

The background of the slide is a close-up photograph of cotton leaves. Several leaves show signs of Cotton Leaf Roll and Distortion Virus (CLRDV), characterized by yellowing, reddish-brown streaks, and small dark spots. In the top left corner, a portion of a pink cotton boll is visible.

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



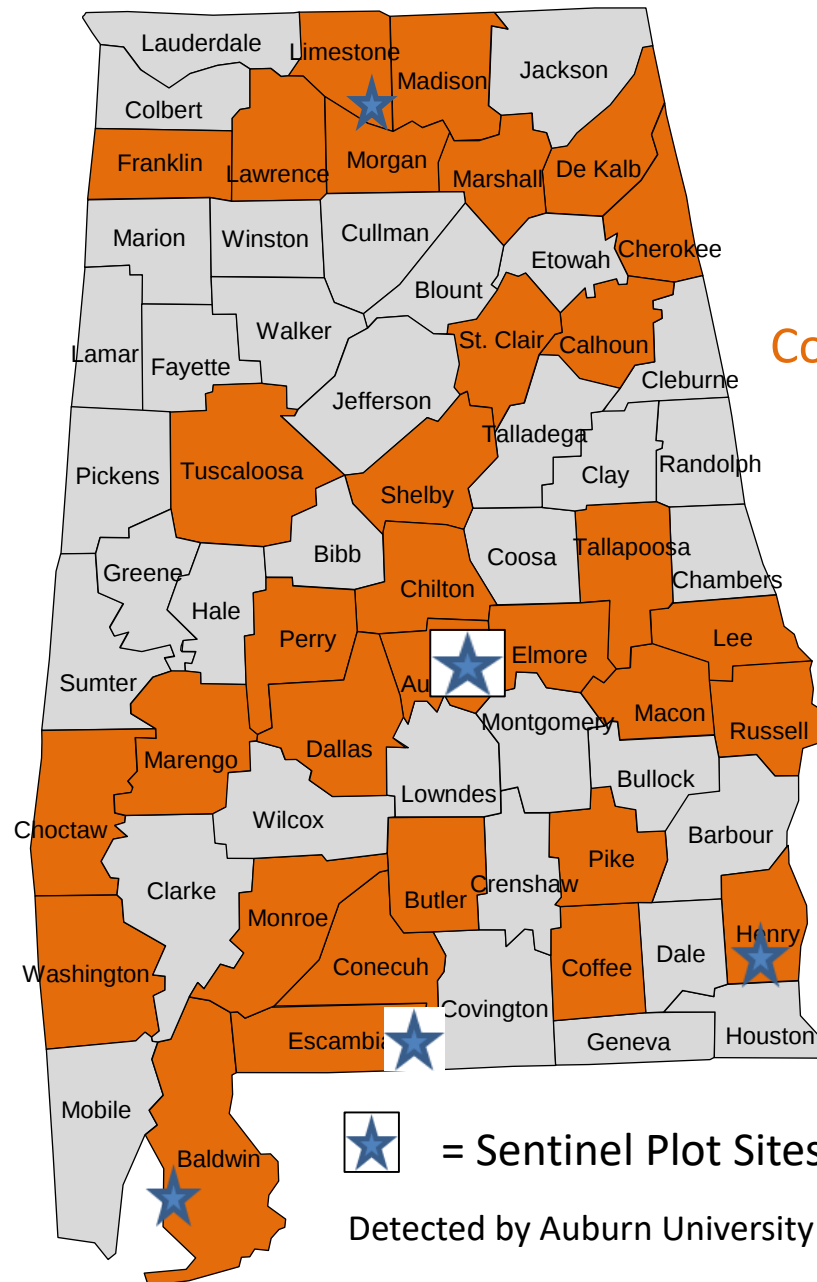
BARU PHY 480 POS Rugose Leaves



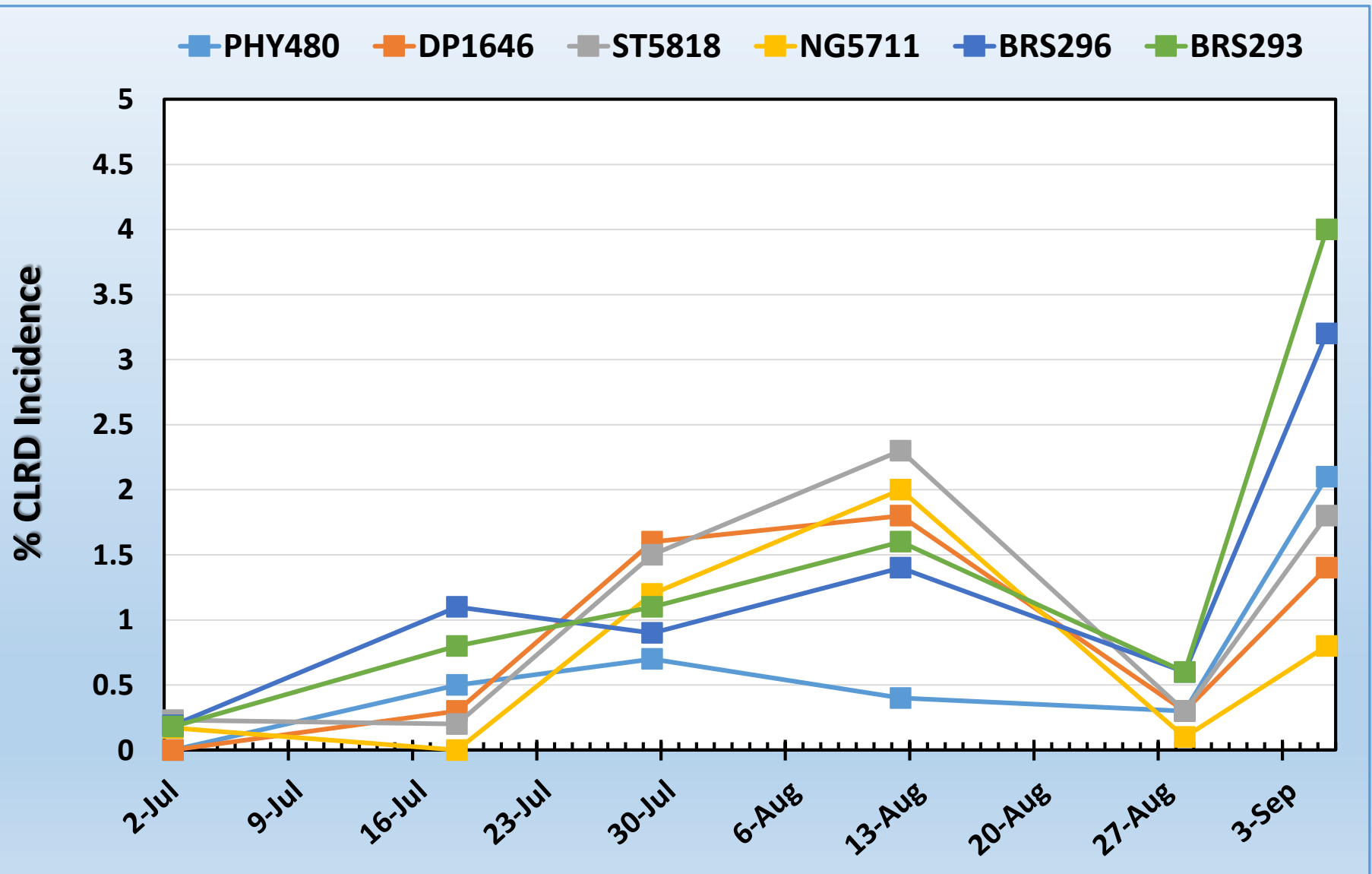
Cotton Blue Disease

Cotton leafroll dwarf virus
CLRDV

2019 Cropping Season
Distribution
September 19, 2019



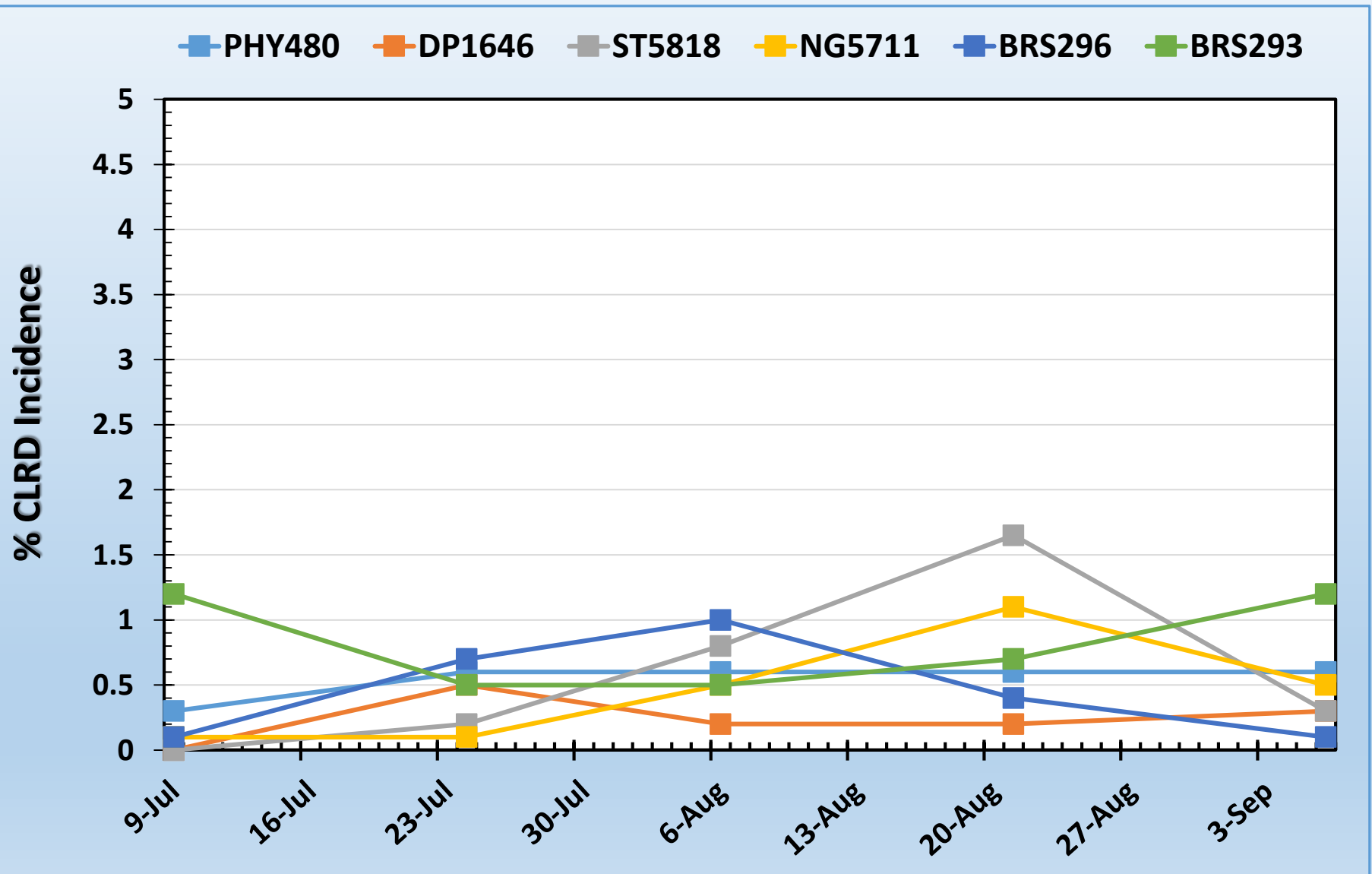
Incidence of CLRDV at BARU in 2019



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

Source	2 July	18 July	29 July	12 August	28 August
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
Planting Date					
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.**

Source	9 July	24 July	5 Aug	21 Aug	6 Sep
Planting Date	0.91	0.56	0.33	3.83^	0.91
Cotton Cultivar	1.05	0.71	1.10	1.79	1.05
PD × CV	0.56	1.11	2.19*	1.72	0.56
Planting Date					
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.