

Early Experiences with Connecticut Broadleaf Cigar Wrapper Tobacco in Kentucky and Tennessee



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Connecticut Broadleaf

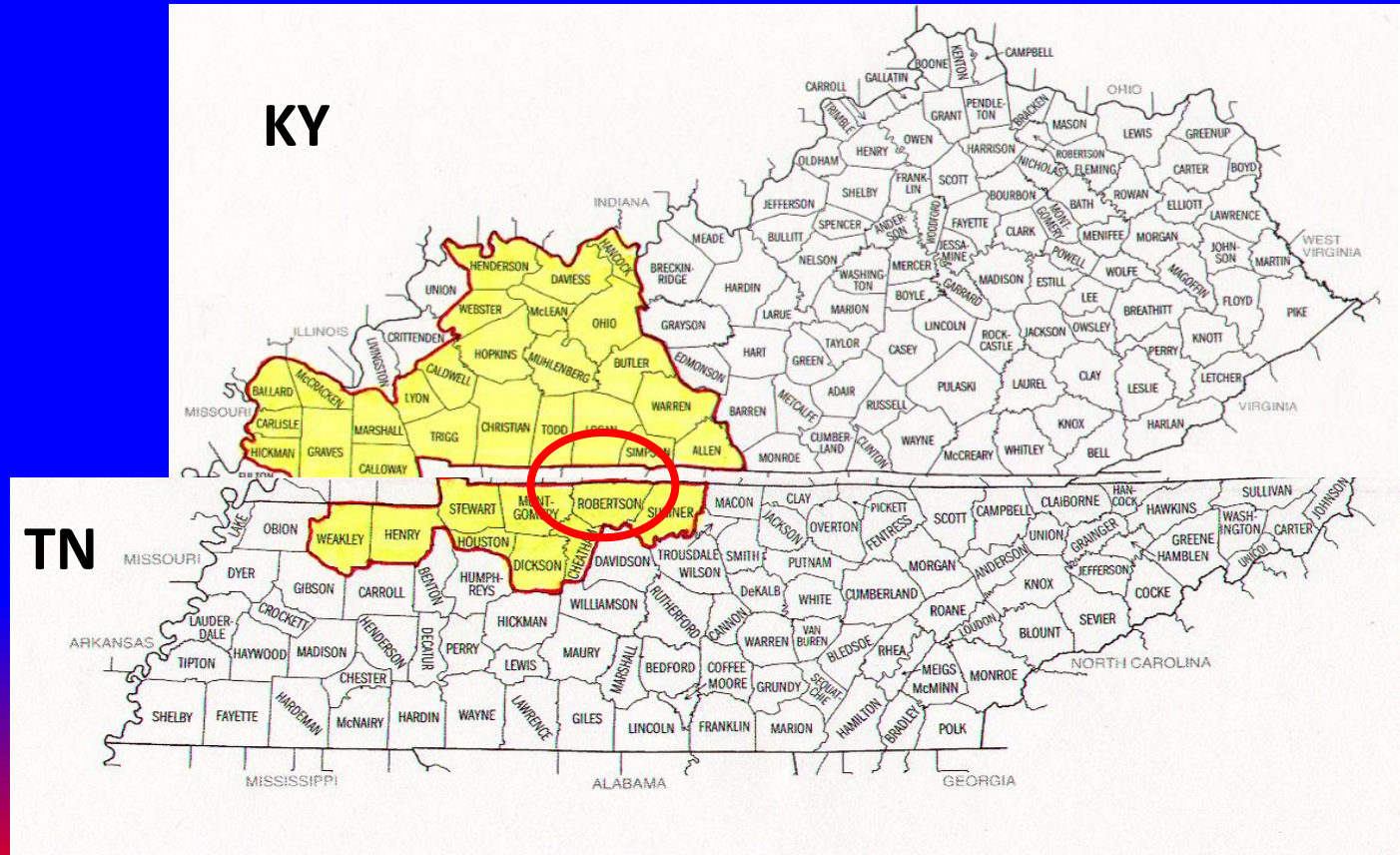
- Leaf dealers and others have suggested increased demand for this type for last 2-3 years.
- Reduced supply from traditional production area in Connecticut and Massachusetts.
- Used primarily in rough-cut cigars
- Small acreages produced in KY/TN in 2017 and 2018
- Around 1,000 acres grown in 2019.

Connecticut Broadleaf

- CT Broadleaf could be good opportunity for KY/TN growers that have seen declining contract volume.
- Dark tobacco growers accustomed to management for high leaf quality standards.
- KY-TN dark tobacco production area has history of cigar wrapper production
 - Niche market (1-2% of total production)
 - Mostly fire-cured, some air-cured

Traditional Cigar Wrapper Production Area in KY/TN

- Mostly in TN: Robertson, Montgomery, Cheatham Co.
- Logan, Simpson, Todd Co. KY



CT Broadleaf Production Timeline

- Short-season crop
 - Fast growing in greenhouse and field
 - Early harvest before leaf deterioration begins
- Transplants ready in 7 weeks (8 weeks for burley/dark)
- 7 weeks from transplanting to topping (9 wks for burley/dark)
- Harvest at 2 to 3 weeks after topping (4-6 wks for burley/dark)
- 9 to 10 week field season (14-16 weeks for dark-fired)
- Harvest complete before burley or dark harvest begins
- Average yield for CT Broadleaf: 2,000 lbs/A
 - 2,500 lbs/A for burley; 3,000 lbs/A for dark air; 3,500 lbs/A for dark fired

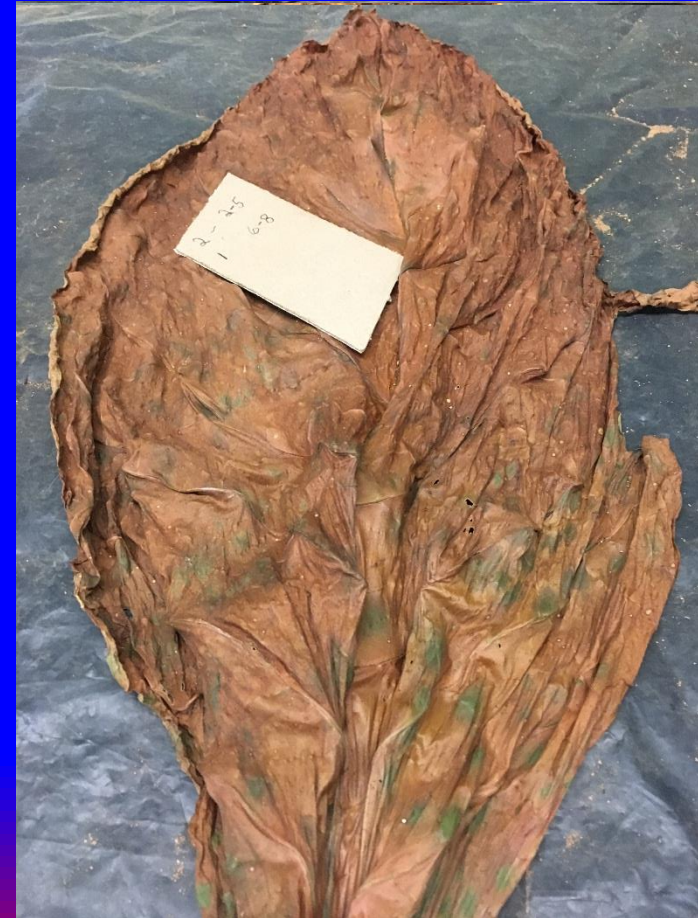
CT Broadleaf Pricing

High Risk but High Reward

Grade	Price Range (\$/lb)
Wrapper (#1)	\$5.80 - \$6.25/lb
Binder (#2 wrapper)	\$3.80 - \$4.65/lb
Filler	\$1.50 - \$1.75/lb
Trash	\$0.50 - \$0.60/lb

CT Broadleaf Grading/Sorting

- Wrapper grade depends on how many 'cuts' can be made in a leaf
- 'Cut' is 3" to 5" area
 - Uniform brown color
 - No flaws (white or green spots, holes)
 - Leaf at least 9" wide
- #1 Wrapper: 6 to 8 cuts
- #2 Wrapper (binder): 2 to 5 cuts
- Filler: Solid leaf but 0-1 cut
- Trash: Excessive ground injury
- Profitability depends on %wrapper
 - 50%+ wrapper



2019 CT Broadleaf Research Projects

- Nitrogen rate trial
- Variety Trial
- Fungicide Trial

General Management for Trials

- 175 lbs N/A for variety trial and fungicide trial
- 40" rows x 24" plant spacing = 6534 plants/acre
 - Transplanted May 28
 - TPW: 8 oz Ridomil/7 oz Coragen/3 oz Admire Pro/5 oz Capture
- 3 foliar insecticide applications
 - Normally only 1 with Coragen
- Bud topped to 14 leaves (3 toppings)
- Contact fatty alcohol/Butralin droplined for sucker control
- Harvested August 5 (3 weeks after topping)
- Air-cured in traditional dark air-cured barn, no heat added



2019 CT Broadleaf Nitrogen Rate Trial

- Crider silt loam, pH 5.9
- 1 ton/A lime, 70 lbs P₂O₅/A, 150 lbs K₂O/A
- RCBD with 4 replications of nitrogen rate treatments
- 'C33' variety used

- 7 nitrogen rates: ammonium nitrate
 - 75 lbs N/A (broadcast PREtransplant)
 - 100 lbs N/A (75 PRE + 25 sidedress at 2 wks)
 - 125 lbs N/A (75 PRE + 50 SD)
 - 150 lbs N/A (75 PRE + 75 SD)
 - 175 lbs N/A (75 PRE + 100 SD)
 - 200 lbs N/A (75 PRE + 125 SD)
 - 225 lbs N/A (75 PRE + 150 SD)

2019 Connecticut Broadleaf Nitrogen Rate Trial

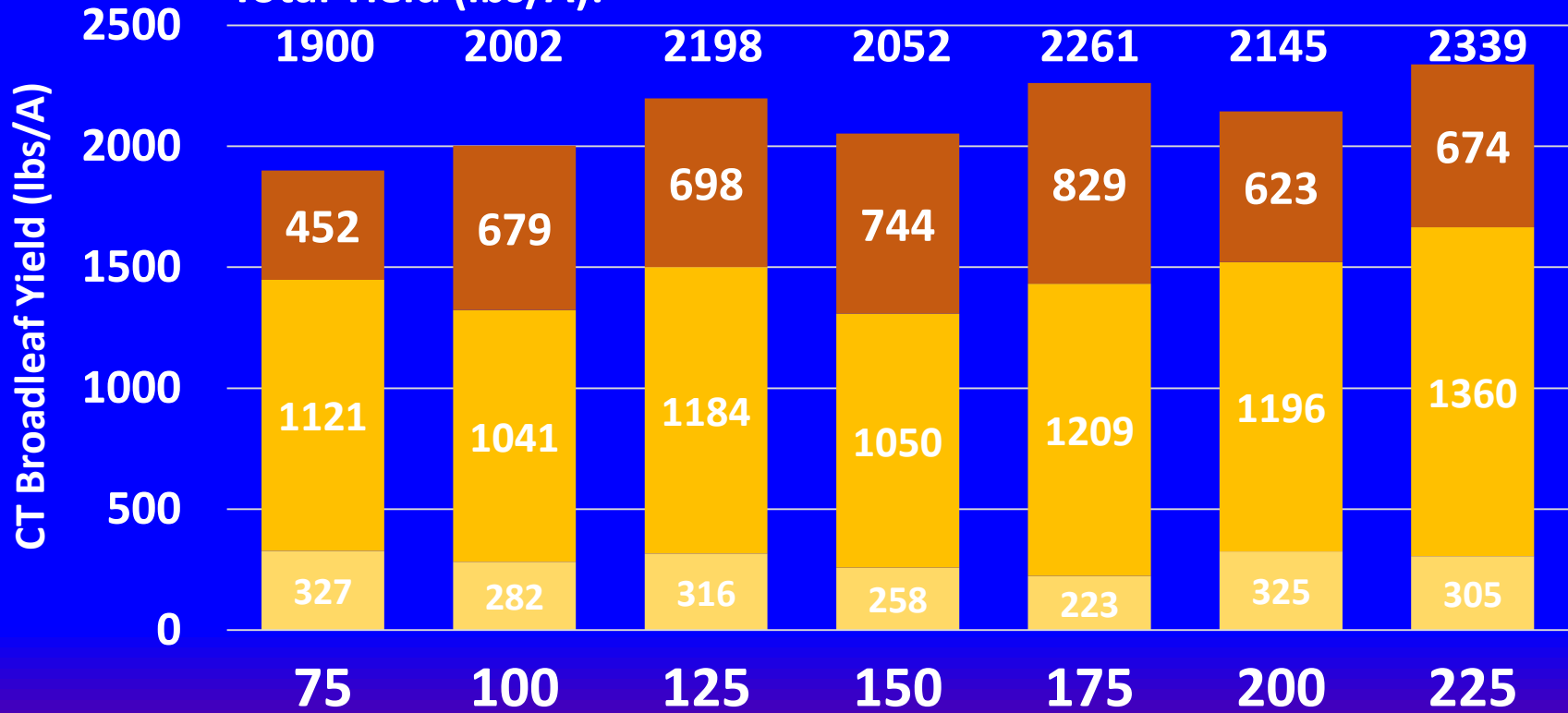
UKREC, Princeton KY

Variety: C33
Transplanted May 28
Harvested 3 wk after topping

LSD(0.10) = 53 261 224 334 (total)

Trash Filler # 2 Wrapper # 1 Wrapper

Total Yield (lbs/A):



N rate (lbs N/A, 75 lb N PRE, remainder sidedressed at 2 wk)

% Wrapper: 23 34 32 36 37 29 29

LSD(0.10) for % wrapper = 9

Mean total yield for trial = 2148 lbs/A; mean % wrapper = 32%

CT Broadleaf Variety Trial

CT Broadleaf Variety	Disease resistance
A1	Fusarium wilt, TMV
B1	Fusarium wilt, TMV
B2	Fusarium wilt, TMV, black root rot, blue mold male sterile hybrid
D1	Fusarium wilt, TMV, black root rot
D2	Fusarium wilt, TMV, black root rot, cyst nematode
C33	No disease resistance open-pollinated industry standard

- No black shank resistance in any CT Broadleaf variety
 - Must put in clean field and use fungicides in KY/TN
- Variety trial was RCBD with 4 replications of treatments
 - 2-row plots, 35 ft. long

2019 CT Broadleaf Variety Trial – Pre-Harvest



C33

No disease resistance



A1

Fusarium wilt, TMV



B1

Fusarium wilt, TMV



B2

Fusarium wilt, TMV, black root rot, blue mold
Male Sterile Hybrid



D1

Fusarium wilt, TMV, black root rot



D2

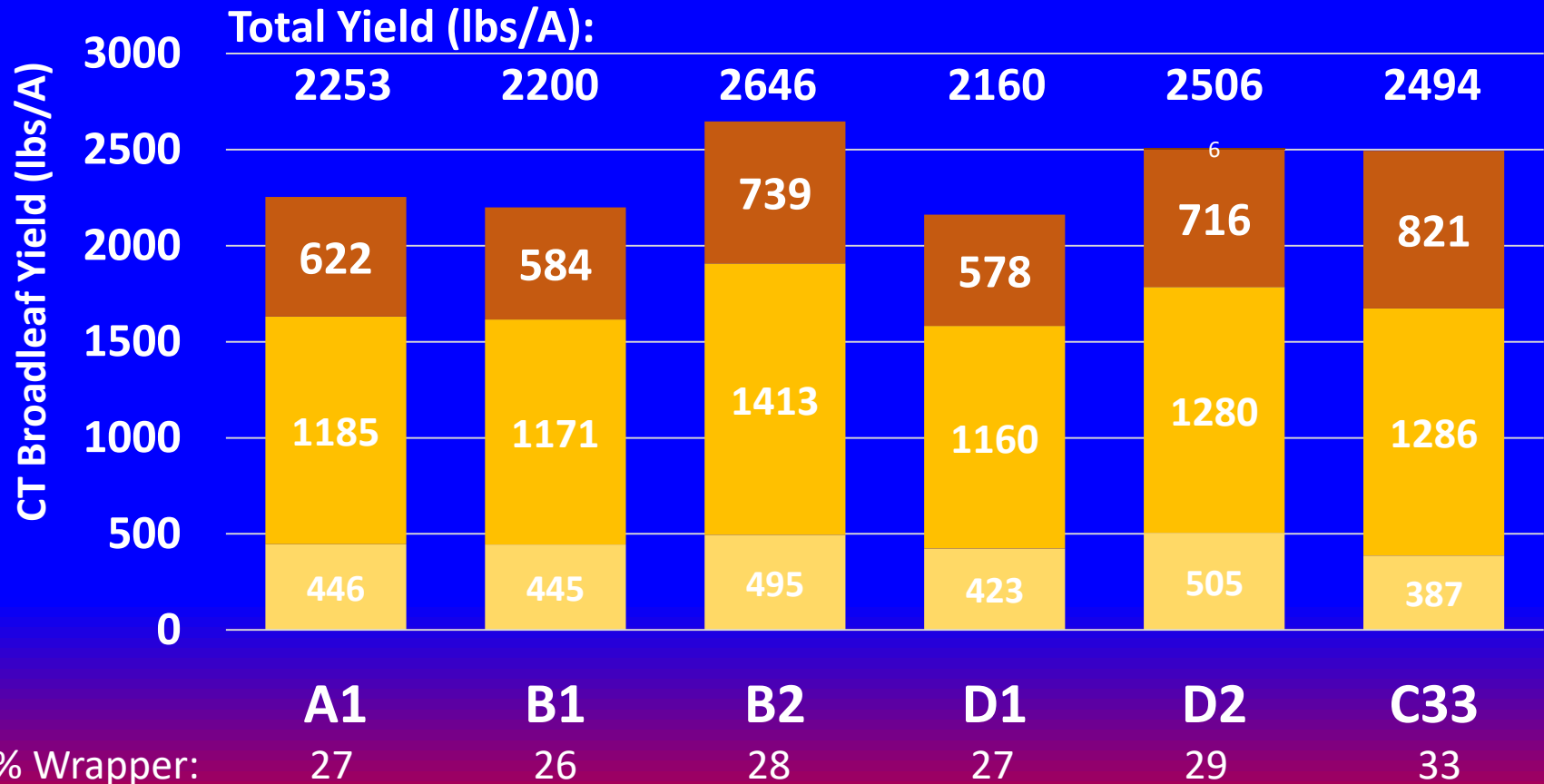
Fusarium wilt, TMV, black root rot, cyst nematode

2019 Connecticut Broadleaf Variety Evaluation

UKREC, Princeton KY

N: 175 lbs N/A (75 PRE; 100 Sidedress)
 Transplanted May 28
 Harvested 3 wk after topping

LSD(0.10) = 78 244 242 270 (total)
 ■ Trash ■ Filler ■ # 2 Wrapper ■ # 1 Wrapper



LSD(0.10) for % wrapper = 9.7

Mean total yield for trial = 2376 lbs/A; mean % wrapper = 28%

'Greenspeck' in Cured CT Broadleaf

- Associated with late frogeye leafspot infections occurring within 7 days of harvest
 - Not visible at harvest
 - *Cercospora* pathogen produces a toxin that locks chlorophyll into areas of infection where surrounding areas cure to brown
 - Research may address if greenspeck is affected by:
 - Late fungicide applications
 - Nitrogen rate
 - CT variety



CT Broadleaf C33 at 30 days after housing

Optimum Curing Conditions for CT Broadleaf?

- Ideal curing conditions for burley and dark air-cured:
 - 60 to 90 F average daily air temperature
 - 65 to 75% average daily relative humidity
- Curing conditions at Princeton barn in 2019
 - 45 days: early August to late September
 - Mean temperature = 74.7 F
 - Mean relative humidity = 67.2%
 - Very dry conditions in late August and September
 - Watered floor and walls of barn down during critical periods
- Could curing conditions also be involved in greenspeck?
- Should average RH be <65% for CT Broadleaf?

2019 CT Broadleaf Fungicide Trial

Trt	Treatment	Rate/Acre	Timing	Spray Volume
1	No Fungicide	-	-	-
2	Quadris	8 oz/A	Layby (4 wks)	15 gal/A
3	Quadris	8 oz/A	Layby (4 wks)	15 gal/A
	Manzate	2 lb/A	5.5 wks	40 gal/A
	Quadris	8 oz/A	7 wks (topping – 21 d PHI)	44 gal/A

- Variety: C33
- RCBD with 5 replications of treatments
- Hollow cone nozzles

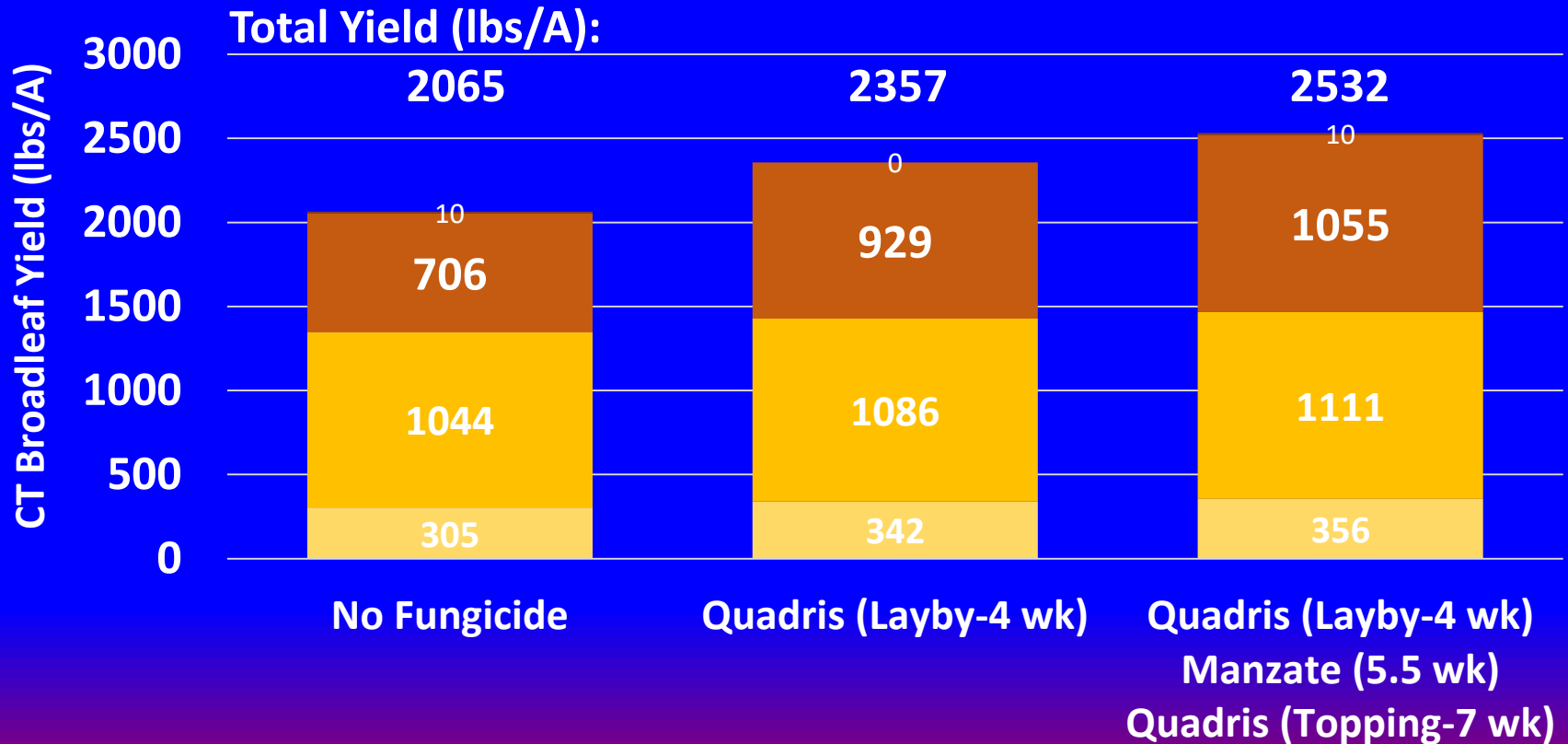
2019 Connecticut Broadleaf Fungicide Trial

UKREC, Princeton KY

Variety: C33
 N: 175 lbs N/A (75 PRE; 100 Sidedress)
 Transplanted May 28
 Harvested 3 wk after topping

LSD(0.10) = 55 167 349 13 423 (total)

■ Trash ■ Filler ■ # 2 Wrapper ■ # 1 Wrapper



% Wrapper: 33
 LSD(0.10) for % wrapper = 10.2

39 42

Mean total yield for trial = 2318 lbs/A; mean % wrapper = 38%

2019 Summary of Research Trials

- Nitrogen rate trial:
 - Optimum N rate: 125 to 175 lbs N/A
- Variety trial:
 - Highest total yield with B2, D2, and C33
 - Highest %wrapper with C33 (33%)
- Fungicide trial:
 - Good response to fungicide applications
 - More fungicides = higher yield and higher % wrapper
 - Higher %wrapper as a result of less greenspeck

Adjustments to Management Practices

- Plant population around 6,000 plants/A
 - Larger leaves, less disease pressure
- Top to 12 leaves instead of 14 leaves
 - Larger leaves and easier to handle short plants
- Harvest a few days earlier (2.5 weeks after topping)
- Scout intensively and make extra insecticide applications for fleabeetle control.
- Make extra fungicide applications
- Consider adding heat (no smoke) to lower humidity in curing barn.

Current Situation and Future Research

- Over 1,000 acres of CT Broadleaf grown in KY/TN in 2019
- Plans for more acreage in 2020
- Growers with experience with dark-fired cigar wrapper have done well with CT Broadleaf and will grow more
- Some burley growers did well with CT Broadleaf in 2019
- Growers with bad experiences in 2019 will not grow more
- Extension fact sheet for CT Broadleaf: continued revision

http://darktobacco.ca.uky.edu/files/connecticut_broadleaf_cigar_wrapper_tobacco_fact_sheet_2019.pdf

Questions?



- Appreciation to Lancaster Leaf Tobacco Company of PA for funding support of 2019 Research Projects
- Appreciation to Dr. Jim LaMondia at CAES for seed and information