

2022 Connecticut Broadleaf Research Report

Andy Bailey and Caleb Perkins

University of Kentucky

Mitchell Richmond

University of Tennessee

2022 CT Broadleaf Research Trials

- 1) Fungicide Trial
 - Objective: Evaluate various registered and experimental fungicides and fungicide programs for control of late-season frogeye leafspot related to greenspot in cured leaf.
- 2) Lower Leaf Removal Trial
 - Objective: Evaluate the effect of lower leaf removal at layby or at topping, with or without fungicide application, on wrapper leaf production.

Research History

- Increase in demand for Connecticut Broadleaf.
- Dealers urged Kentucky producers to try and meet increased demand for natural leaf cigar wrappers.
- Research took place at the University of Kentucky Research and Education Center in Princeton, KY and private farm near Mayfield, KY
 - **Fungicide Trials: 2019-2022**
 - Evaluate fungicides on effectiveness against *late-season frog-eye leafspot*.
 - **Lower Leaf Removal Trials: 2021-2022**
 - Evaluate effects of lower leaf removal on *wrapper production*.



Fungicide Trial

- 12 Fungicide treatments
- 1st application made 3 weeks after planting date
- Applications are made until time to harvest
- Fungicides were chosen based on *effectiveness against frog-eye leafspot*
- All applications broadcasted with hollow cone nozzles
- All 4 rows sprayed; data came from center 2 rows
- 4 row plots 40' long; 40'' row width with 32'' plant spacing, gives plant population of 4,900 plants/acre
- Spray volume changed as tobacco increased in size
 - 15 gal/ac
 - 25 gal/ac
 - 40 gal/ac



Focus on Late-Season Frogeye Leafspot Control

Trt	Fungicide Program (Number of Applications)	Chemical Name	Classification	Rates	Timing of Final Spray
2	Manzate (1) Quadris (1)	Mancozeb Azoxytrobilin	Fungicide	2 lb/100 gal 8 fl oz/a	21 d
3	Manzate (2) Quadris (2) Revus (1)	Mancozeb Azoxytrobilin Mandipropamide	Fungicide	2 lb/100 gal 8 fl oz/a 8 fl oz/a	7 d
4	Presidio (2)	Fluopicolide	Fungicide	4 fl oz/a	7 d
5	Orondis Ultra (2)	Oxathiapiprolin/mefenoxam	Fungicide	4.8 fl oz/a	7 d
6	Cueva (5)	Copper octanoate	Copper	1 gal/a	3 d
7	Double Nickel (5)	<i>Bacillus amyloliquefaciens</i> strain D747	Biological	2 qt/a	3 d
8	Regalia (5)	<i>Reynoutria sachalinensis</i>	Biological	2 qt/a	3 d
9	Velum Prime (2)	Fluopyram	Fungicide	6.84 fl oz/a	30 d
10	EXPERIMENTAL A (Topsin) (4)	Thiophanate-methyl	Fungicide	1 lb/a	14 d
11	EXPERIMENTAL B (Topguard) (3)	Flutriafol	Fungicide	14 fl oz/a	14 d
12	EXPERIMENTAL C (Miravis Top) (3)	Pydiflumetofen+difenoconazole	Fungicide	13.7 fl oz/a	14 d

Fungicide Trial – Mayfield KY, 2022

- 12 Fungicide treatments
- 1st application made 3 weeks after planting date
- Applications are made until time to harvest
- Fungicides were chosen based on *effectiveness against frog-eye leafspot*
- All applications broadcasted with hollow cone nozzles
- All 4 rows sprayed; data came from center 2 rows
- 4 row plots 40' long; 40'' row width with 32'' plant spacing, gives plant population of 4,900 plants/acre
- Spray volume changed as tobacco increased in size
 - 15 gal/ac
 - 25 gal/ac
 - 40 gal/ac



Focus on Frogeye Control in Late Season

Trt	Fungicide Program (Number of Applications)	Chemical Name	Classification	Rates	Timing of Final Spray
2	Manzate (1) Quadris (1)	Mancozeb Azoxytrobilin	Fungicide	2 lb/100 gal 8 fl oz/a	21 d
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Lower Leaf Removal Trial – Mayfield, KY 2022

2021 Treatments (topped to 10 leaves)

- 1. No Leaves Removed, No Fungicide
- 2. No Leaves Removed, Fungicide
- 3. 4 Lower Leaves Removed @ Topping, No Fungicide
- 4. 4 Lower Leaves Removed @ Topping, Fungicide
- 5. No Leaves Removed, *Top 6 Leaves* Harvested (no fungicide)

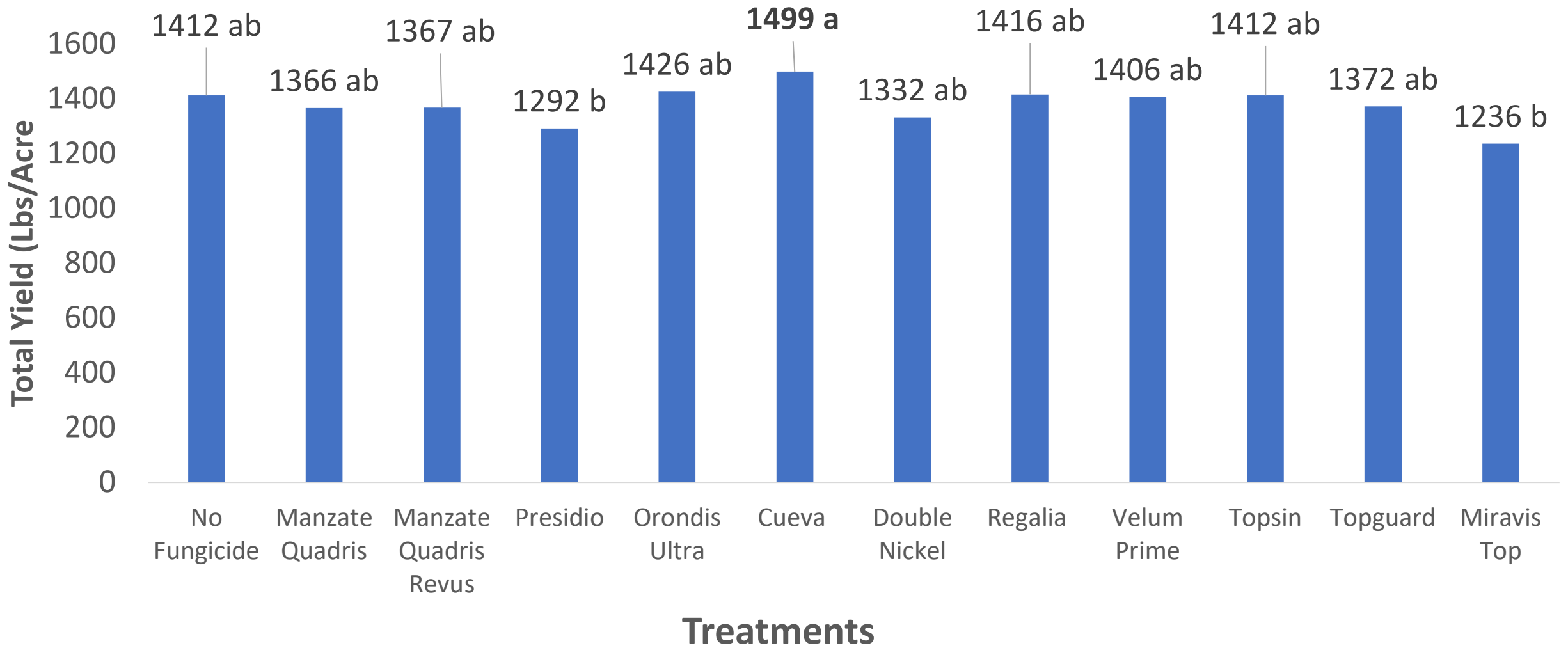
*Fungicides used:

- Quadris (*at topping*), 8 fl oz/a
- Double Nickel (*3 days Pre-Harvest*), 2 qt/a

2022 Treatments (topped to 12 leaves)

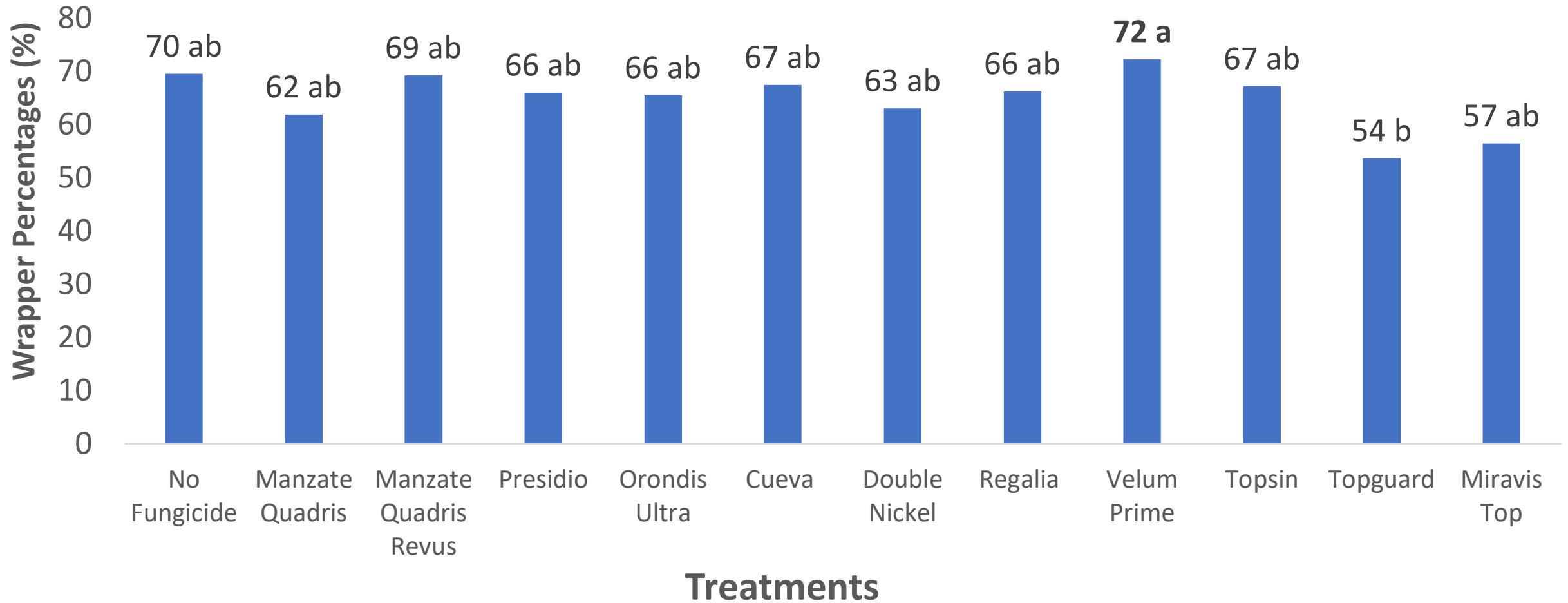
- 1. No Leaves Removed, No Fungicide
- 2. No Leaves Removed, Fungicide
- 3. 4 Lower Leaves Removed @ Layby, No Fungicide
- 4. 4 Lower Leaves Removed @ Layby, Fungicide
- 5. 4 Lower Leaves Removed @ Topping, No Fungicide
- 6. 4 Lower Leaves Removed @ Topping, Fungicide
- 7. No Leaves Removed, *Top 8 Leaves* Harvested, No Fungicide
- 8. No Leaves Removed, *Top 8 Leaves* Harvested, Fungicide

2022 Fungicide Trial: Total Yield/Acre



Data followed by the same letter are not statistically different accorded to LSD, alpha = 0.10

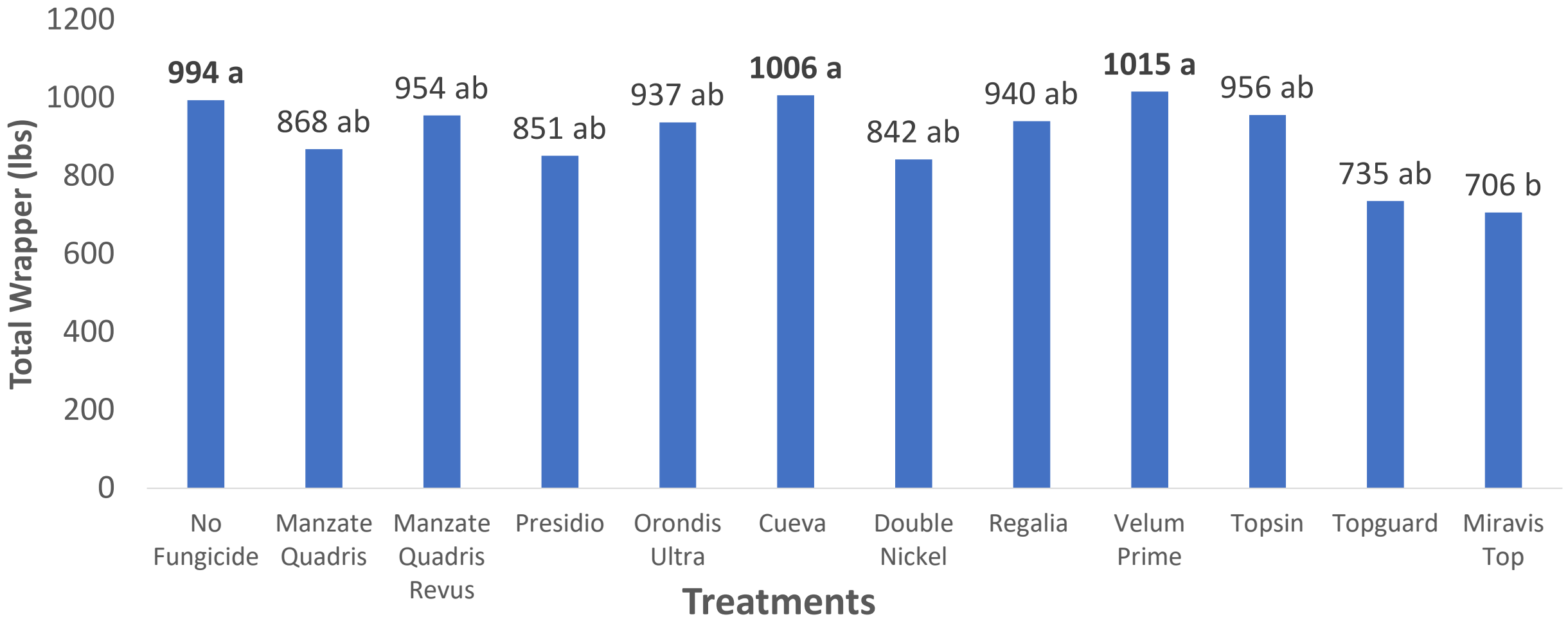
2022 Fungicide Trial: Wrapper Percentages



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*Wrapper percentages were a sum of graded #3, #2, #1 divided by the total yield

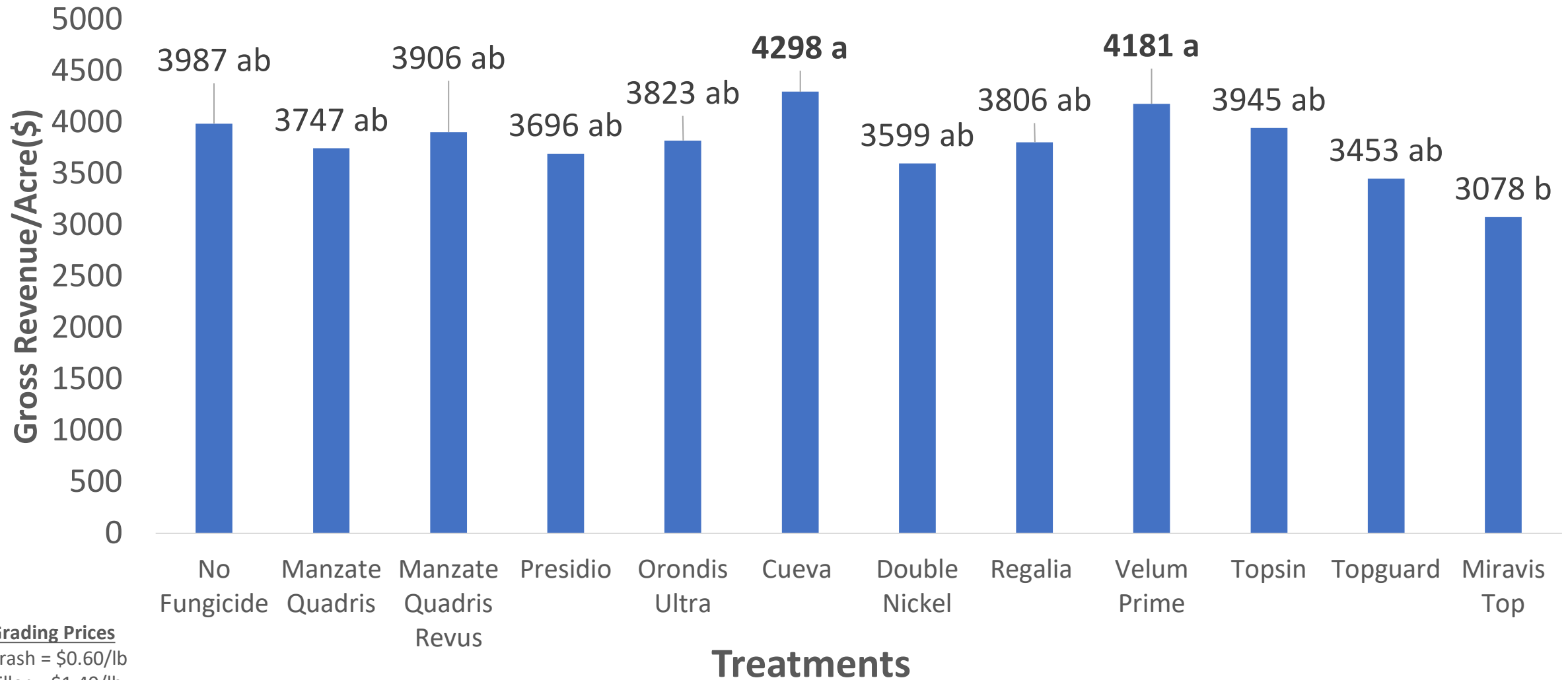
2022 Fungicide Trial: Total Wrapper (lbs)



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*Total wrapper pounds were a sum of grades #3, #2, #1 yield/acre

2022 Fungicide Trial: Gross Revenue/Acre



Grading Prices

Trash = \$0.60/lb

Filler = \$1.40/lb

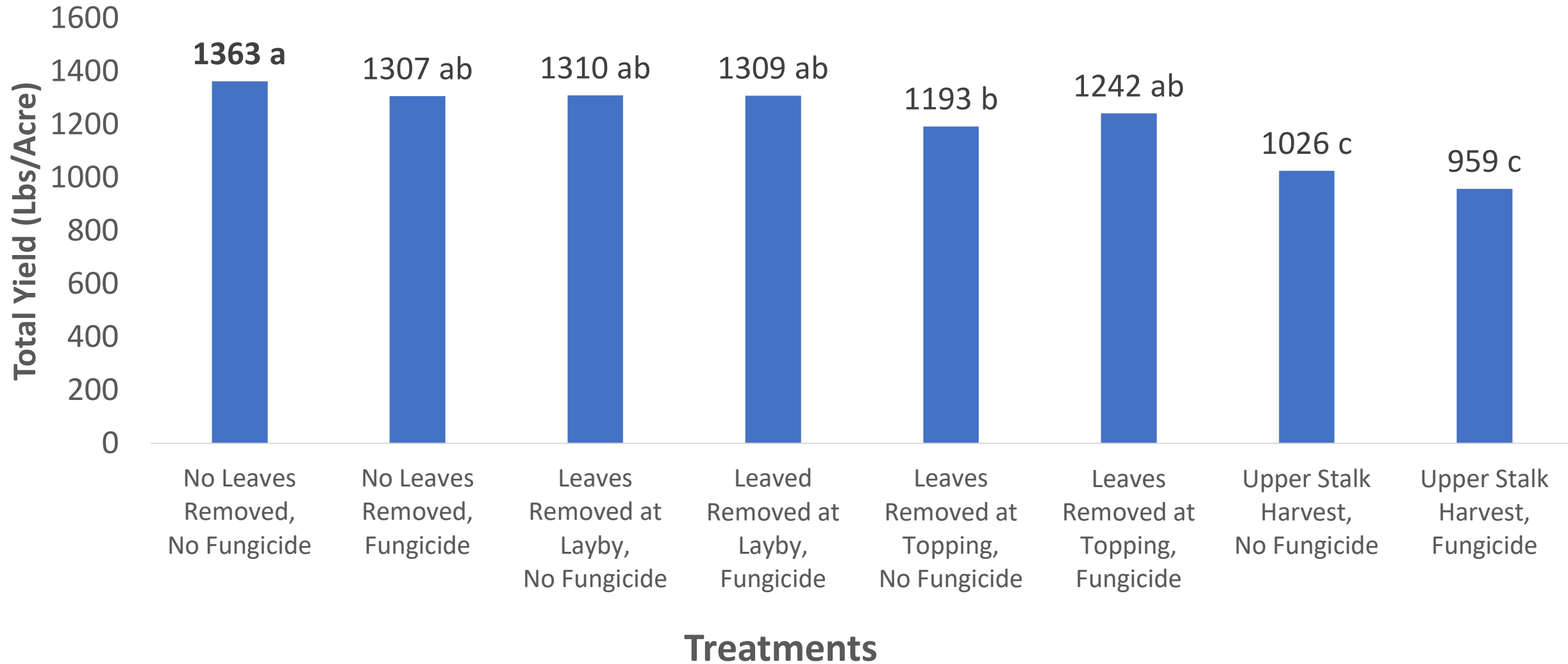
#3 (2 cut) = \$3.00/lb

#2 (Binder) = \$4.50/lb

#1 (Wrapper) = \$6.85/lb

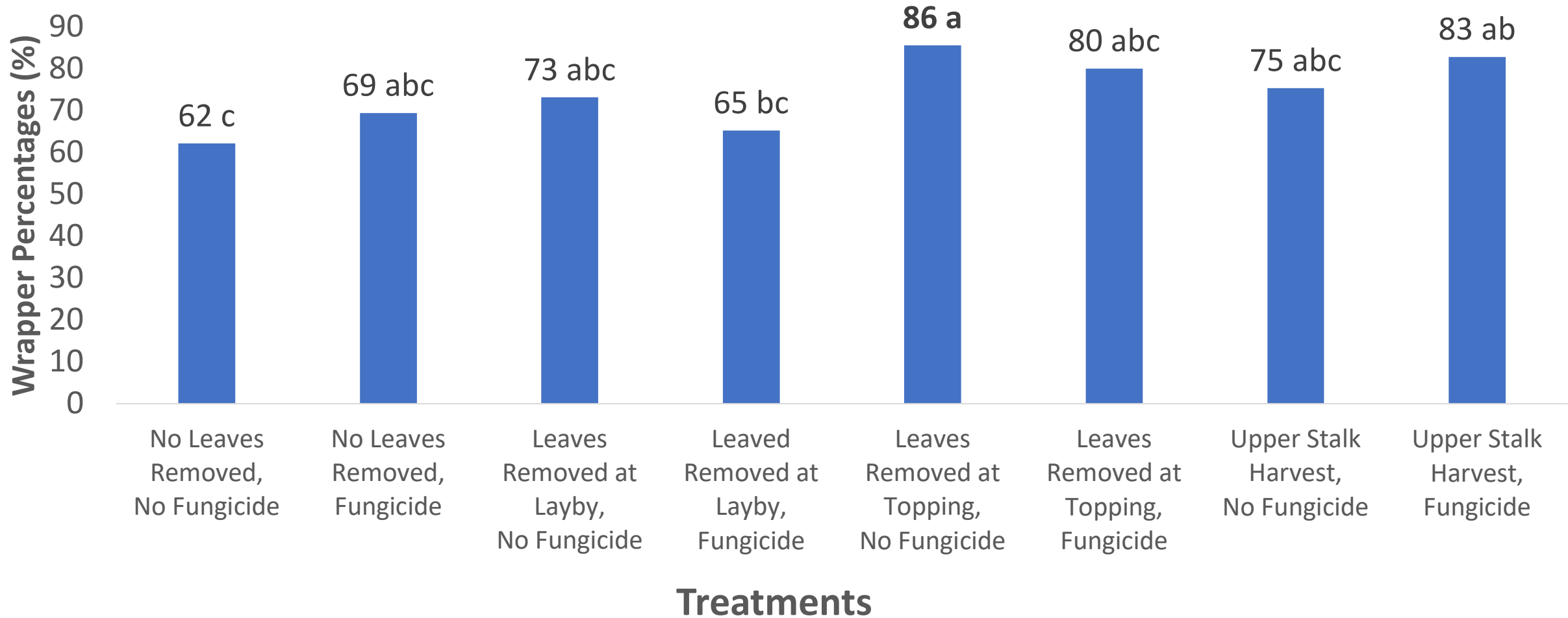
Data followed by the same letter are not statistically different accorded to LSD, alpha = 0.10

2022 Lower Leaf Removal Trial: Total Yield/Acre



Data followed by the same letter are not statistically different accorded to LSD, alpha = 0.10

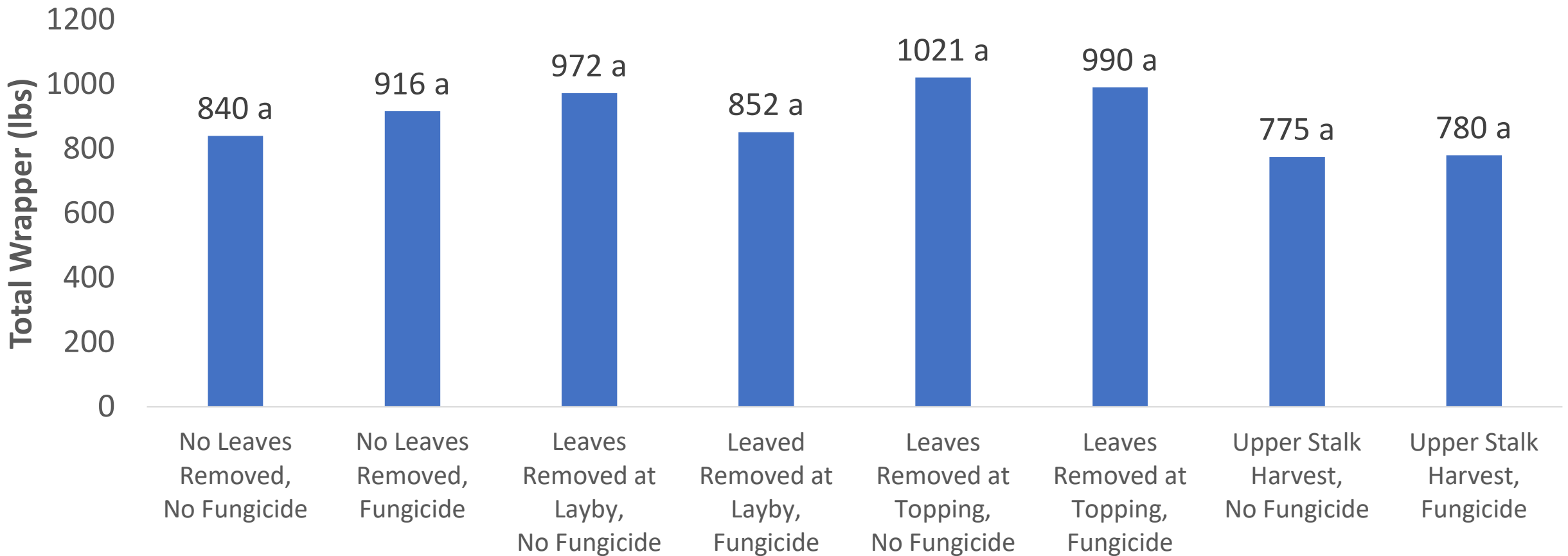
2022 Lower Leaf Removal Trial: Wrapper Percentages



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*Wrapper percentages were a sum of graded #3, #2, #1 divided by the total yield

2022 Lower Leaf Removal Trial: Total Wrapper (lbs)

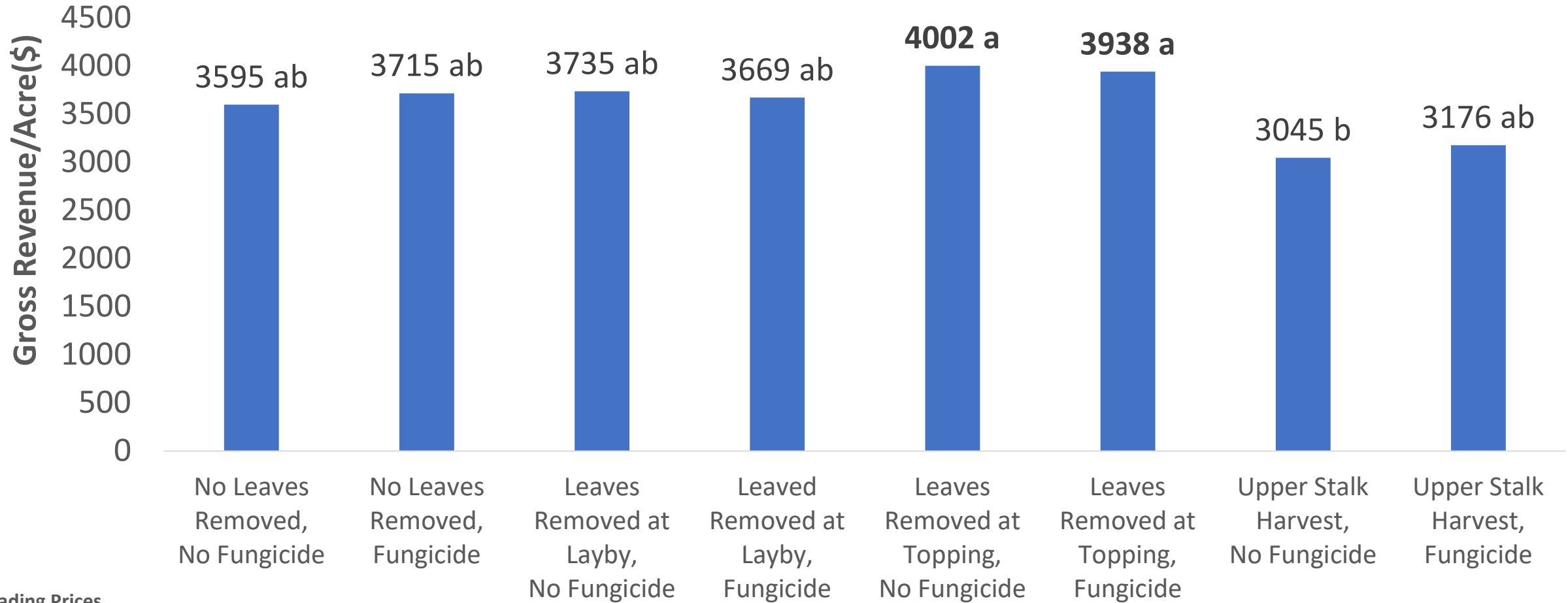


Treatments

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*Total wrapper pounds were a sum of grades #3, #2, #1 yield/acre

2022 Lower Leaf Removal Trial: Gross Revenue



Grading Prices
Trash = \$0.60/lb
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#3 (2 cut) = \$3.00/lb
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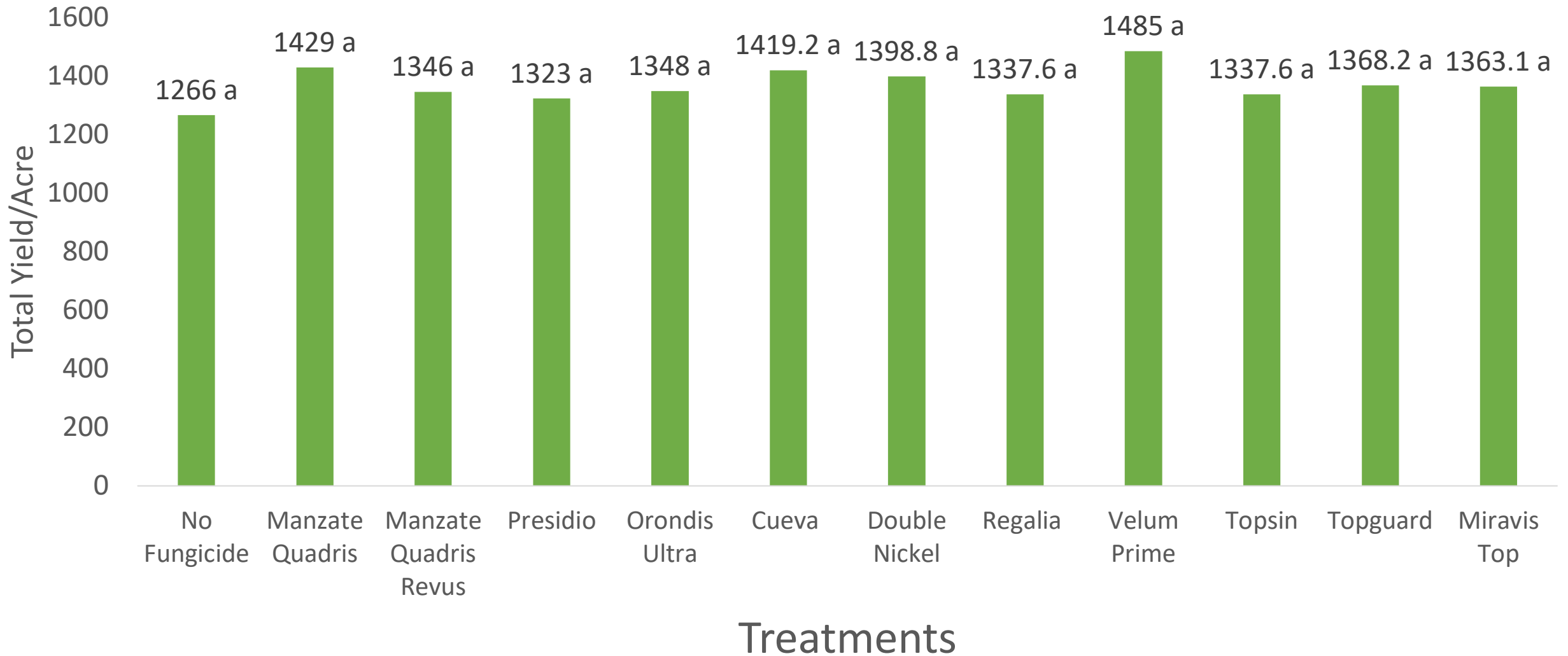
Treatments

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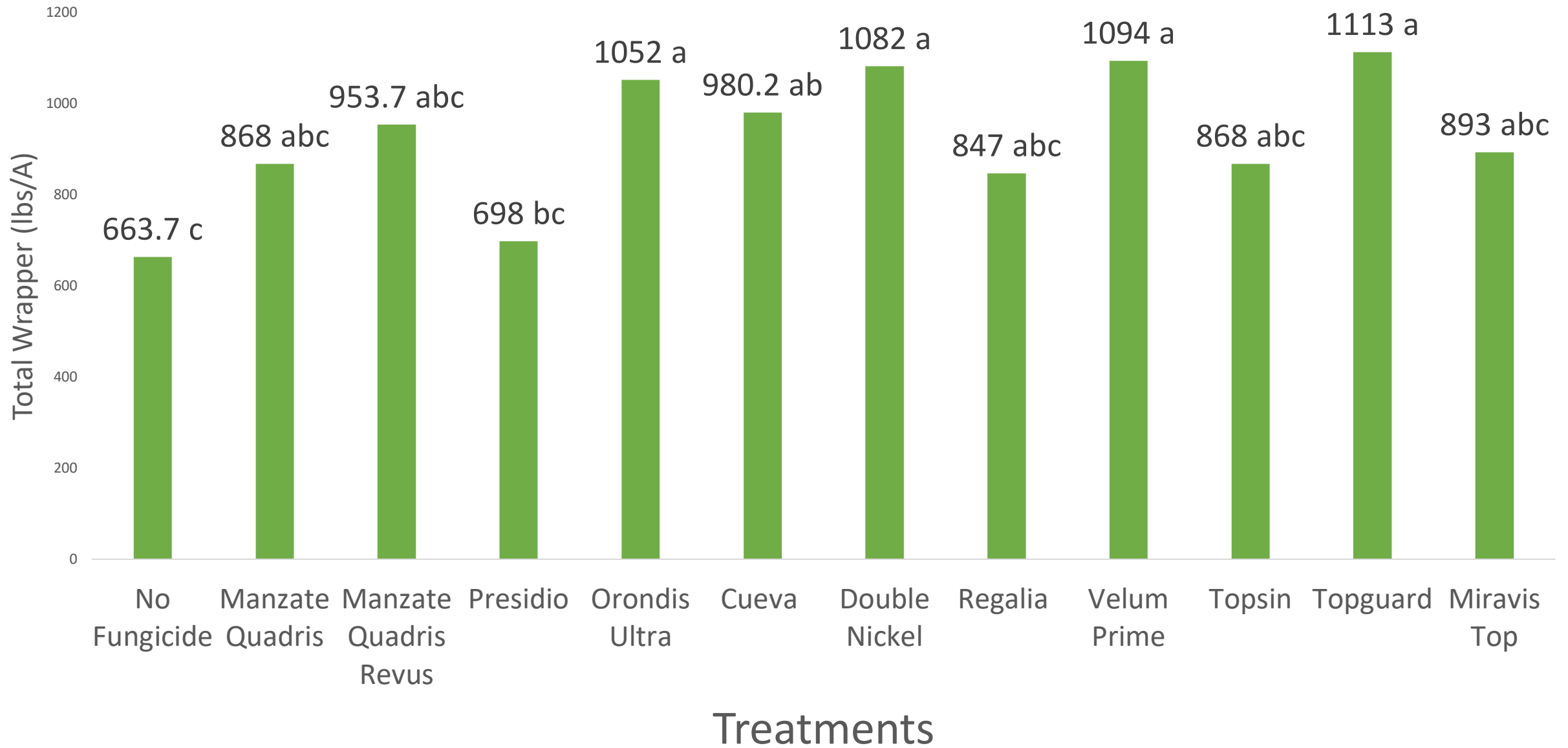
Dealer Data from Mayfield Trials

- Thanks to:
 - Katie Dillon and Chad Evitts (Gallatin Redrying)
 - Zach Burchfiel and Houston Cooksey (Hail & Cotton)
- 5 total sticks per plot:
 - 4 sticks per plot sorted by University personnel
 - 1 stick per plot sorted by Leaf Dealers

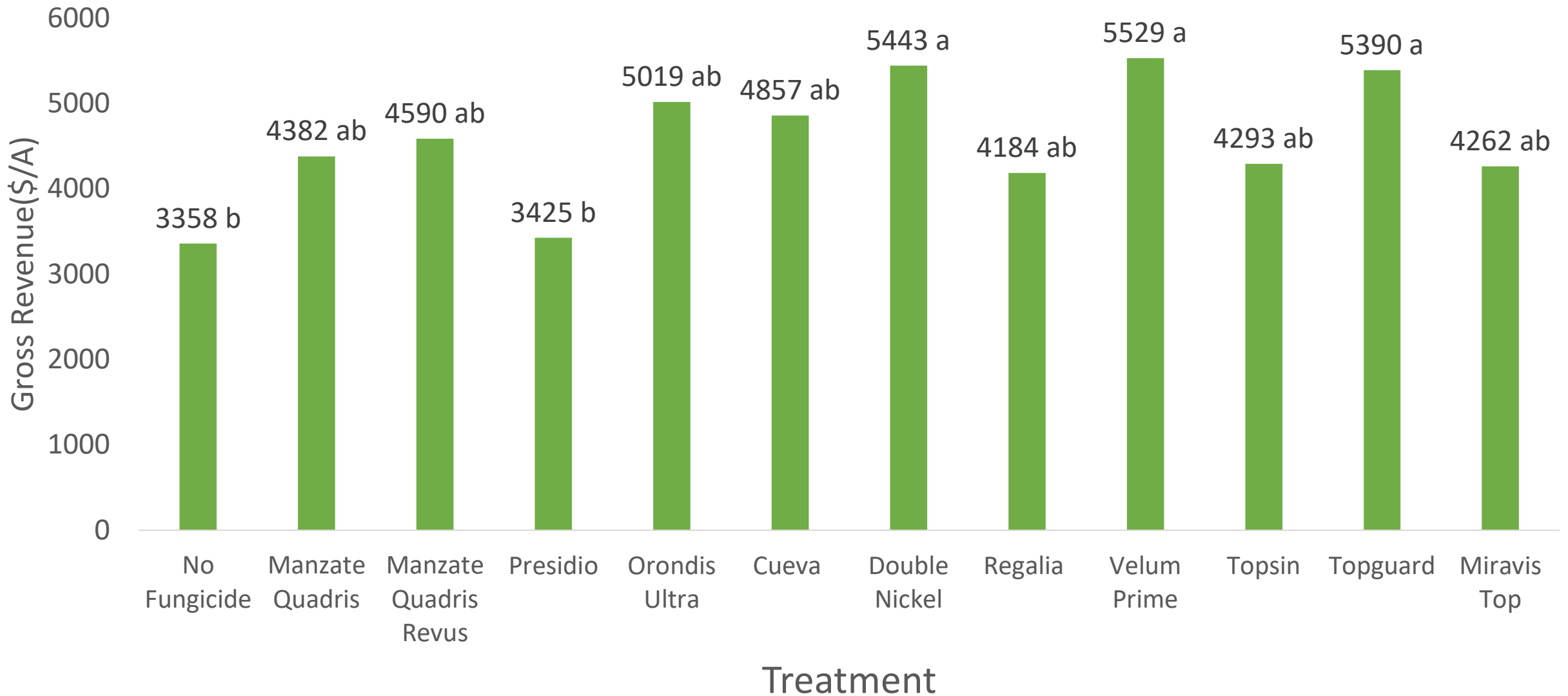
2022 Dealer Fungicide Total Yield/Acre (lbs/A) - Mayfield



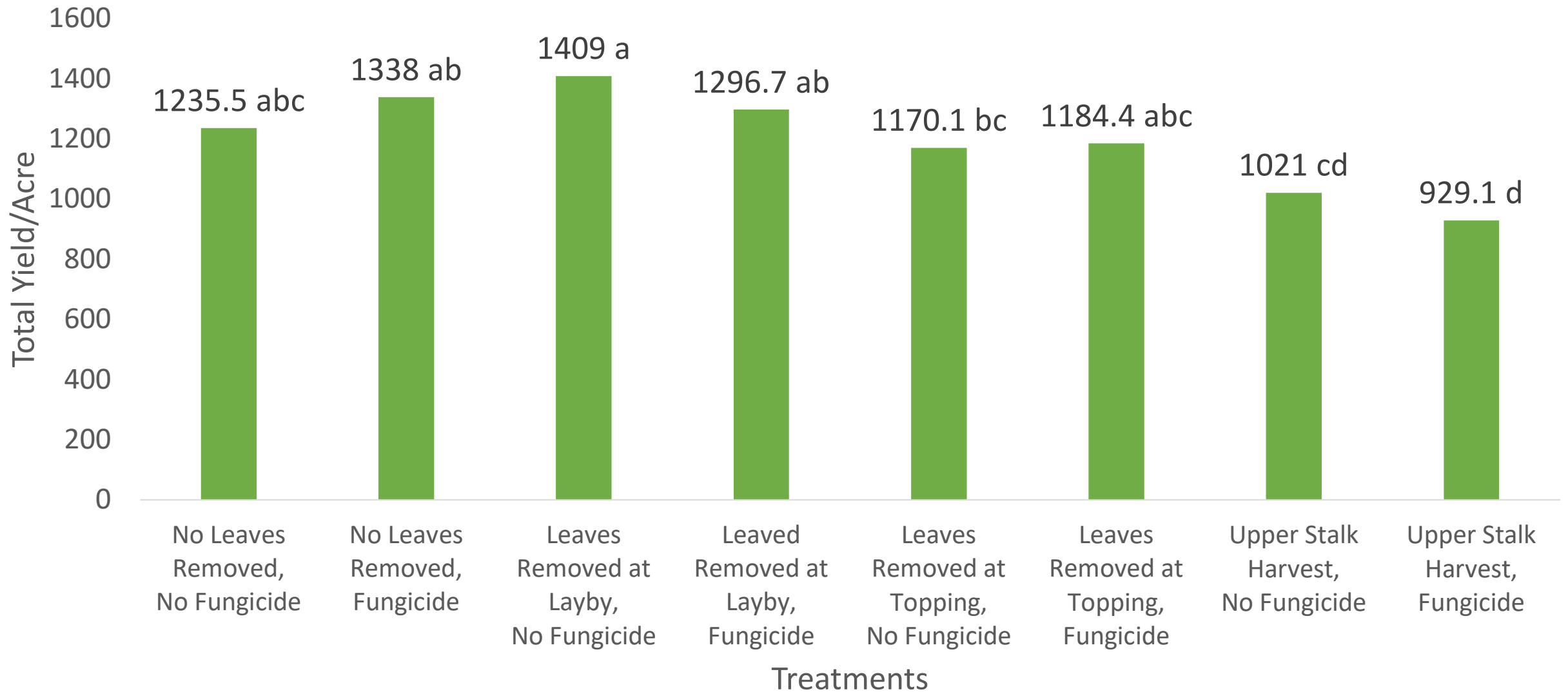
2022 Dealer Fungicide Total Wrapper (lbs/A) - Mayfield



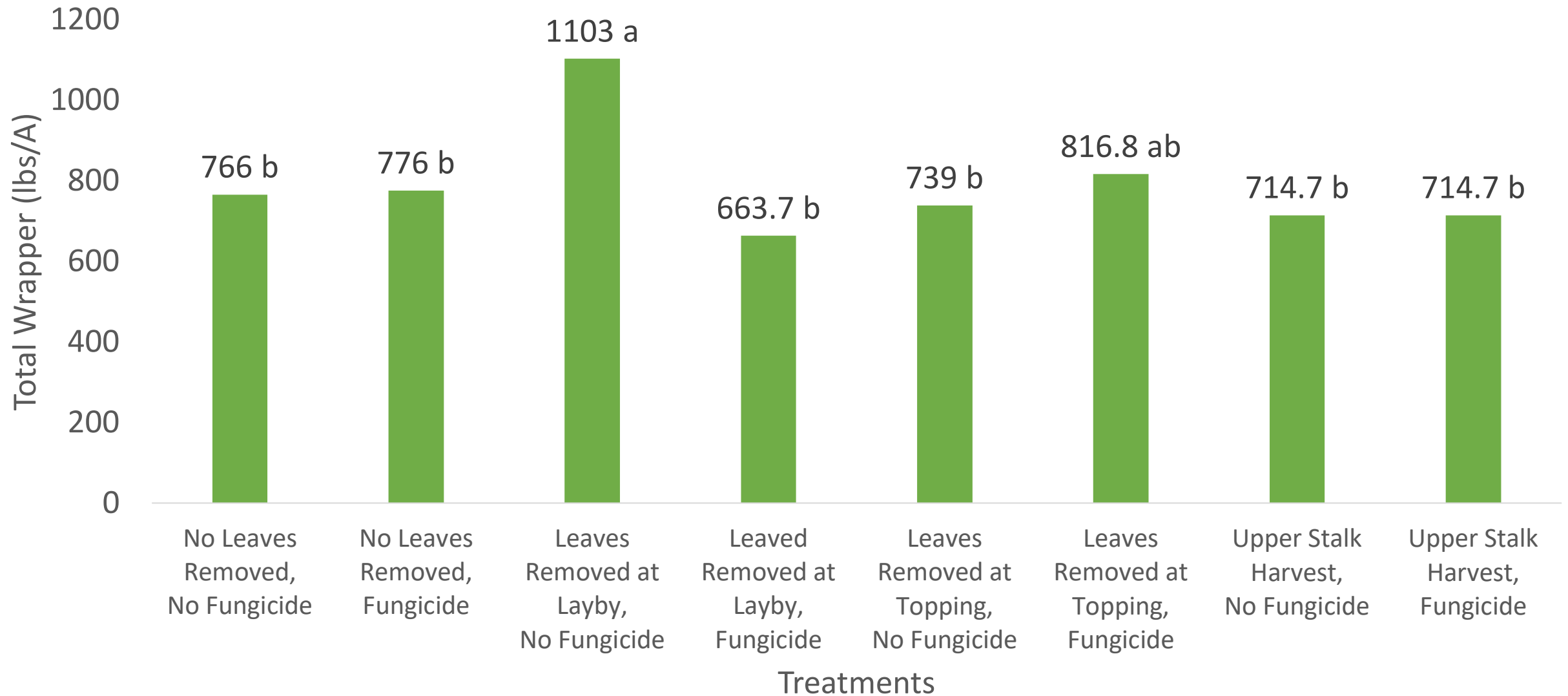
2022 Dealer Fungicide Total Gross Revenue (\$/A) - Mayfield



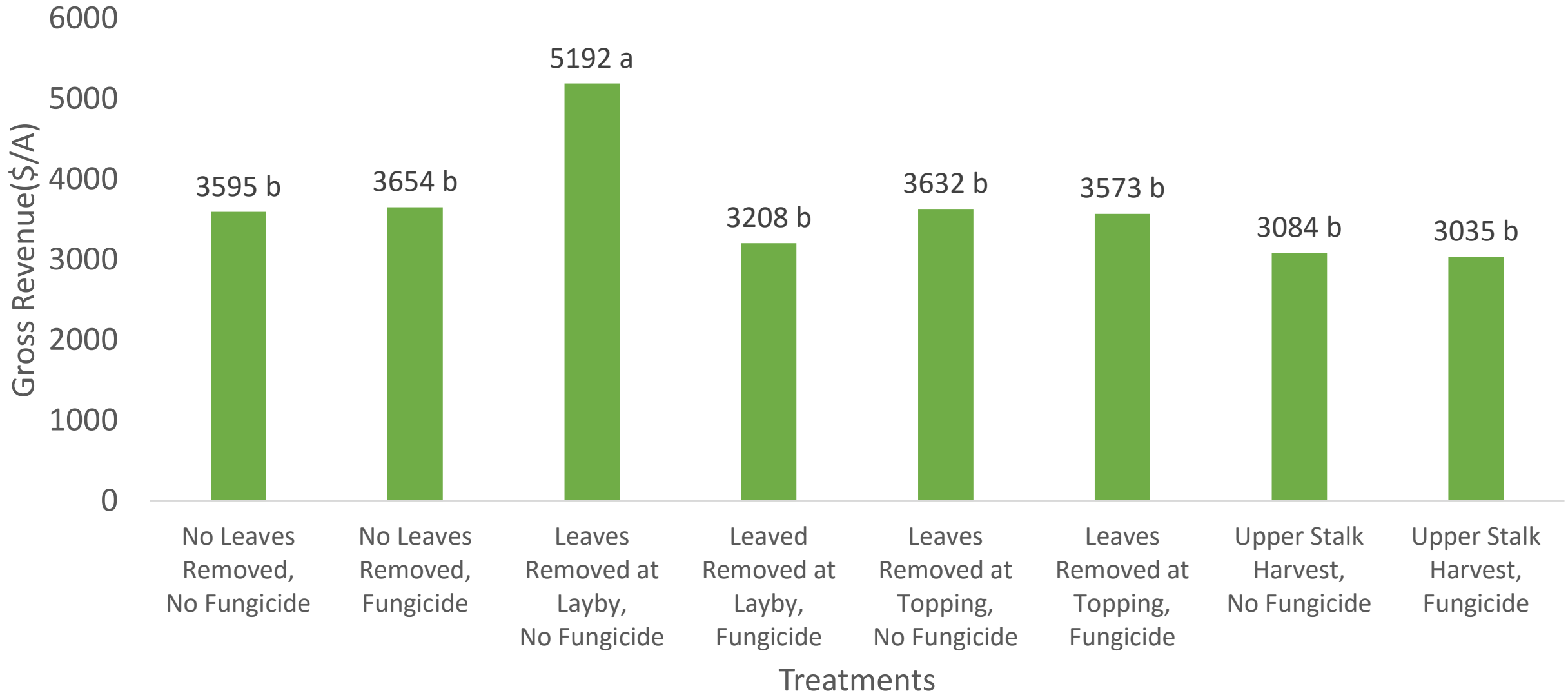
2022 Dealer Lower Leaf Removal - Total Yield/Acre - Mayfield



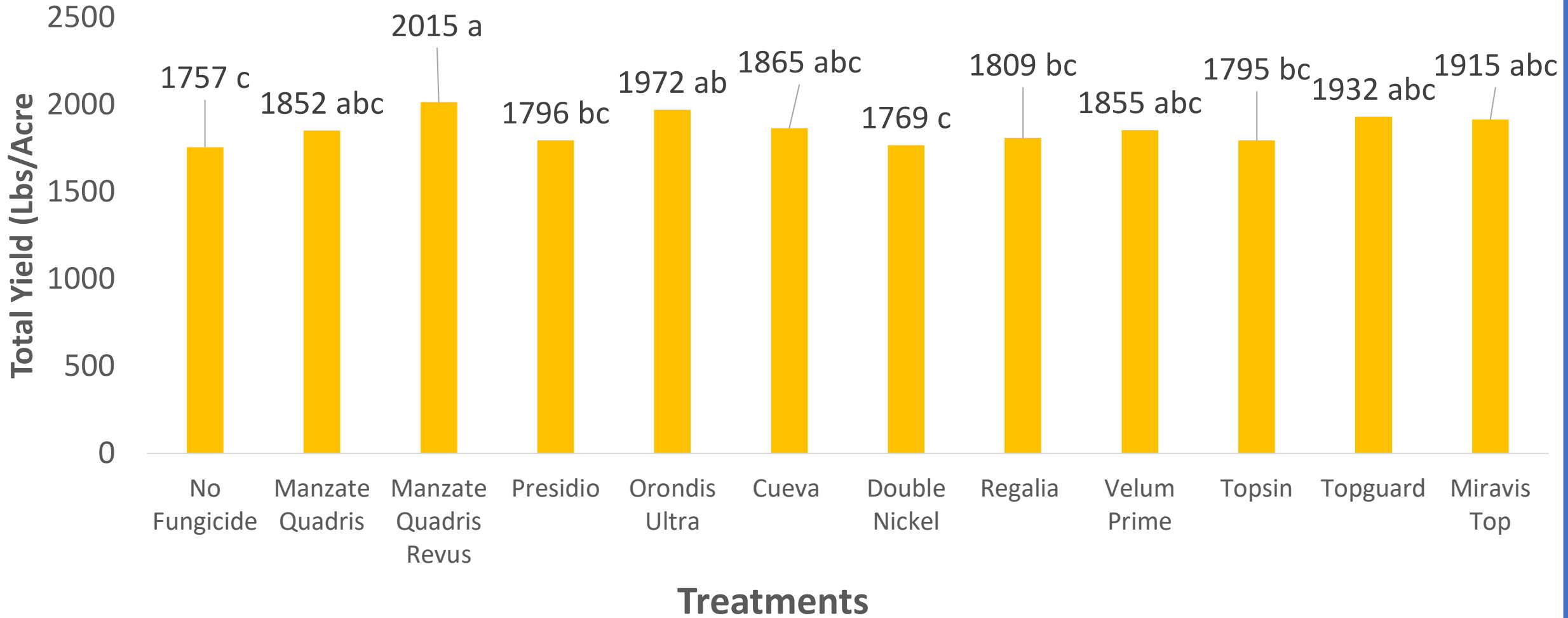
2022 Dealer Lower Leaf Removal - Total Wrapper (lbs/A) Mayfield



2022 Dealer Lower Leaf Removal - Total Gross Revenue (\$/A) - Mayfield

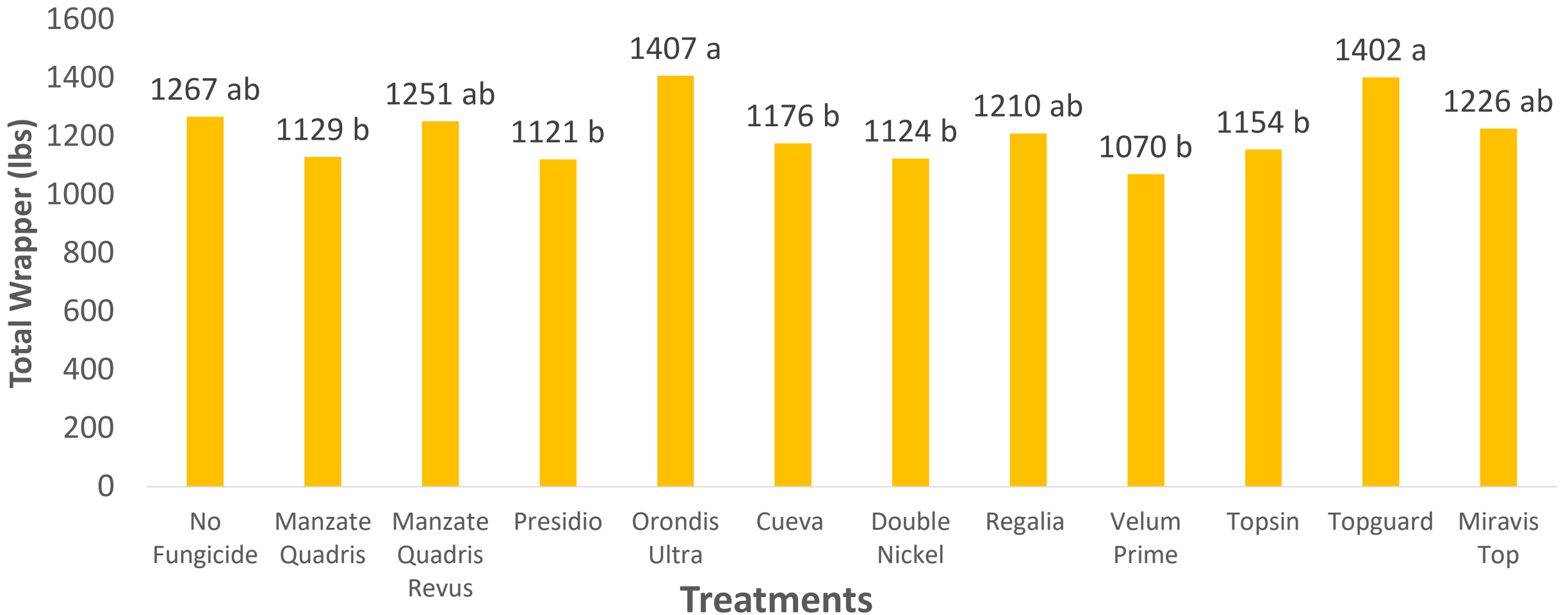


2022 Fungicide Trial: Total Yield/Acre - Springfield



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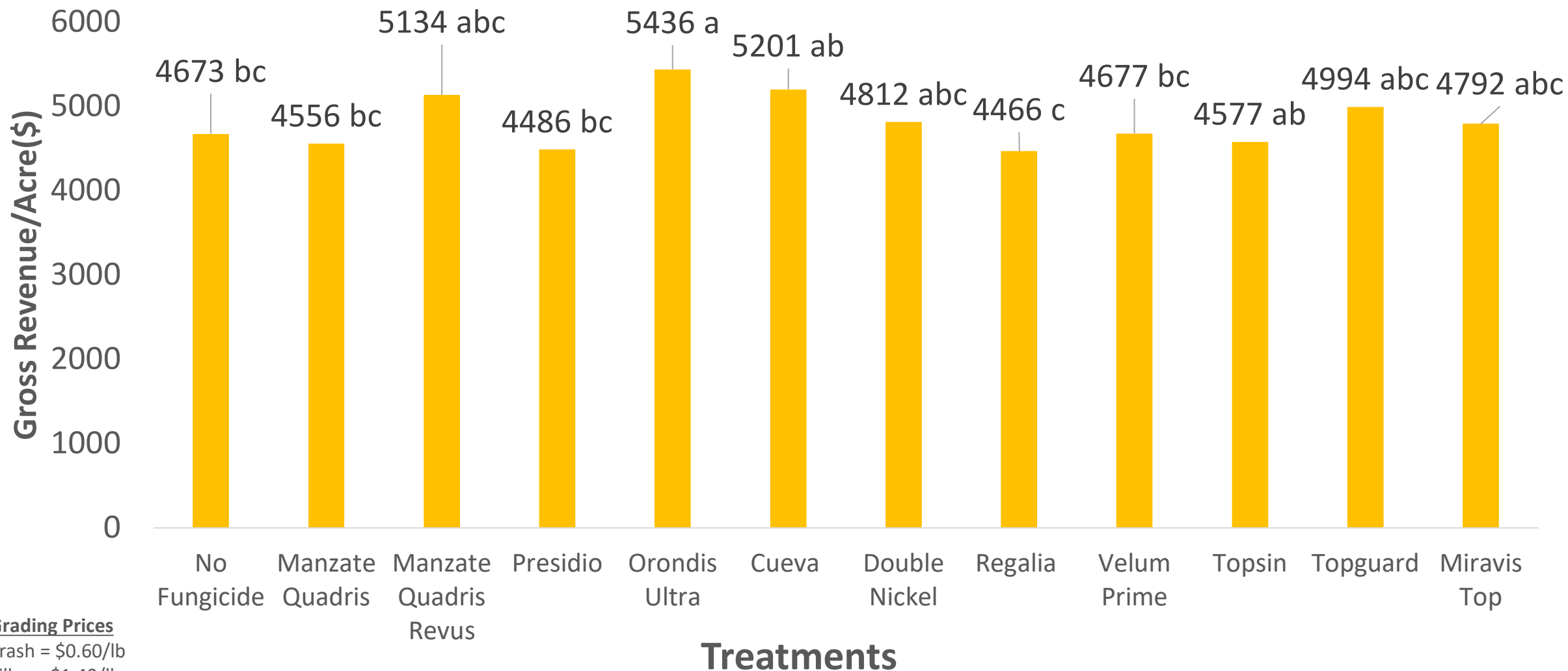
2022 Fungicide Trial: Total Wrapper (lbs) - Springfield



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2022 Fungicide Trial: Gross Revenue/Acre - Springfield



Grading Prices

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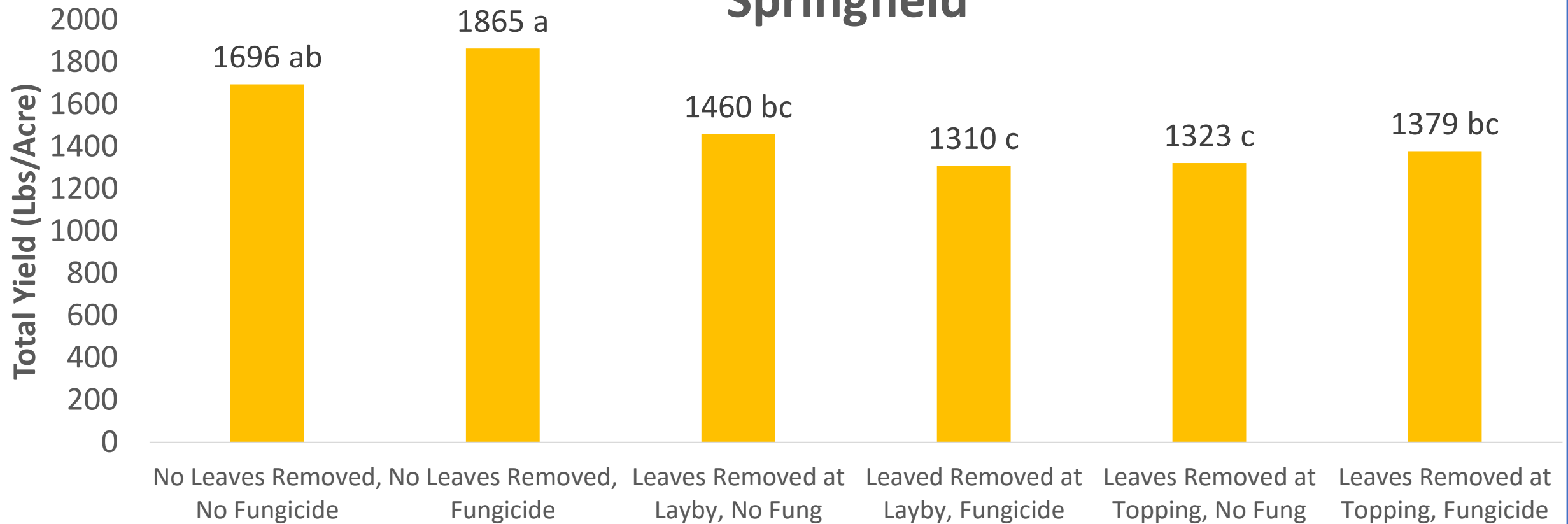
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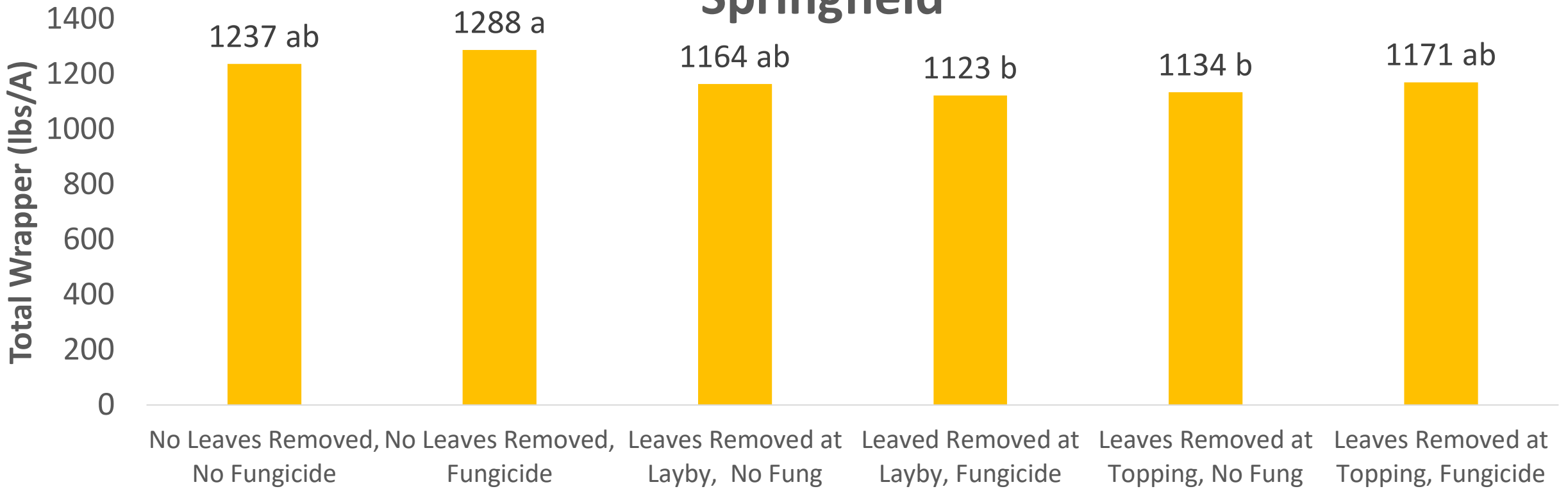
2022 Lower Leaf Removal Trial: Total Yield/Acre - Springfield



Treatments

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2022 Lower Leaf Removal Trial: Total Wrapper (lbs/A) - Springfield

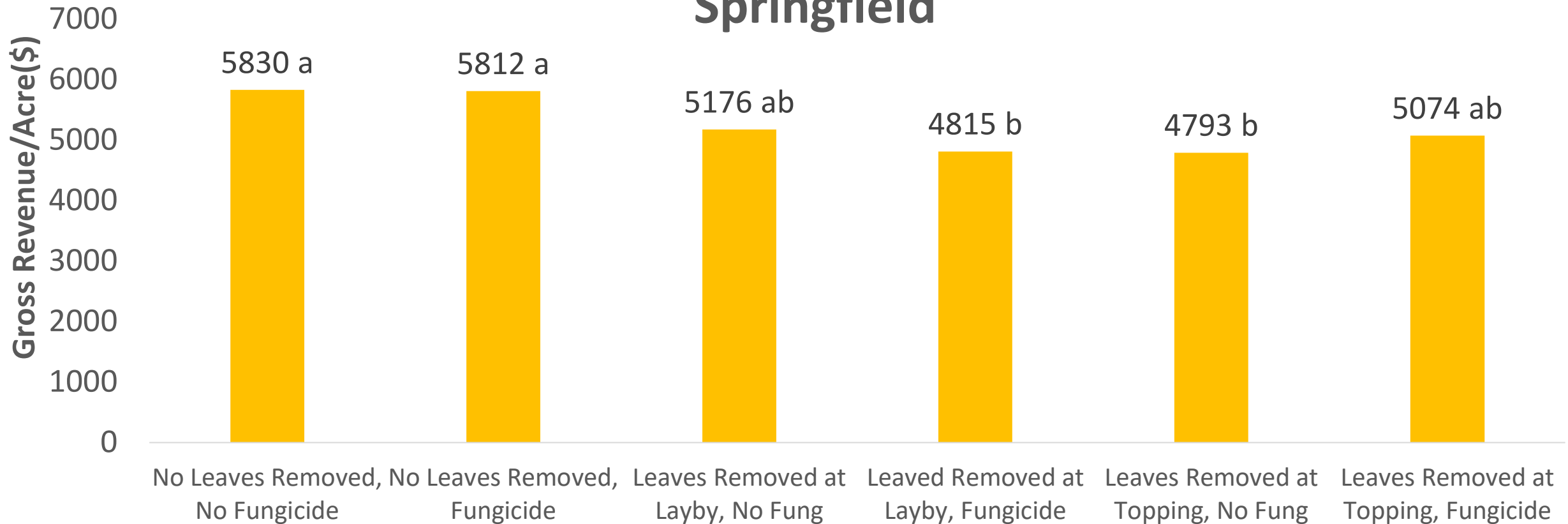


Treatments

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*Total wrapper pounds were a sum of grades #3, #2, #1 yield/acre

2022 Lower Leaf Removal Trial: Gross Revenue (\$/A) - Springfield



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Treatments

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Summary of 2022 CT Broadleaf Research – Fungicide Trial (University Data)

- Dry conditions in 2022 limited treatment differences seen to fungicide treatments (low disease pressure), and limited plant response to lower leaf removal.
- No significant response to fungicides for wrapper leaf production at Mayfield or Springfield.
- Best treatments in 2022 trial (Springfield) were Manzate/Quadris/Revus program and Orondis Ultra

Summary of 2022 CT Broadleaf Research – Lower Leaf Removal Trial (University Data)

- Lower leaf removal resulted in average total yield loss of 71 lb/A (Mayfield) to 413 lb/A (Springfield)
- Unlike in 2021, there were no significant increases in wrapper pounds produced in lower leaf removal treatments.
 - Came closer to seeing a response in wrapper lbs at Mayfield when lower leaves were removed at topping.
- Lower leaf removal resulted in average \$181/A increase in gross revenue at Mayfield, but an average \$856/A decrease in gross revenue at Springfield.

Future Research

- Major problems with Frogeye Leafspot and greenspot have not occurred in 2021-2022. Would like to continue research in a year with more disease pressure.
- Plan to continue with a smaller fungicide trial in 2023, highlighting Miravis Top which should be registered for tobacco soon.
- Plan to continue with a smaller lower leaf removal trial.
- Appreciate continued support of all sponsors in this project.

Acknowledgements

Hail & Cotton, Inc.

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at Princeton