

IMPACT OF FOLIAR OVERSPRAYS ON DUAL-GENE COTTONS

LOUISIANA AGRICULTURAL TECHNOLOGY
& MANAGEMENT CONFERENCE

MARKSVILLE, LA
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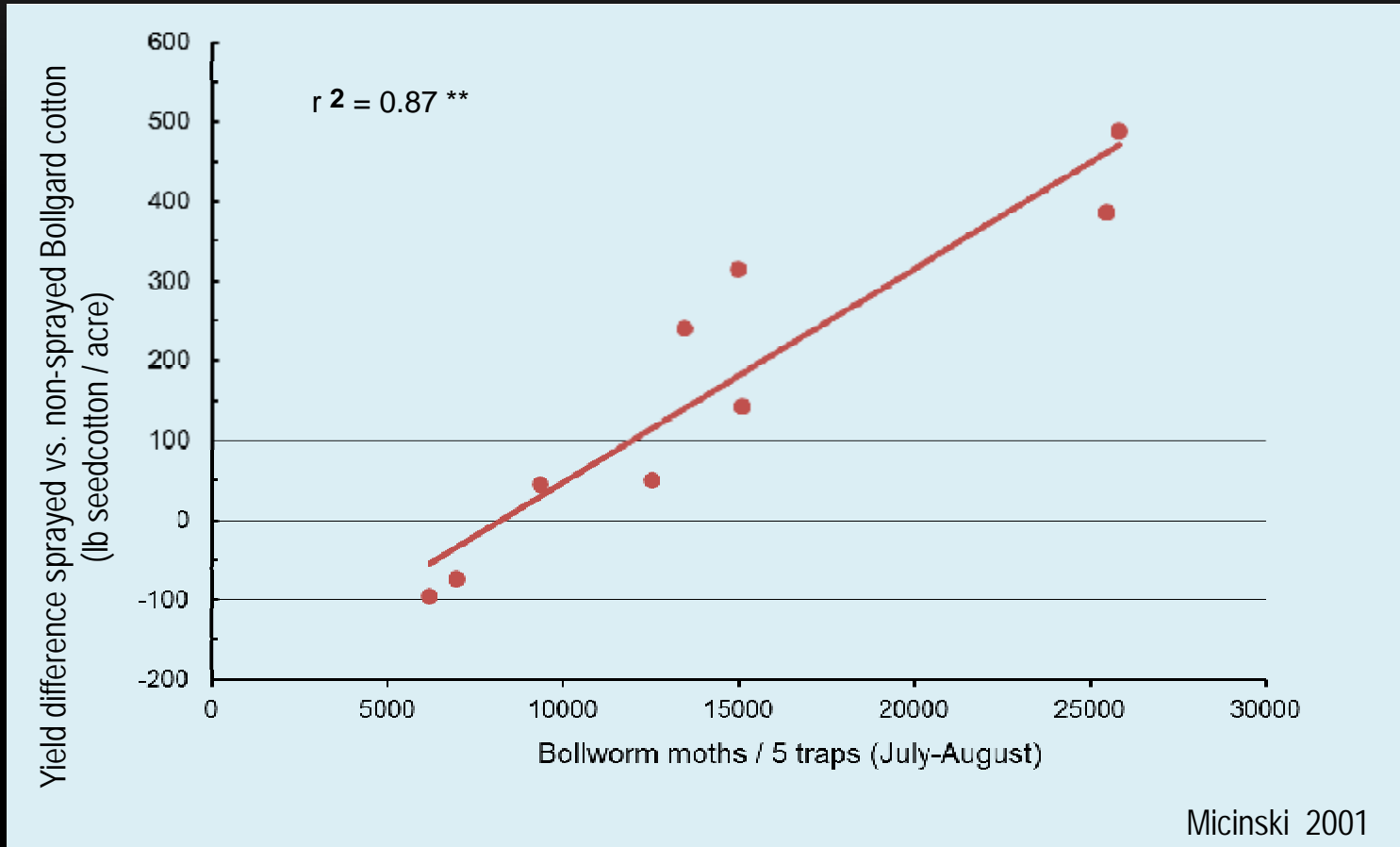
Gus Lorenz – AR, Scott Stewart – TN, Angus Catchot, Jeff Gore and
Don Cook – MS, Ryan Jackson – USDA-ARS, Stephen Biles – TX, Roy
Parker – TX, Sebe Brown – LA, Steve Micinski - LA



GENERAL BT TECHNOLOGY COMPARISON

Pest	Bollgard (Cry1Ac)	Bollgard II (Cry1Ac + Cry2Ab)	Widestrike (Cry1Ac + Cry1F)	TwinLink (Cry1Ab + Cry2Ac)
	1996	2003	2005	2013
Bollworm	4	2.5	3	2.5
Tobacco Budworm	1	1	1	1
Pink Bollworm	1	1	1	1
Beet Armyworm	2	2	2	2
Fall Armyworm	2.5	2	1	2
Soybean Looper	1	1	1	1
	1 = Complete control	2 = Rarely requires oversprays	3 = Sometimes requires oversprays	4 = Frequently requires oversprays

FOLIAR OVERSPRAYS ON BOLLGARD COTTON 1990S



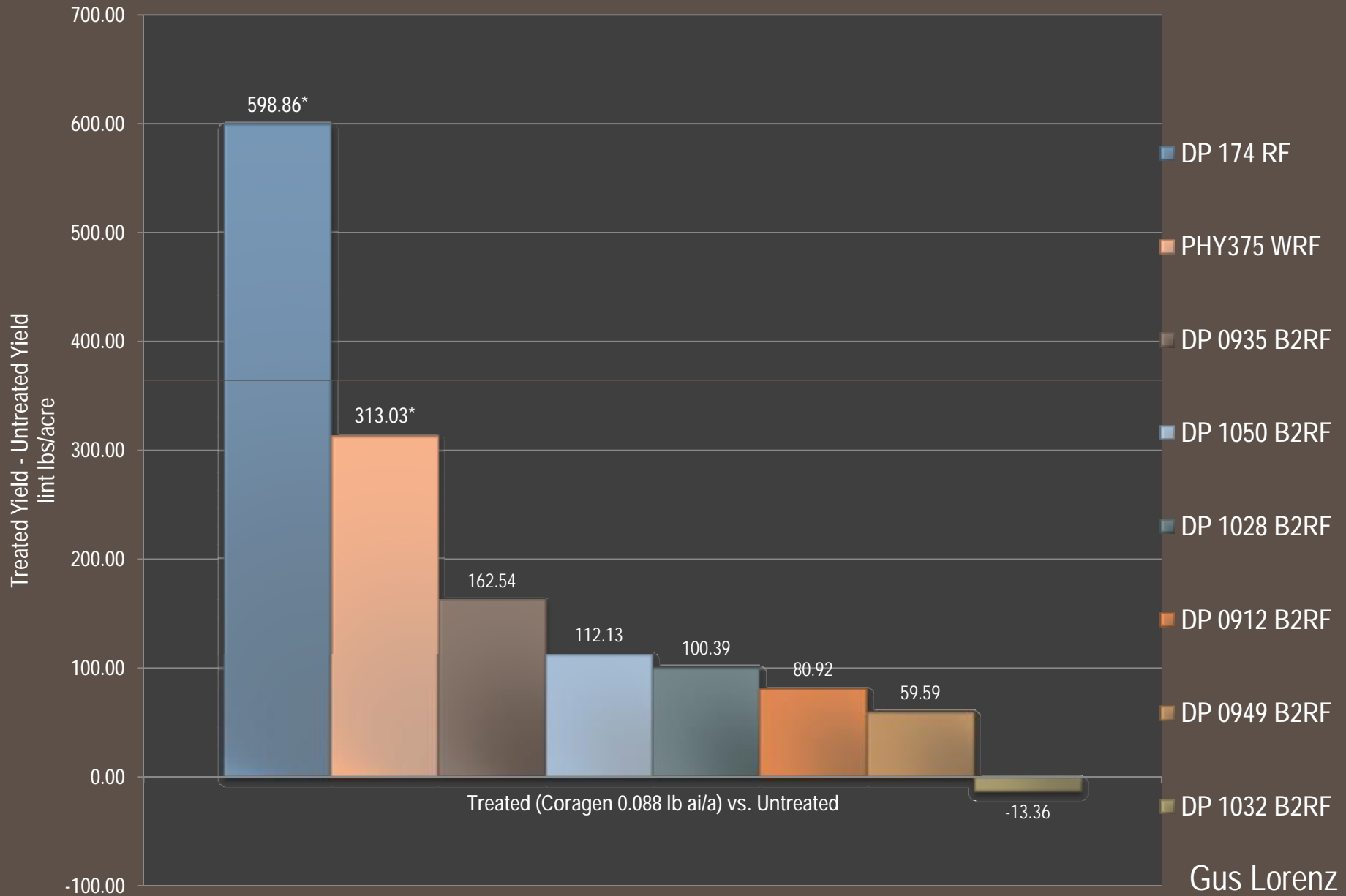
SPRAYING DUAL GENE COTTON FOR WORMS



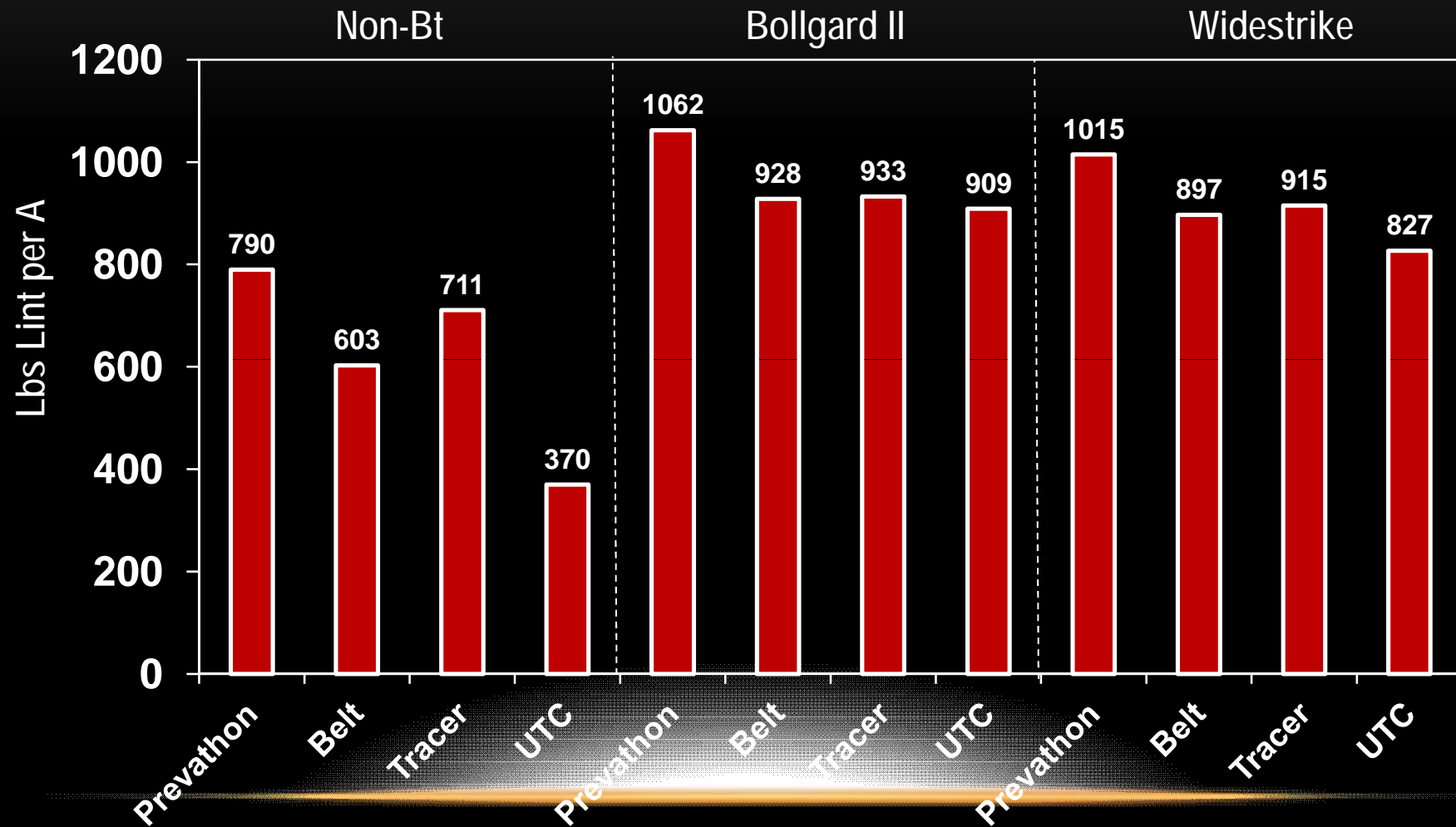
- Current technologies are not bullet proof
- Under what conditions
 - Bt technology in question
 - BGII vs WS
 - Threshold/pressure
- Insecticide choice

DUAL-GENE COTTON OVER SPRAYS
HIGH BOLLWORM PRESSURE

High Pressure 2010 Yield Difference Comparison Treated (Coragen 0.088lb ai/a) vs. Untreated



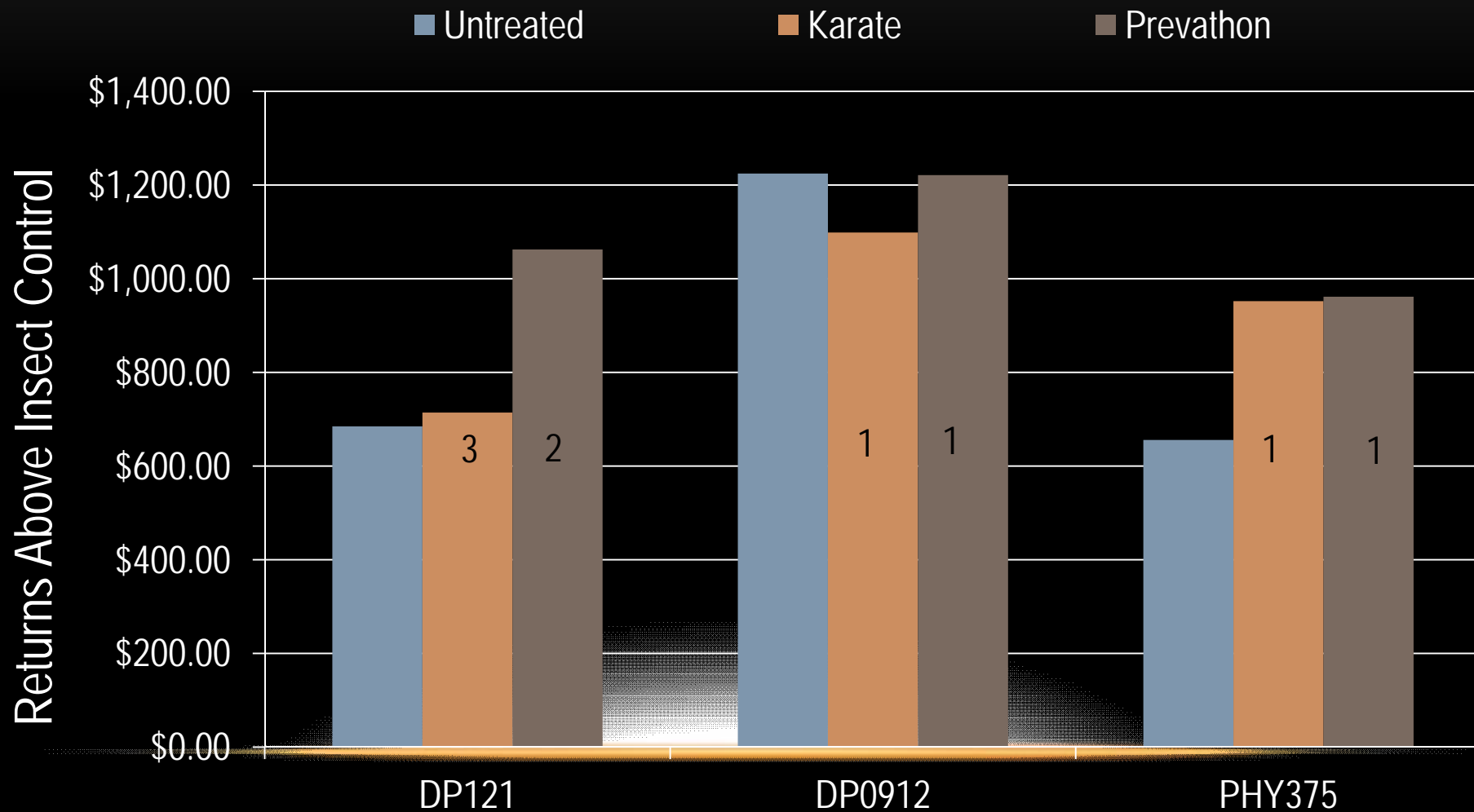
MID-SOUTH BT OVERSPRAY – YIELD



Off-Station Value-Added Trait Study – Tchula

Insecticide Applications Triggered on Larval Thresholds Individually

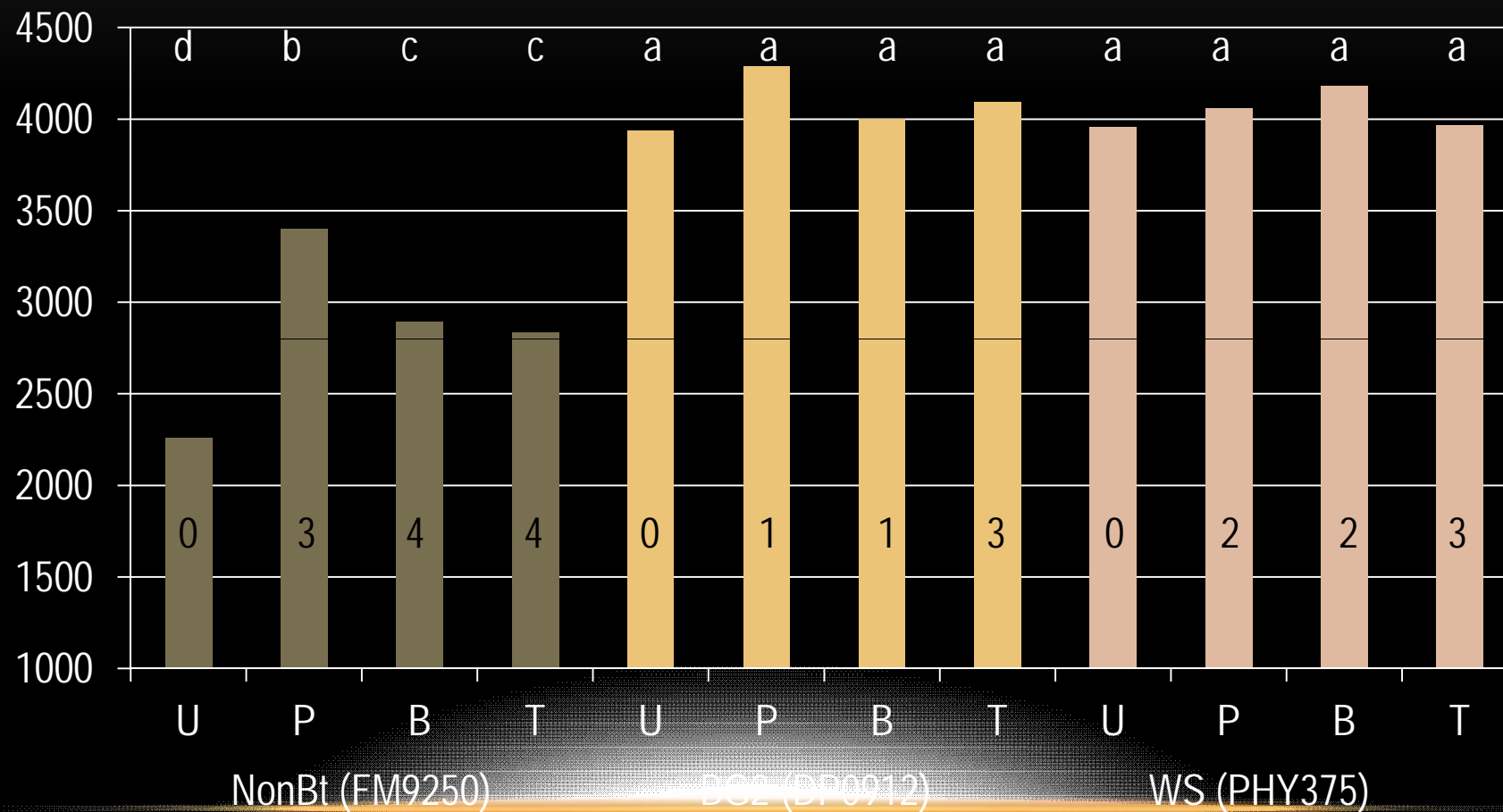
2012



DUAL-GENE COTTON OVER SPRAYS
MODERATE BOLLWORM PRESSURE

TECHNOLOGY X FOLIAR INSECTICIDE TRIAL 1 (2012)

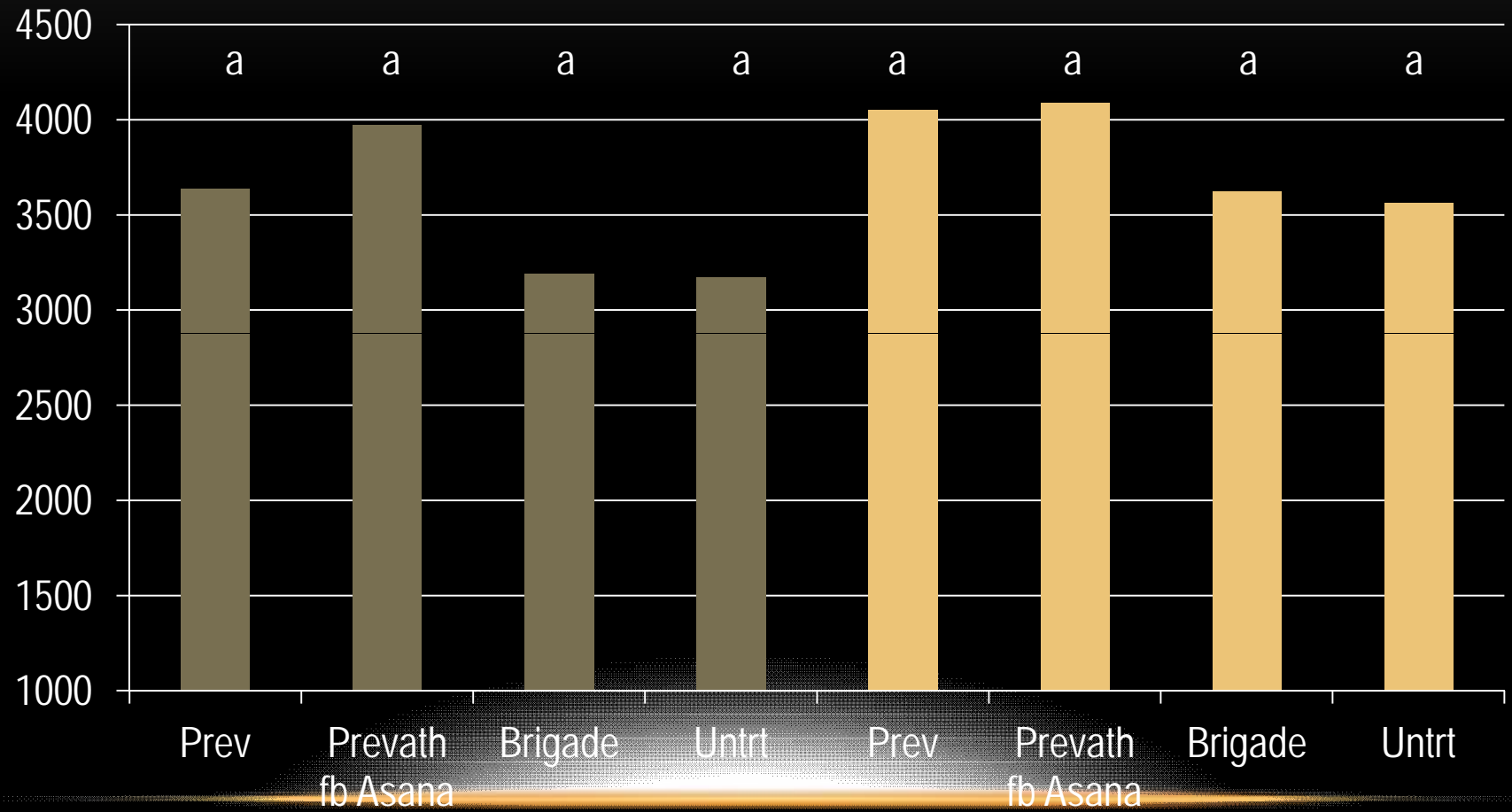
Seed Cotton Yield (moderate pressure)



Scott Stewart

TECHNOLOGY X FOLIAR INSECTICIDE TRIAL 2 (2012)

Seed Cotton Yield (moderate pressure)



WS (PHY375)

BG2 (DP0912)

Scott Stewart

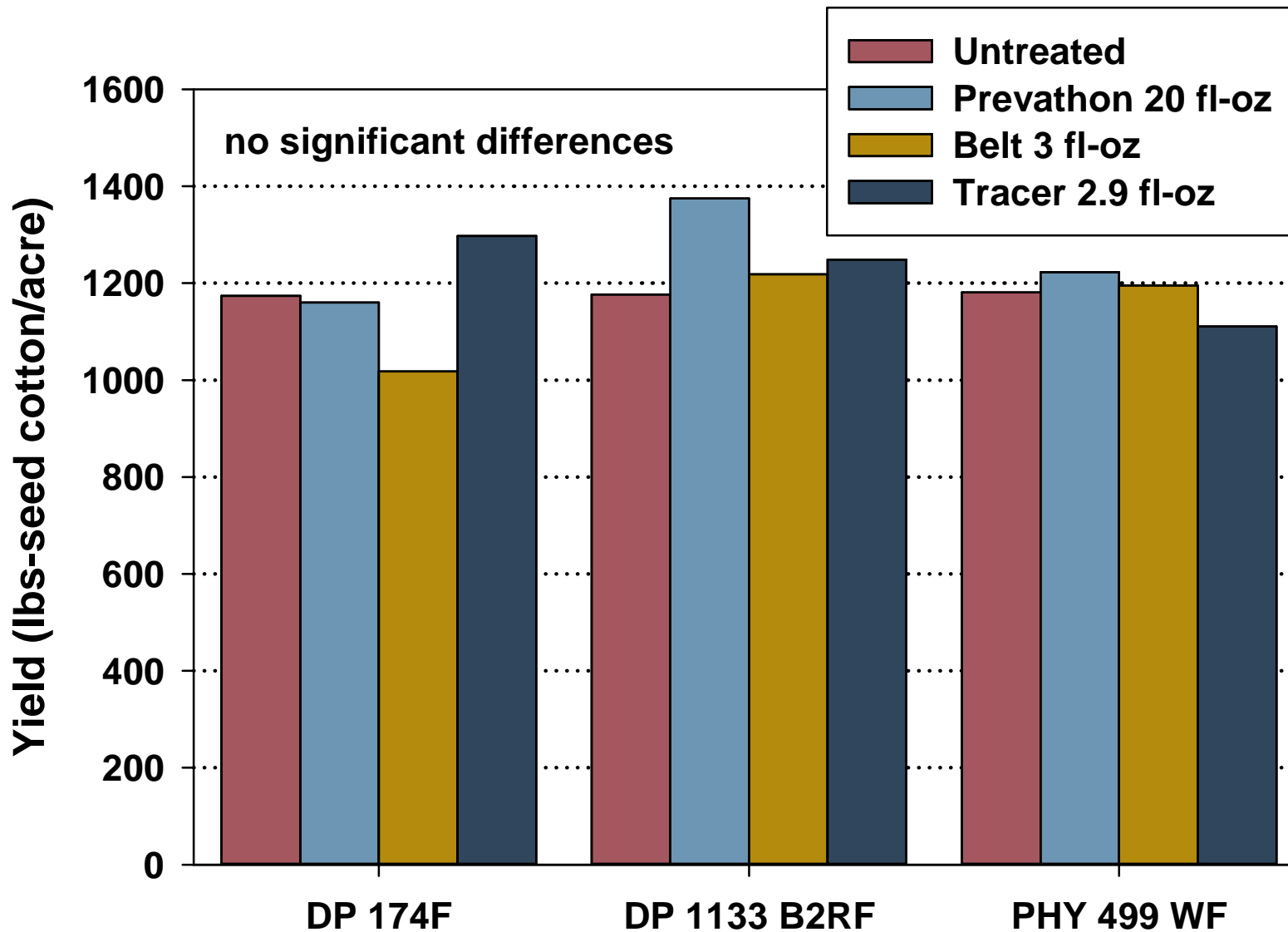
DUAL-GENE COTTON OVER SPRAYS
LOW BOLLWORM PRESSURE

DOES PREVATHON PROMOTE YIELD VIA
SUPERIOR WORM CONTROL, OR THROUGH
SOME OTHER FACTOR?



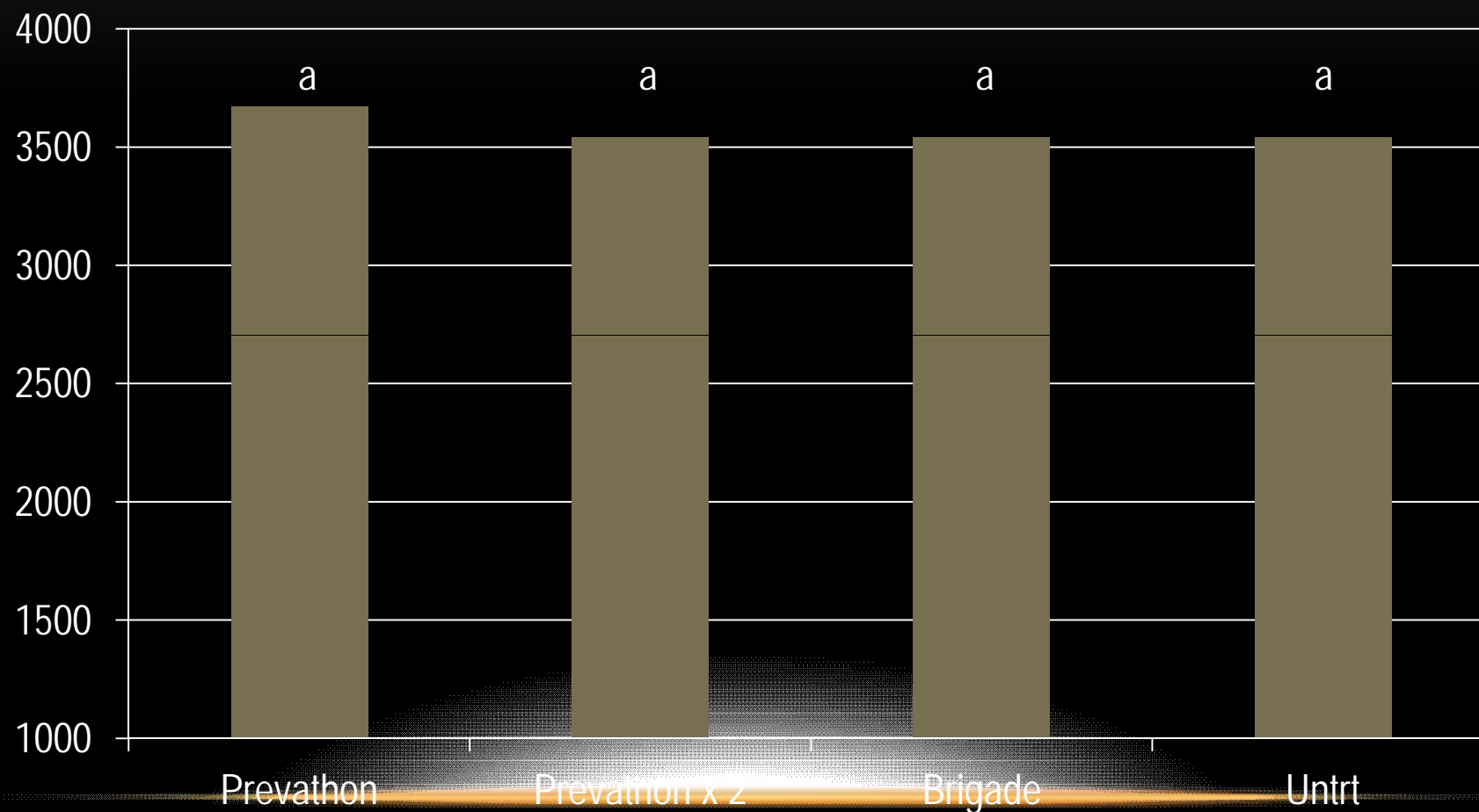
TECHNOLOGY X INSECTICIDE OVERSPRAY

LOW BOLLWORM PRESSURE – WINNSBORO, LA



TECHNOLOGY X FOLIAR INSECTICIDE TRIAL 3 (2012)

Seed Cotton Yield (light pressure and oversprayed leps)

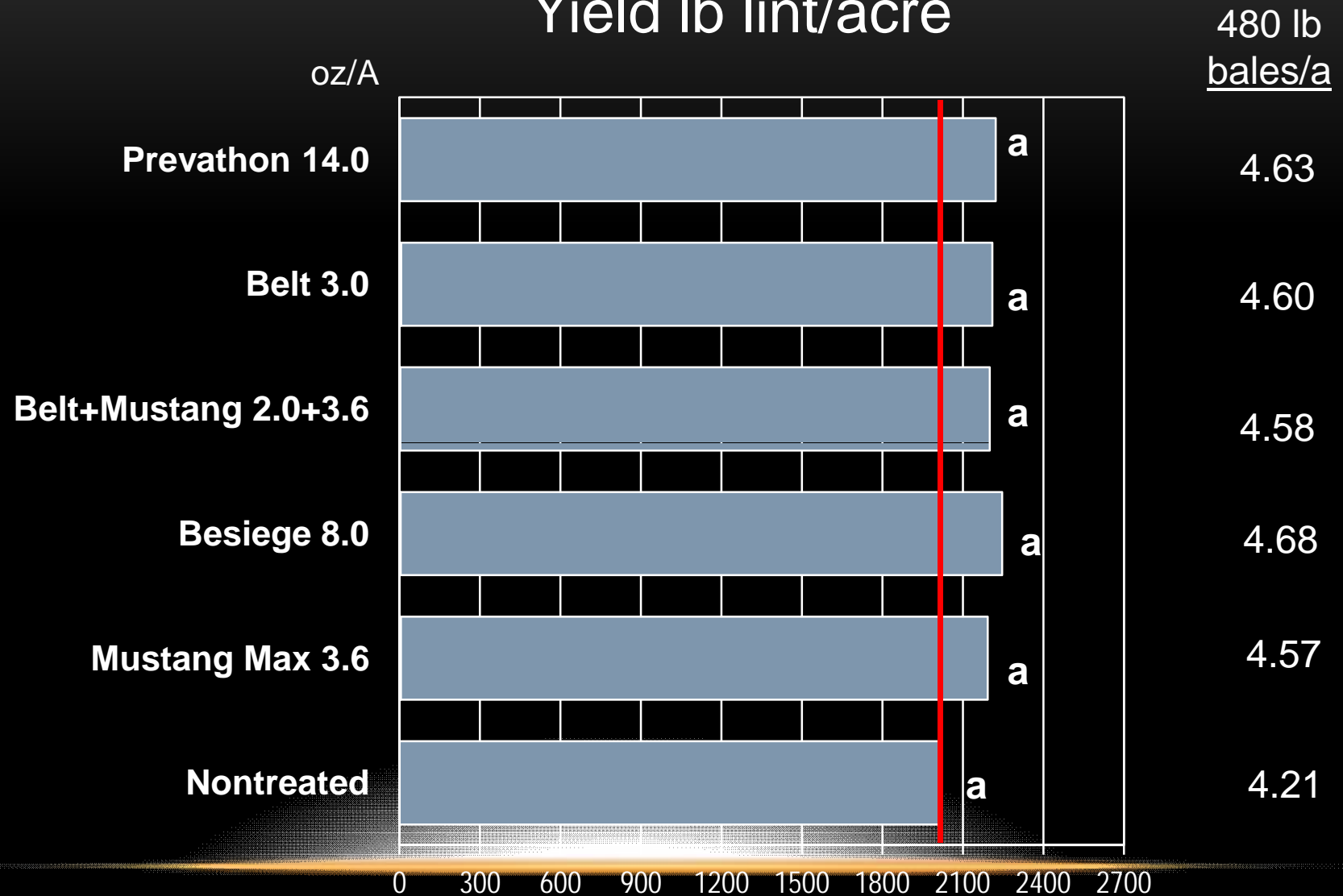


WS (PHY375)

Scott Stewart

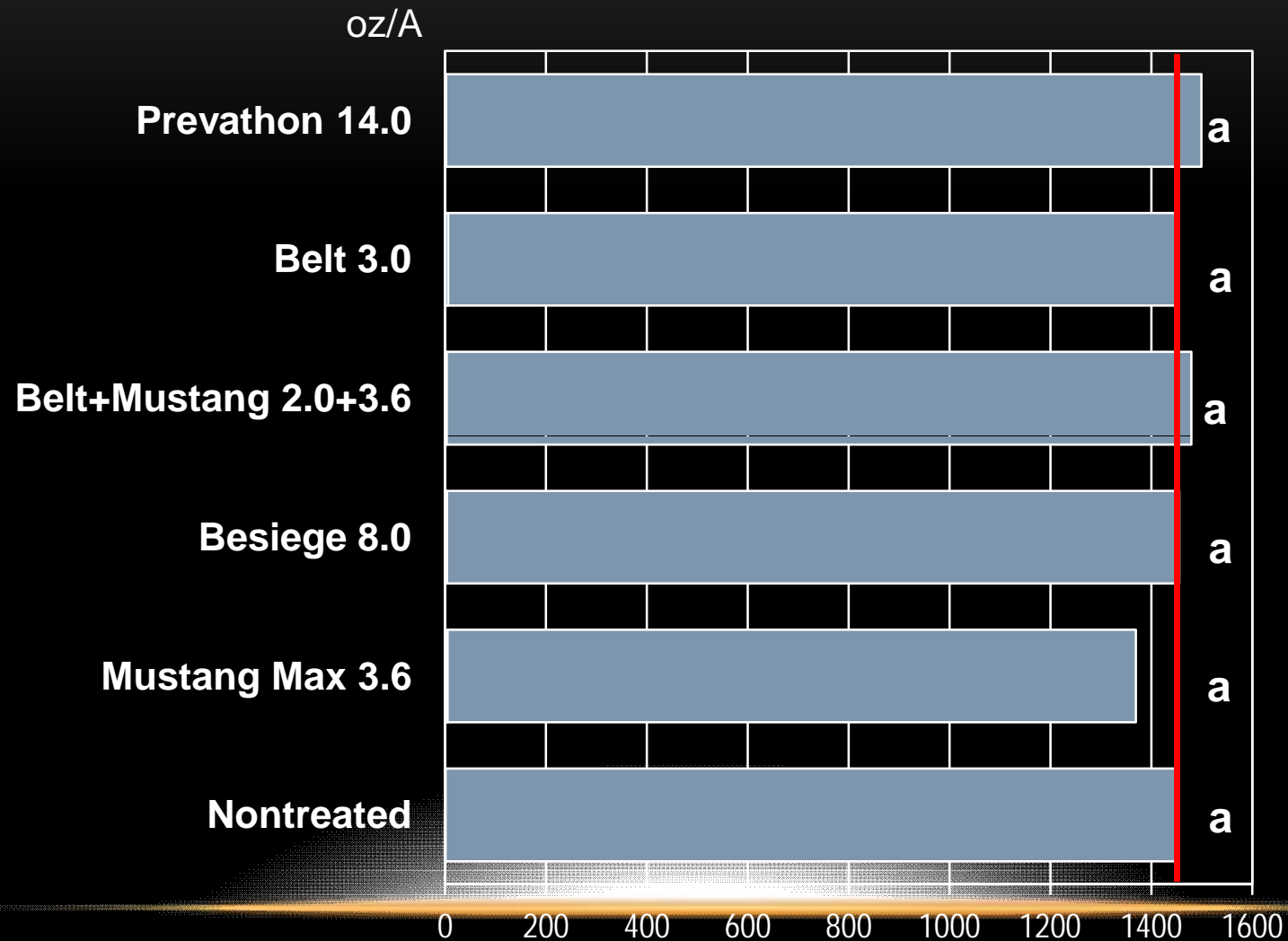
Insecticide Overspray of PHY367 WRF

Yield lb lint/acre

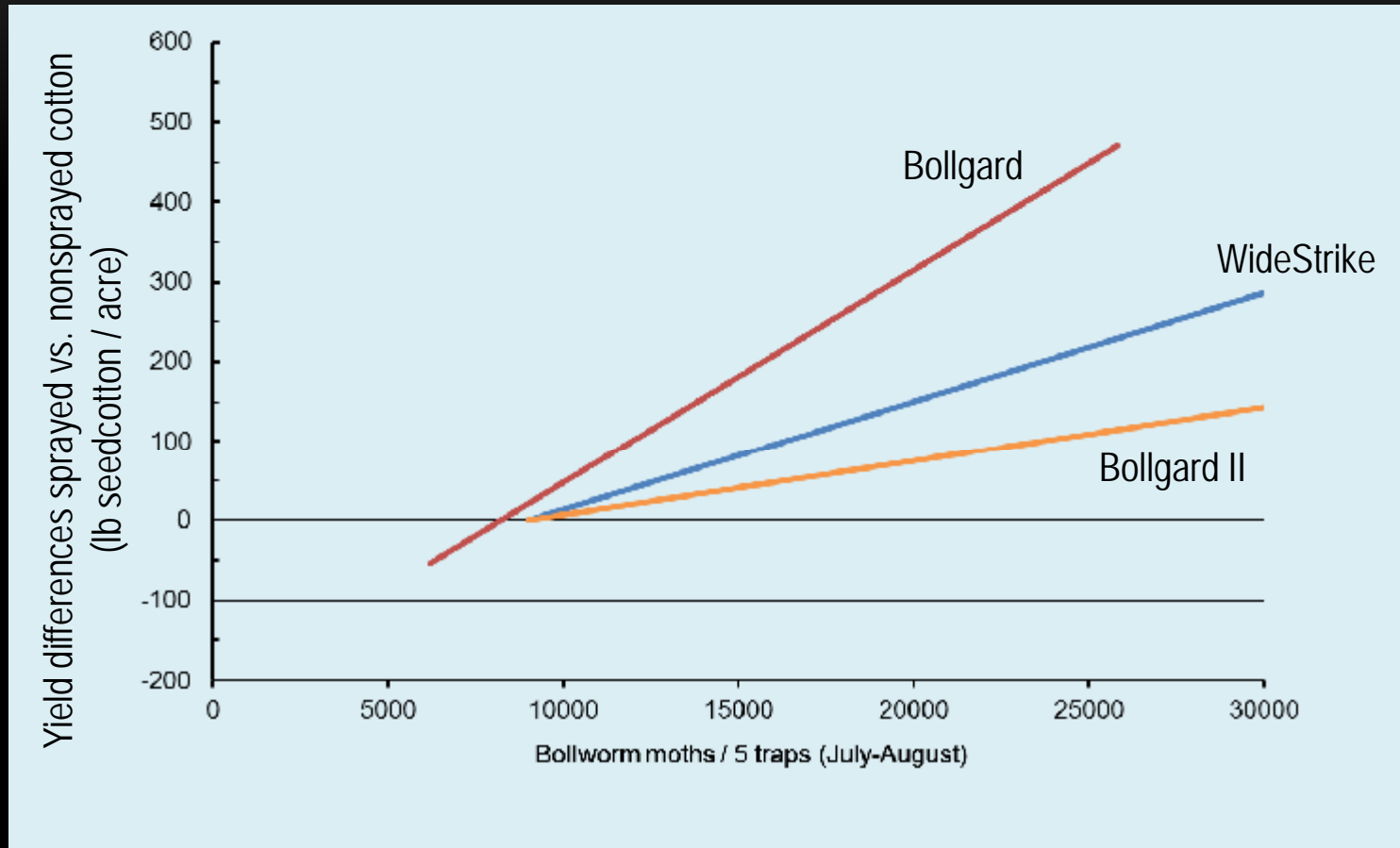


Insecticide Overspray of DP 1044 B2RF

Yield lb lint/acre



FOLIAR OVERSPRAYS ON SINGLE AND DUAL-GENE BT COTTONS



SUMMARY

- The benefit of overspraying dual-gene Bt cotton for bollworms is dependent on the technology in question and the level of bollworm pressure
 - Bollgard II is more efficacious towards bollworms than Widestrike
 - Varietal differences also occur
 - Both Bollgard II and Widestrike can benefit from insecticide oversprays targeting bollworms when bollworm pressure is high
- Need research into adjusting action thresholds on dual gene cotton
 - Should we be basing worm sprays in Bt cotton on egg lays?
- Does Prevathon enhance cotton yield in the absence of bollworm pressure?
 - The current body of data suggests that it does not; that increases in yield appear to be due to insect control