

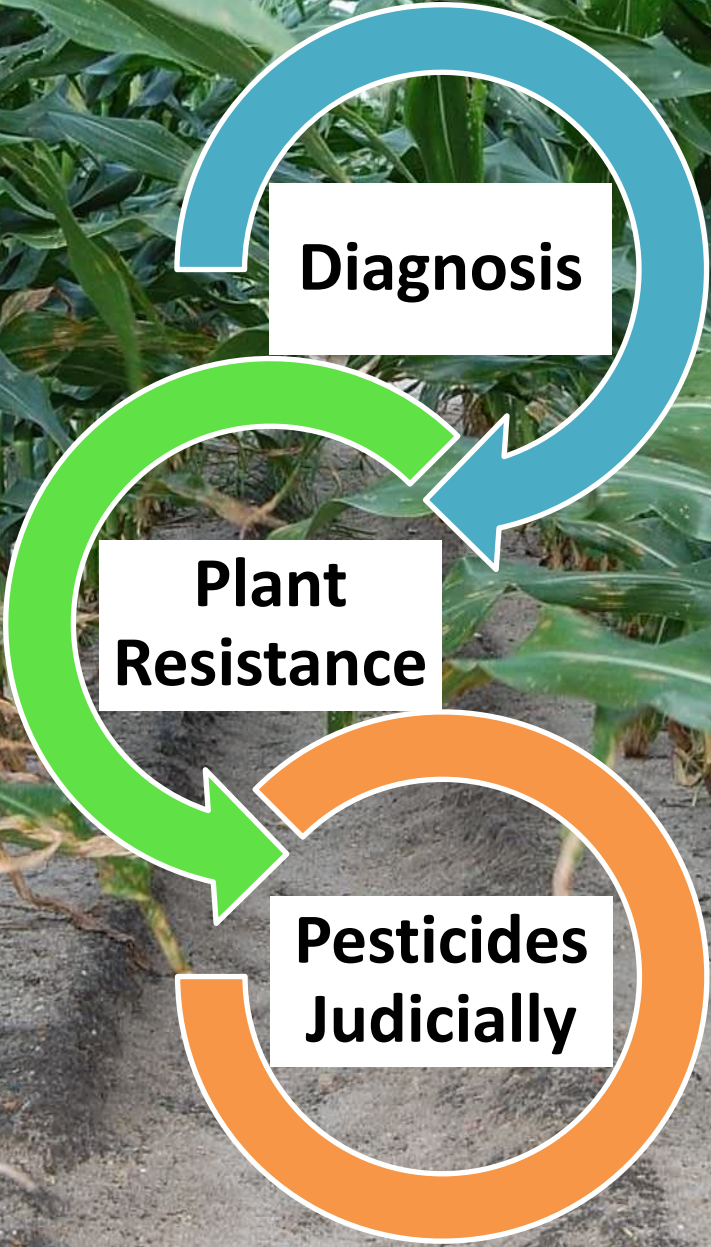
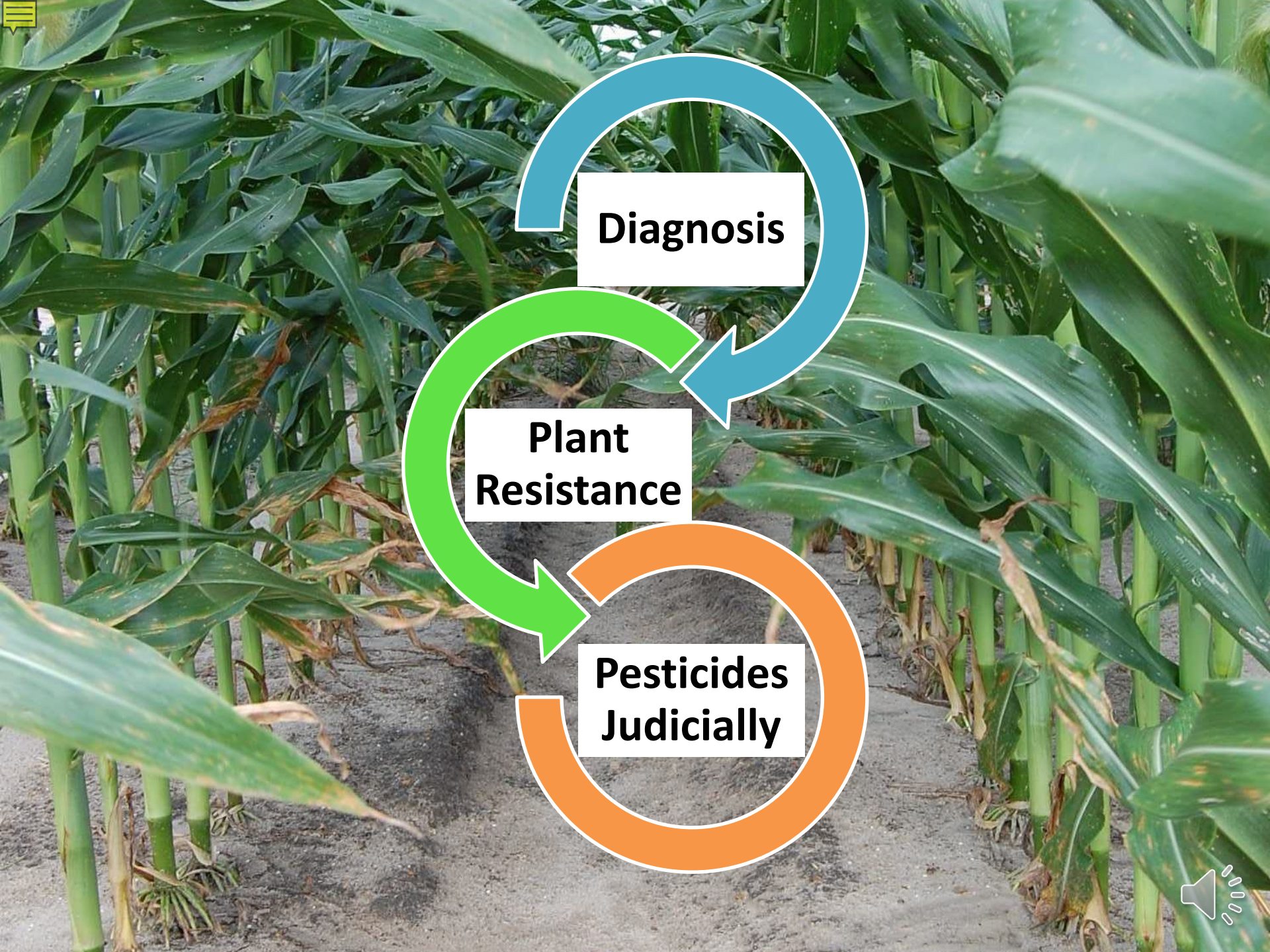
# Corn Disease Management

-----  
**Foliar and stem problems**

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







**Diagnosis**

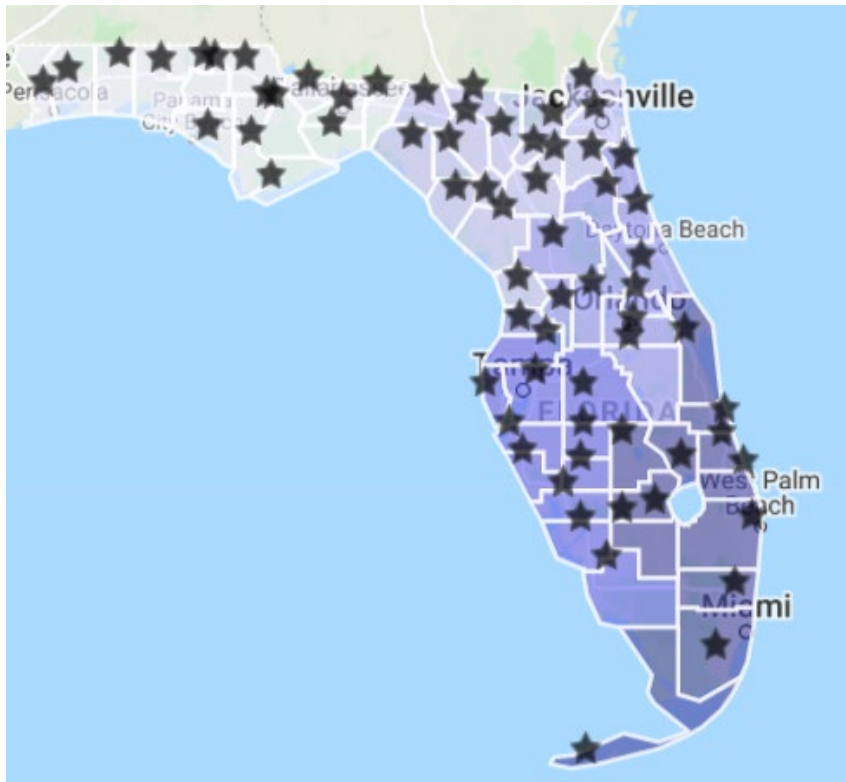
**Plant  
Resistance**

**Pesticides  
Judiciously**



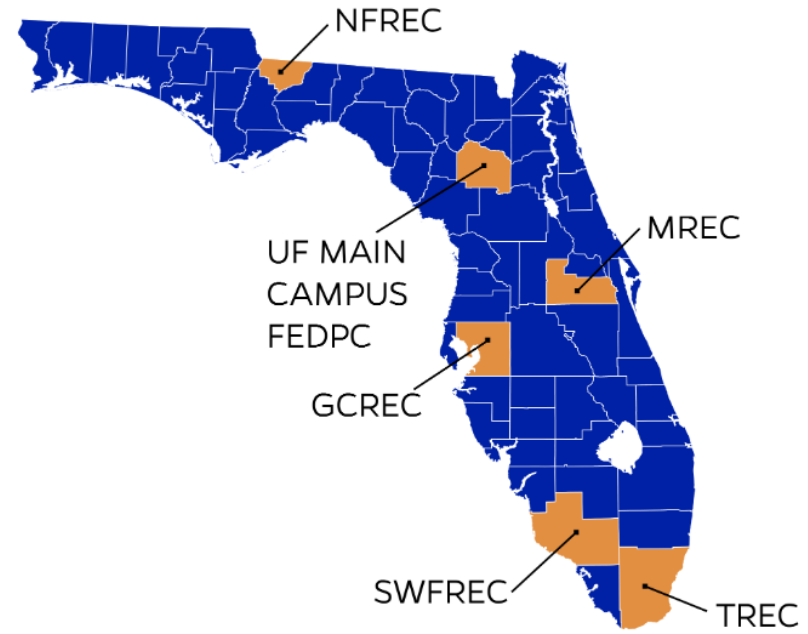
# Correct management can not start without correct diagnosis.

## Contact Local Extension



<https://sfyl.ifas.ufl.edu/find-your-local-office/>

## Plant Diagnostic Labs



<https://plantpath.ifas.ufl.edu/extension/diagnostic-labs/>





Scouting is critical to staying ahead of a disease issue.





# Rust Diseases of Corn

## Southern Rust



pustules smaller and on upper leaf surface  
more of an orange color

## Common Rust



pustules on upper and lower surface  
more of a brown color

# Northern corn leaf blight

---



Image: N. Dufault

Image: N. Dufault

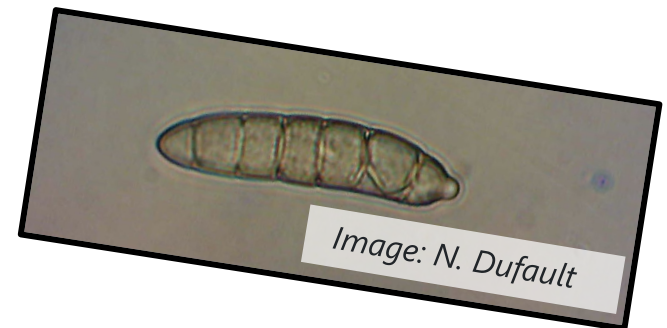


Image: N. Dufault



# Other blights and spots

Southern Corn Leaf Blight

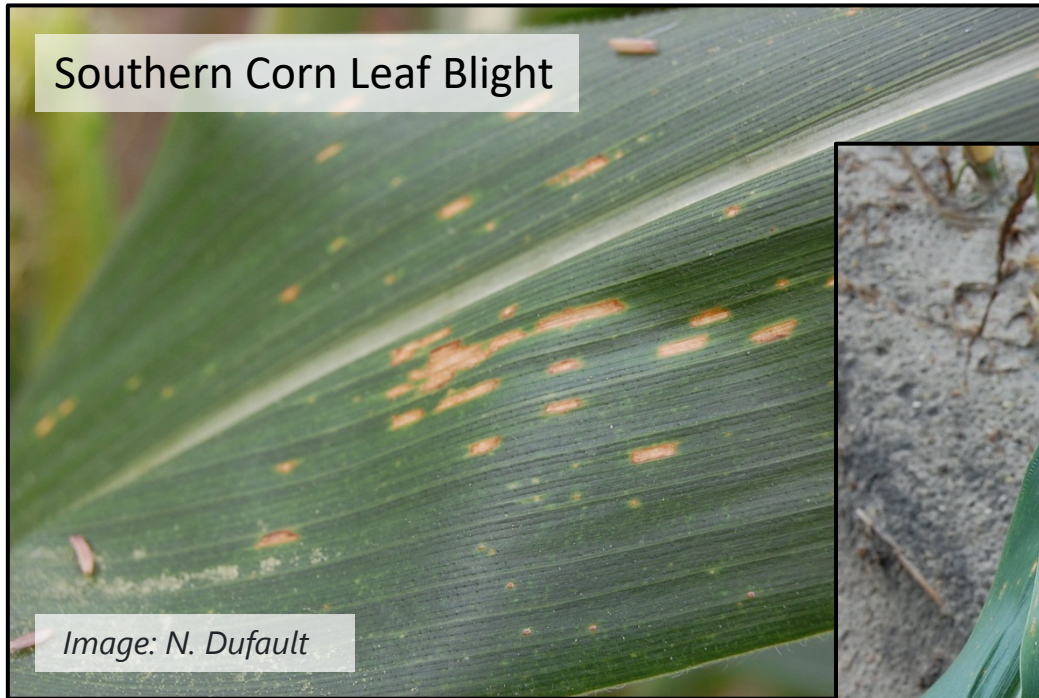


Image: N. Dufault

Gray Leaf Spot



Image: N. Dufault

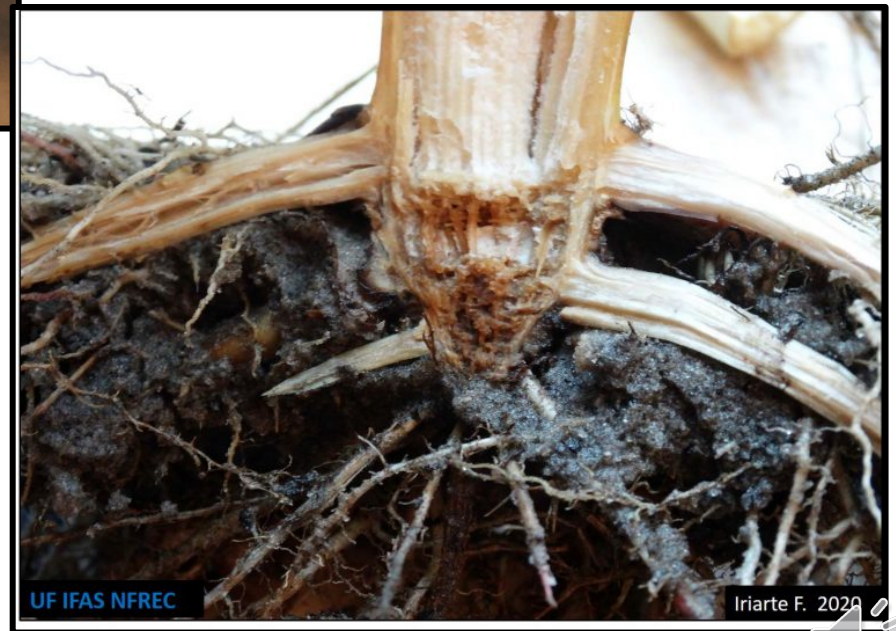
Similar symptoms but it depends on hybrid; however, both can cause significant yield losses.

# Stalk and crown rots of corn



Fusarium stalk rot, pink coloration

Fusarium crown rot, white threads



More Crown Rot Information:  
<https://nwdistrict.ifas.ufl.edu/phag/2020/07/10/investigating-a-rapid-decline-in-north-florida-corn-fields/>

UF IFAS NFREC

Iriarte F. 2020





# **Varietal resistance is the most important management strategy for corn disease.**

Tips for variety selection:

- Focus on diseases and insects
- Pay attention to company scales, one companies 4 may not equal another companies 4.
- Assess what “excellent disease package” means

## **Field Corn Production Guide<sup>1</sup>**

David Wright, Jim Marois, Jim Rich, Diane Rowland, and Michael Mulvaney<sup>2</sup>

---

# Contact your local Extension agents for Florida variety trials

YouTube **NFREC SV 2020** Search

20,000

25,000

30,000

Corn Series - Population Variety Trial

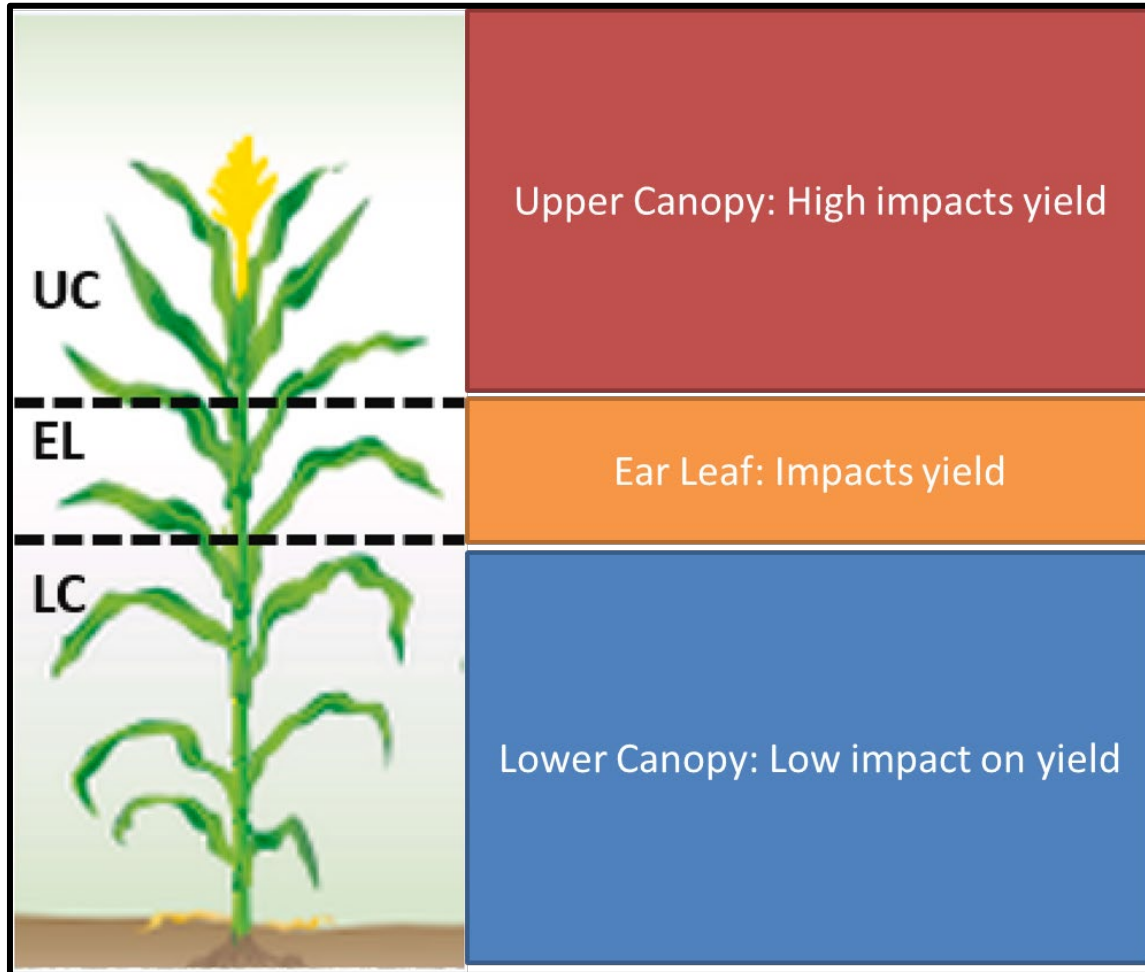
9 views • Sep 1, 2020

2 0 SHARE SAVE ...

<https://www.youtube.com/watch?v=vXoTSx5zuhY>

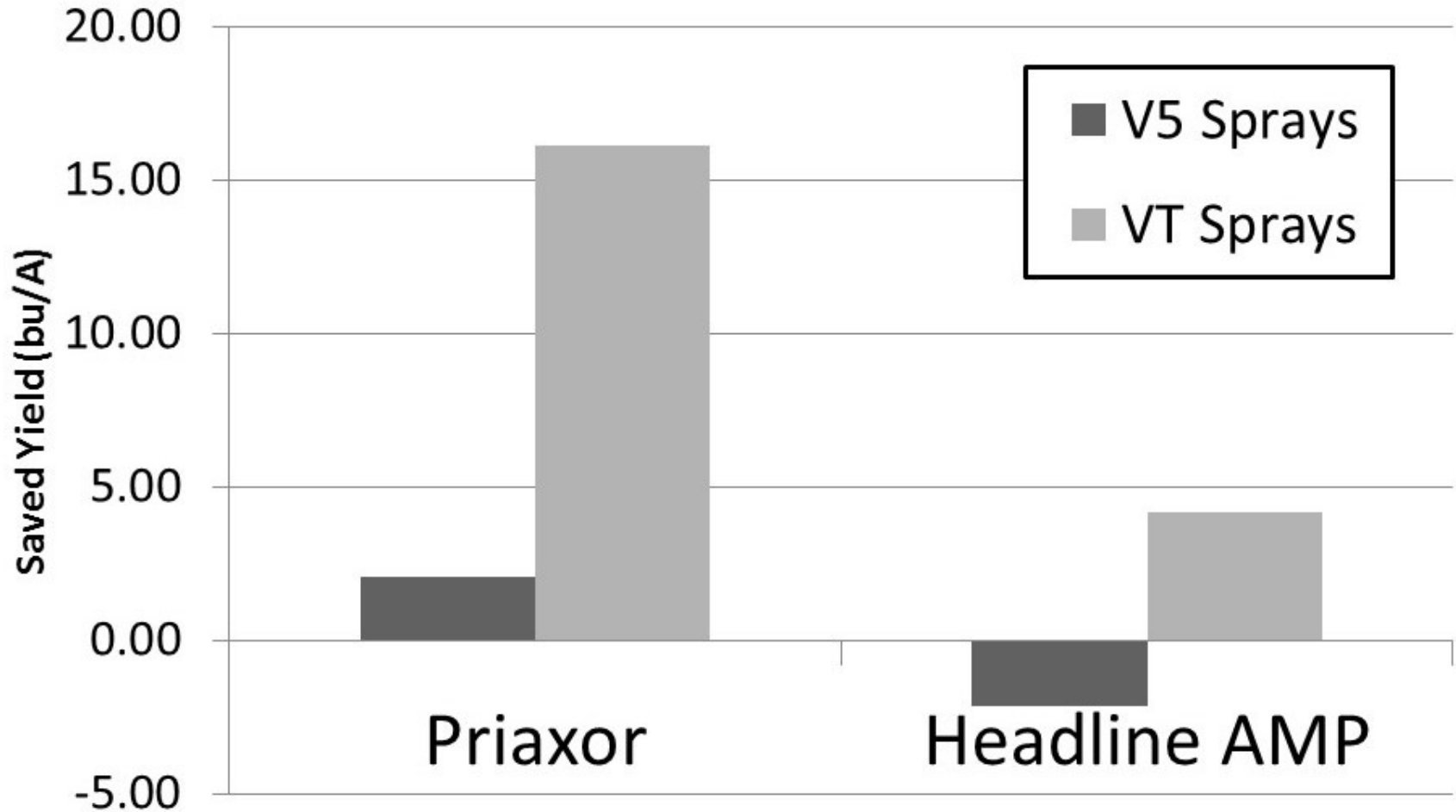


# Fungicide usage is dependent on leaves and disease presence



**Threshold**  
**5%**  
**Ear leaf covered with disease**

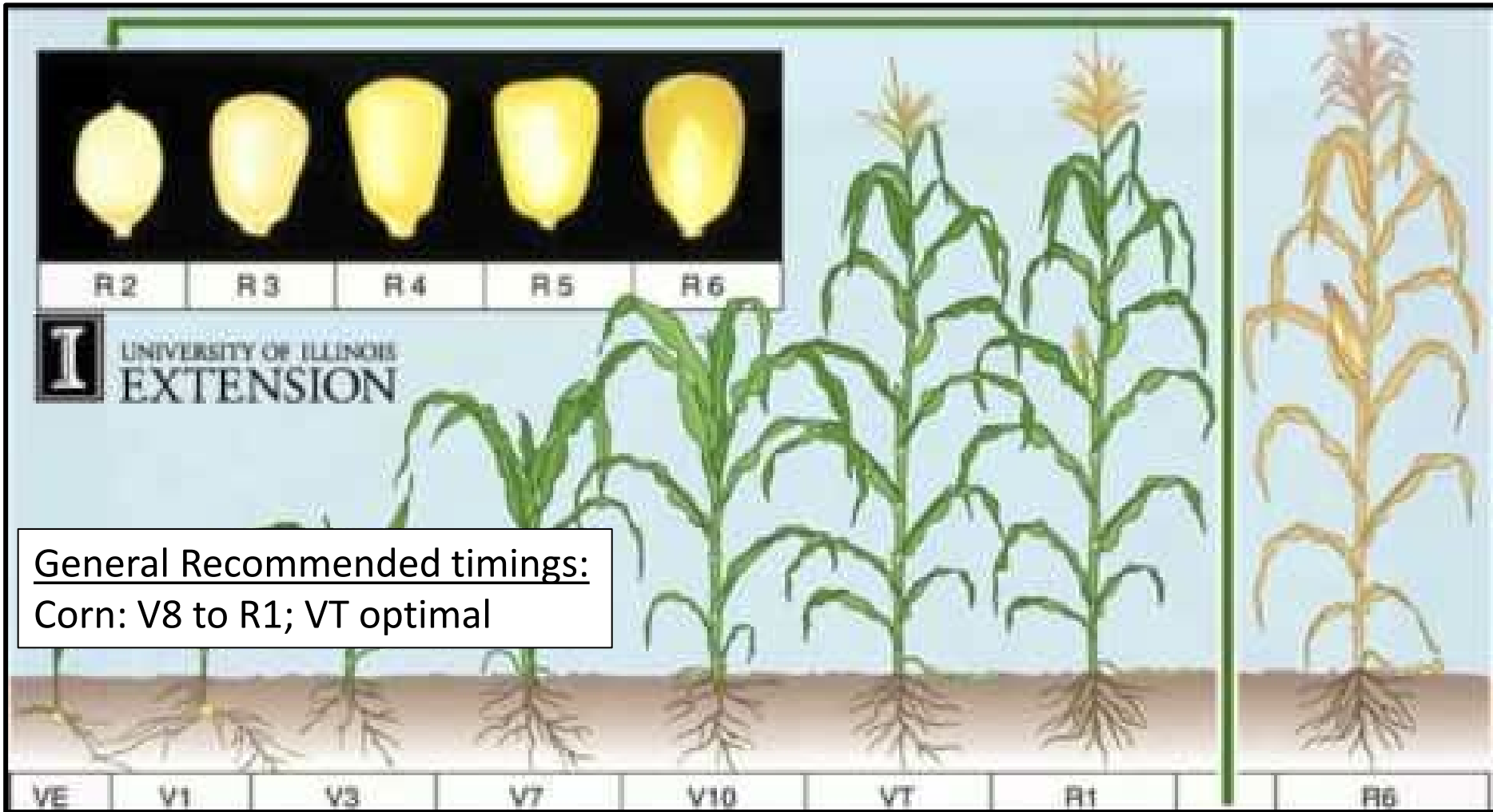
# The probability of seeing a return on your investment is better at VT than V5 or V6.



Need a good ROI with the application

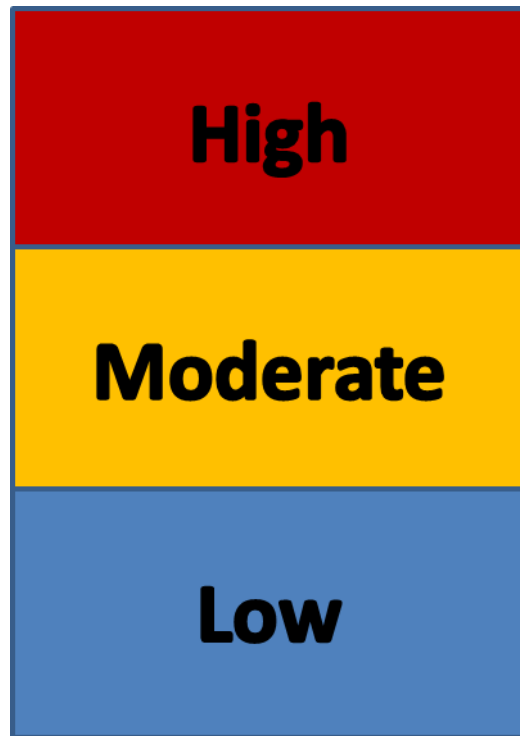


# VT is optimal for sprays, but sprays between V8 and R1 can be beneficial



# Disease presence in small amounts does not always warrant a fungicide spray.

---



## Know your risk:

- 1.) Disease presence locally
- 2.) Variety susceptibility
- 3.) Crop potential/Market price
- 4.) Planting date/growth stage
- 5.) Forecasted environment
- 6.) Ear leaf severity at tassel



# If a spray is justified, there are many options to consider

Fungicide Efficacy for Control of Corn Diseases<sup>1</sup>

FUNGICIDE(S)			Rate/A (fl. oz.)	Anthracnose Leaf Blight	Common Rust	Eyespot	Gray Leaf Spot	Northern Corn Leaf Blight	Southern Rust	Tar Spot <sup>2</sup>	Harvest Restriction <sup>3</sup>
Class	Active ingredient (%)	Trade Name									
QoI Strobilurins Group 11	azoxystrobin 22.9%	Quadris 2.085C* multiple generics	6.0-15.5	VG	E	VG	E	G	VG	NL	7 days
	pyraclostrobin 23.6%	Headline 2.09EC/5C*	6.0-12.0	VG	E	E	E	VG	VG	NL	7 days
	picoxystrobin 22.5%	Approach 2.085C*	3.0-12.0	VG	VG-E	VG	F-VG	VG	G	NL	7 days
DMI Triazoles Group 3	propriconazole 41.8%	Tilt 3.6EC* multiple generics	2.0-4.0	NL	VG	E	G	G	F	NL	30 days
	prothioconazole 41.0%	Proline 4805C*	5.7	U	VG	E	U	VG	G	NL	14 days
	tebuconazole 38.7%	Folicur 3.6F* multiple generics	4.0-6.0	NL	U	NL	U	VG	F	NL	36 days
	tetraconazole 20.5%	Domark 230 ME*	4.0-6.0	U	U	U	E	VG	G	NL	R3 (milk)
Mixed Modes of Action	azoxystrobin 13.5%	Quilt Xcel 2.25E* multiple generics	10.5-14.0	VG	VG-E	VG-E	E	VG	VG	G-VG	30 days
	azoxystrobin 11.7%	Quilt Xcel 2.25E* multiple generics	10.5-14.0	VG	VG-E	VG-E	E	VG	VG	G-VG	30 days
	benzovindiflupyr 2.9%	Trivapro 2.2 ISE*	13.7	U	U	U	E	VG	E	G-VG	30 days
	azoxystrobin 10.5%	Trivapro 2.2 ISE*	13.7	U	U	U	E	VG	E	G-VG	30 days
	propriconazole 11.9%	Trivapro 2.2 ISE*	13.7	U	U	U	E	VG	E	G-VG	30 days
	cyproconazole 7.17%	Approach Prima 2.345C*	3.4-6.8	U	U	U	E	VG	G	G-VG	30 days
	picoxystrobin 17.94%	Approach Prima 2.345C*	3.4-6.8	U	U	U	E	VG	G	G-VG	30 days
	flutriafol 19.3%	Fortix 3.225C*	4.0-6.0	U	U	U	E	VG-E	VG	NL	R4 (kough)
	fluxasirobin 14.84%	Preemptor 3.225C*	4.0-6.0	U	U	U	E	VG-E	VG	NL	R4 (kough)
	flutriafol 26.47%	Lucento	3.0-5.5	U	U	U	VG-E	VG	VG	G-VG	R4
	bioafen 15.55%	Lucento	3.0-5.5	U	U	U	VG-E	VG	VG	G-VG	R4
	prothioconazole 16.0%	Delaro 3255C*	8.0-12.0	VG	E	VG	E	VG	VG	G-VG	14 days
	trifloxystrobin 13.7%	Delaro 3255C*	8.0-12.0	VG	E	VG	E	VG	VG	G-VG	14 days
	pydiflumetofen 7.0%	Miaviv Neo 2.5SE*	13.7	U	U	U	E	VG-E	VG	G-VG	30 days
	azoxystrobin 9.3%	Miaviv Neo 2.5SE*	13.7	U	U	U	E	VG-E	VG	G-VG	30 days
	propriconazole 11.6%	Miaviv Neo 2.5SE*	13.7	U	U	U	E	VG-E	VG	G-VG	30 days
	pyraclostrobin 28.58%	Priaxor 4.175C*	4.0-8.0	U	VG	U	VG	VG-E	VG	U	21 days
fluxapyroxad 14.33%	Priaxor 4.175C*	4.0-8.0	U	VG	U	VG	VG-E	VG	U	21 days	
pyraclostrobin 13.6%	Headline AMP 1.685C*	10.0-14.4	U	E	E	E	VG	G	G-VG	20 days	
metconazole 5.1%	Headline AMP 1.685C*	10.0-14.4	U	E	E	E	VG	G	G-VG	20 days	
trifloxystrobin 32.3%	Stratego VLD 4.185C*	4.0-5.0	VG	E	VG	E	VG	G	NL	14 days	
prothioconazole 10.8%	Stratego VLD 4.185C*	4.0-5.0	VG	E	VG	E	VG	G	NL	14 days	
tebuconazole 7.48%	Affiance 1.55C*	10.0-14.0	U	G-VG	U	G-VG	G-VG	G	G	7 days	
azoxystrobin 9.35%	Affiance 1.55C*	10.0-14.0	U	G-VG	U	G-VG	G-VG	G	G	7 days	
Flutriafol 18.63%	TopGuard EQ	5.0-7.0	U	F	U	VG	G	U	G-VG	45 days	
Azoxystrobin 25.30%	TopGuard EQ	5.0-7.0	U	F	U	VG	G	U	G-VG	45 days	
Mefenflufuronazole 17.56%	Veltyma	7.0-10.0	U	U	U	VG-E	VG-E	VG	G-VG	21 days	
Pyraclostrobin 17.56%	Veltyma	7.0-10.0	U	U	U	VG-E	VG-E	VG	G-VG	21 days	
Mefenflufuronazole 11.61%	Re vylek	8.0-15.0	U	U	U	VG-E	VG-E	VG	G-VG	21 days	
Pyraclostrobin 15.49%	Re vylek	8.0-15.0	U	U	U	VG-E	VG-E	VG	G-VG	21 days	
Fluxapyroxad 7.74%	Re vylek	8.0-15.0	U	U	U	VG-E	VG-E	VG	G-VG	21 days	

If only one spray will be applied in the season, consider a mixed mode of action product

<sup>1</sup>Fungicide application timing is extremely important and needs to be made near the onset of the tar spot symptoms. Efficacy ratings based on limited site locations from 2018 and 2019. A 2e label is available for several fungicides for control of tar spot, however, efficacy data are limited. Check 2e labels carefully, as not all products have 2e labels in all states.  
<sup>2</sup>Harvest restrictions are listed for field corn harvested for grain. Restrictions may vary for other types of corn (sweet, seed, or popcorn, etc.), and corn for other uses such as forage or fodder.  
<sup>3</sup>This information is provided only as a guide. It is the applicator's legal responsibility to read and follow all current label directions. Reference in this publication to any specific commercial products for general information only, and does not constitute an endorsement or recommendation by the CDWG. Individuals using such products assume responsibility for their use in accordance with current directions of the manufacturer. Members or participants in the CDWG assume no liability resulting from the use of these products.

# Special Topic: Paraquat burn

## How is it different from disease?

### Paraquat Burn



Only older leaves affected

### Eyespot (*Aureobasidium zeae*)



Halo present

<https://edis.ifas.ufl.edu/ag374>

<https://cropprotectionnetwork.org/resources/articles/diseases/eyespot-of-corn>



# Paraquat burn can vary

## Extreme spotting and blighting



<https://bnty.purdue.edu/Extension/Weeds/HerbInj2/Img/Large/060.JPG>



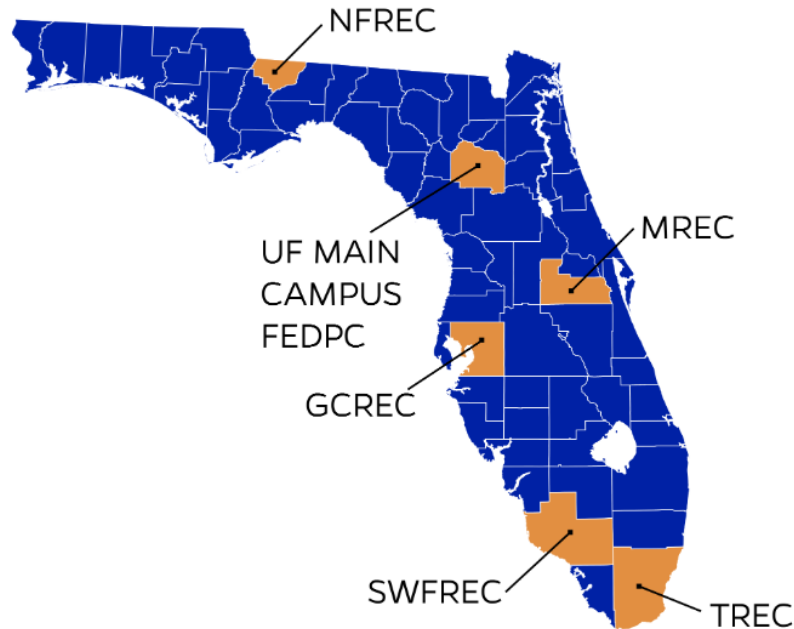
Photo by Curtis Thompson, K-State Research and Extension

<https://bnty.purdue.edu/Extension/Weeds/HerbInj2/Img/Large/060.JPG>  
<https://www.agronomy.k-state.edu/documents/eupdates/eupdate080213.pdf>

# What to do if you suspect injury?

---

## Contact UF Diagnostic Labs



## Document the injury

- Field pattern
  - Entire field
  - Near edge
  - Specific area
- Timing when seen
- Check weather
- Photograph symptoms
- Determine extent
- Keep farm records

<https://plantpath.ifas.ufl.edu/extension/diagnostic-labs/>





# Paraquat injury can only be assessed

---



No resistance



No Pesticides



Diagnosis