Evaluation of effects of chemical treatments on tobacco leaf spot diseases

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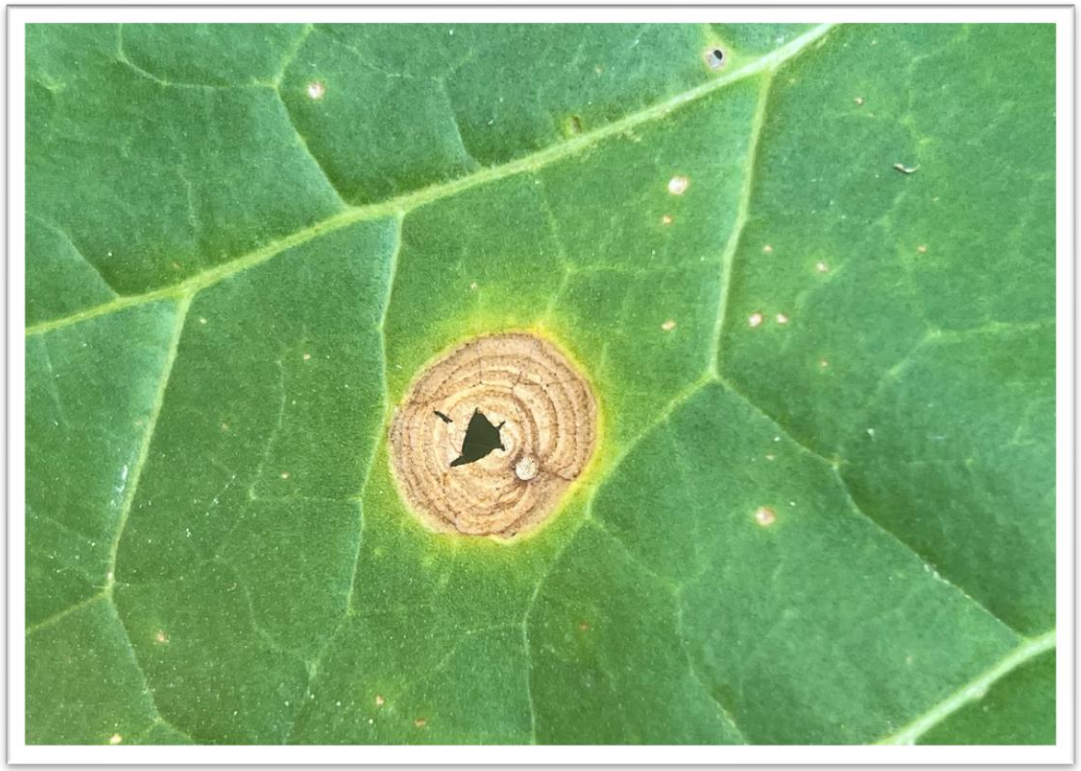
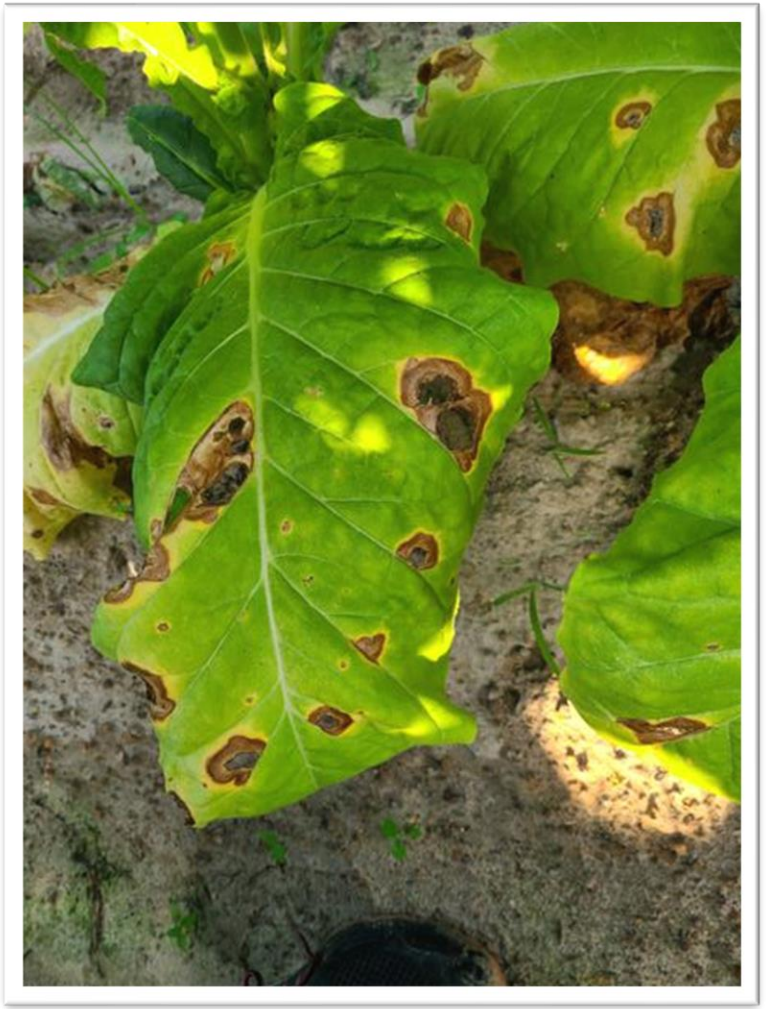
Target Spot

- **Caused by the <u>fungal</u> pathogen *Thanatephorus cucumeris***
  - Survive in soil and on crop residues
  - Warm and moist conditions
  - syn: *Rhizoctonia solani*





Management practices

- **Harvesting mature leaves**
- **Manage nutrient level**
  - Nitrogen
- **Crop rotation**
- **Chemical applications**
  - Quadris (Azoxystrobin)
  - Manzate Pro Stick (Mancozeb)

Brown Spot

- **Caused by the <u>fungal</u> pathogen *Alternaria alternata* and other *Alternaria* spp.**
  - Survive on crop residues
  - Warm and moist conditions
  - syn: *Lewia* spp.
- **Crop rotation**
  - Avoid host plants including tobacco, potato, and others
- **Remove/destroy crop debris**

Frogeye Leaf Spot

- **Caused by the <u>fungal</u> pathogen *Cercospora nicotianae*** (races?)
  - Warm and moist conditions
  - syn: *Mycosphaerella*
- **Crop rotation**
- **Remove/destroy crop debris**

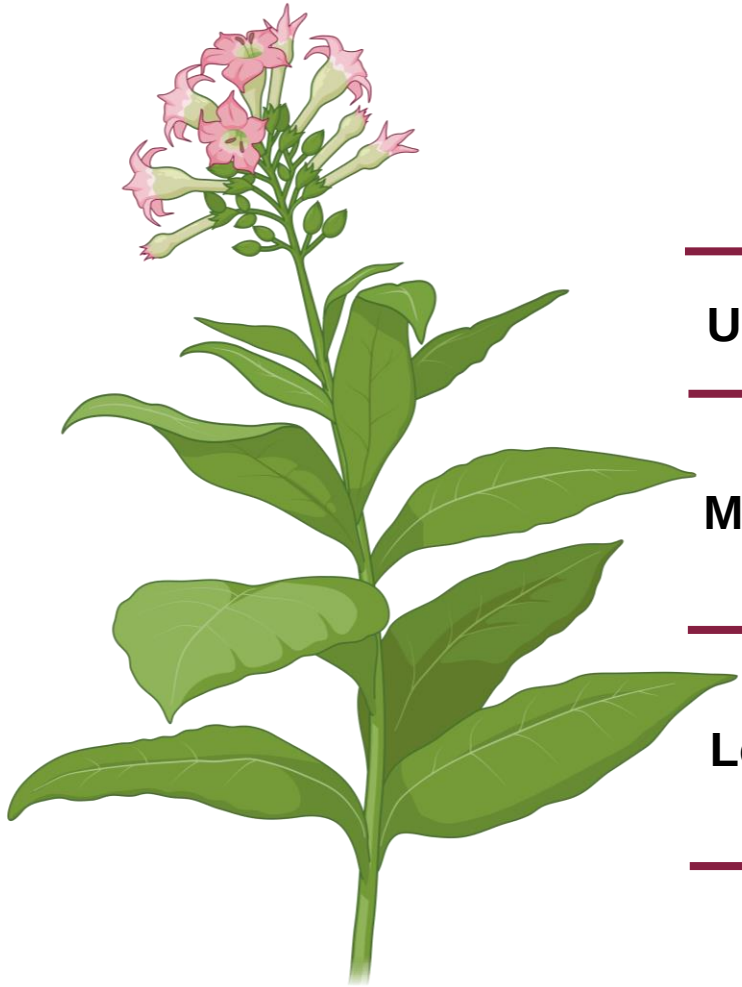
Research questions

- **Fungicide efficacy on reducing the severity of three common foliar fungal diseases**

Treatment Table

Number	Treatment (Rate/A (fl oz))
1	Control
2	Adastrio (7.0) + Adastrio (7.0)
3	Adastrio (9.0) + Adastrio (9.0)
4	Quadris (9.0) + Adastrio (9.0)
5	Adastrio (9.0) + Quadris (9.0)
6	Quadris (9.0) + Quadris (9.0)
7	Manzate Pro-stick (2 lbs/A) + Manzate Pro-stick (2 lbs/A)

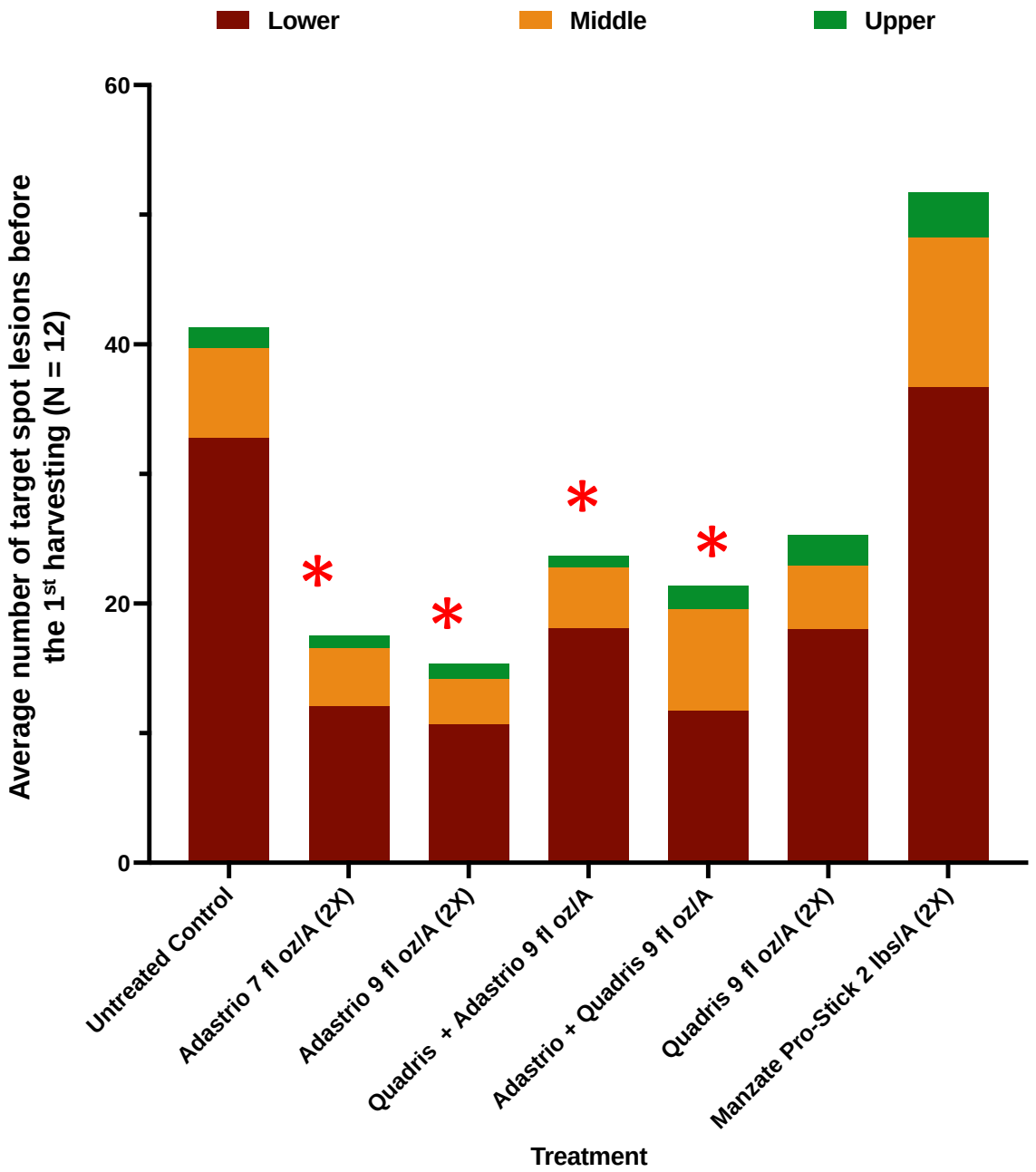
Adastrio: Fluindapyr, Flutriafol, Azoxystrobin (7+3+11)
Quadris: Azoxystrobin (11)
Manzate Pro-Stick: Mancozeb (M3)



	Block 1								Block 3						
50' long	401	701	301	601	101	501	201	Gap	303	403	203	103	703	503	603
	Gap														
	16'	16'	16'	16'	16'	16'	16'		16'	16'	16'	16'	16'	16'	16'
50' long	702	602	202	102	502	302	402	Gap	604	304	704	404	504	104	204
	Block 2								Block 4						

Variety: PVH2310

Three plants were assessed per block **(12 plants/treatment)**

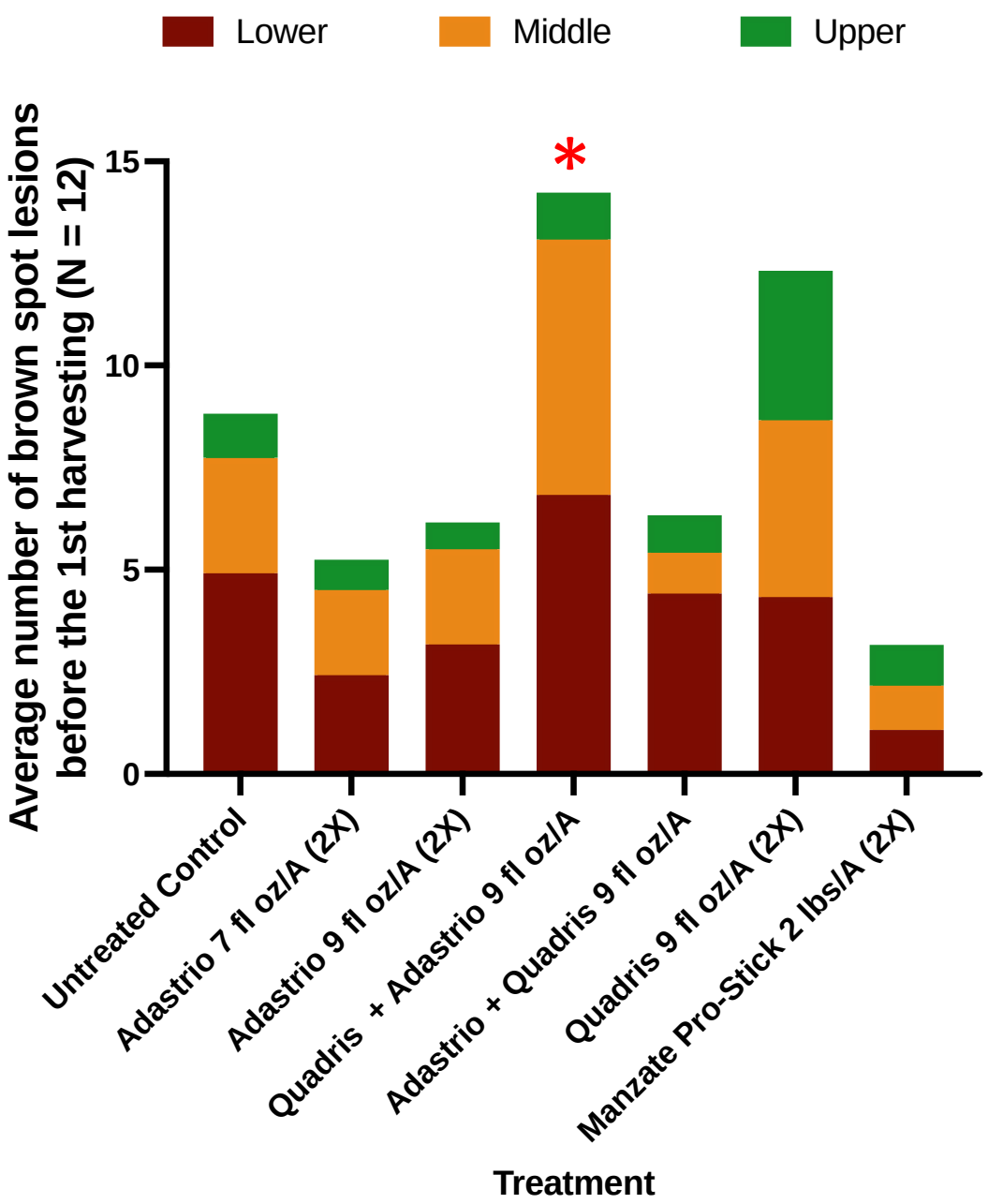


Type III Tests of Fixed Effects		
Effect	***F*-value**	***Pr > F***
Treatment	4.59	0.0005
Stalk position	48.21	<.0001

Foliar sprays of Adastrio (2X) and the combination of Adastrio and Quadris significantly reduced target spot.

Lower stalk > Upper stalk

Mid-stalk > Upper stalk

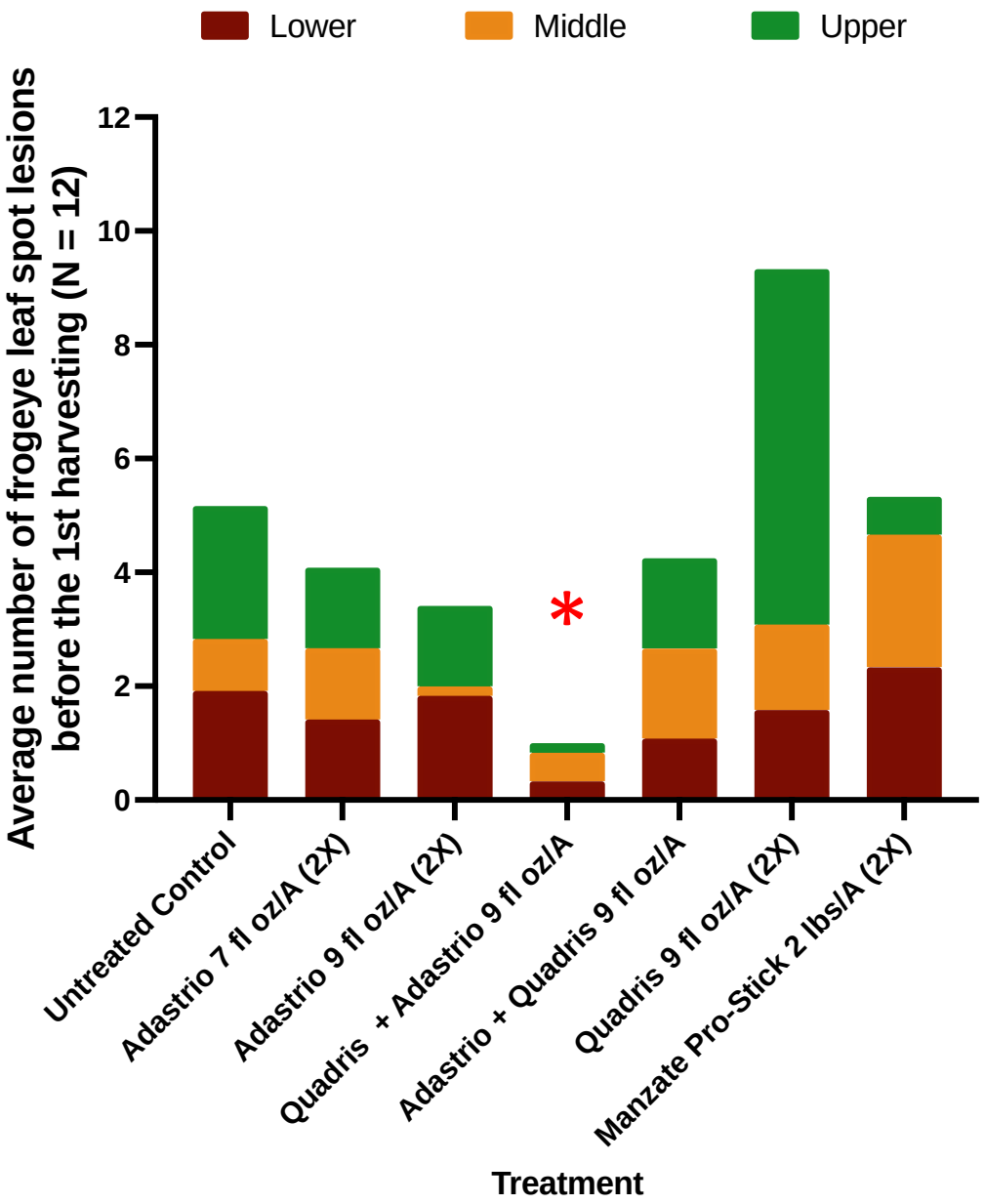


Type III Tests of Fixed Effect		
Effect	***F*-value**	***Pr > F***
Treatment	4.5	0.0008
Stalk position	20.48	<.0001

The number of brown spot lesions was not reduced by most foliar applications that we tested.

Lower stalk > Upper stalk

Mid-stalk > Upper stalk



Type III Tests of Fixed Effect		
Effect	***F*-value**	***Pr > F***
Treatment	4.95	0.0003
Stalk position	4.27	0.0176

<u>The application of Quadris followed by Adastrio</u> significantly reduced frogeye leaf spot.

Lower stalk < Upper stalk

Mid-stalk < Upper stalk

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