

Bacterial blight in Texas in 2015 and Subsequent Tests with Isolates

Terry Wheeler

Texas A&M AgriLife Research, Lubbock

Field Protocol for Bacterial Blight Inoculations



- 1) Grow bacteria in Trypticase Soy Broth for 1 ½ days;
- 2) Add 1800 ml to 50 gal of water + 379 ml of Silwet.
- 3) Apply over the top of the plants at 50 gal/acre.

Apply on younger leaves (2-leaf stage until mid-Aug);
Works better with well-water rather than city water.



Blight Resistant Varieties to Race 18

All-Tex (AT) ConchoB2XF, AT Nitro-44 B2RF

Croplan Genetics 3787B2RF

Deltapine (DP) 1359B2RF, DP 1518B2XF (GT)

Dyna-Gro (DG) 2615B2RF, DG 3445B2XF (GT), DG 3544B2XF (GT)

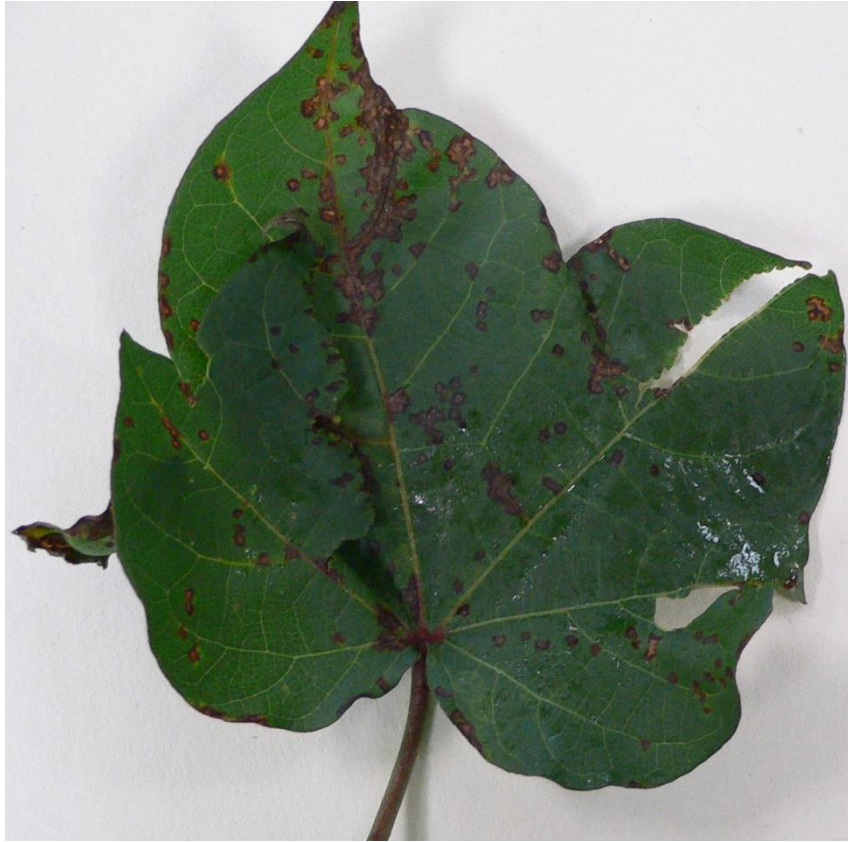
Fibermax (FM) 1830GLT, FM 1900GLT, FM 1911GLT, FM 2007GLT, FM 2011GT, FM 2334GLT, FM 2484B2F, FM 8270GLB2, FM 9250GL

NexGen (NG) 1572RF, NG 4111RF, NG 4012B2RF, NG 4545B2XF, NG 3500XF

Phytogen (PHY) 243WRF, PHY 339WRF, PHY 575WRF

Stoneville (ST) 5115GLT, ST 5289GLT, ST 6448GLB2.

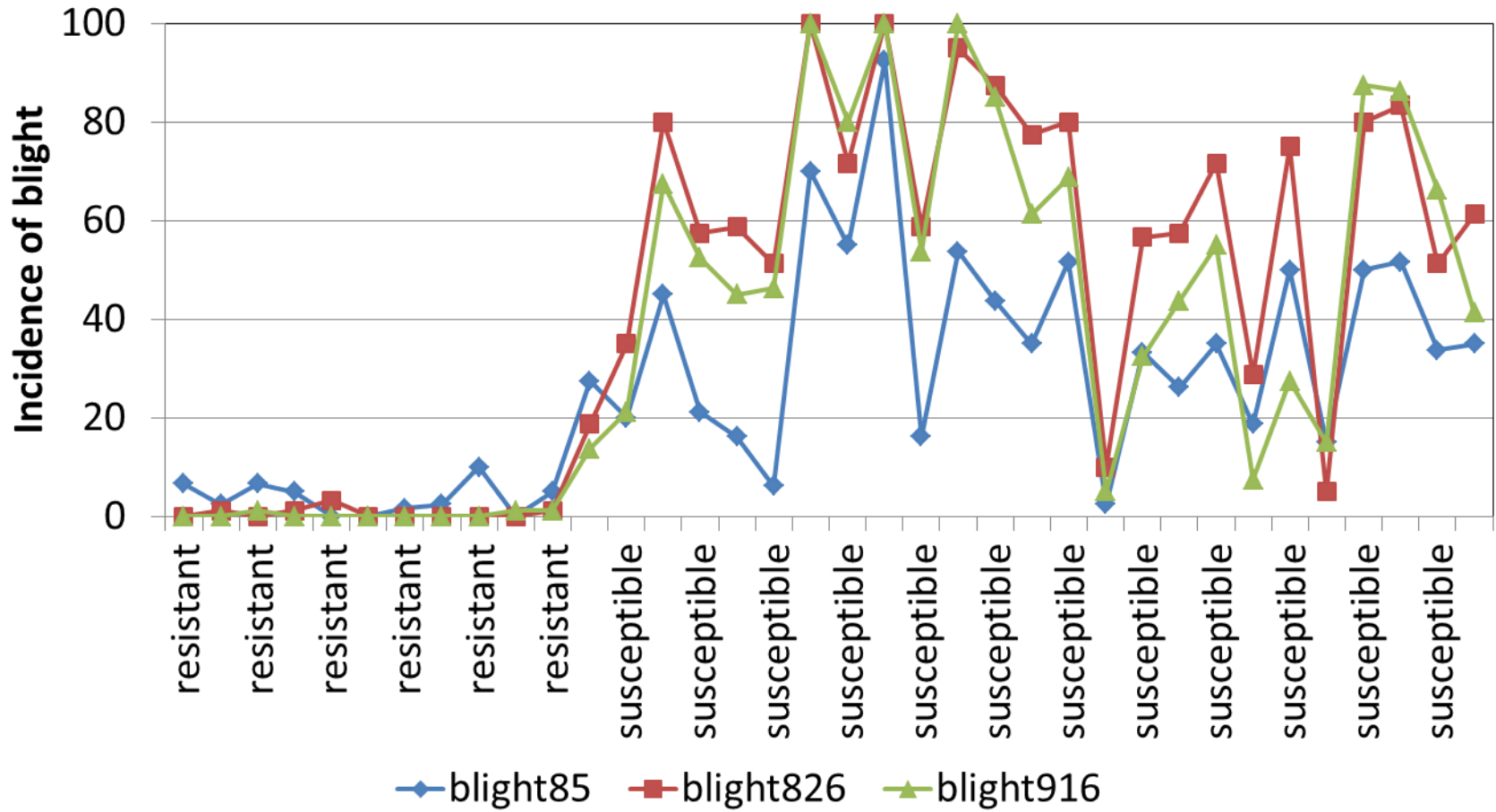
Bacterial Blight at Plains



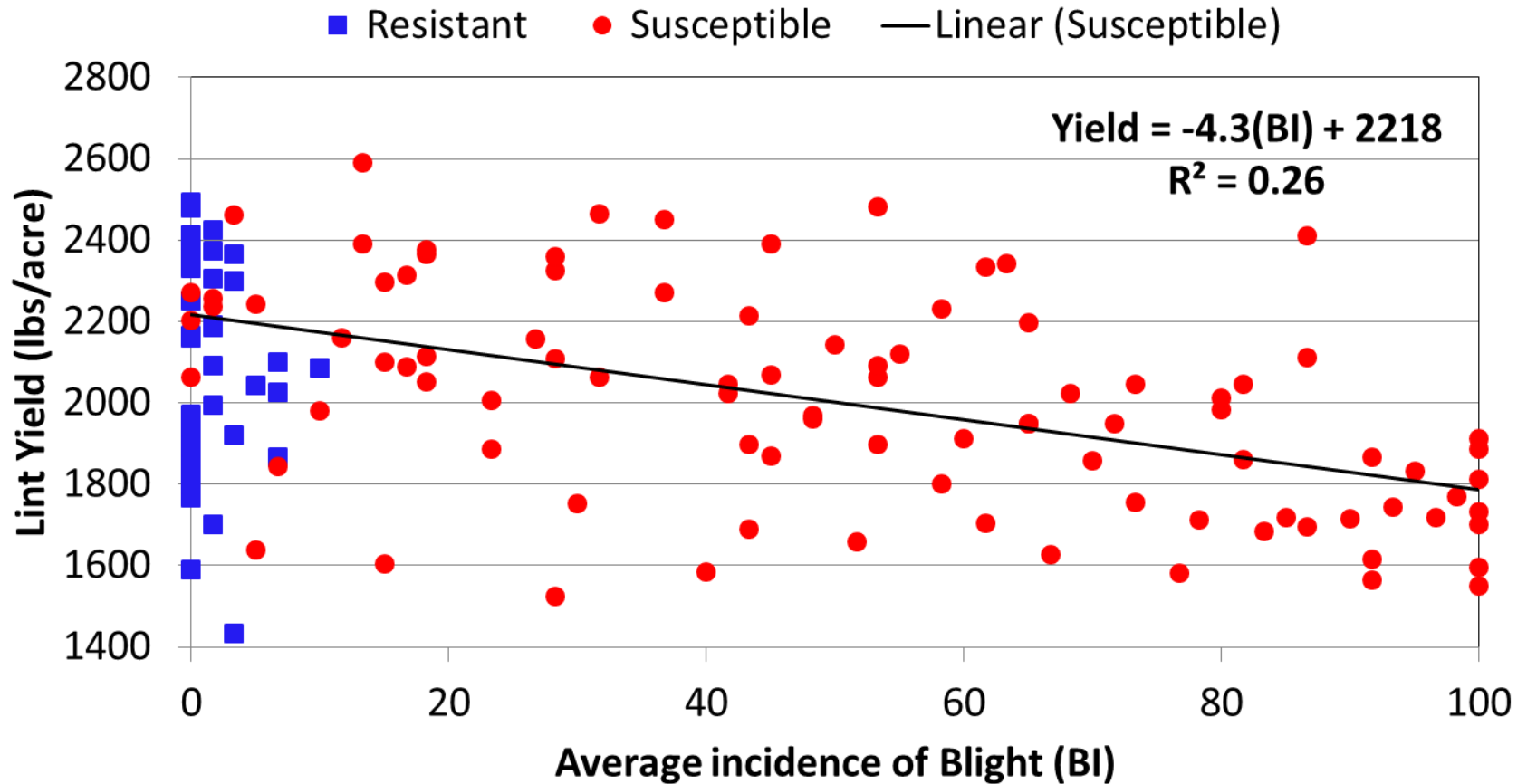




Incidence of blight at three dates (8/5, 8/26, and 9/16)



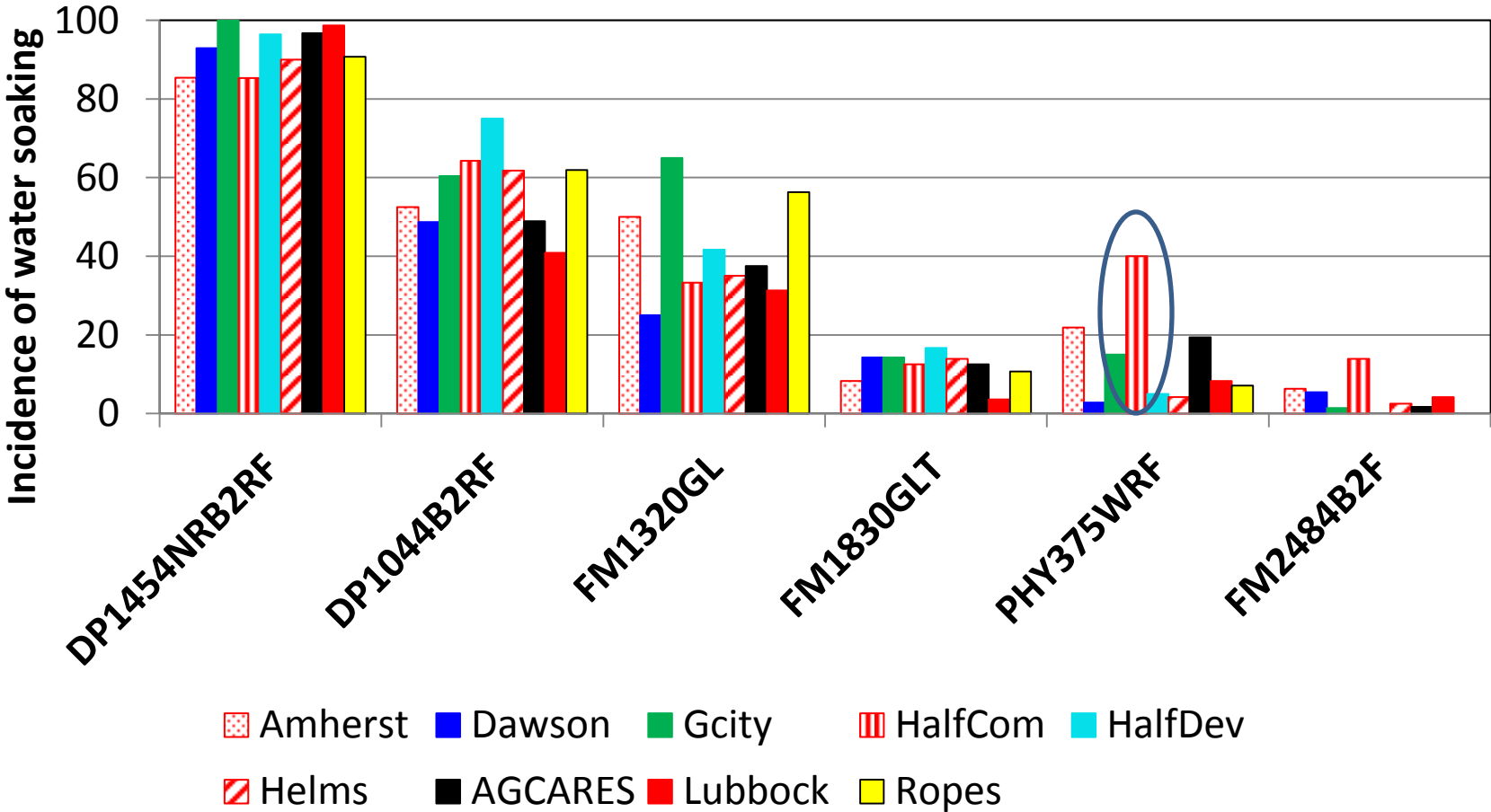
Relationship between Blight Incidence and Lint Yield (51% Incidence of Blight = 10% Predicted Yield loss)



List of Locations and Cultivars with Bacterial Blight in 2015

Location	# iso. ^a	Obtained from cultivars listed
Amherst	6	FM 1830GLT (R)
Dawson county	14	PHY 333WRF (S), DP 1219B2RF (S), ST 4946GLB2 (S)
Helms farm	11	PHY 333W3FE (R), PHY 222W3FE (R?)
Halfway-station	11	FM 1911GLT (R) , BX 1532GLT (S), Breeding line (?)
Hall co.	5	ST 4747GLB2 (S)
Lamesa- AGCARES	13	ST 4946GLB2 (S), PHY 499WRF (7)
Garden City	23	BX 1630GLT(S), DP 1321B2RF (S), BX 1638GLT (S), FM 2322GL (S)
Lubbock-E Loop	11	FM 2484B2F (R)
Lubbock- reniform test	7	Breeding line (?)
Lubbock-Jones	2	PHY 417WRF (S)
Lubbock-Regis	7	DP 1219B2RF (S)
Lubbock-Pima	3	Pima breeding lines (?)
Plains	1	Unknown (S)
Ropesville	7	BX 1633GLT (S), DP 1522B2XF (S)
South Texas	2	FM 958 (R) , PHY 333WRF (S)

Greenhouse testing of Isolates from some Locations on Varieties



- **No consistent unusual response within a location or variety.**
- **Unusual responses probably due to inconsistency within seed of a variety, or due to a mistake in placing the variety in a test.**
- **These isolates do not behave like a new race that has defeated the resistant genes available.**

Questions still to be understood

- 1) How did disease foci occur in resistant varieties in the field?
- 2) There was a second bacteria with a lot of ooze associated with *Xanthomonas* in isolations from Plains, Helms, and Quaker Farm.
- 3) Lack of pure yellow, mucoid colonies originally from South Texas; Ropes; Quaker Farm (Lubbock) and Plains.
- 4) Samples taken from Lubbock (Jason Woodward), Amherst (Mark Kelley), and Halfway were isolated without difficulty, even though they came from resistant varieties.
- 5) Samples taken from one location in South Texas (M isolates), Garden City, Lubbock (Regis and Casey Jones), Dawson co., AGCARES, came from susceptible varieties and were isolated without difficulty.