
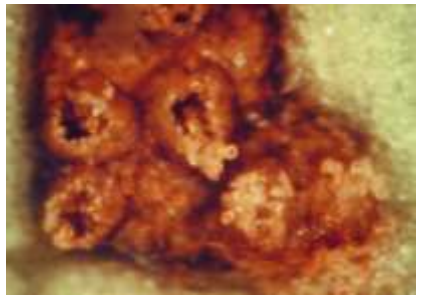


Soybean Diseases

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UTIA
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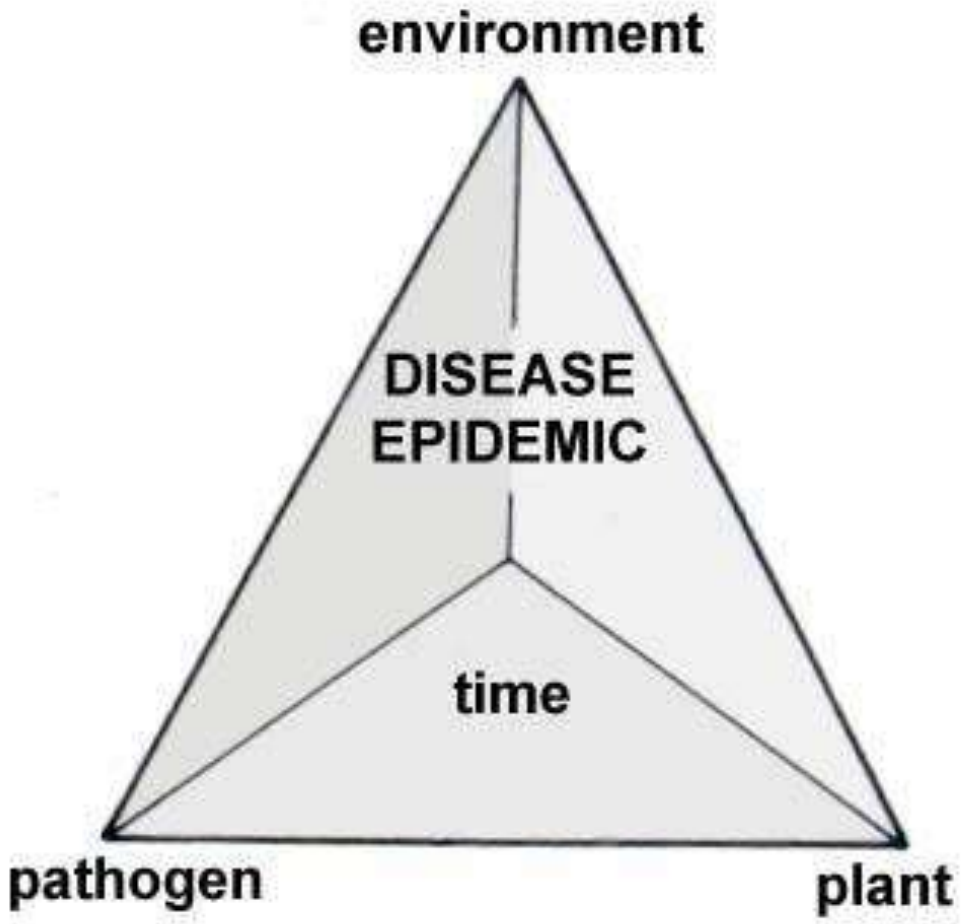
Disease Pyramid



Factors needed to result in yield loss due to disease PEST

1. **Pathogen** → influenced by field history, location, etc.
2. **Environment** → promotes disease development
3. **Susceptible host** → variety
4. **Time** → all 3 factors have to occur at a critical time/growth stage

For **yield loss** to be an issue

Resources

UTcrops.com

Foliar fungicide efficacy tables for corn, soybean, and wheat (and seed treatment efficacy table for soybean)

news.utcrops.com

- Get up-to-date reminders and info on field crops throughout the season

guide.utcrops.com

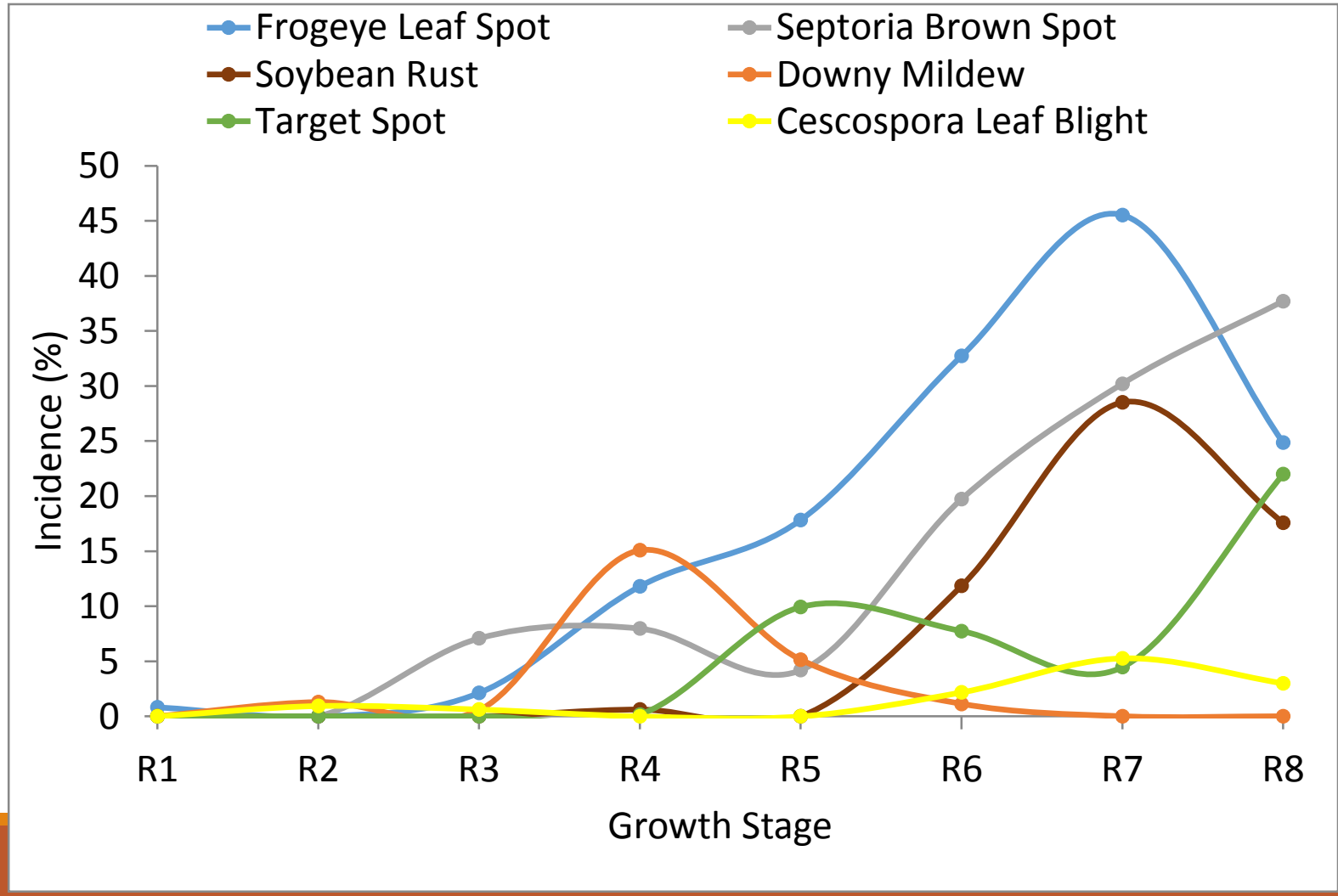
- Disease identification material (also on mobile-friendly field guide site

search.utcrops.com

- Searchable disease ratings and yield on soybean cultivars

Disease Monitoring – 2017 Soybean Sentinel plots

- 12 counties (6 in West, 5 in Middle, and 1 in East TN)
- Around R3 – Septoria brown spot, Frogeye leaf spot, and Downy mildew
- Late season diseases – target spot (R4), Soybean rust (>R5), Cercospora leaf blight (R7)



2017 Soil Sample Results

- Limited funding from TSPB for 2017
- Screen for population level of soybean cyst nematode, charcoal rot, and sudden death syndrome
- Hoping for funding for 2018 – expand # samples and counties

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CFU/g to SDS, CRR, and Soybean cyst nematode, among different counties.

County	SDS (CFU/g)	CRR (CFU/g)	# Eggs (100cc)
Weakly	2	181	25
Dyer	0	52	8
Gibson	2	64	3650
Gibson	0	14	3500
Gibson	0	133	5600
Gibson	0	42	4350
Gibson	1	51	200
Gibson	0	86	1750
Madison	2	175	2850
Madison	0	121	5100
Madison	0	57	12200
Madison	1	55	150
Crocket	1	24	0
Crocket	0	64	0
Crocket	0	72	100
Crocket	0	88	100
Crocket	1	76	5650
Crocket	2	14	0
Madison	2	52	800

2017 Soil Sample Results

Mobile-Friendly Field Guide

@ guide.utcrops.com

- Soybean Disease
  - Foliar Diseases
  - Pod, Stem, & Root Diseases
  - Seedling Diseases

- For each disease:
  - General Info (short video)
  - Management Options
  - Images
  - Fungicide Resistance (where applicable)

Soybean Cultivar Disease Trials

- CST varieties evaluated in small, replicated plots a multiple locations (varying disease pressures) with and without fungicide application at R3
- 2017 Frogeye Leaf Spot and Target Spotrated, and presence of Stem Canker, Sudden Death Syndrome, and Cercospora Leaf Blight reported
- 2013 – 2016 disease data in searchable database @ **http://search.utcrops.com/disease/**
- PDFs also available @ UTcrops.com
- Larger database is being build by group of specialists **http://search.utcrops.com/**

Herbicide Trait: All Herbicide Traits

Maturity Group : All MGs

Company/brand : Asgrow

Cultivar : Asgrow AG46X6

Frogeye Leaf Spot : All FLS levels

LOW=little to no FLS/Good resistance
MOD=moderate levels of FLS/Moderate resistance
HIGH=high levels of FLS/Poor resistance

Yield Performance in County Tests : All Cultivars

Top yielding cultivars in consecutive years : All Cultivars

*=2 consecutive years
**=3 consecutive years
***=4 consecutive years

Sort By : Cultivar

Order By : Ascending

Submit

2Record Found with your Search Criteria. (Search By : Asgrow Asgrow AG46X6 , Sort By : cultivar)

				Top Yielding Cultivars In					High Disease Pressure Locations		Low-Moderate Disease Pressure Locations		Behind Wheat Locations (Low-Moderate)		Other Diseases	Soybean Cyst Nematode Reaction HG Type (Race)			
Cultivar	Herbicide Trait	MG	Company/brand	County Tests	Consecutive years	Year	County Tests Avg Yield	FLS	Treated Yield*	Nontreated Yield	Treated Yield*	Nontreated Yield	Treated Yield*	Nontreated Yield	Other Diseases	2.5.7(1)	1.2.5.7(2)	5.7(3)	2.5.7(5)
Asgrow AG46X6	RRX	IV	Asgrow	-	-	2016	0.00	MOD	51.7	47.6	57.7	53.9	58.7	50.3	BS(HIGH), TS(MOD), SDS		HS	HS	S
Asgrow AG46X6	RRX	IV	Asgrow	ABC	-	2017	64.70	MOD	57.4	53.8	49.5	51.3	51.1	46.1	TS(LOW),SC(MOD)				

* Treated = Quadris Top 8 fl oz/a applied around R3 growth stage

SDS=sudden death syndrome, BS=brown spot, TS=target spot, CLB=cercospora leaf blight, SC=stem canker, CR=charcoal rot

http://search.utcrops.com/

2017 Variety Disease Data

Example scenario…

- Should I spray a fungicide on my soybeans?
  - What's the variety and field history? Seeing any disease?
- AgriGold G4835 RX **variety, have it in multiple fields with different histories**
  - Based on variety trial data, spraying a fungicide at R3 protected:
  - 6.5 bu/a in severe disease pressure location
  - 0.9 bu/a in moderate disease pressure location
  - 1.9 bu/a in a low disease pressure location (after wheat)
    - Across all locations, average of 3.1 bu/a fungicide response

Fungicide Efficacy Table – UTcrops.com

Fungicide(s)				Anthracnose	Brown spot	Cercospora leaf blight[2]	Frogeye leaf spot[3]	Soybean rust	Harvest restriction[4]
Class	Active ingredient (%)	Product/Trade name	Rate/A (fl oz)						
QoI Strobilurins Group 11	Azoxystrobin 22.9%	Quadris 2.08 SC Multiple Generics[5]	6.0 - 15.5	VG	G	P	P	G-VG	14 days
	Fluoxastrobin 40.3%	Aftershock 480 SC Evito 480 SC	2.0 - 5.7	G	G	P	P	U	R5 (beginning seed) 30 days
	Picoxystrobin 22.5%	Aproach 2.08 SC	6.0 - 12.0	G	G	P	P	G	14 days
	Pyraclostrobin 23.6%	Headline 2.09 EC/SC	6.0 - 12.0	VG	G	P	P	VG	21 days
DMI Triazoles Group 3	Cyproconazole 8.9%	Alto 100 SL	2.75 - 5.5	U	VG	F	F	VG	30 days
	Flutriafol 11.8%	Topguard 1.04 SC	7.0 - 14.0	VG	VG	P-G	VG	VG-E	21 days
	Propiconazole 41.8%	Tilt 3.6 EC Multiple Generics[5]	2.0 - 4.0	VG	G	NL	F	VG	R5 (beginning seed)
	Prothioconazole 41.0%	Proline 480 SC	5.0 - 5.7	NL	U	NL	G-VG	VG	21 days
	Tetraconazole 20.5%	Domark 230 ME	4.0 - 5.0	VG	VG	P-G	G-VG	VG-E	R5 (beginning seed)
MBC Thiophanates Group 1	Thiophanate-methyl 45.0%	Topsin-M Multiple Generics[5]	10.0 - 20.0	U	U	F	VG	G	21 days
SDHI Carboximides Group 7	Boscalid 70%	Endura 0.7 DF	3.5 - 11.0	NL	VG	U	P	NL	21 days
2,6-dinitro-anilines Group 29	Fluazinam 40.0%	Omega 500 DF	0.75-1.0 pints	NL	NL	NL	NL	NL	R3 (beginning pod)

2017 Fungicide Trials

Conducted at 2 to 3 locations

Fungicides applied at R3 growth stage

Verification

5 highly effective fungicide combinations evaluated across 3 cultivars, varying in disease susceptibility

Make Your Own Mix

Fungicide combinations compared to pre-mixed fungicide across FLS susceptible cultivar

Verification Trials

Across all locations, all products significantly protected yield, regardless of cultivar, but analysis by location showed…

- No effect on yield from cultivar or fungicides at low disease pressure location (wheat-beans)

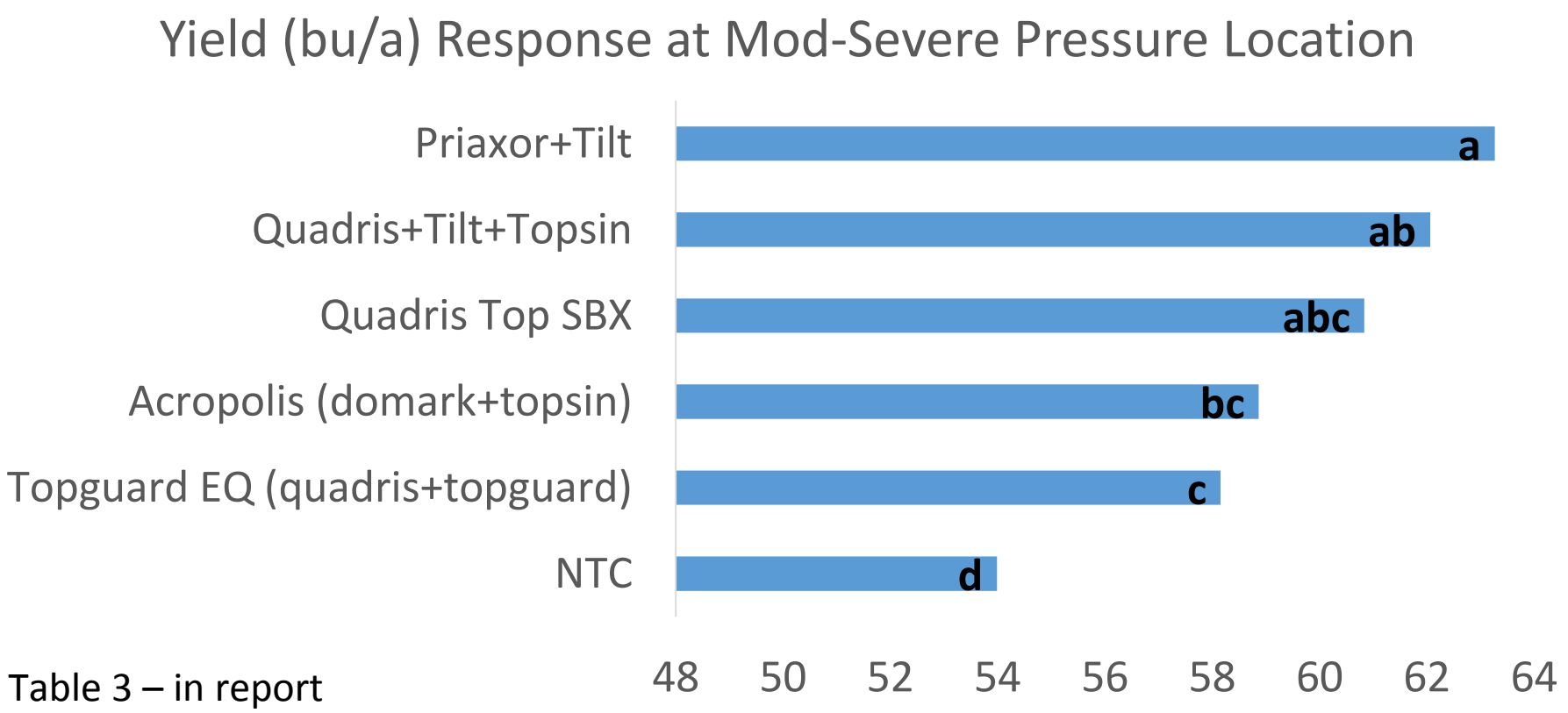

Table 3 – in report

Verification Trials

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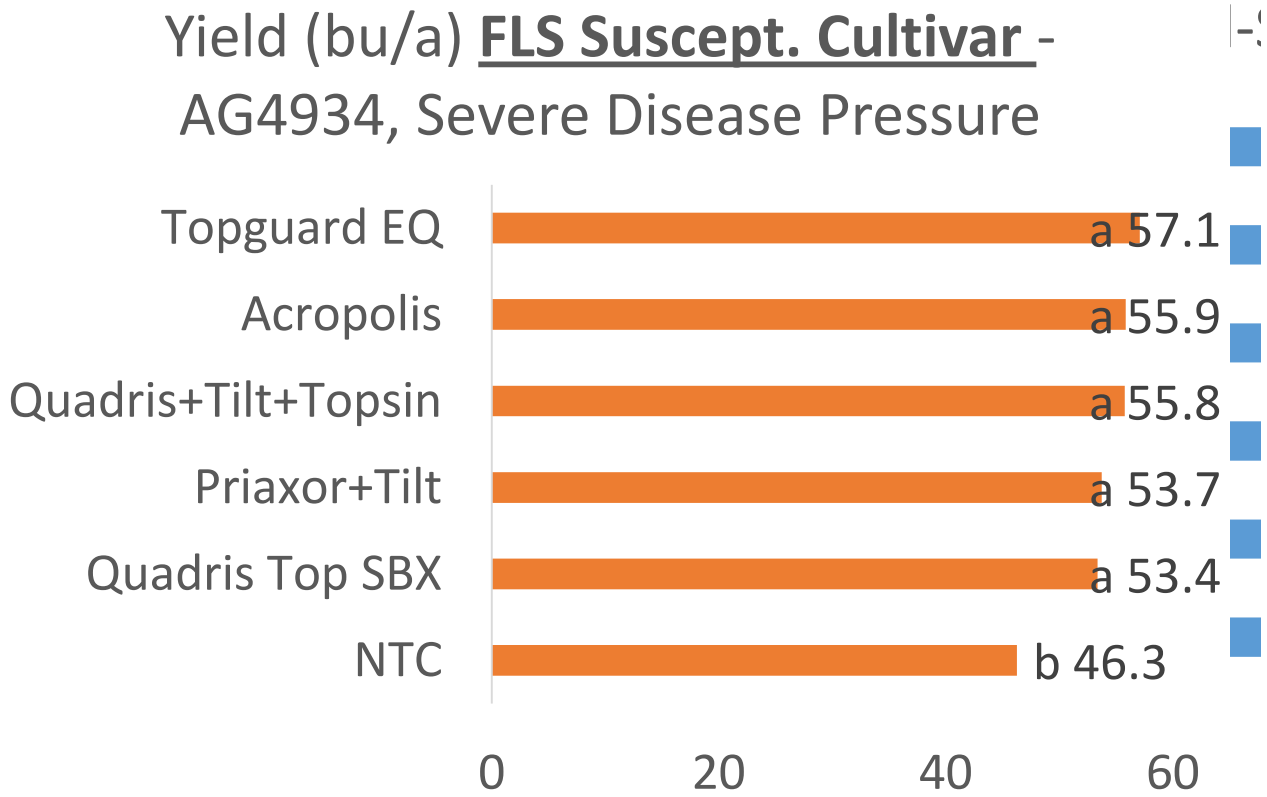
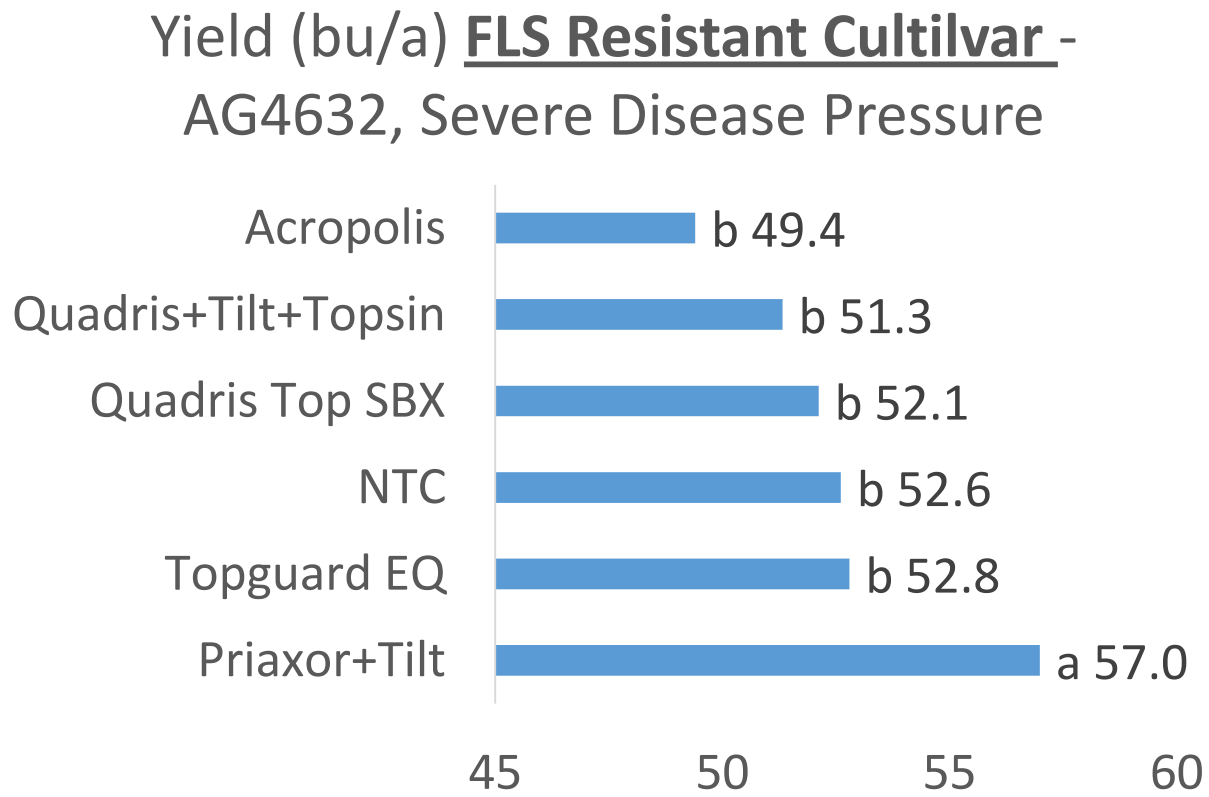
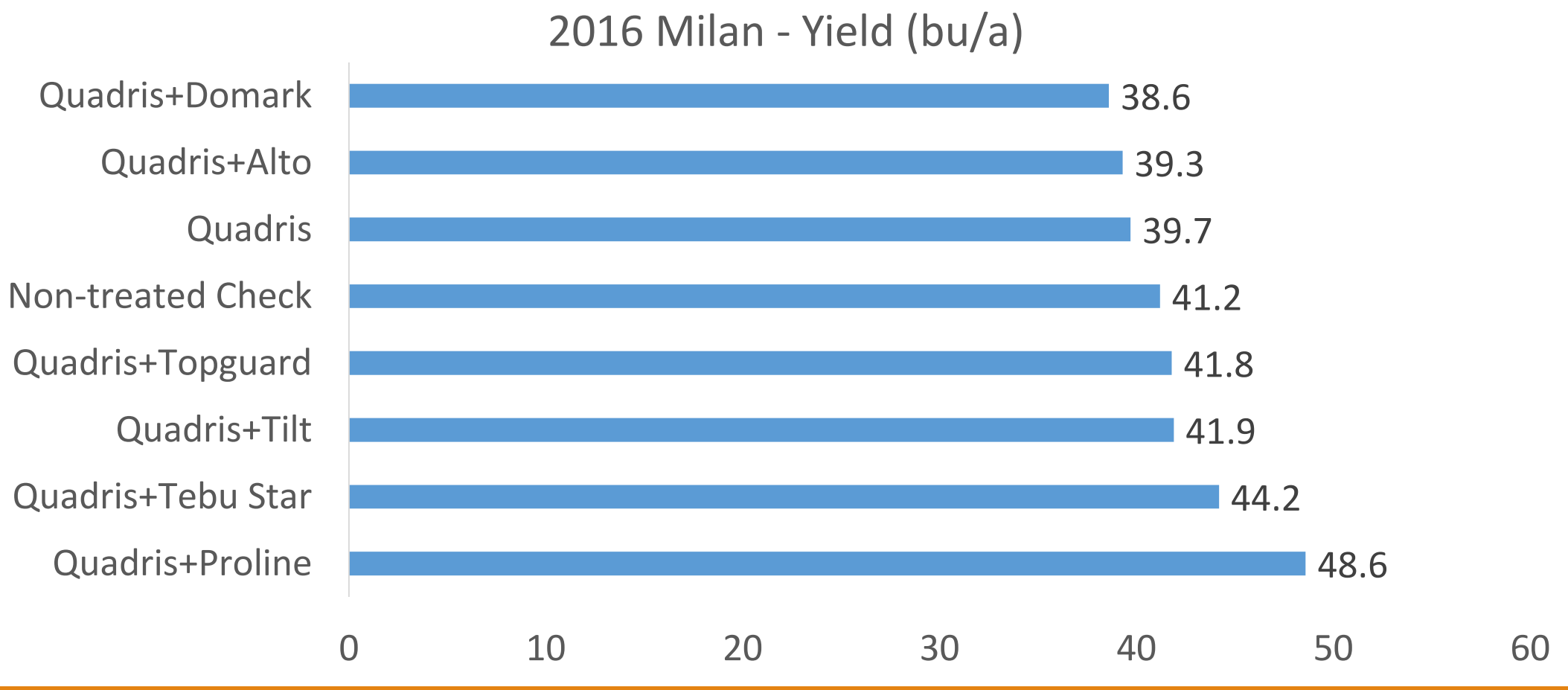




Fungicide Trials – make your own mix



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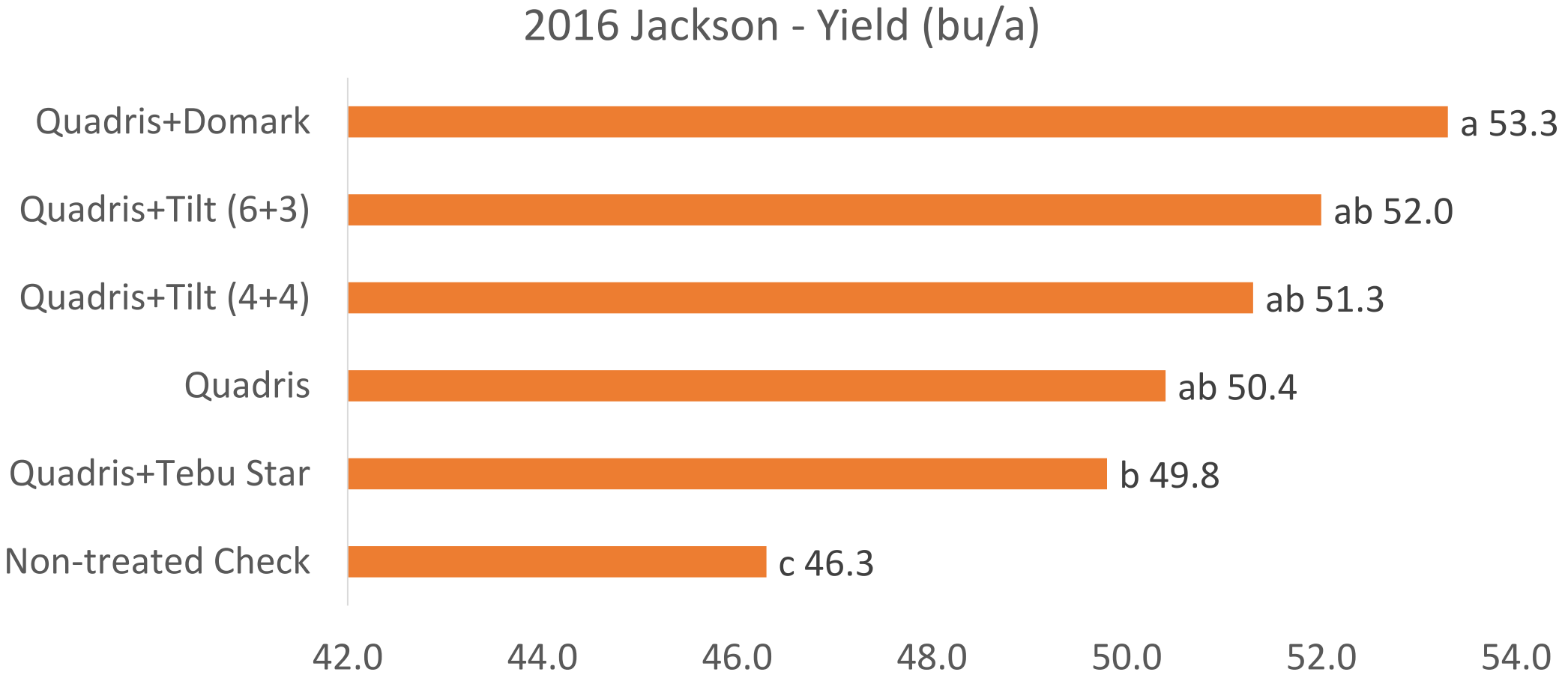

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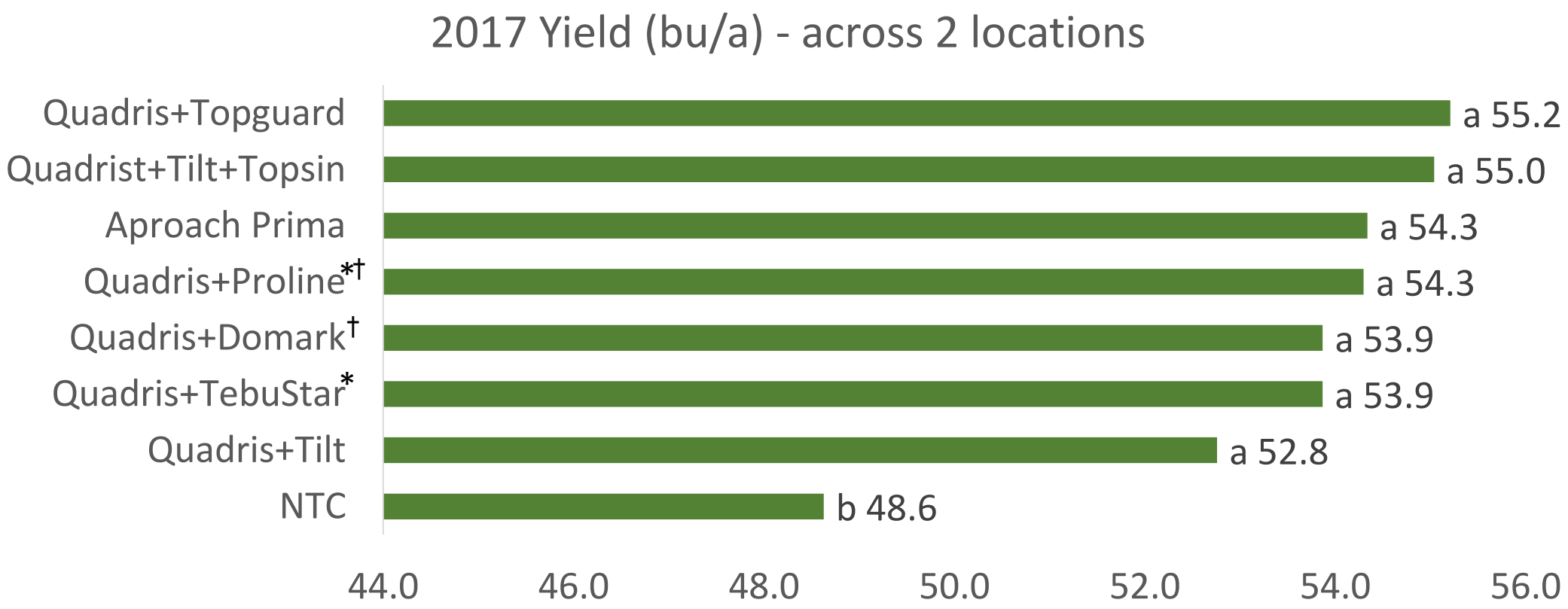

* Phytotoxicity noted

† Significantly lower FLS ratings than non-treated

Thank you for your attention!

Questions?

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