



2021 Connecticut Broadleaf Research

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2021 Connecticut Broadleaf Research Projects

UKREC, Princeton KY

1) Curing Trial:

- Effect of supplemental heat during first 21 days on cured leaf quality

2) Lower Leaf Removal and Fungicide Use Trial:

- Effect of lower leaf removal at topping, with or without fungicide applications, on wrapper leaf quality

3) Fungicide Trial:

- Comparison of fungicide programs for management of greenspot in cured leaf caused by late-season frogeye leafspot infection

*Data presented are from UK grading



Curing Research for CT Broadleaf

2020 Curing Experiment:

- Tobacco harvested August 5
- Housed in a small fire-cured barn
- Heat not used until wet period began August 27
- Charcoal heat used for 4-6 hours/day for 10 days
 - 95-105° F
- Compared to tobacco in adjacent air-cured barn:
 - Heat did not improve tobacco
 - Likely only prevented major problem with mold/houseburn

2021 Curing Experiment:

- Begin heating earlier regardless of outside conditions
 - Start at 1-2 days after housing
 - 4-10 hours of heat/day with propane
 - Continue heat for 21 days to aid in yellowing and early curing



2020 Curing Experiment



2021 Curing Experiment

Effect of Heat During Early Curing

2021 – UKREC, Princeton KY

- Tobacco harvested July 29-30 (2 weeks after topping), housed in either small fire-curing barn or adjacent standard air-curing barn on August 3.
 - SPX seed selection used
 - No fungicides applied to tobacco from either barn
- Daytime supplemental heat (propane) started in small barn the day after housing on August 4 and continued daily for 21 days until August 25.
 - Heat maintained between 100 and 105 F for 4 to 10 hours each day
- Tobacco in heated barn completed curing at least 7 days earlier
- Tobacco from both barns taken down October 4



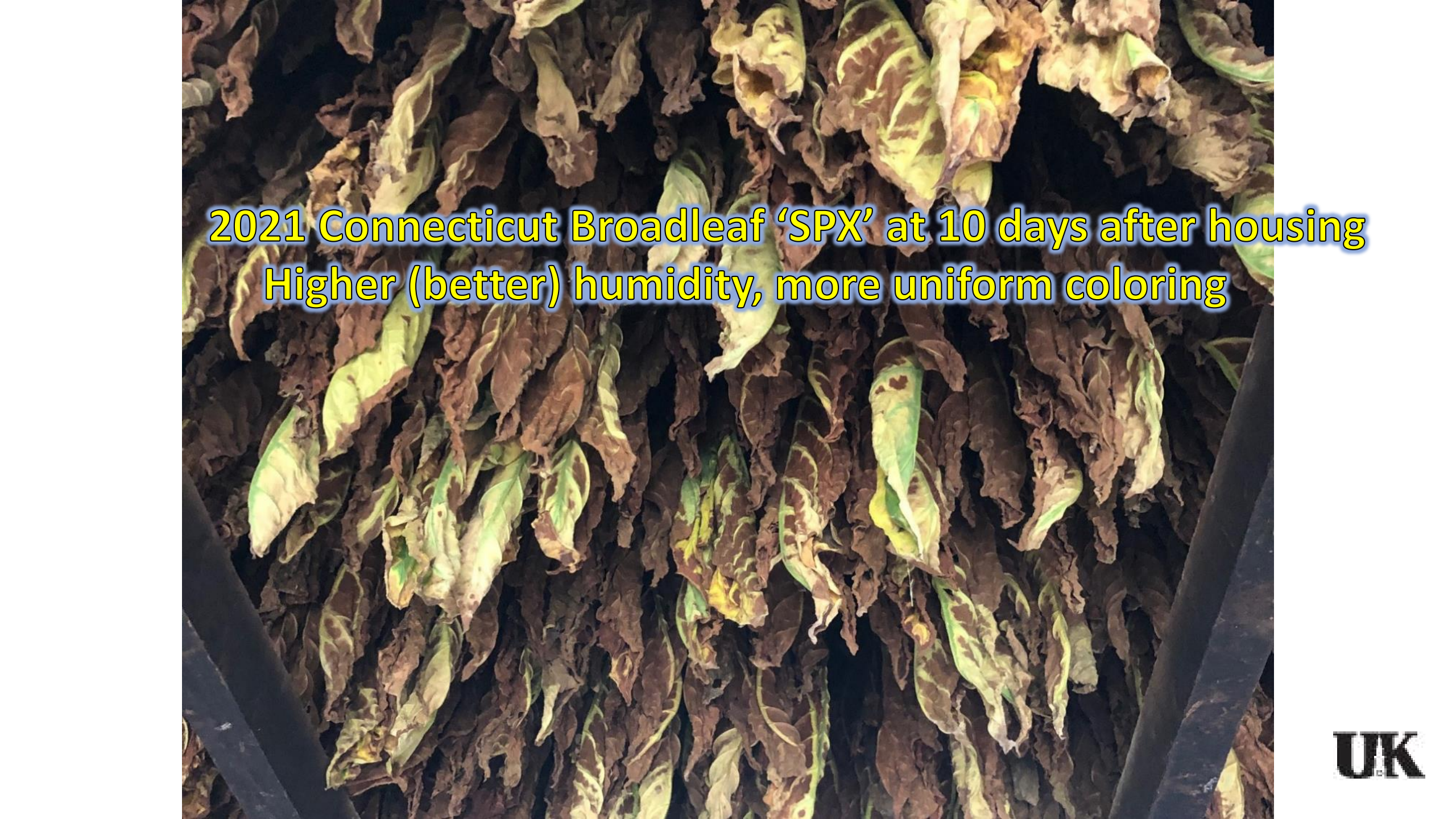
Connecticut Broadleaf Curing Conditions

2021 - Barn with Supplemental Heat vs. Air-Curing Only

Average Barn Temperature and Relative Humidity during 21-day period from August 4 to August 25, UKREC - Princeton KY		
Barn	Mean Temperature (°F)	Mean Relative Humidity (%)
Air-Curing only	77.4	79.0
Supplemental Heat	82.6	73.3



2019 Connecticut Broadleaf C33 'SPX' at 10 days after housing



2021 Connecticut Broadleaf 'SPX' at 10 days after housing
Higher (better) humidity, more uniform coloring

Connecticut Broadleaf Air-Curing Conditions

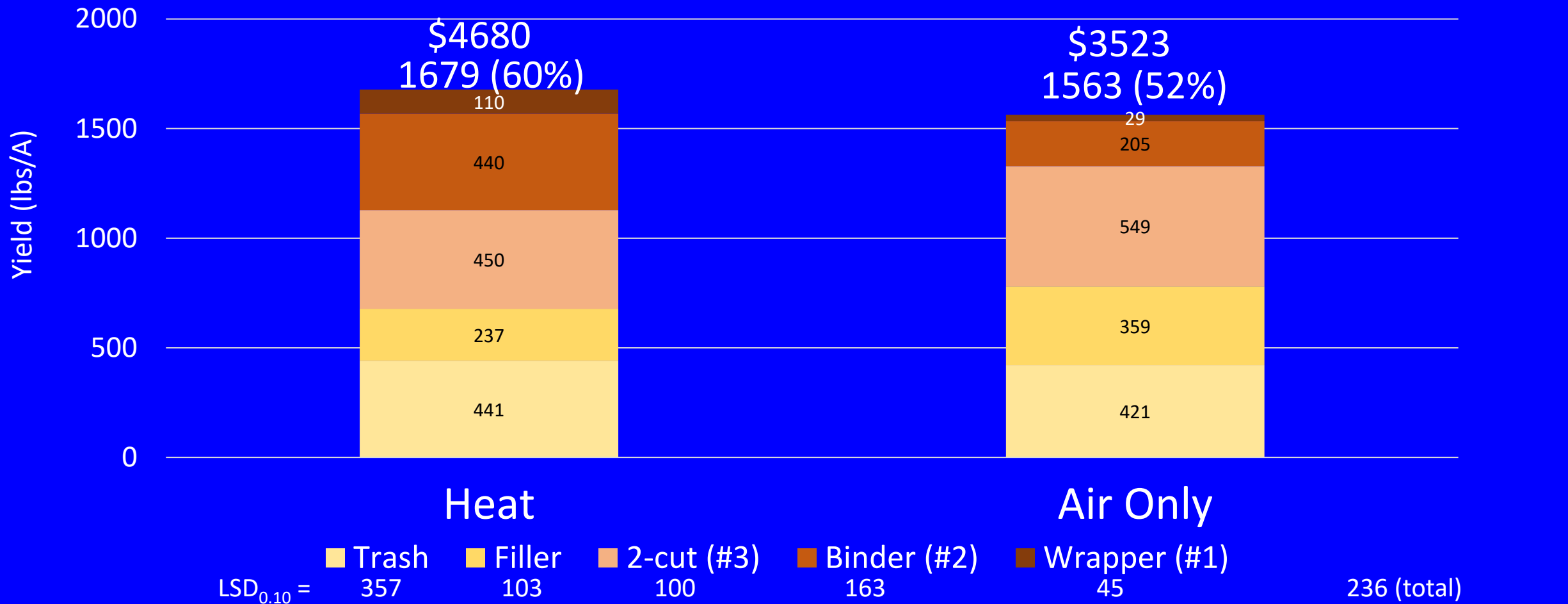
Harvested early August (2019 and 2020), or late July (2021)

Average Air-Curing Barn Temperature and Relative Humidity during 6-week period from mid-August to October 1, UKREC - Princeton KY		
Year	Mean Temperature (°F)	Mean Relative Humidity (%)
2019	75.6	68.4
2020	70.9	77.4
2021	72.9	75.6

Effect of Heat During Early Curing

2021 UKREC, Princeton KY – UK Grading

Total Yield and Yield/Grade, % All Wrapper (#3+#2+#1), Gross Revenue (\$/A)*



*Gross revenue based on Hail & Cotton pricing (trash = \$0.60/lb; straight strip filler = \$1.40/lb; 2-cut = \$3.00/lb; binder = \$4.50/lb; wrapper = \$6.85/lb).

Greenspot in Cured Leaf – very little in 2021

- Lots of greenspot in 2019 and 2020, but almost none in 2021, why?
- We think that greenspot is associated with late-season infections of frogeye leafspot that are occurring in the last 7-10 days before harvest
- Could infection be correlated with significant rain events in the last 10 days before harvest?
 - Rainfall at UKREC, Princeton KY in last 10 days before harvest:
 - 2019: 1.7 inches
 - 2020: 1.8 inches
 - 2021: 0.17 inches



Curing Concerns in Kentucky

- Air-cured tobacco harvested late July/early August, curing will be complete while temperatures and RH are still high
- Mold will be a concern
- Add heat to lower RH to prevent mold growth at end of cure
- Some buyers are allowing use of denatured alcohol or vinegar to remove mold



Effect of Lower Leaf Removal and Fungicide Use

2021 – UKREC, Princeton KY

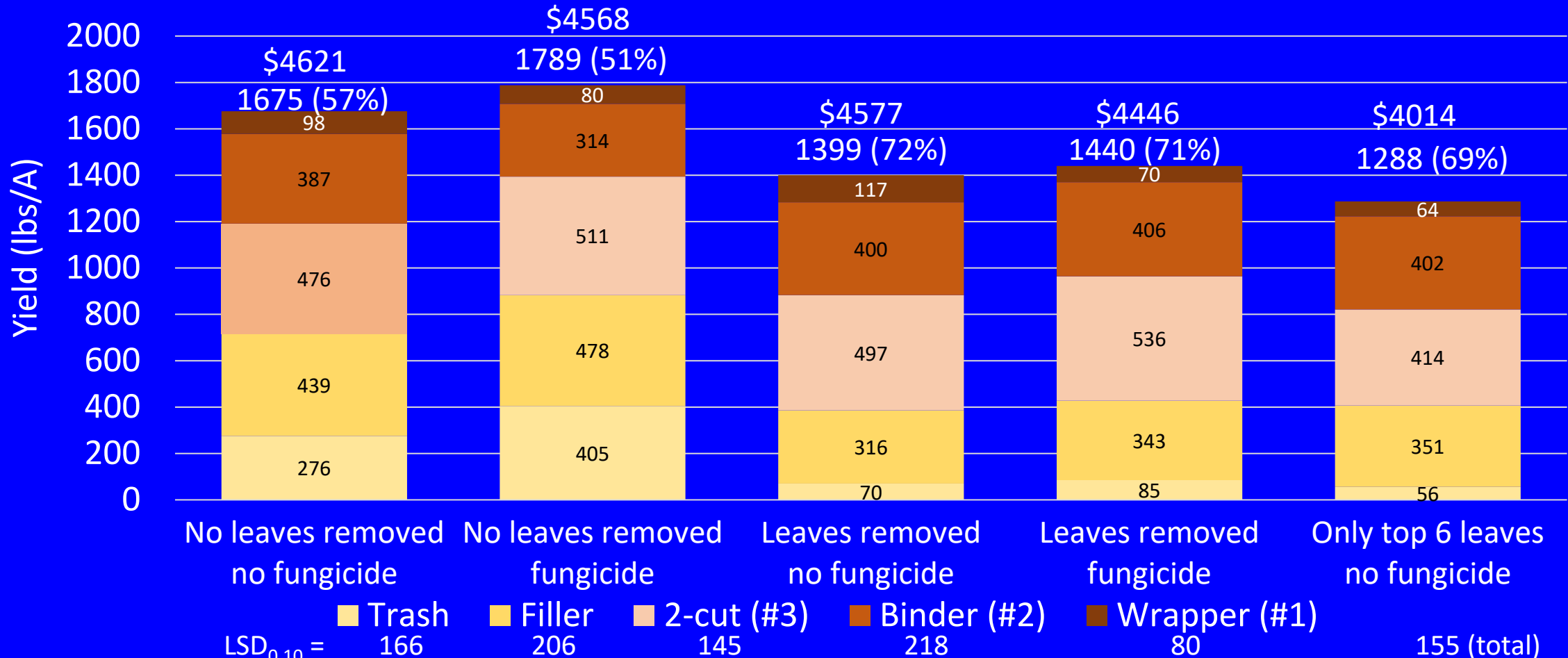
- SPX seed selection used
- Treatments:
 - No lower leaves removed, No fungicides used
 - No lower leaves removed, Quadris at topping – Double Nickel 3 d prior to harvest
 - 4 bottom leaves removed at topping, No fungicides used
 - 4 bottom leaves removed at topping, Quadris at topping – Double Nickel 3 d prior to harvest
 - No lower leaves removed, No fungicide used, Only top 6 leaves harvested
- All tobacco topped to 10 leaves and harvested 2 weeks after topping
- In leaf removal plots, leaves were moved from row middles



Effect of Lower Leaf Removal and Fungicide Use

2021 UKREC, Princeton KY – UK Grading

Total Yield and Yield/Grade (% All Wrapper (#3+#2+#1))
Gross Revenue (\$/A)*



155 (total)
18 (% all wrapper)

*Gross revenue based on Hail & Cotton pricing (trash = \$0.60/lb; straight strip filler = \$1.40/lb; 2-cut = \$3.00/lb; binder = \$4.50/lb; wrapper = \$6.85/lb).



2021 CT Broadleaf Fungicide Research: Focus on Late-Season Frogeye Control (Greenspot in Cured Leaf)



Trt	Fungicide/Fungicide Program	Chemical Name	Classification	Number of Applications	Timing of Final Spray
1	Manzate/Quadris	mancozeb/axozystrobin	Fungicide	2	21 d
2	Manzate/Quadris/Revus	mancozeb/azoxystrobin/ mandipropamide	Fungicide	5	7 d
3	Presidio	fluopicolide	Fungicide	2	7 d
4	Orondis Ultra	oxathiapiprolin/mefenoxam	Fungicide	2	7 d
5	Cueva	copper octanoate	Copper	5	3 d
6	Double Nickel	<i>Bacillus amyloliquefaciens</i> strain D747	Biological	5	3 d
7	Regalia	<i>Reynoutria sachalinensis</i>	Biological	5	3 d
8	Velum Prime	fluopyram	Fungicide	2	30 d
9	EXPERIMENTAL A	thiophanate-methyl	Fungicide	4	14 d
10	EXPERIMENTAL B	flutriafol	Fungicide	3	14 d
11	EXPERIMENTAL C	Pydiflumetofen+difenoconazole	Fungicide	3	14 d

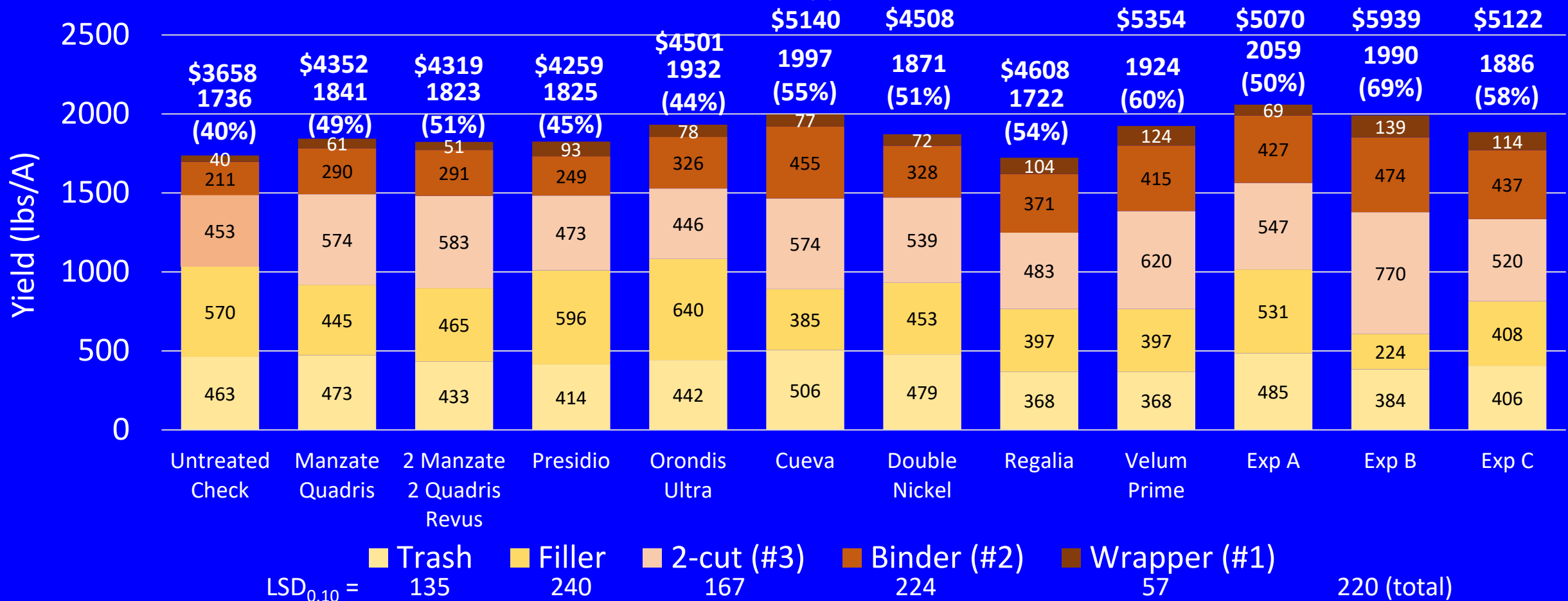
*Foliar insecticide program for all treatments was Assail (4 oz/A) at 3 and 5 weeks, and Exirel (20 oz/A) at 7 weeks.



Effect of Fungicides on Wrapper Yield

2021 UKREC, Princeton KY – UK Grading

Total Yield and Yield/Grade (% All Wrapper (#3+#2+#1)), Gross Revenue (\$/A)



220 (total)
14 (% all wrapper)
\$979 (gross revenue)

*Gross revenue based on Hail & Cotton pricing (trash = \$0.60/lb; straight strip filler = \$1.40/lb; 2-cut = \$3.00/lb; binder = \$4.50/lb; wrapper = \$6.85/lb).

Acknowledgements

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