

Customized Equipment for Green Weight Harvest of Flue-Cured Tobacco in On-Farm Tests

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On-Farm Tests 1990's & Before

- Small plots, 4 rows by 50 feet
- Growers with rack barns
- Tobacco tagged in racks
- Cured
- Weighed and graded



Late 1990' Into 2000's



Can We Use Green Weight?

- “Correlation Studies between Green and Cured Weights of Flue-Cured Tobacco” (White and Mattinger, NC State University – Central Crops Research Station 1960 TS)
- In general, all of the correlations were very high with a trend toward an increased correlation with later primings
- R values from .782 to .946
- Varieties did not differ with respect to correlation
- Plot total yields were correlated at with an r value of .937 for all varieties

Table 3. Individual priming green and cured weights for all entries.

Priming	Green Weight (lbs.)	Cured Weight (lbs.)	Cured Weight %
A	2235	289	12.9
B	3528	526	14.9
C	2487	421	16.9
D	2167	407	18.8
E	1989	393	19.8
F	1725	360	20.9

Weighted average: 17.37%

Correlation Studies Between Green and Cured Weights of Flue-Cured Tobacco. SB White, Jr. and DF Matzinger. NC State College, Raleigh, NC. Tobacco Science 1960.

Attempts

- Late 90's scales on multi-pass harvesters
 - Not very portable
 - Complex
- Deer fencing or other materials to keep tobacco separate
 - NTRM problem
 - Cured weights possible
 - Cumbersome
 - More grower effort



Design a “Tobacco Weigh Wagon”

- Weigh wagons used in other crops
- Simple
- Portable
- Can be used at multiple locations
- Immediate data
- Farmers are on board



Scales

- Central City Scales, Central City, Nebraska
- They were familiar with the scales and even indicated selling kits before
- Parts (\$ 2995.00)
 - 640 Indicator
 - Spindles
 - Load bar for tongue
 - Cables, Clevis, Hubs, and mounts

Components of Scale Kit



Wilson Manufacturing

Spivey's Corner, NC

- Local welding and fabrication
- Builds tobacco trailers for local farms
- Patterned a trailer after current designs
- Cost \$4000 for welding and supplies
- \$300 for wheels and tires



Harvest in Action



Transport



Unloading by Machine or Hand



2021 Use

- Four replicated tests harvested in three counties
 - 3 plant population studies (4 treatments)
 - 1 transplant water test (18 treatments)
- Plot sizes were 2 rows by an average of 50 feet
- Will hold about 2,000 lbs of green tobacco

2022 Plans

- Plant population tests
- 2x2 band application of typical in-furrow materials
- Other yield checks as needed
- Farmers were receptive to work with us

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Questions?

