



# Alabama CLRDV Sentinel Plot Summary

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# Sentinel Plot Design

- 2 x 15 ft rows with 3 to 4 seed per ft.
- RCB or Factorial arranged as a split-plot with Planting date as the main and cultivar as the split-plot treatment.
- One to three planting dates
  - May 1, May 15, and June 1
- Cotton Cultivars
  - PhytoGen 480                      Deltapine 1646
  - Stoneville 5471                      NexGen 5711
  - BRS 286 (Typical)                      BRS 293 (Typical and Atypical)

# Sentinel CLRDV Assessment

- Aphid Vector – top 5 nodes on same 10 plants weekly.
- Incidence % of symptomatic plants from PHS through cut out about 30, 60, 90 and 120 days (actually done at 2 wk intervals beginning at 3 to 5 true leaves).
- Record appearance of specific symptoms (stunting, leaf rugosity, terminal node compression, accentuated verticality, etc).
- Collect terminals/leaves to confirm CLRDV in each plot.

# Alabama Sentinel Plot Issues

- Insect control
  - Thrips pressure was extreme and interfered with CLRDV seedling damage assesment.
  - Scheduling insecticide applications to control stink bugs was an issue in sentinel plots with multiple planting dates.
- Plot design – planting sentinel trials with multiple planting dates were an issue at some outlying units.
- Irrigation – difficult to irrigate small test in a big field.

# Sentinel Plot Issues Continued

- Disease assessment – New disease with often subtle and unfamiliar symptoms made disease assessment difficult.
- Symptoms not consistent with Cotton Blue Disease.
- PCR tests needed to confirm association of CLRDV with symptoms.
- False negative PCR tests.

# Subtle CLRDV Symptoms



TV PHY 480 Red Folded Leaves POS



BARU BRS 293 Rugose/Red Leaves POS

TV BRS 293 Rugose/Red Leaves POS



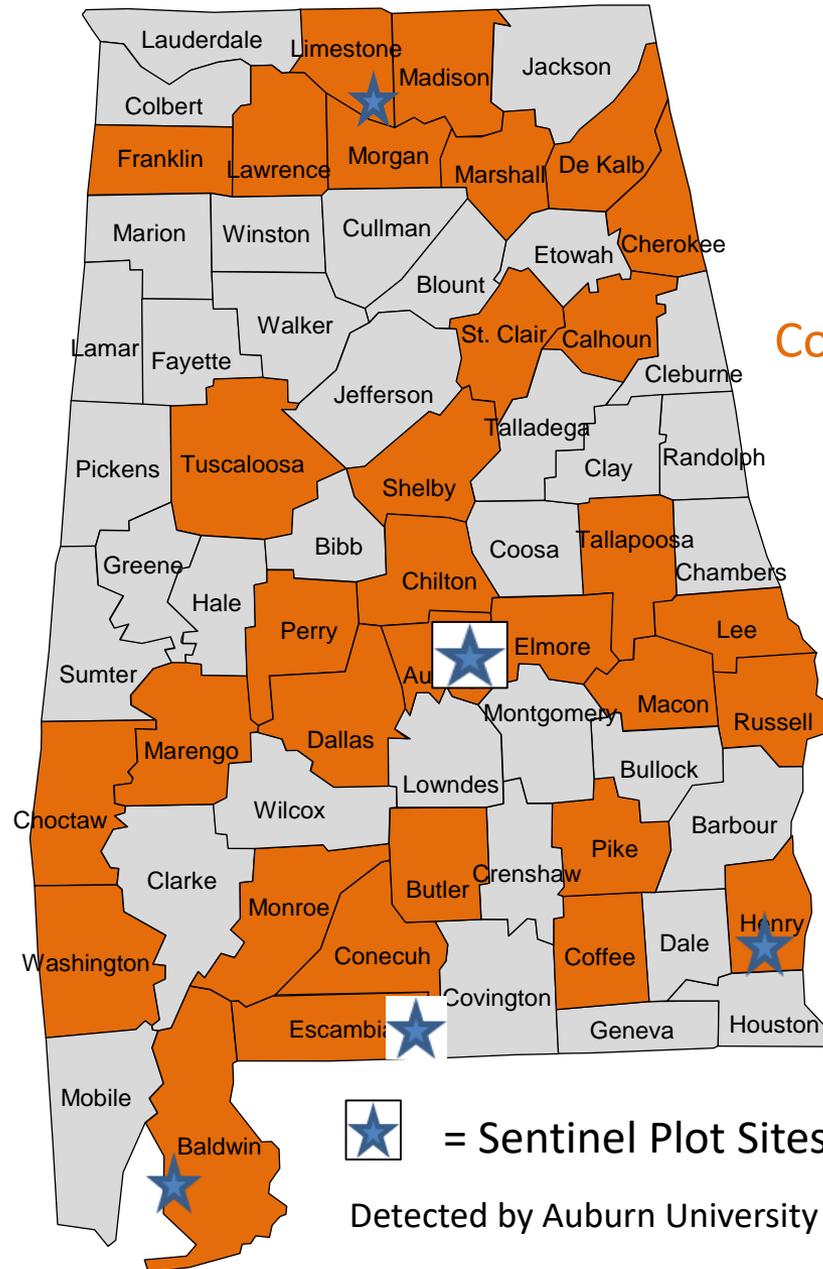
BARU PHY 480 POS Rugose Leaves



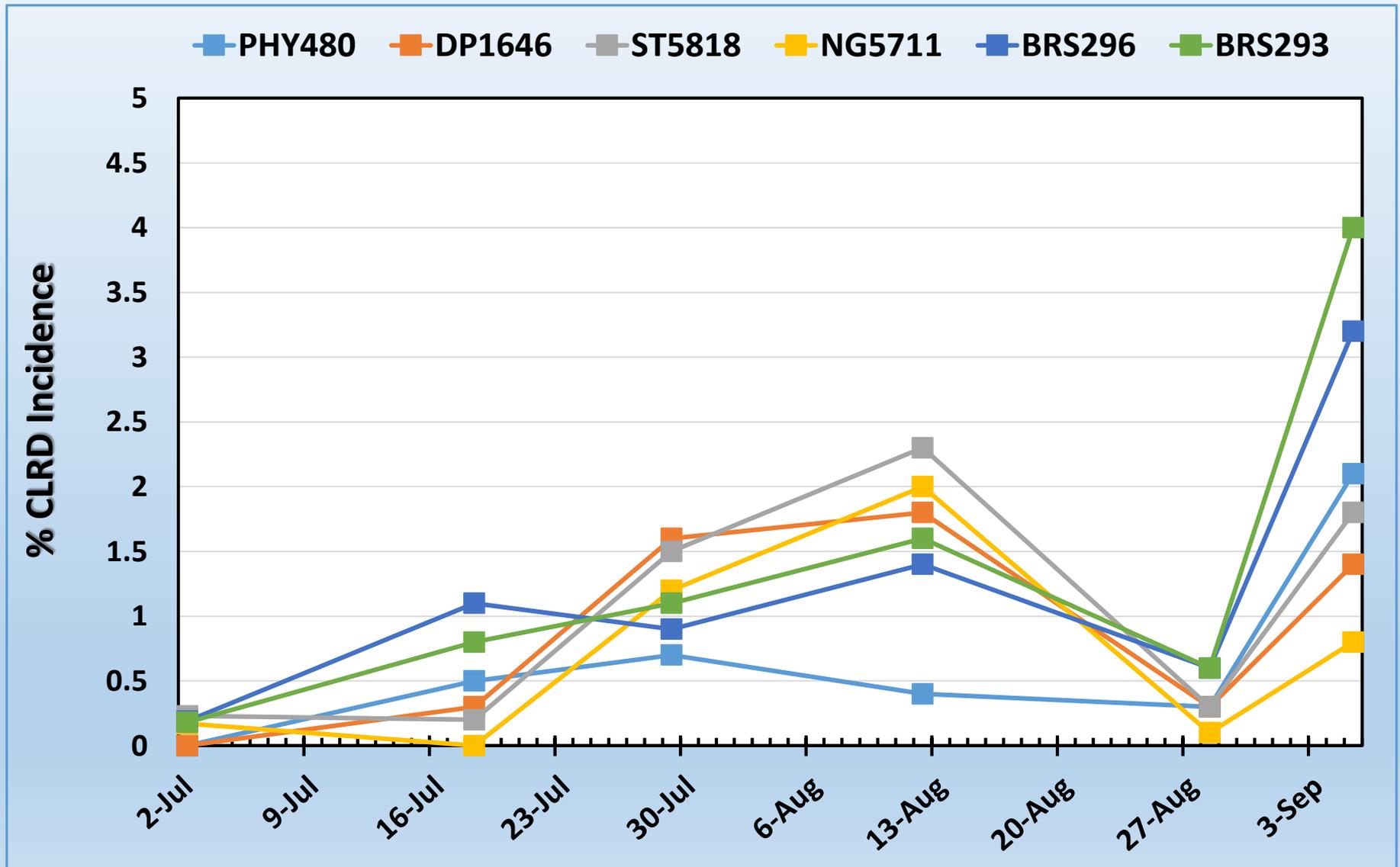
# Cotton Blue Disease

Cotton leafroll dwarf virus  
CLRDV

2019 Cropping Season  
Distribution  
September 19, 2019



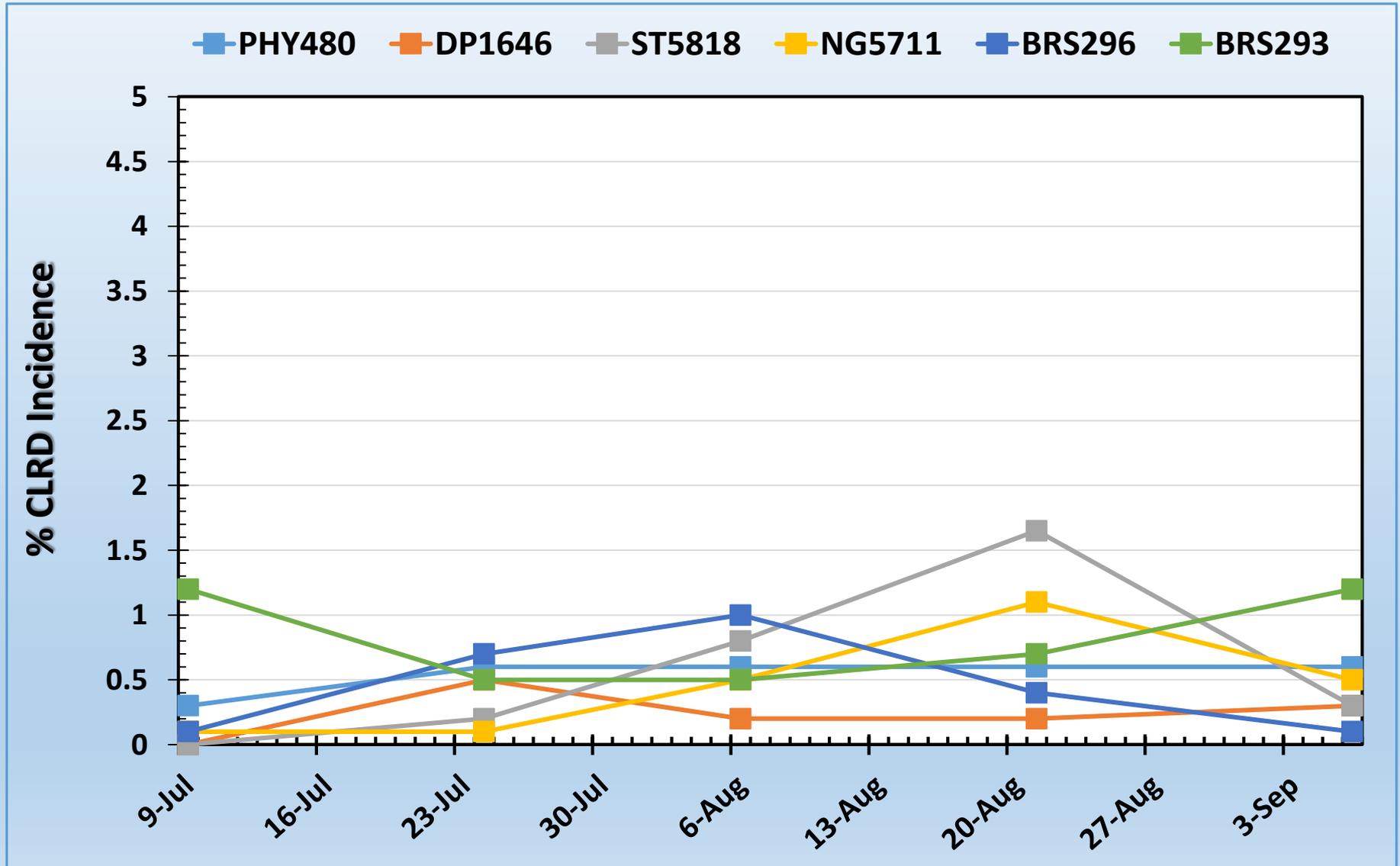
# Incidence of CLRDV at BARU in 2019



# **F Values for generalized linear model as well as % CLRDV incidence as influenced by planting date at BARU.**

<b>Source</b>	<b>2 July</b>	<b>18 July</b>	<b>29 July</b>	<b>12 August</b>	<b>28 August</b>
Planting Date	3.95*	3.48^	3.36^	1.56	2.53
Cotton Cultivar	0.41	3.80**	0.62	1.80	0.99
PD × CV	0.41	4.79***	0.65	1.25	1.68
<b>Planting Date</b>					
1.	0 b	0.2 b	0.5 b	1.9 a	0.7 a
2.	0 b	0.3 ab	1.0 ab	1.8 a	0.6 a
3.	0.4 a	0.9 a	2.0 a	1.0 a	0.2 a

# Incidence of CLRDV at PARU in 2019



**F Values for generalized linear model as well as % CLRDV incidence as influenced by planting date at PARU.**

<b>Source</b>	<b>9 July</b>	<b>24 July</b>	<b>5 Aug</b>	<b>21 Aug</b>	<b>6 Sep</b>
Planting Date	0.91	0.56	0.33	3.83 <sup>^</sup>	0.91
Cotton Cultivar	1.05	0.71	1.10	1.79	1.05
PD × CV	0.56	1.11	2.19 <sup>*</sup>	1.72	0.56
<b>Planting Date</b>					
30 April	0.0 a	0.2 a	0.6 a	1.9 a	0.3 a
15 May	0.1 a	0.6 a	0.7 a	0.3 ab	0.7 a
5 June	0.1 a	0.5 a	0.5 a	0.1 b	0.1 a

# Summary

- CLRDV incidence was 'low' (<5%) at all locations with highest incidence at BARU and least at TVREC.
- Symptoms included
  - seeding stunting
  - flagging of terminal leaves or entire plant with bronzing/reddening.
  - leaf crinkle
  - reddening of terminal leaves
  - red veins on terminal leaves
  - red petioles/upper stems
  - stacked nodes with shortened internodes.

# Modifications in AL Sentinel Plots

- Single planting date at secondary locations.
- Retain three planting dates at primary locations.
- 4-Row plots to allow additional sampling and yield loss assessment.
- Lengthen rows to 25 ft to allow for yield loss assessment.
- Different colored flags to mark symptomatic plants to better track disease spread over time.