

Cigar Wrapper Response to Nitrogen Fertilizer Rates in Western North Carolina

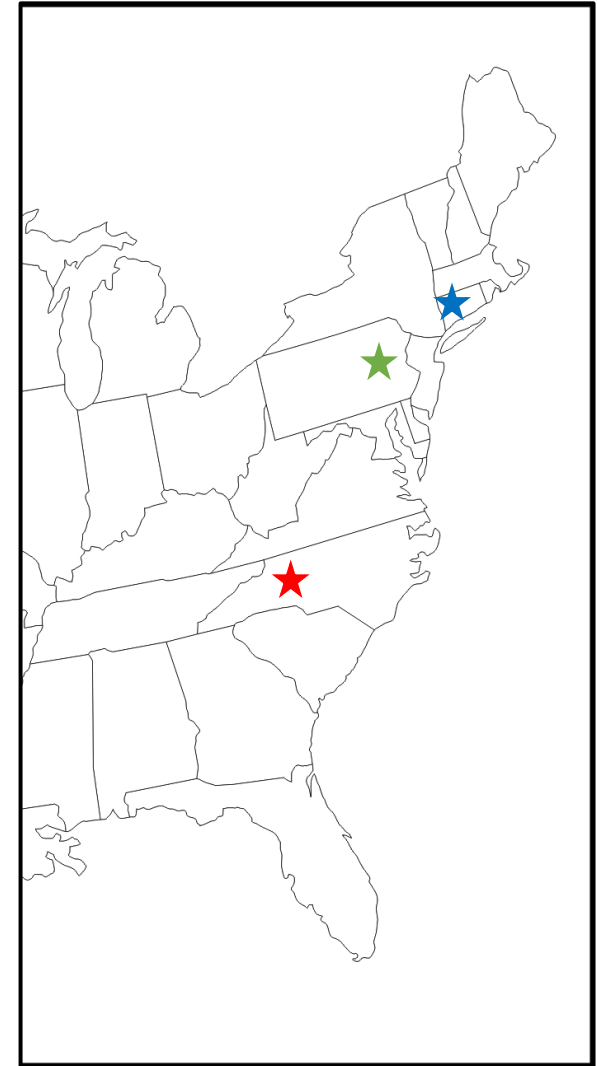
**Maggie M. Short, Matthew C. Vann, Joseph A. Cheek,
Jeremy L. Machacek, D. Scott Whitley**

NC STATE UNIVERSITY

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Introduction – Cigar Wrapper Tobacco

- New crop to North Carolina[★]
- Traditionally grown in the Connecticut River Valley,[★] Pennsylvania,[★] and surrounding areas
- Need localized extension recommendations



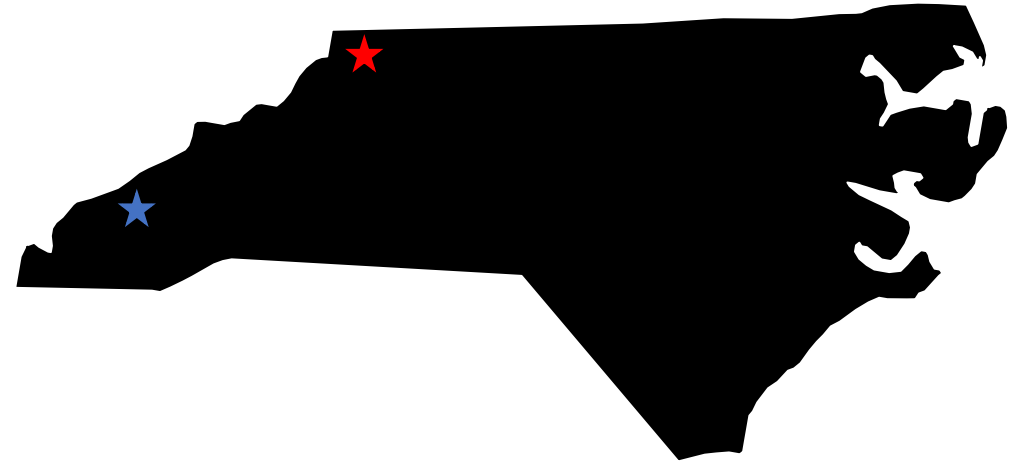
Objective

Quantify the impact of N application rate on cigar wrapper tobacco yield, cured leaf grade distribution, and cured leaf chemistry in western North Carolina



Materials & Methods

- 2020
- Two locations:
 - Upper Mountain Research Station
(*Laurel Springs, NC*)[★]
 - Mountain Research Station
(*Waynesville, NC*)[★]
- Single row plots (1.22m x 10m)
- Thirty treatments; four replications



Materials & Methods - Treatments

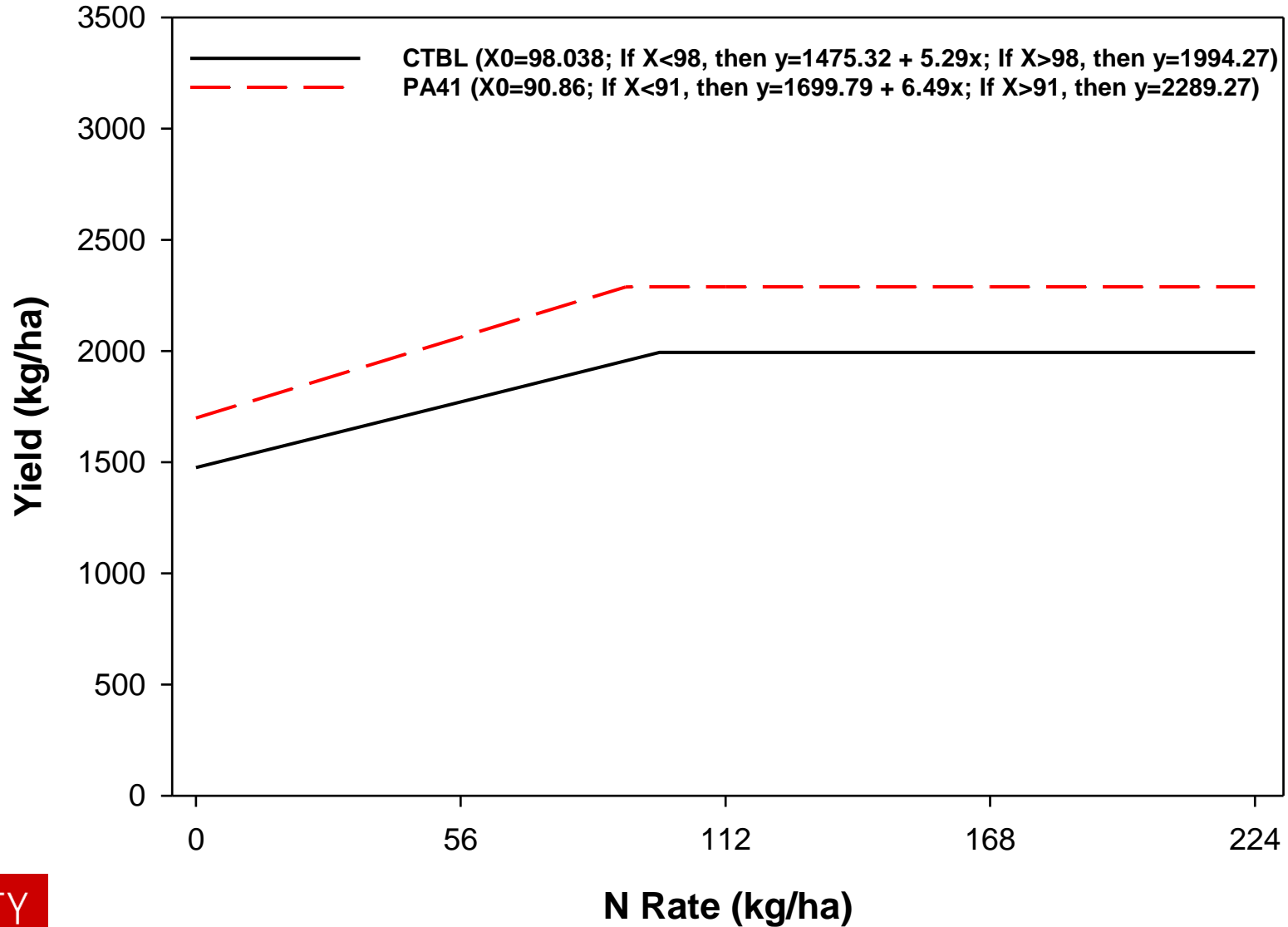
- Factorial treatment arrangement: 5 N rates x 6 varieties = 30
- N rates: 0, 56, 112, 168, 224 kg/ha
 - Applied as 28 % UAN
 - Split-applied @ 10 DAT and Layby
- Two types of varieties used:
 - Connecticut Broadleaf (CTBL) – D1, B2, PAB
 - Pennsylvania Seedleaf (PA41) – Grower's Choice, Eshbach, Welk's Pride

Materials & Methods - Data

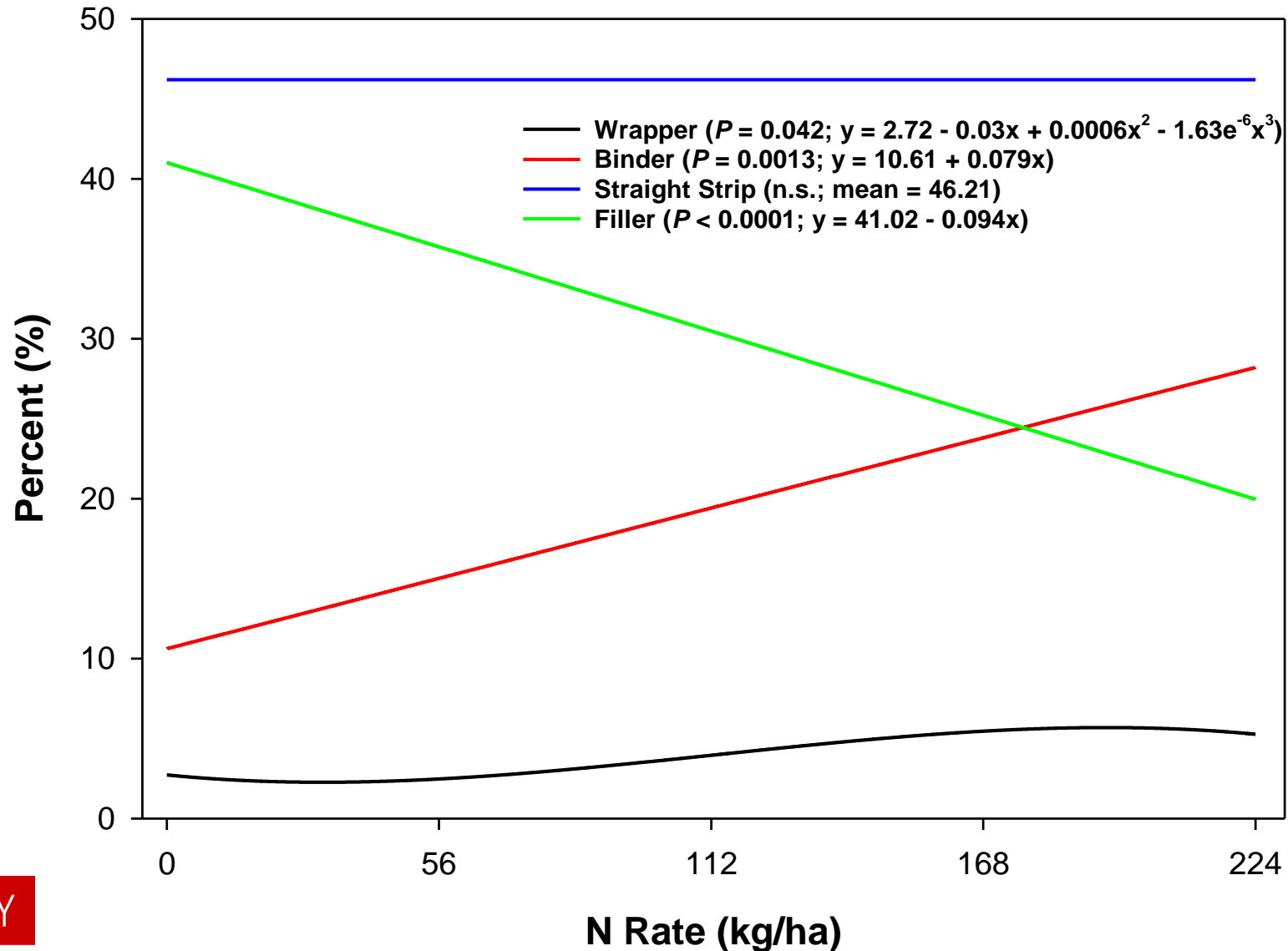
- Data collection
 - Total yield per plot (weight)
 - Grade distribution: wrapper, binder, straight strip, filler
 - Cured leaf chemistry
- Data analysis using SAS ver. 9.4
 - Yield: linear plateau in PROC NL MIXED
 - Other: regression in PROC GLIMMIX
 - Random effects: Environment and Rep within Environment



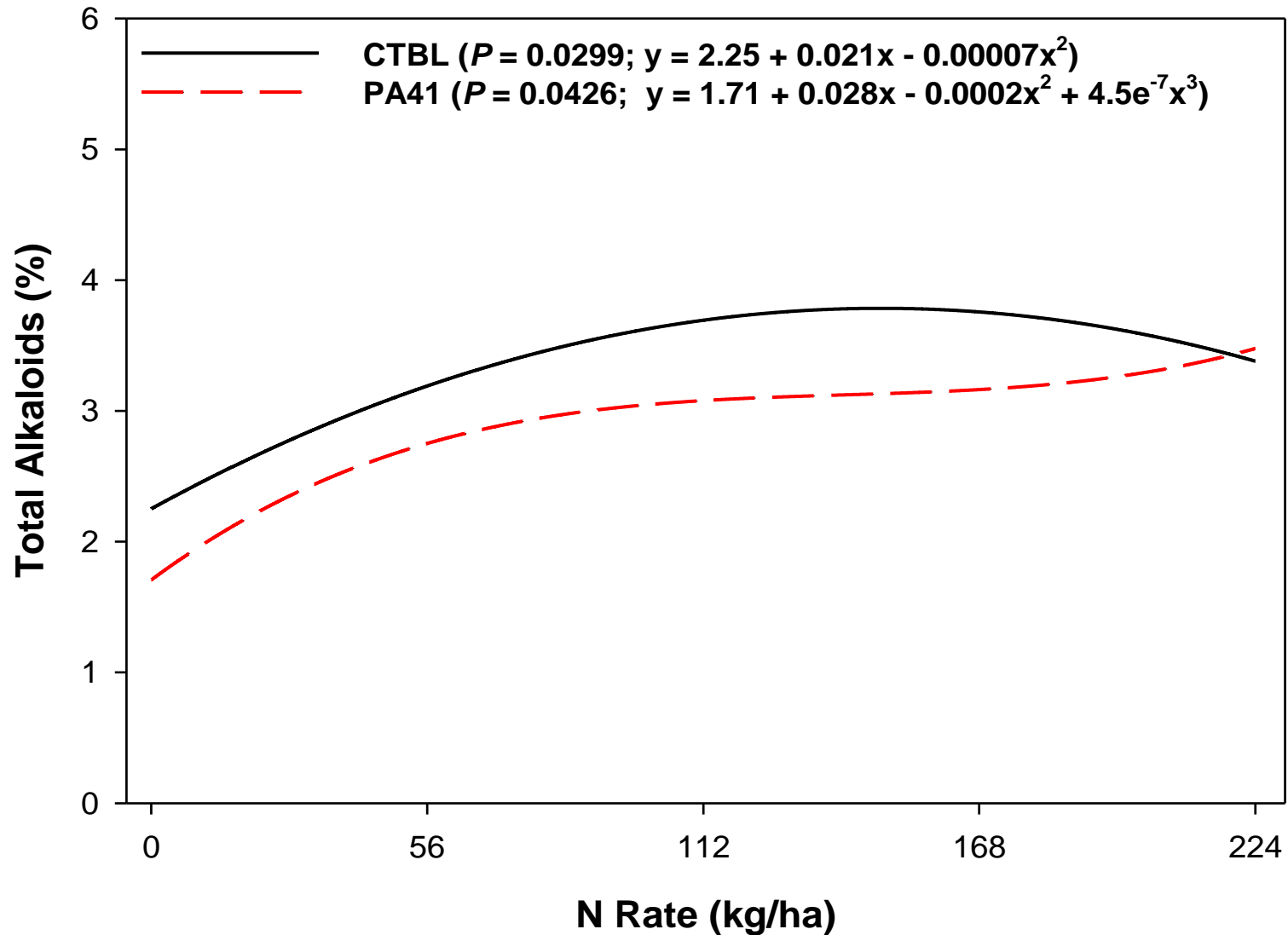
N Rate Effect on Yield



N Rate Effect on Grade Distribution



N Rate Effect on Total Alkaloids



Conclusions

- Yield was optimized at 91 and 98 kg N/ha for PA41 varieties and CTBL varieties, respectively.
- PA41 yielded higher than CTBL consistently.
- Increasing N rate increased wrapper and binder proportions while decreasing filler proportion.
- Increasing N rate generally increased total alkaloids.



Questions?

mmshort2@ncsu.edu

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