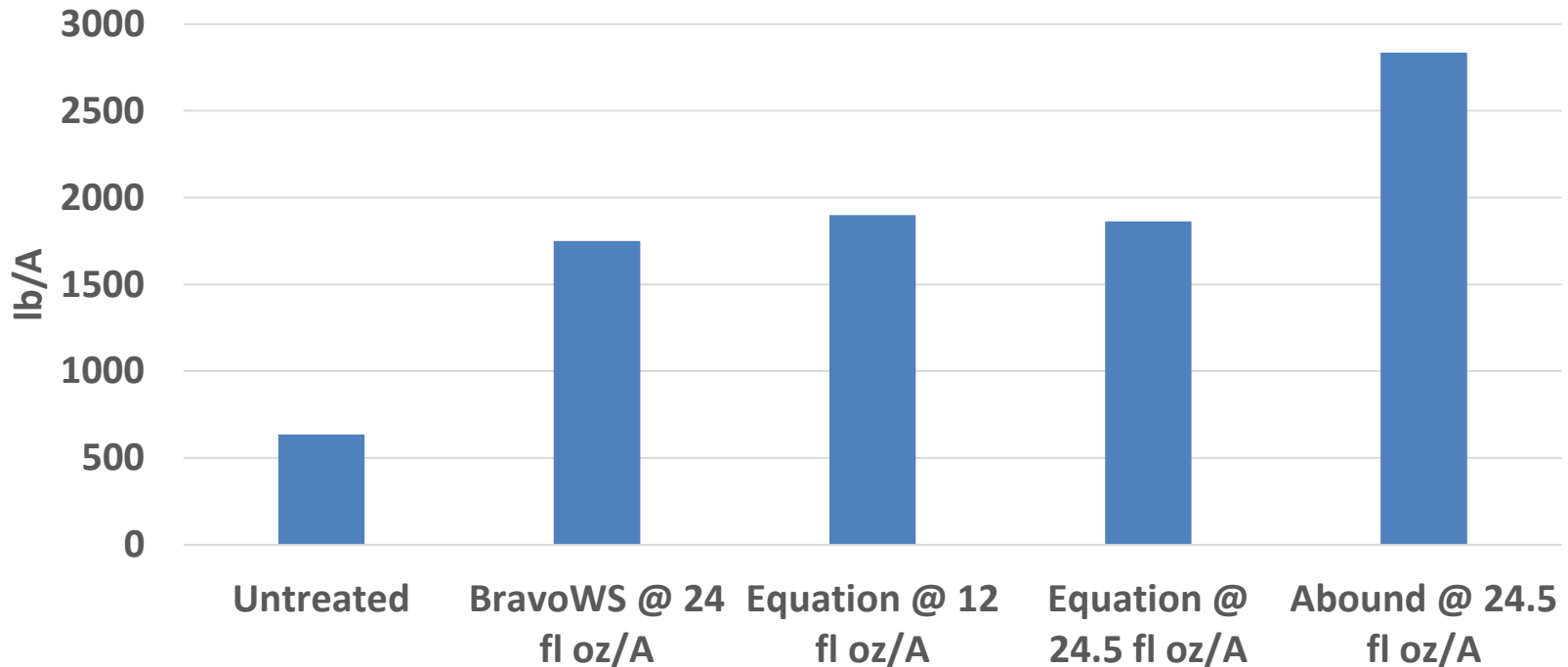
Tim Brenneman,
Plant Pathologist

Growers have a new fungicide labeled for use on peanuts that will be an effective tool for managing soilborne diseases. This product is the first of a new line of chemistry that originated with compounds derived from mushrooms. The active ingredient is azoxystrobin and it has a mode of action different than any of our previously labeled fungicides. It is active on a very wide range of fungi pathogenic to a variety of crops. Azoxystrobin is also active on strains of fungi resistant to some other fungicides such as the sterol demethylation inhibitors and the benzimidazoles. This makes it a good addition to our arsenal of products available to manage fungicide resistance. However, it has a single site mode of action and therefore could also be susceptible to the development of fungicide resistance.

The trade name of azoxystrobin on peanuts is Abound which is formulated as a 2.08 flowable.

It should be applied as a foliar spray at about 60 and 90 days after planting. Since it does have activity on foliar diseases, it can be substituted for the sprays normally applied for leaf spot at those times. However, the residual control for leaf spot is only 10-14 days, so the rest of the spray schedule will need to be maintained as usual. The use rates will be 18.5-24.6 fl oz per acre per application. It is labeled for ground sprays only and an adjuvant should not

Equation did not do well by itself, but was good as a rotational product.



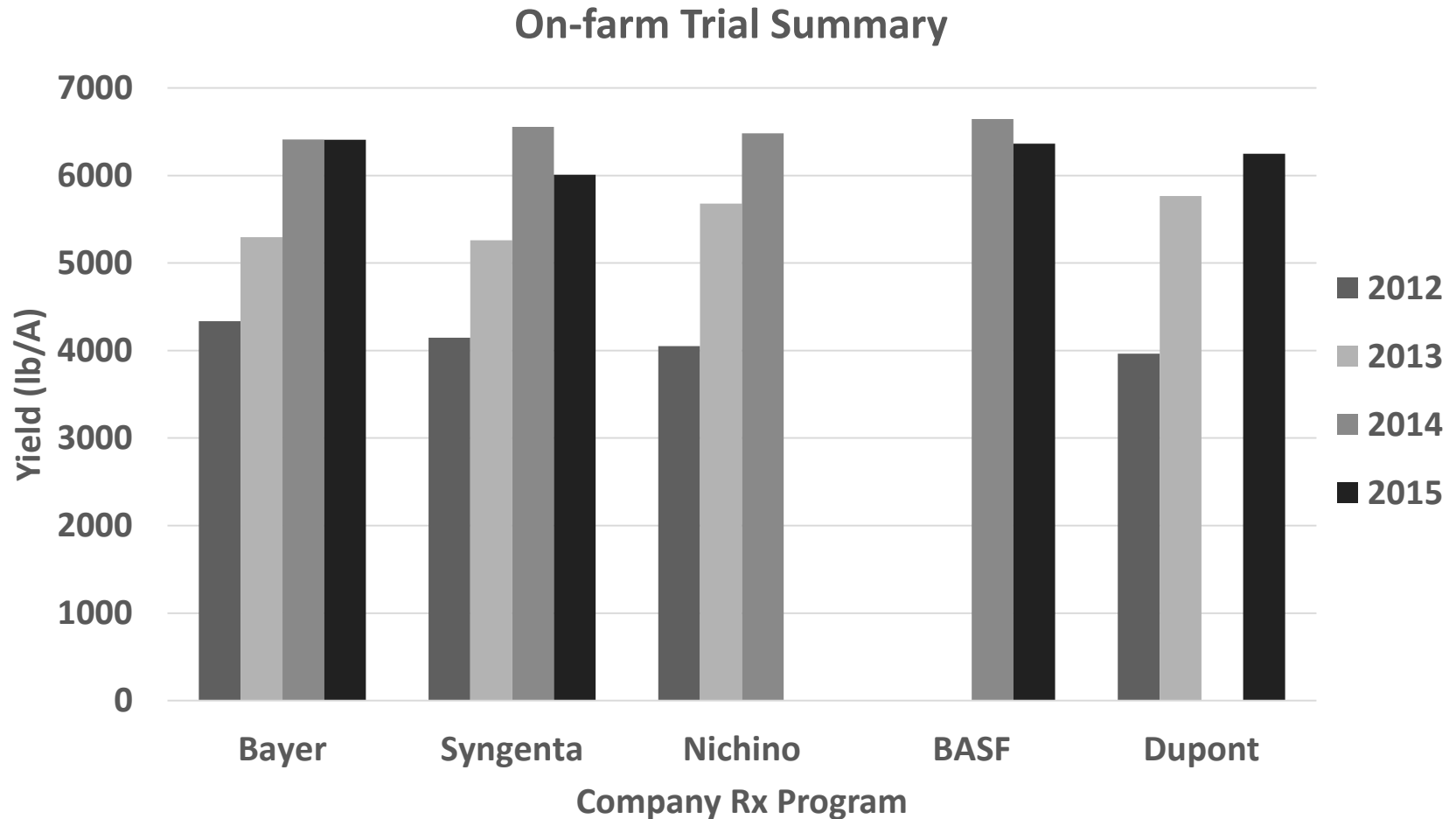
On-Farm Trials

Adams Farm 2012,13,14 &15

- Generally low disease levels
- 5 to 10 Acres
- Variety: Georgia 06-G
- May Planting Dates
- Peanut Rx Programs
 - Minor adjustments
 - Proline from 2013-2015



All programs are beneficial, but will vary slightly from year to year.



Yields vary from 100 to 400 lbs/A, but not enough to overcome field variance

Peanut Rx assesses preseason risk of disease, especially with susceptible varieties.

Assess Disease Risk in Your Field and Develop a Peanut Rx

This worksheet will lead you through the four-step process of determining your disease risk level in order to customize a Peanut Rx™ for your individual field using the reverse side of this worksheet and with the assistance of your Syngenta representative.

For each of the risk index factors, identify which option best describes the situation for your field and add the index value associated with each choice to obtain your overall disease risk value. This worksheet does not contain all of the varieties included in the 2016 Peanut Rx or the notes that accompany each factor. To view the complete 2016 Peanut Rx, visit the University of Georgia peanut Web site at www.ugapeanuts.com.



Step 1: Assess Your Disease Risk

Variety Selection				
Variety*	Spotted Wilt Points	Leaf Spot Points	Soil-borne Disease Points White Mold Limb Rot	
Bailey [†]	10	15	10	
Florida-07 [†]	10	20	15	
Florida Fancy [†]	25	20	20	
FruRun™ 157 [†]	20	25	20	
Georgia-060	10	20	20	
Georgia-07W	10	20	15	
Georgia-09B [†]	20	25	25	
Georgia-12Y	5	15	10	
Georgia-13M1,2	10	20	20	
Georgia-14N1,2	10	15	15	
Georgia Green	20	20	25	
Georgia Greener [†]	10	20	20	
Tidguard [†]	10	15	15	
TUFFrunner™ 257 ^{†,‡}	15	25	20	
TUFFrunner™ 727 [†]	20	15	15	
TUFFrunner™ 511 ^{†,§}	20	20	15	

Planting Date				
Peanuts are planted:	Spotted Wilt Points	Leaf Spot Points	Soil-borne Disease Points White Mold Limb Rot	
Prior to May 1	20	0	10	5
May 1 to May 10	15	0	5	0
May 11 to May 31	5	5	0	0
June 1 to June 10	10	10	0	5
After June 10	15	10	0	5

Plant Population (final stand, not seeding rate)				
Plant stand:	Spotted Wilt Points	Leaf Spot Points	Soil-borne Disease Points White Mold Limb Rot	
Less than 3 plants/ft	25	NA	0	NA
3 to 4 plants/ft (3)	10 (15)	NA	0 (5)	NA
More than 4 plants/ft	5	NA	5	NA

At-plant insecticide				
Insecticide used	Spotted Wilt Points	Leaf Spot Points	Soil-borne Disease Points White Mold Limb Rot	
None	15	NA	NA	NA
Other than Thimet® 200	15	NA	NA	NA
Thimet 200	5	NA	NA	NA

Row Pattern				
Peanuts are planted in:	Spotted Wilt Points	Leaf Spot Points	Soil-borne Disease Points White Mold Limb Rot	
Single rows	10	0	5	0
Twist rows	5	0	0	0

Tillage				
Tillage type	Spotted Wilt Points	Leaf Spot Points	Soil-borne Disease Points White Mold Limb Rot	
Conventional	15	10	0	0
Reduced	5	0	5	5

Classic [†] Herbicide				
Classic herbicide usage	Spotted Wilt Points	Leaf Spot Points	Soil-borne Disease Points White Mold Limb Rot	
Classic applied	5	NA	NA	NA
No Classic applied	0	NA	NA	NA

Crop Rotation (with a non-legume crop)				
Years between peanut crop	Spotted Wilt Points	Leaf Spot Points	Soil-borne Disease Points White Mold Limb Rot	
0	NA	25	25	20
1	NA	15	20	15
2	NA	10	10	10
3 or more	NA	5	5	5

Field History				
Have you had a problem controlling these diseases?	Spotted Wilt Points	Leaf Spot Points	Soil-borne Disease Points White Mold Limb Rot	
No	NA	0	0	0
Yes	NA	10	15	10

Irrigation				
Does the field receive irrigation?	Spotted Wilt Points	Leaf Spot Points	Soil-borne Disease Points White Mold Limb Rot	
No	NA	0	0	0
Yes	NA	10	5	10

* Adequate research data is not available for all varieties with regards to all diseases. Additional varieties will be included as data to support the assignment of an index value are available.
[†] High class variety.
[‡] Varieties Georgia Greener and Bailey have increased resistance to Rhizoctonia limb rot (RLR).
[§] Run do other varieties commonly planted in Georgia.
[¶] Tidguard has excellent resistance to the peanut root-knot nematode.

Step 2: Calculate Your Severity Points

Fill in the following table to calculate your severity points for each of the four major peanut diseases given the 10 determining factors. Total each column to establish your disease index values.

	Spotted Wilt	Leaf Spot	White Mold	Rhizoctonia Limb Rot
Variety				
Planting Date				
Plant Population				
At-plant Insecticide				
Row Pattern				
Tillage				
Classic Herbicide				
Crop Rotation				
Field History				
Irrigation				
Your Total Index Value				

Step 3: Interpret Your Index Values

Once you've calculated your index values, utilize the following information to interpret your risk level situation.

	Spotted Wilt	Leaf Spot	White Mold	Rhizoctonia Limb Rot
Low Risk	≤ 80	10-20	10-20	TBD
Moderate Risk	70-110	40-60	30-50	TBD
High Risk	≥ 175	60-100	50-80	TBD

In a year when tomato spotted wilt virus incidence is high statewide or in your region, even fields with a low risk level may experience significant losses. Consider the following recommendations to reduce your spotted wilt risk level:

- Use less susceptible varieties.
- Adjust your planting date.
- Consult the complete Peanut Rx for additional options that may also provide limited benefit.

Step 4: Develop Your Peanut Rx

Once you have calculated your total risk for each fungal disease, utilize the most conservative fungicide program as your guide for customizing a per field prescription spray program with the assistance of your Syngenta representative. Syngenta recommended fungicide spray programs for each risk level are included on the reverse side of this worksheet.

Programs developed through the cooperation of



Peanut Rx has an APP!

https://play.google.com/store/apps/details?id=com.zedxinc.peanutrx&hl=en

Apps Mrs. Olson's Lefse Letting Go | Adoptio... Models: Late Blight ... Diagnosticians cook... Phylogeny Programs 6.8 - Mixed Model E...

Apps Categories Home Top Charts New Releases

My apps Shop Games Family Editors' Choice

My account My Play activity My wishlist Redeem Send gift Add credit Parent Guide

Peanut Rx

ZedX, Inc. Business

★★★★★ 1

Everyone

This app is compatible with all of your devices.

Add to Wishlist Install

Preferences

Crops: Select Crop +

Varieties: Select Variety +

AT-215 Remove Florida Fancy Remove Georgia Green Remove Georgia 02C Remove Georgia 02G Remove Georgia 02W Remove Georgia 02S Remove Georgia 32S Remove

Basic Information

Location Name: Select a Loc... + Add X Delete

Location GPS: Yes No

Update GPS: C

Latitude: Longitude:

Crop Information

Planting Date: Crop:

Disease Risk

Disease	Points	Category
Tomato Spot Wilted Virus	115	High [≥ 115]
Leaf Spot	30	Low [10 - 30]
White Mold	50	Medium [30 - 60]
Leaf Rot	15	150

Tomato Spot Wilted Virus

Factor	Points	Risk Rating

Peanut Rx is a disease risk index that allows peanut growers in the SE to predict relative disease risk

Available on Android and IOS.

Forecast models will be available soon too!

Questions?



Fungicides for Foliar Diseases of Cotton

- **Headline (pyraclostrobin) (6 fl oz/A)**
 - Single application expected
 - Labeled for foliar disease control



- **Twinline (pyraclostrobin + metconazole) (7-8.5 fl oz/A)**
 - 2(ee) label for “control of leaf spot (*Corynespora cassiicola*)”



- **Quadris (azoxystrobin) (6 or 9 fl oz/A)**
 - Supplemental label received in July 2008



- **Priaxor (fluxapyroxad + pyraclostrobin)**
 - *Corynespora* control, release
 - Rate still being evaluated



- **Topguard (flutriafol) (7 to 14 fl oz/A)**
 - *Corynespora* Control
 - Rate still being evaluated



- **Tebuzaol 3.6F (tebuconazol) (6-8 fl oz/A)**
 - Labeled for control of southwestern cotton rust
 - *Puccinia cacabata*

