



***Bermudagrass
Suppression in Sugarcane***

Caleb Dalley

USDA-ARS

Sugarcane Research Laboratory

Houma, LA

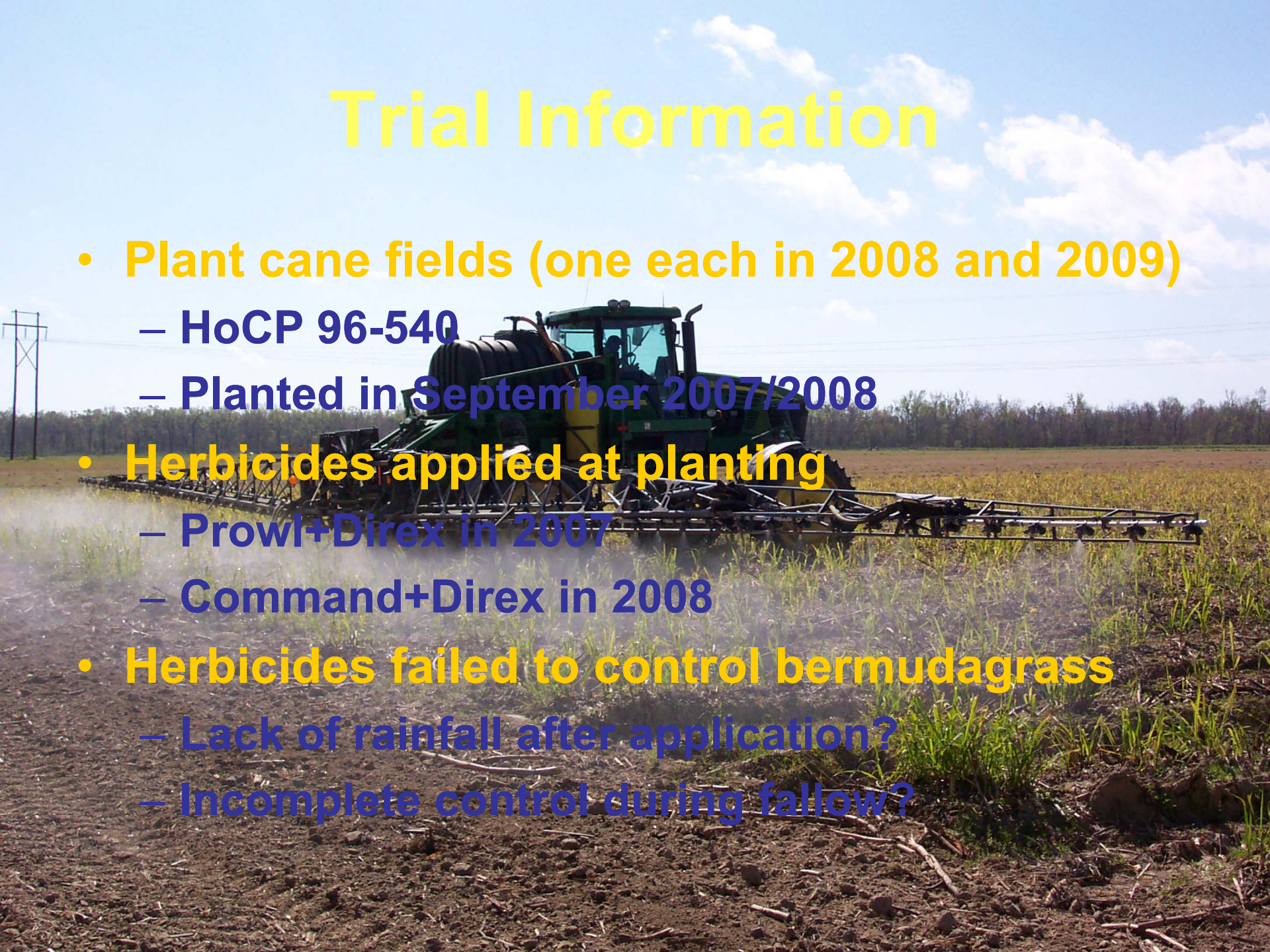
Control versus Suppression

- No herbicide is available that will control bermudagrass in sugarcane
- Controlling bermudagrass must be done in the fallow/rotation year
- Herbicides that suppress bermudagrass allow sugarcane to gain a competitive advantage
- Bermudagrass is most susceptible to herbicide 'injury' during the spring green-up
- Herbicides should be applied before bermudagrass resumes active growth

308

Trial Information

- **Plant cane fields (one each in 2008 and 2009)**
 - HoCP 96-540
 - Planted in September 2007/2008
- **Herbicides applied at planting**
 - Prowl+Direx in 2007
 - Command+Direx in 2008
- **Herbicides failed to control bermudagrass**
 - Lack of rainfall after application?
 - Incomplete control during fallow?

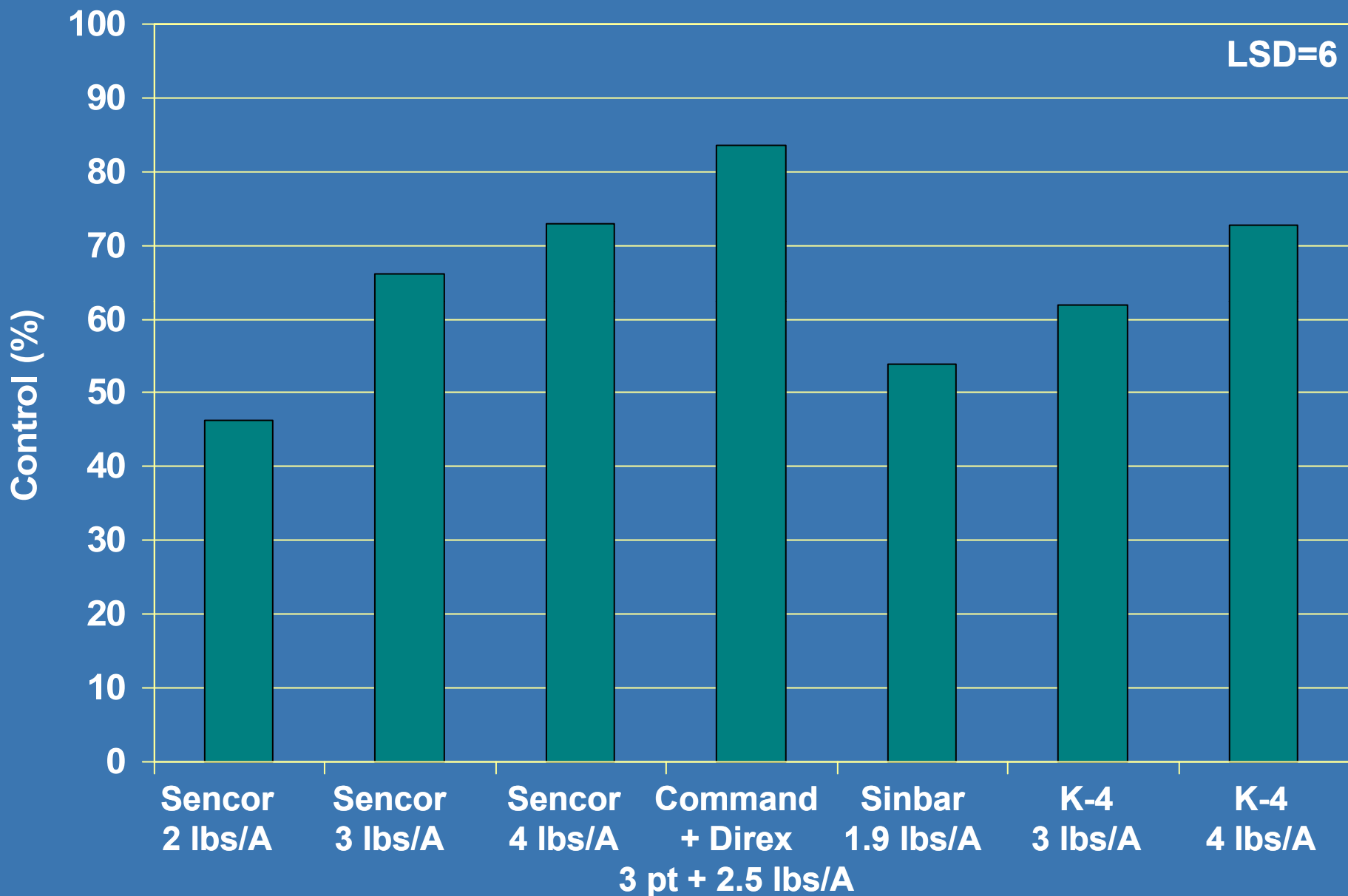


Herbicide Treatments

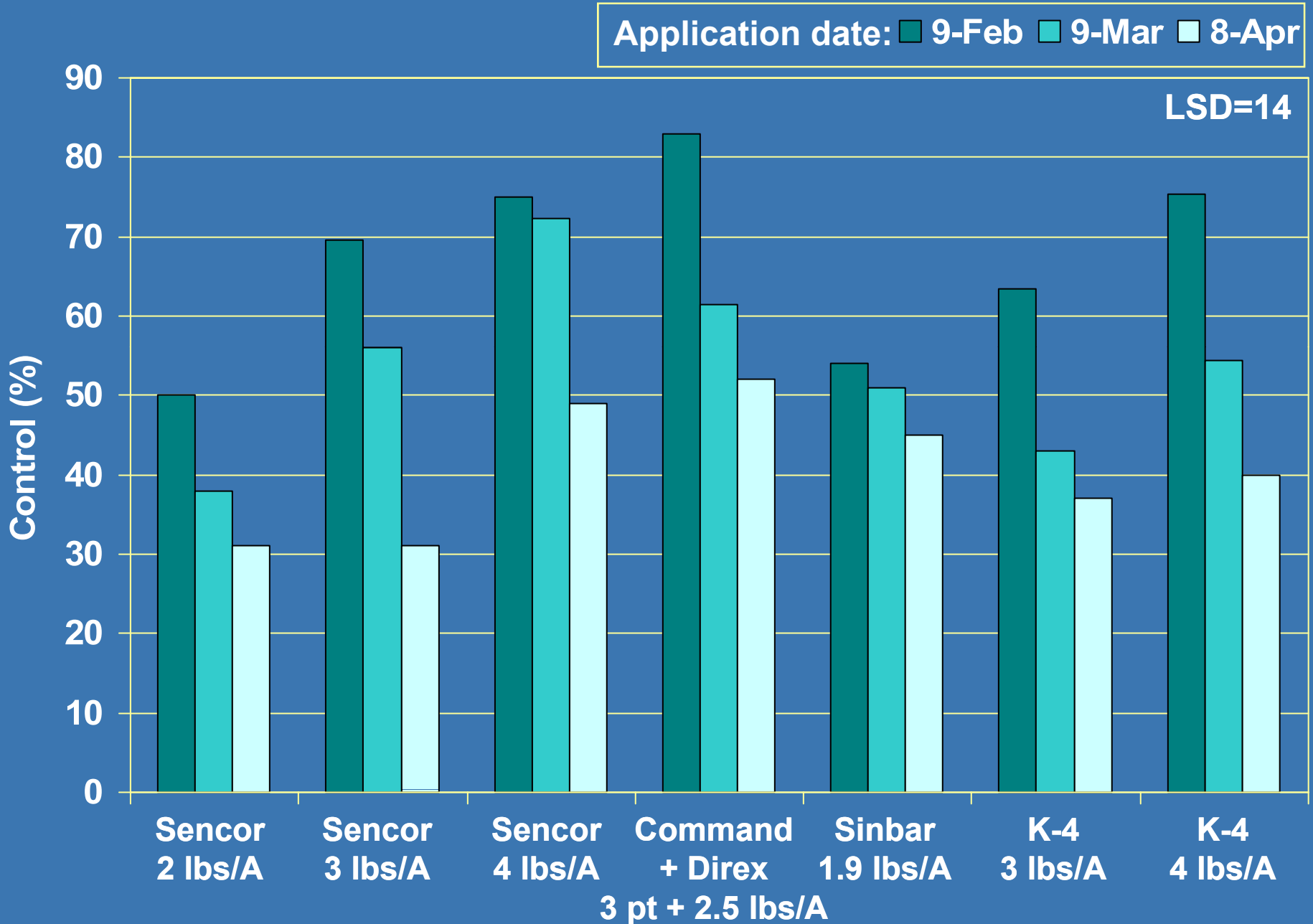
- **Sencor 75 DF (metribuzin)**
 - 2, 3, and 4 lbs per acre (1.5, 2.25, and 3 lbs ai/A)
- **Command plus Direx (clomazone + diuron)**
 - 3 pt plus 2.5 lbs per acre (1.25 and 2 lbs ai/A)
- **Sinbar (terbacil)**
 - 1.9 lbs per acre (1.5 lbs ai/A)
- **Dupont K4 (diuron + hexazinone)**
 - 3 and 4 lbs per acre (1.87 + 0.53 and 1.4 + 0.4 lbs ai/A)
- **Application timings**
 - One timing in 2008 (Feb 12)
 - Three timings in 2009 (Feb 9, Mar 9, and Apr 8, 2009)

Bermudagrass Control 4 Weeks after Treatment

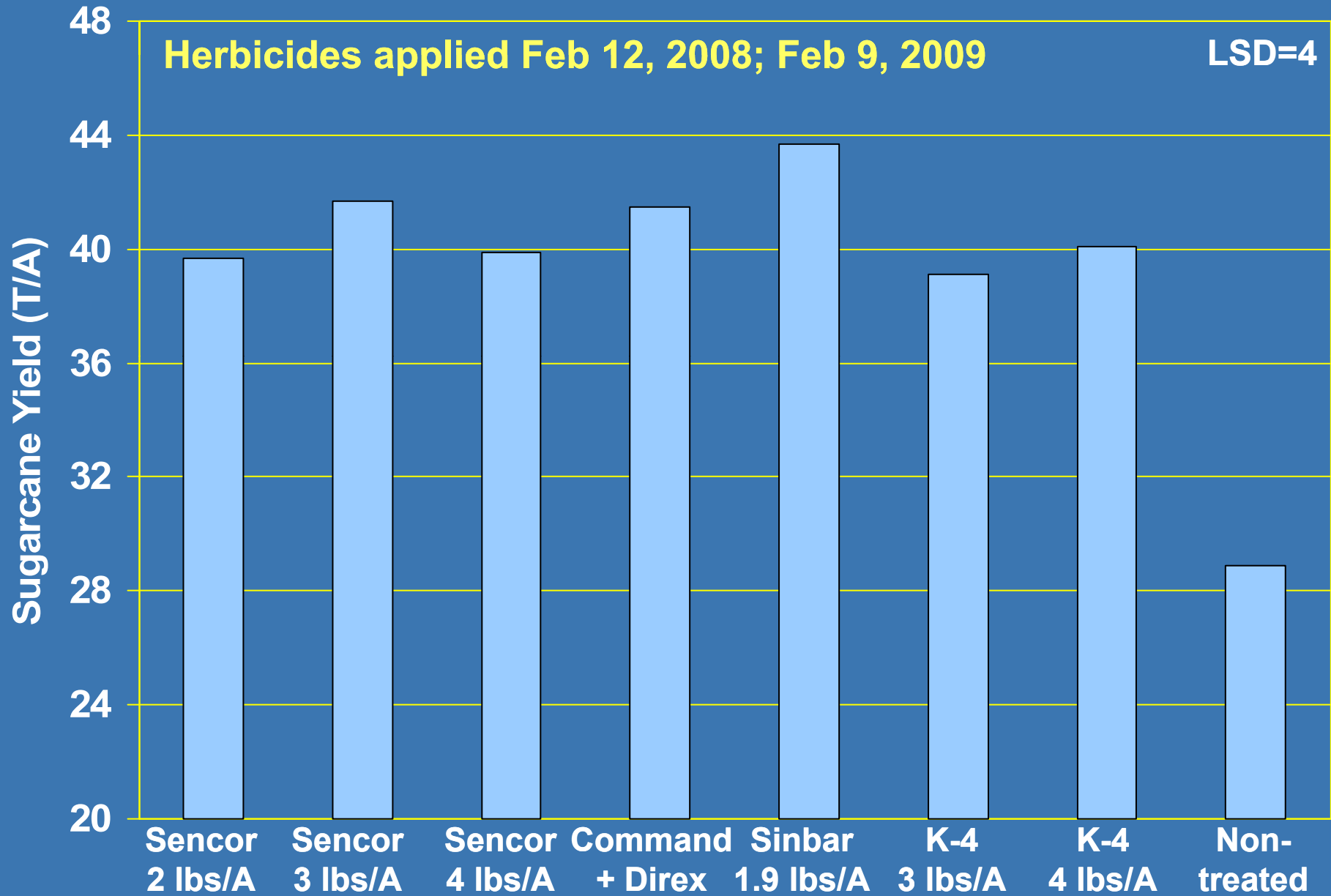
- Applied on Feb 12, 2008 and Feb 9, 2009



Bermudagrass Control 4 Weeks after Treatment, 2009



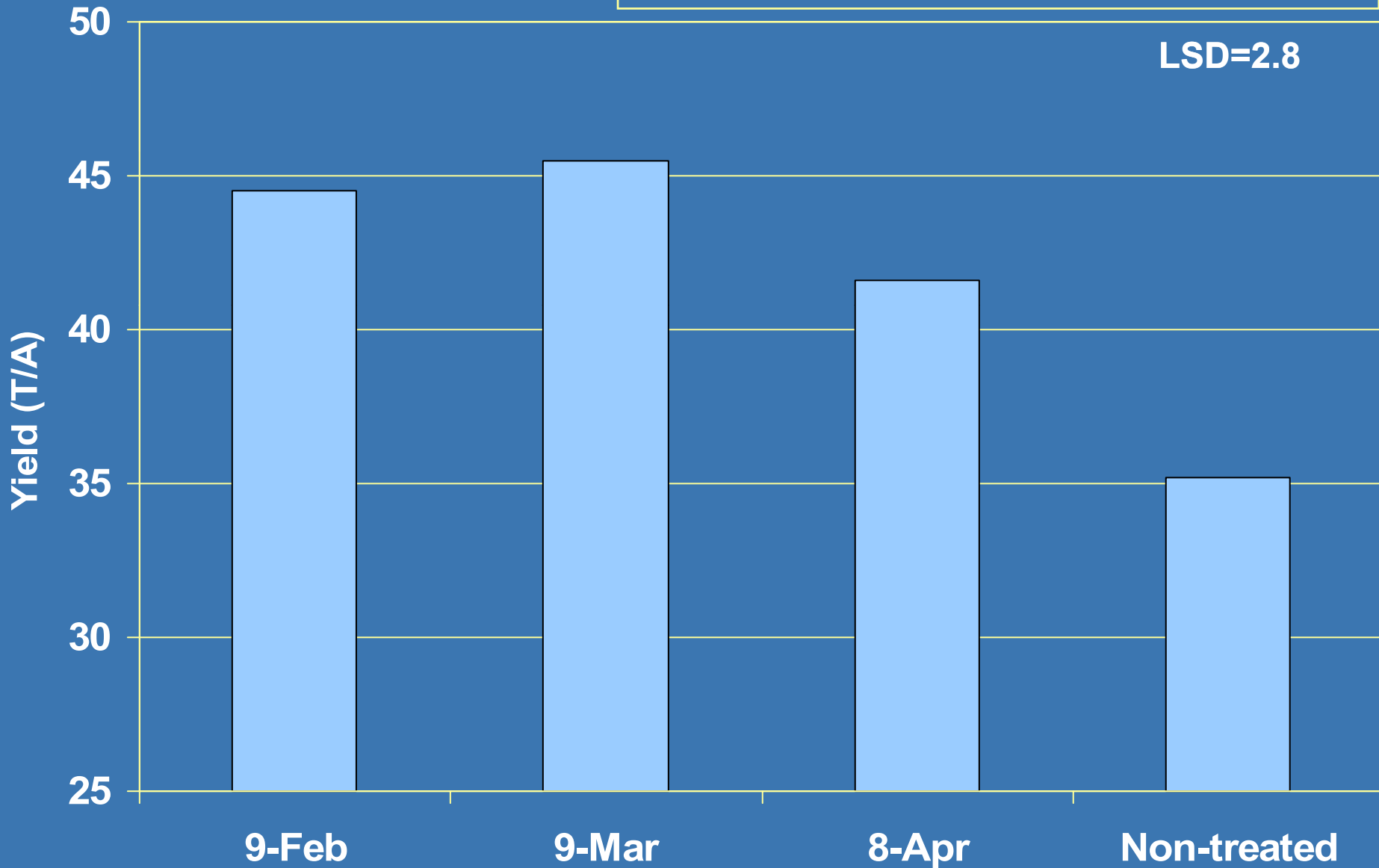
Sugarcane Yield- Average of 2008 and 2009



Harvested Dec 11, 2008; Dec 29, 2009

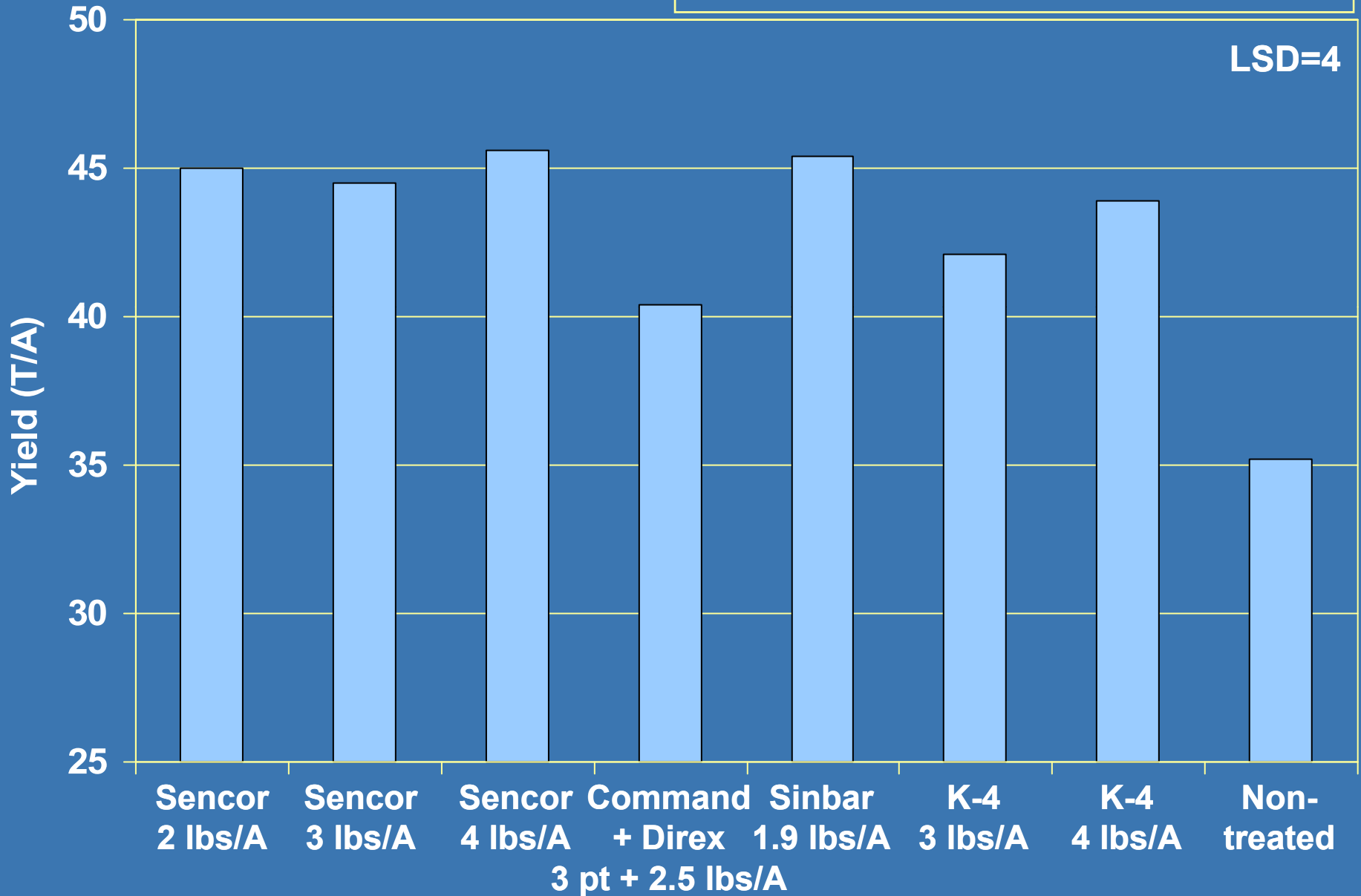
Sugarcane Yield- 2009

Application date: Average of all herbicides

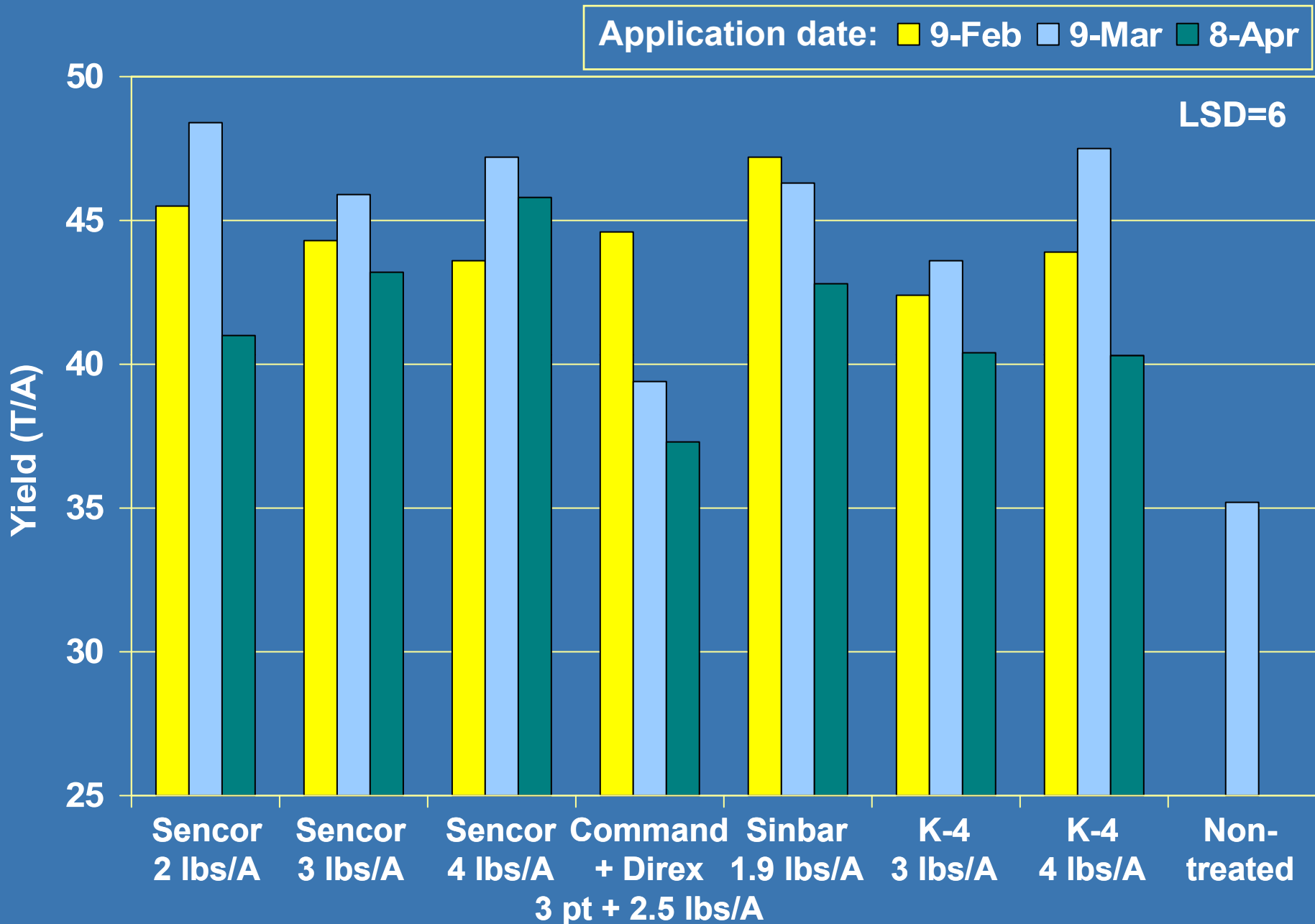


Sugarcane Yield- 2009

Application date: Average of all dates



Sugarcane Yield- 2009



Conclusions

- All herbicide treatments increase sugarcane yield compared to non-treated control
 - Delaying applications until April reduced yield gains
 - Command causes too much injury with delayed applications
 - Bermudagrass control is less when applications are delayed
 - Watch your rates; reducing rates may save money on application, but may cost you in control/yield.
- Suppressing bermudagrass allows sugarcane to gain a competitive advantage increasing yield

Evaluation of Sugarcane Ripeners



Caleb Dalley

Michael Duet

Ed Richard

USDA-ARS

Sugarcane Research Laboratory

Houma, LA

Timing of Ripener Application

Variety: HoCP 96-540 (1st stubble)

Ripener: WeatherMax

Rate: 5.3 oz/A

Plot Size: 50 ft (2 rows)

Reps: 6

Years: 2006, 2007, 2009

Timings: Every 4 weeks

- 2006: Aug 9, Sep 5, Oct 2, Oct 30
- 2007: Aug 10, Sep 7, Oct 3, Nov 1
- 2009: Aug 10, Sep 7, Oct 1, Oct 28

Harvests:

- Handcut: 4, 5, 6, and 7 weeks
- Chopper: 7 weeks

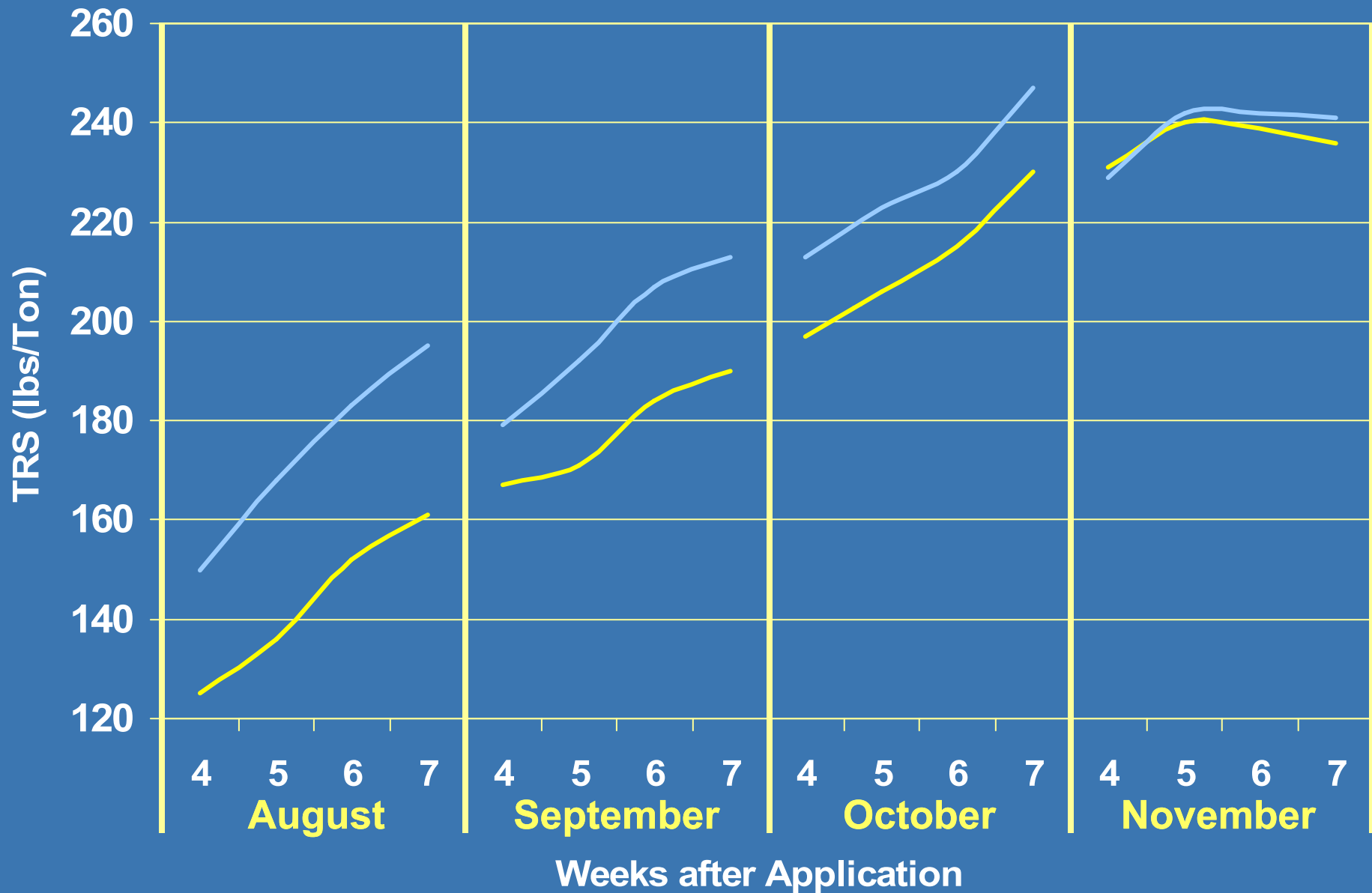
Sugar Analysis: Prebreaker/Press

- Whole stalk, bottom, middle, top
- Billets from chopper



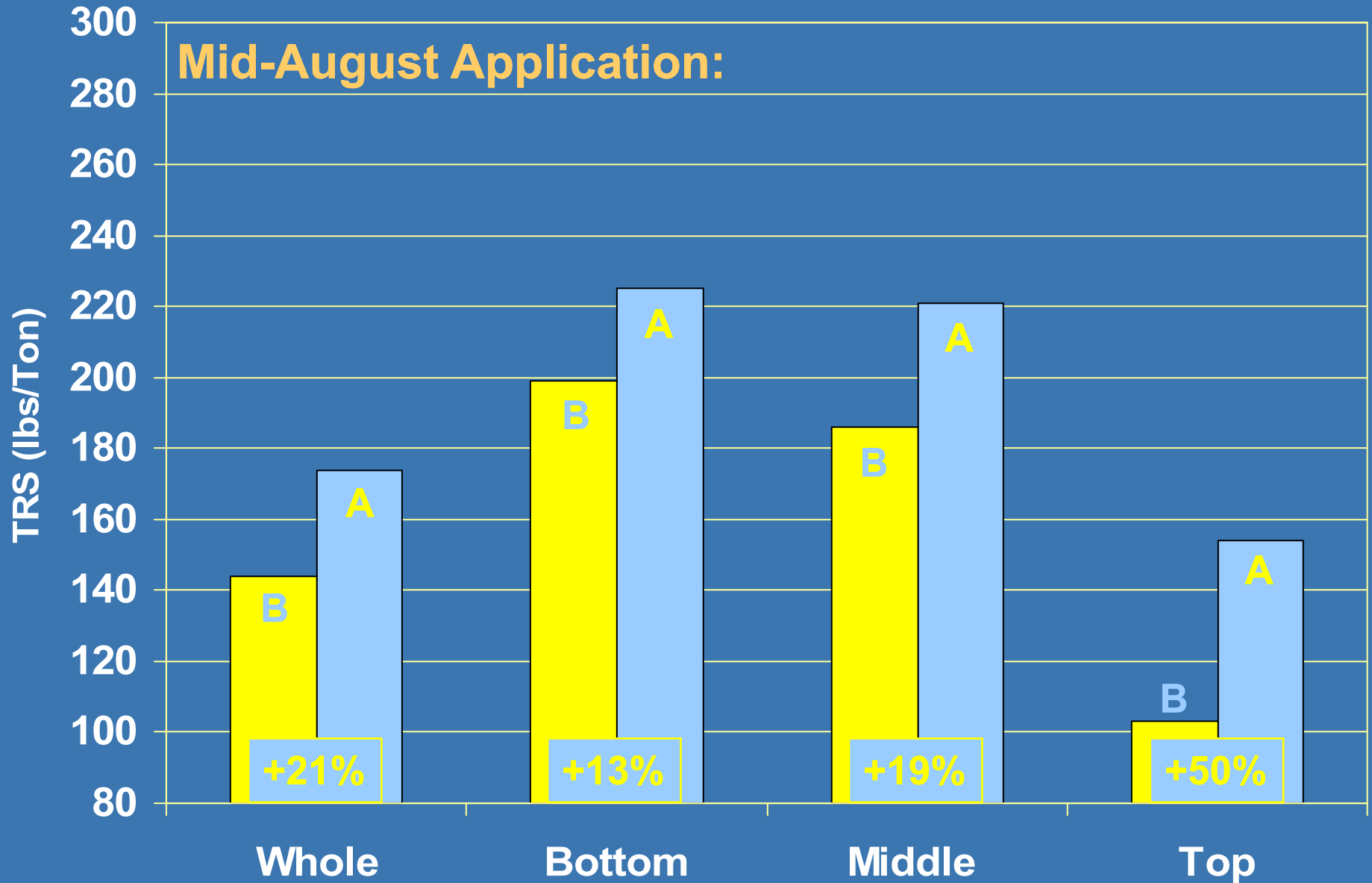
Sugarcane Response to Ripener Application

Average of 2006, 2007, and 2009



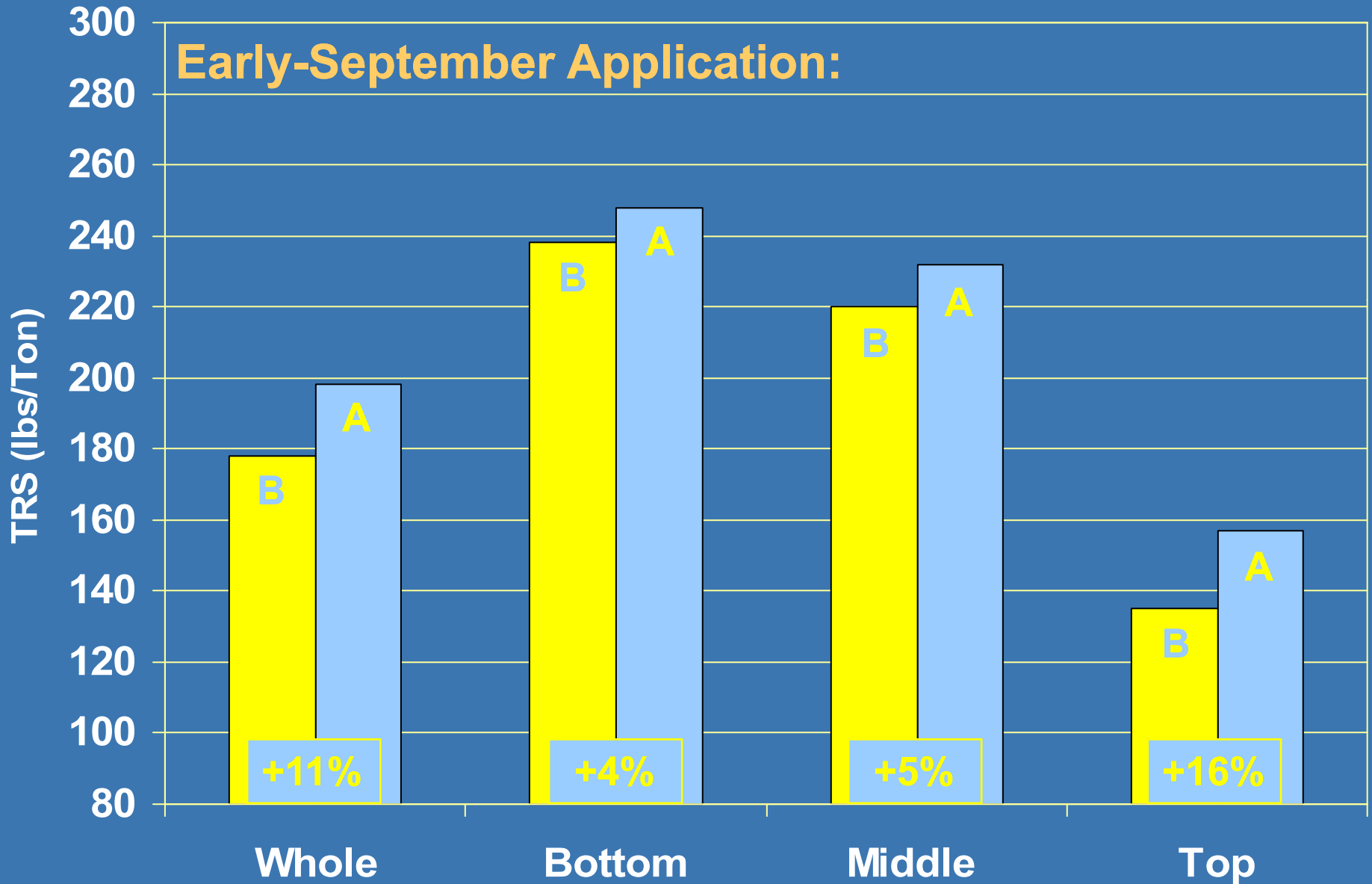
Sugarcane Response to Ripener Application

Average of 2006, 2007, and 2009



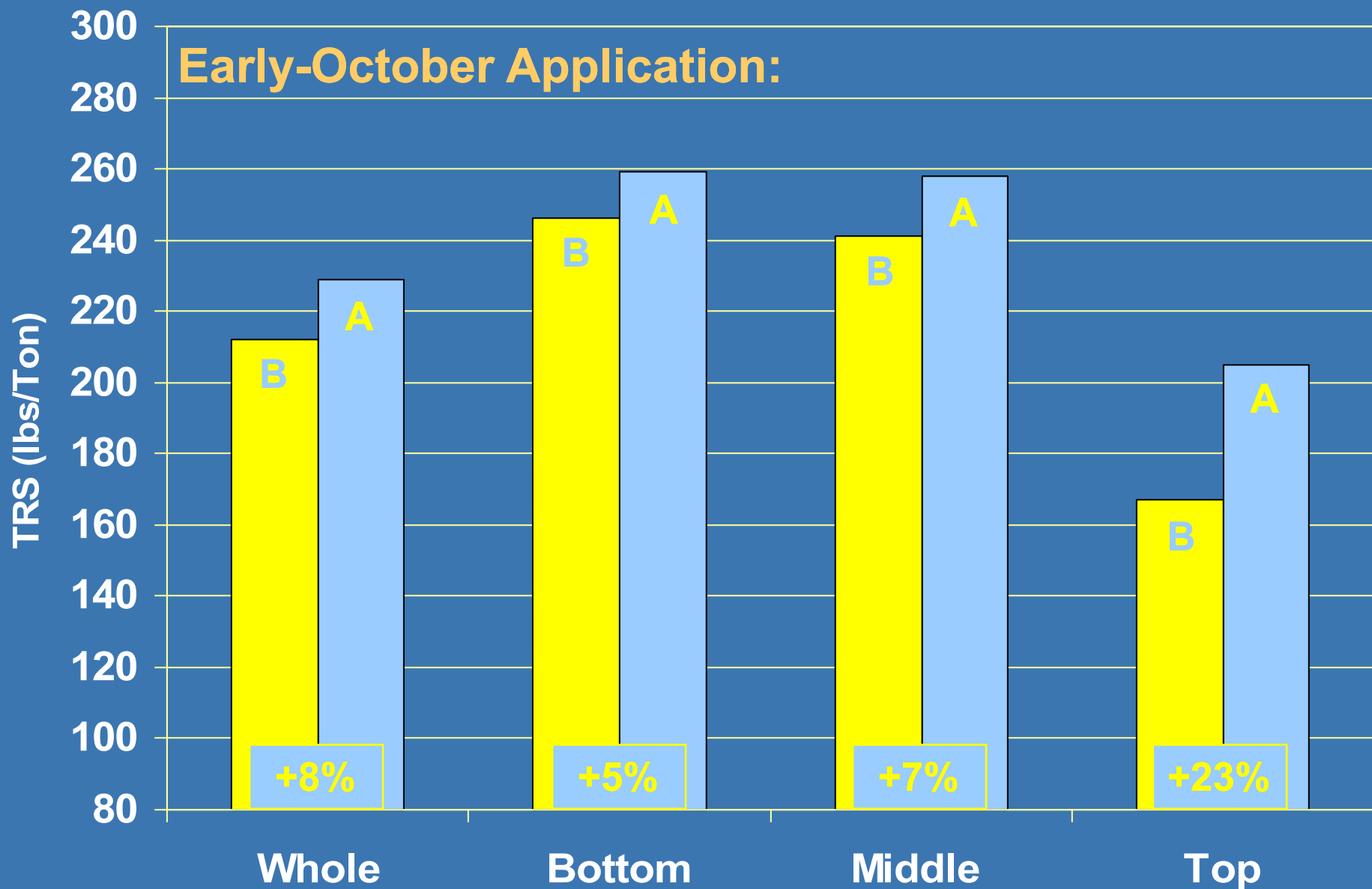
Sugarcane Response to Ripener Application

Average of 2006, 2007, and 2009



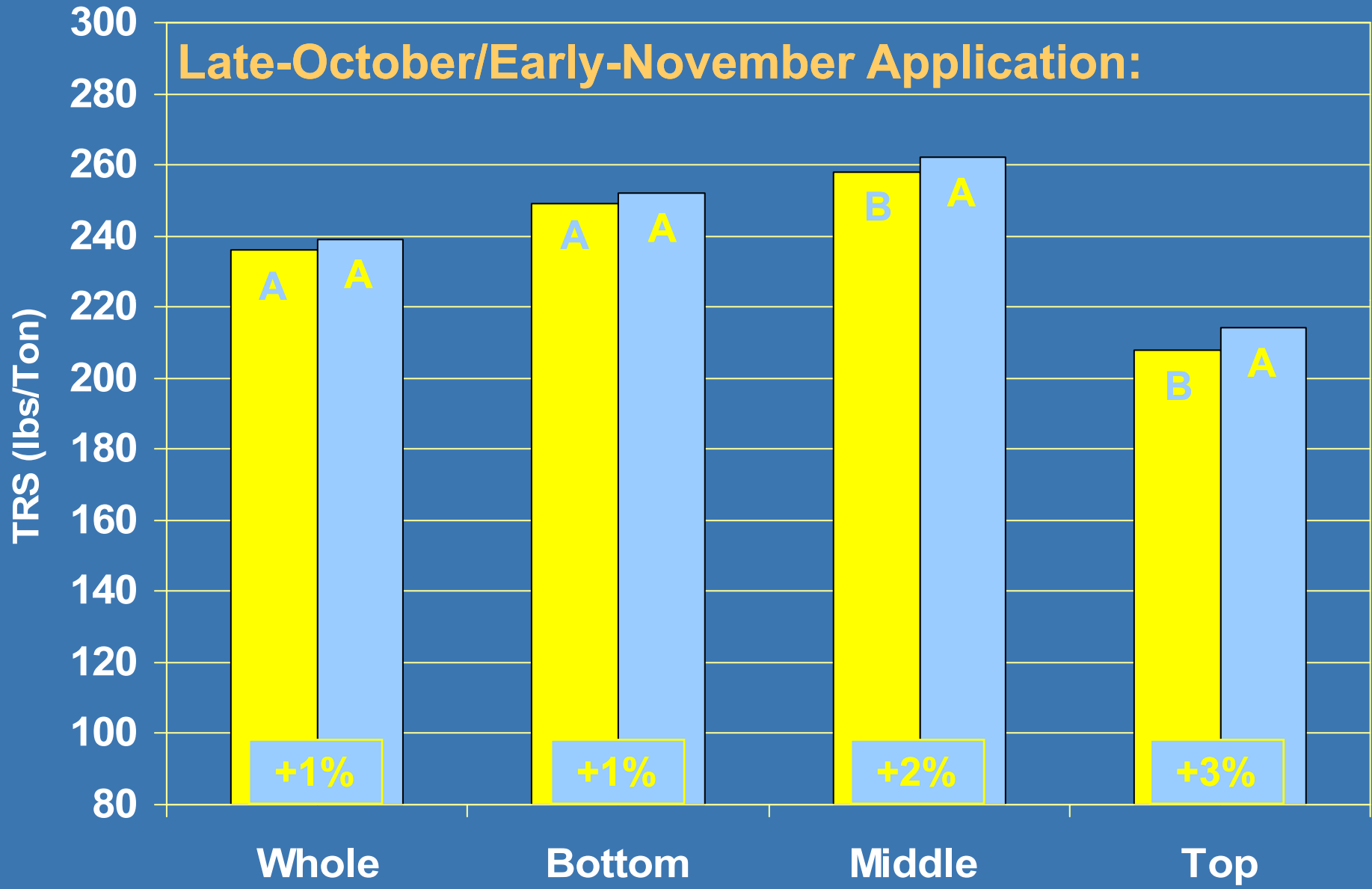
Sugarcane Response to Ripener Application

Average of 2006, 2007, and 2009



Sugarcane Response to Ripener Application

Average of 2006, 2007, and 2009



Varietal Response to Ripener Application

- **Study Information:**

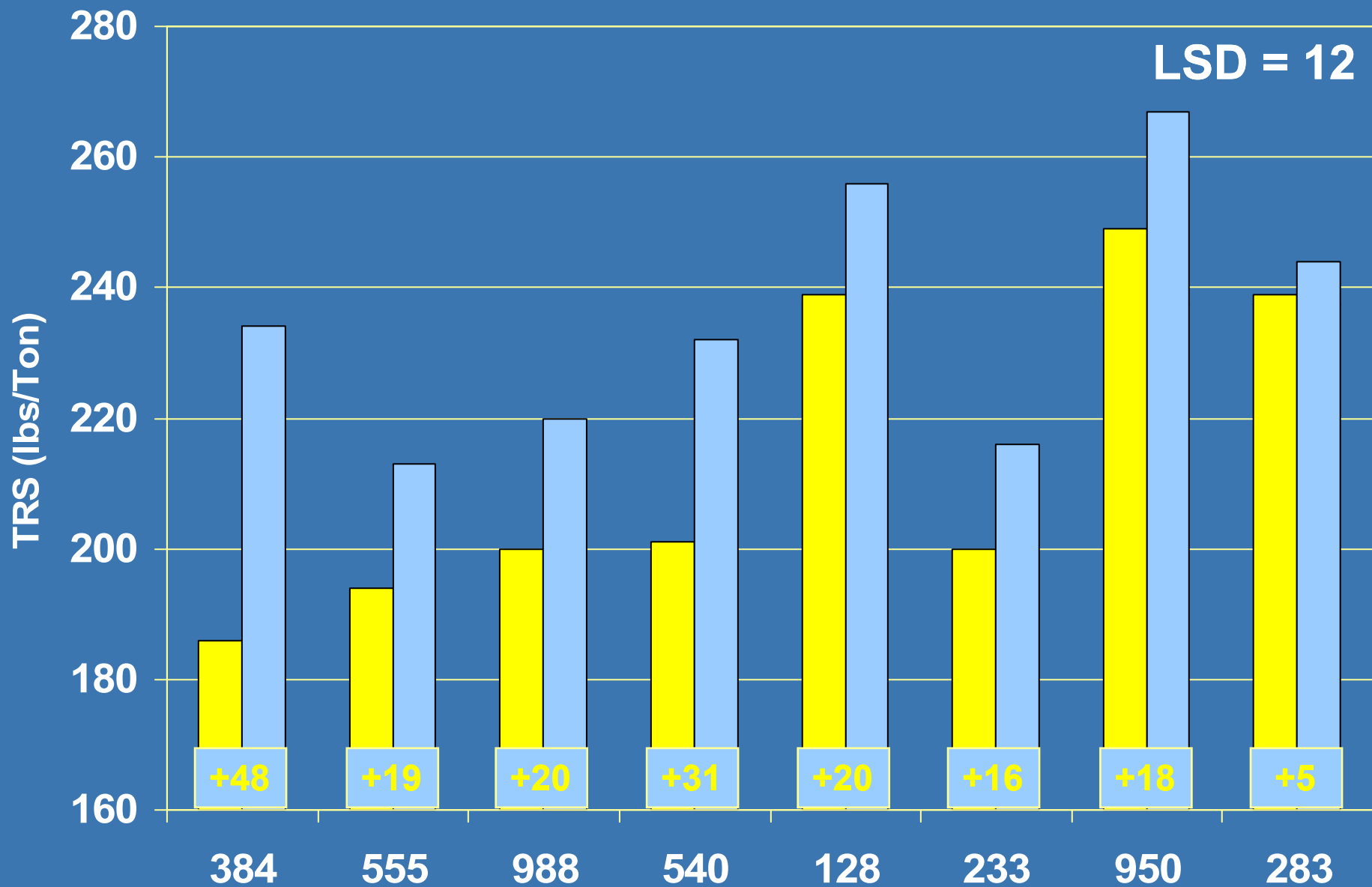
- Ripener: **WeatherMax**
- Rate: **5.3 oz/A**
- Reps: **4**
- Application Date: **Aug 24, 2009**
- Harvest: **Hand-cut**
 - **4, 5, 6, and 7 at weeks**

- **Varieties Tested:**

- **LCP 85-384**
- **HoCP 91-555**
- **Ho 95-988**
- **HoCP 96-540**
- **L 97-128**
- **L 99-233**
- **Ho 00-950**
- **L 01-283**

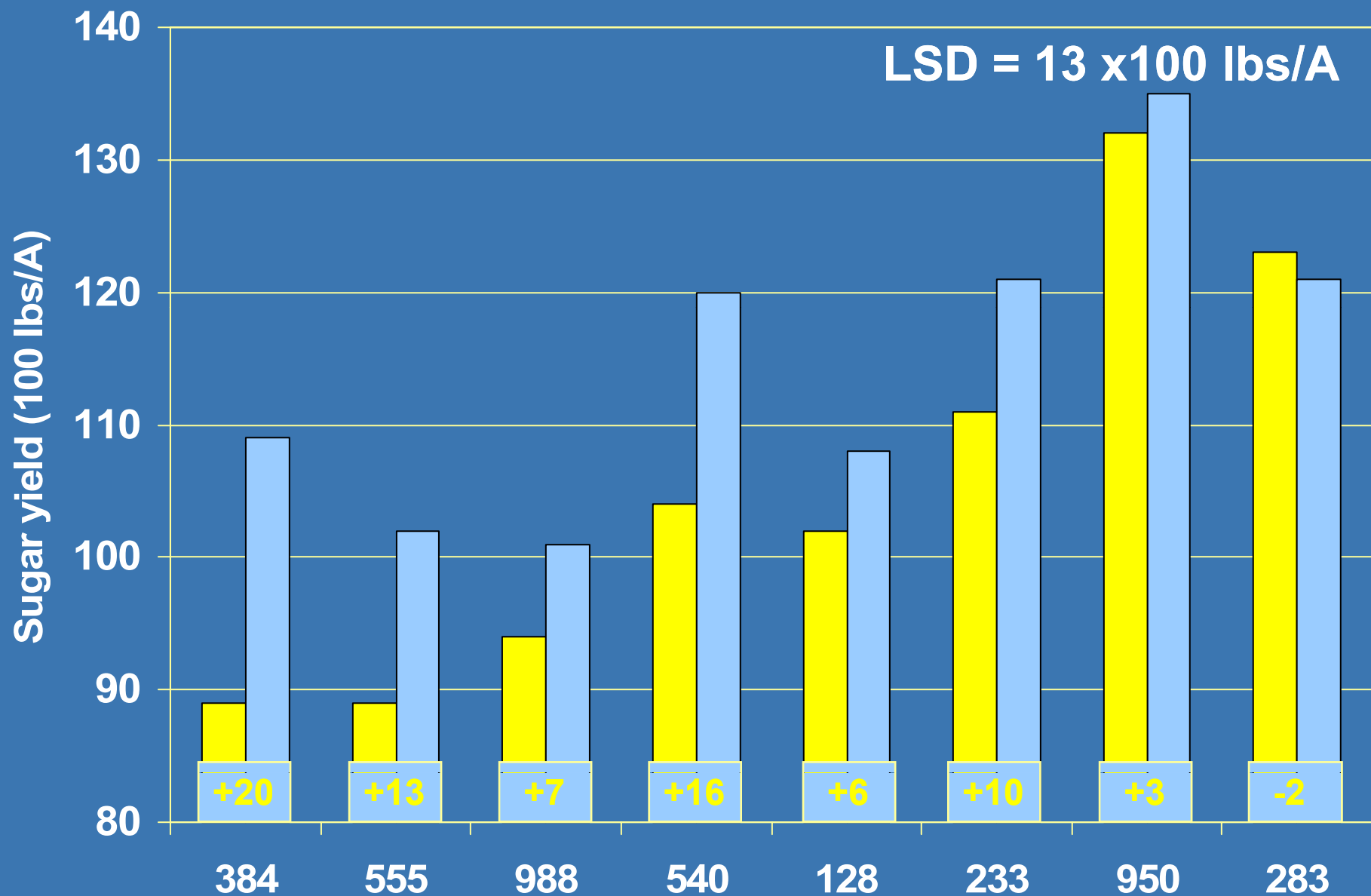
Sugarcane Response to Ripener Application

Average of all sampling dates



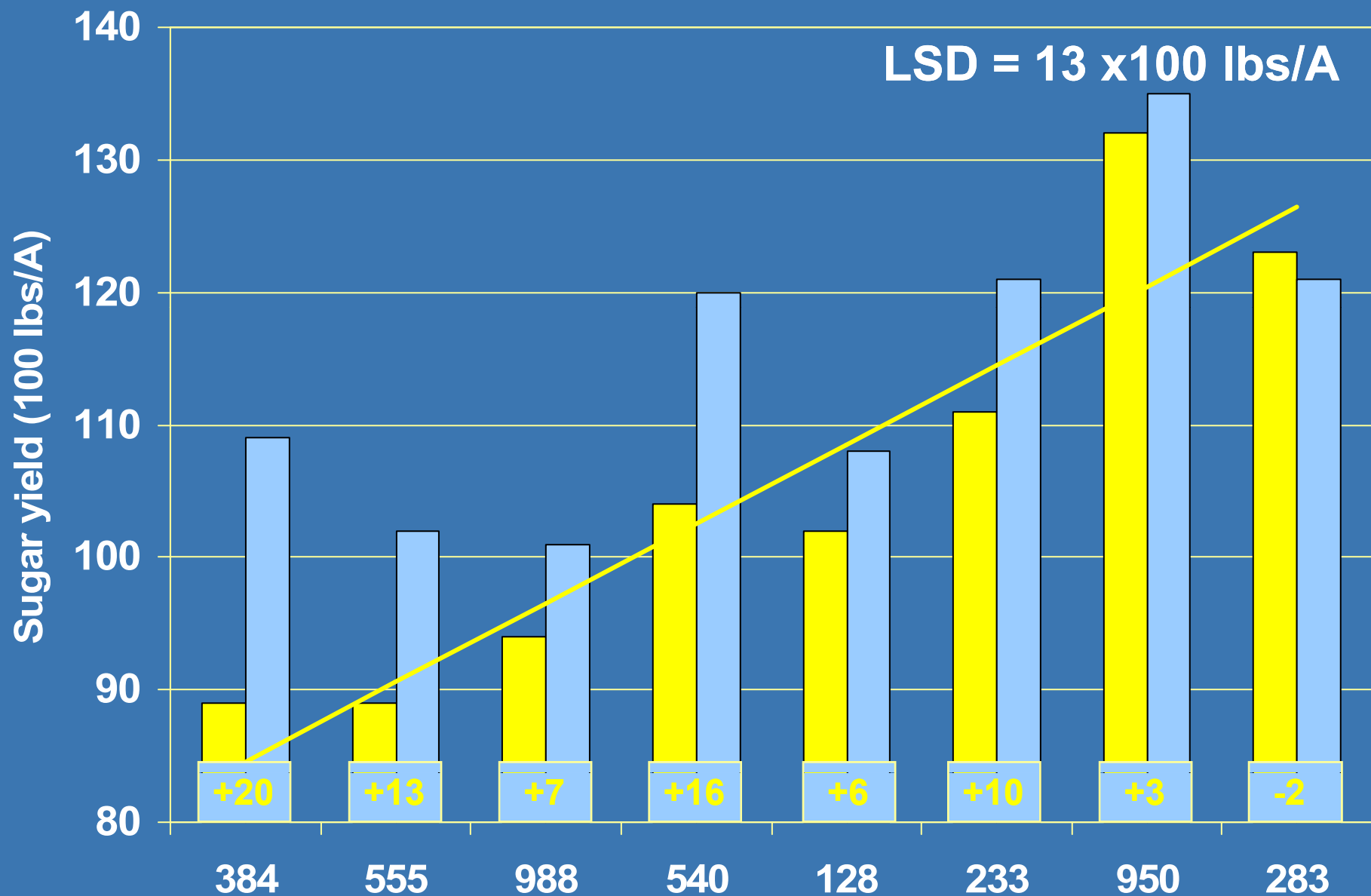
Sugarcane Response to Ripener Application

Average of all sampling dates



Sugarcane Response to Ripener Application

Average of all sampling dates

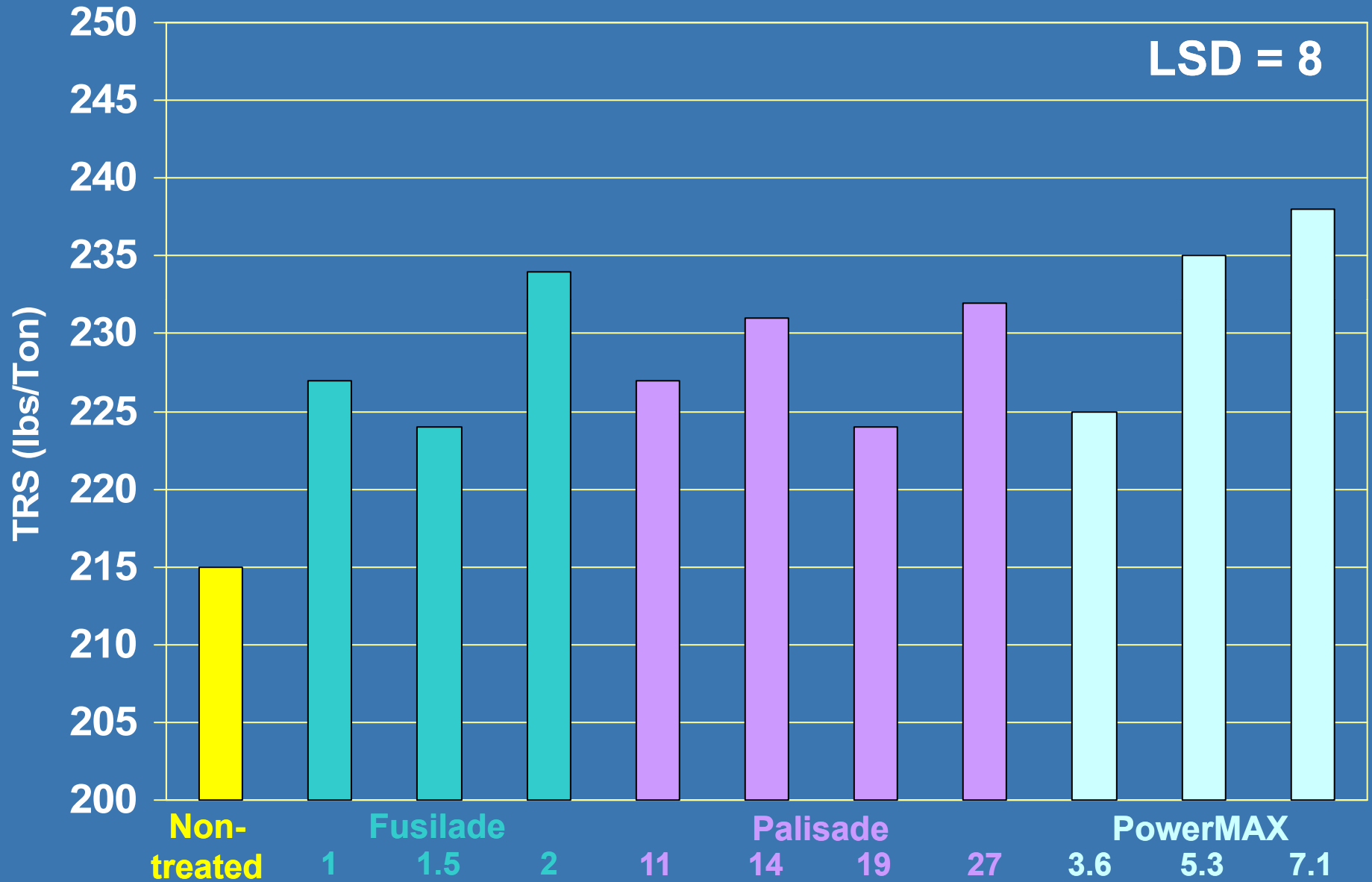


Alternative Ripeners

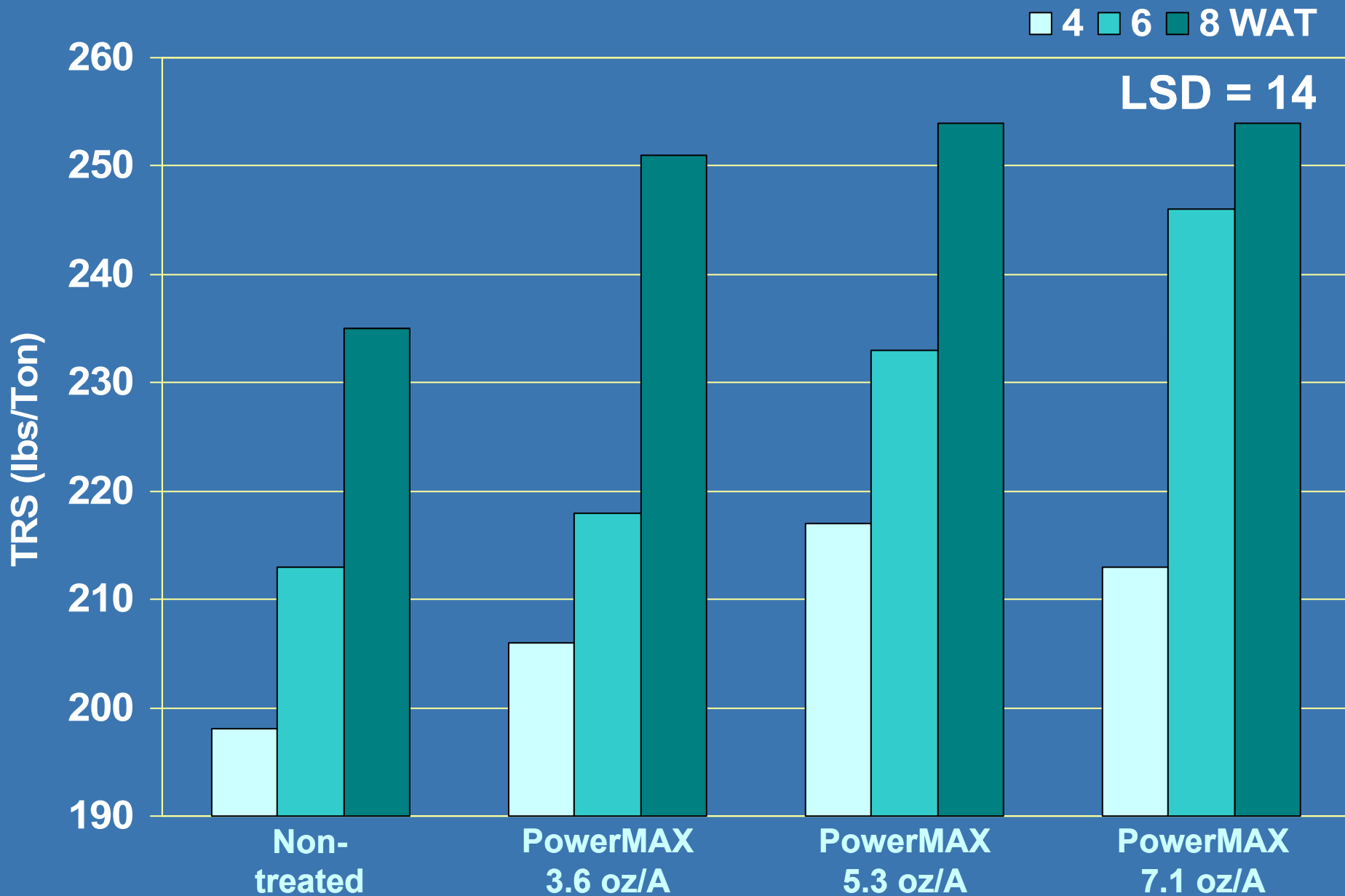
- **Experimental Ripeners Tested**
 - **Fusilade:** 1, 1.5, and 2.0 oz/A
 - **Palisade:** 10.8, 13.6, 19, and 27.2 oz/A
 - **Roundup PowerMAX:** 3.56, 5.3, and 7.1 oz/A
- **Sugarcane Variety:** HoCP 96-540 (1st stubble)
- **Application Date:** Sept 29, 2009
- **Reps:** 4
- **Plot size:** 25 feet by 2 rows
- **Harvested:**
 - Hand-cut at 4 and 6 weeks after treatment (WAT)
 - Chopper at 8 (WAT)

Sugarcane Response to Ripeners

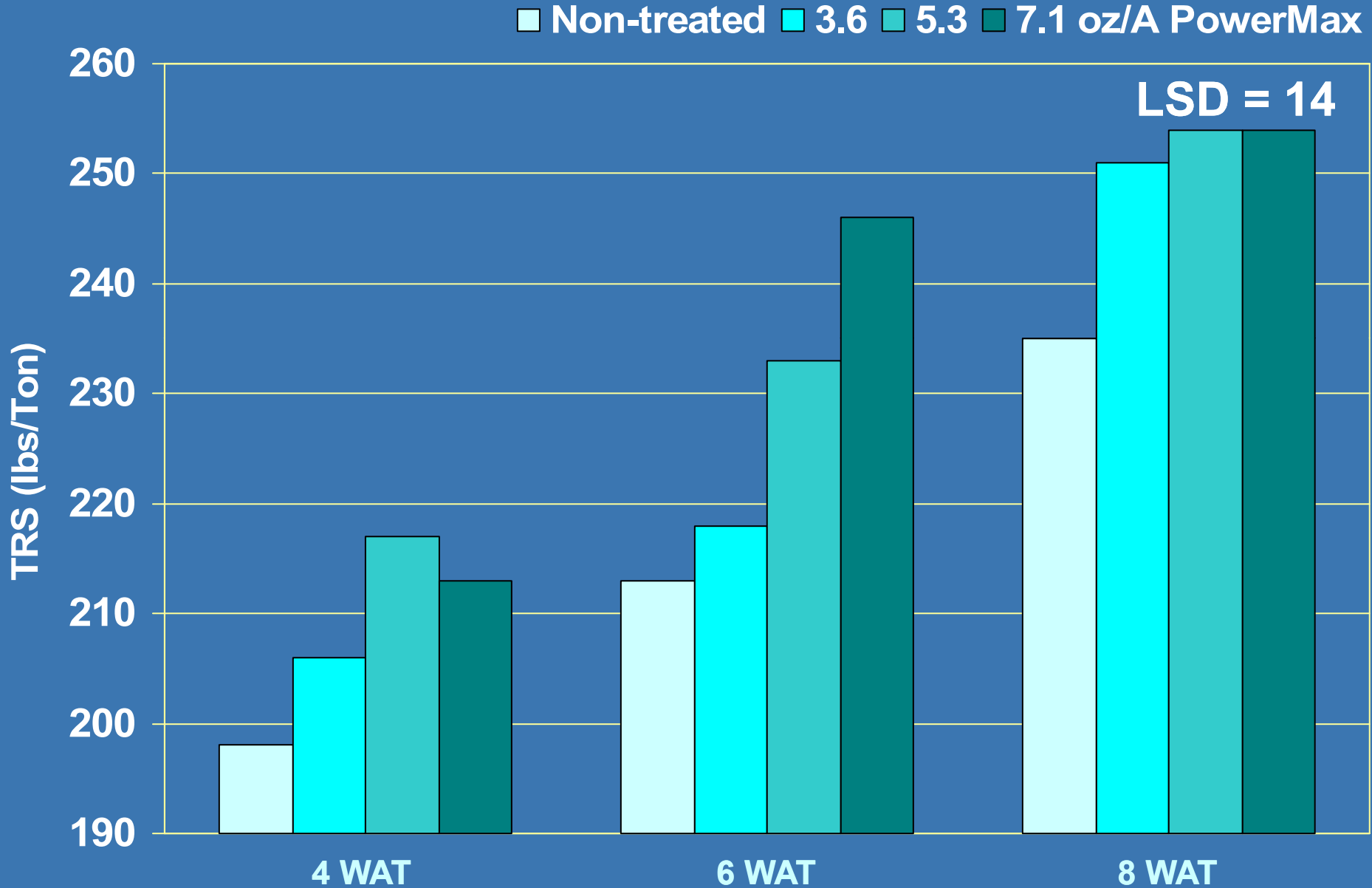
Average of all sampling dates



Sugarcane Response to Ripeners

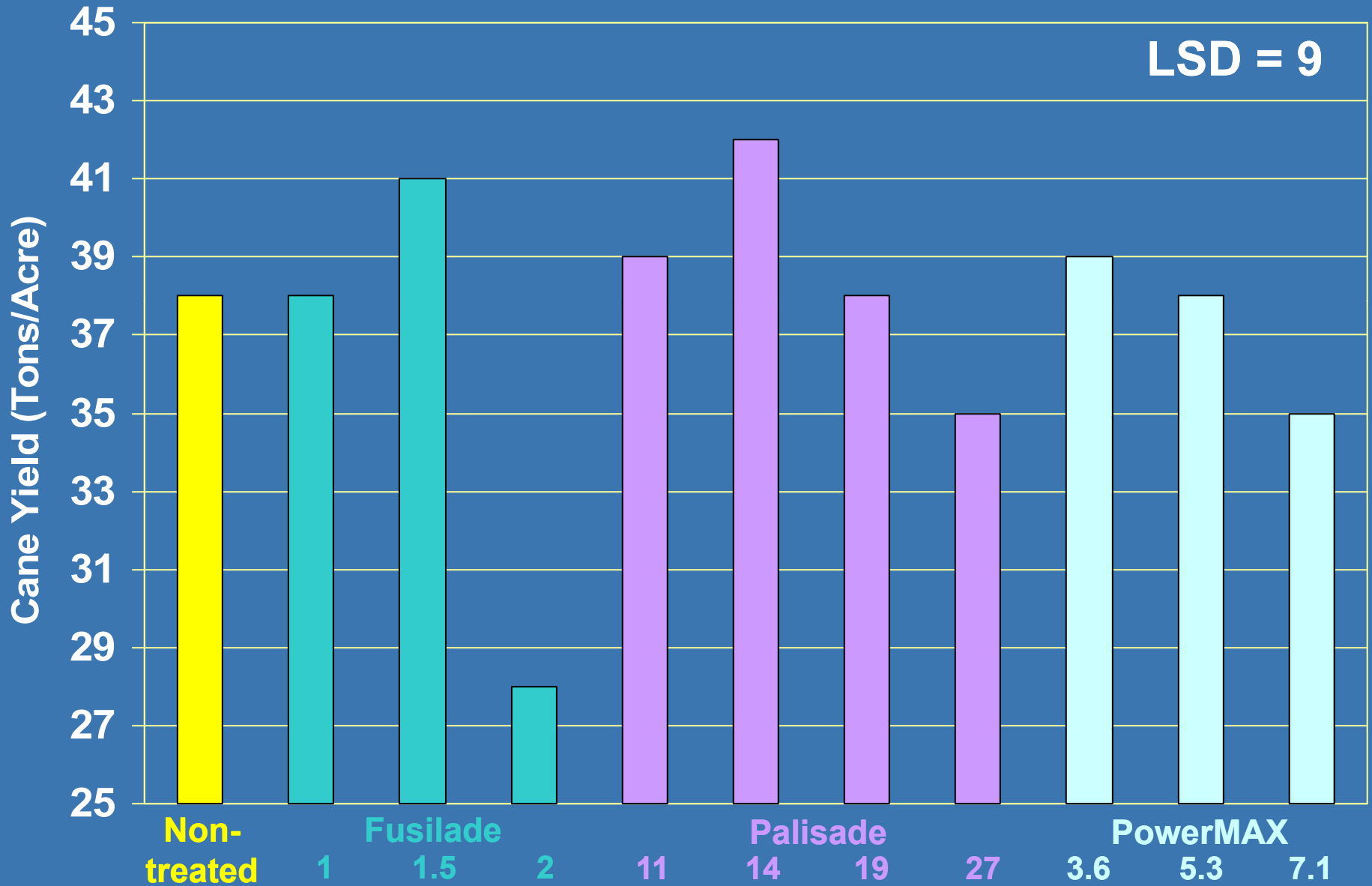


Sugarcane Response to Roundup PowerMax



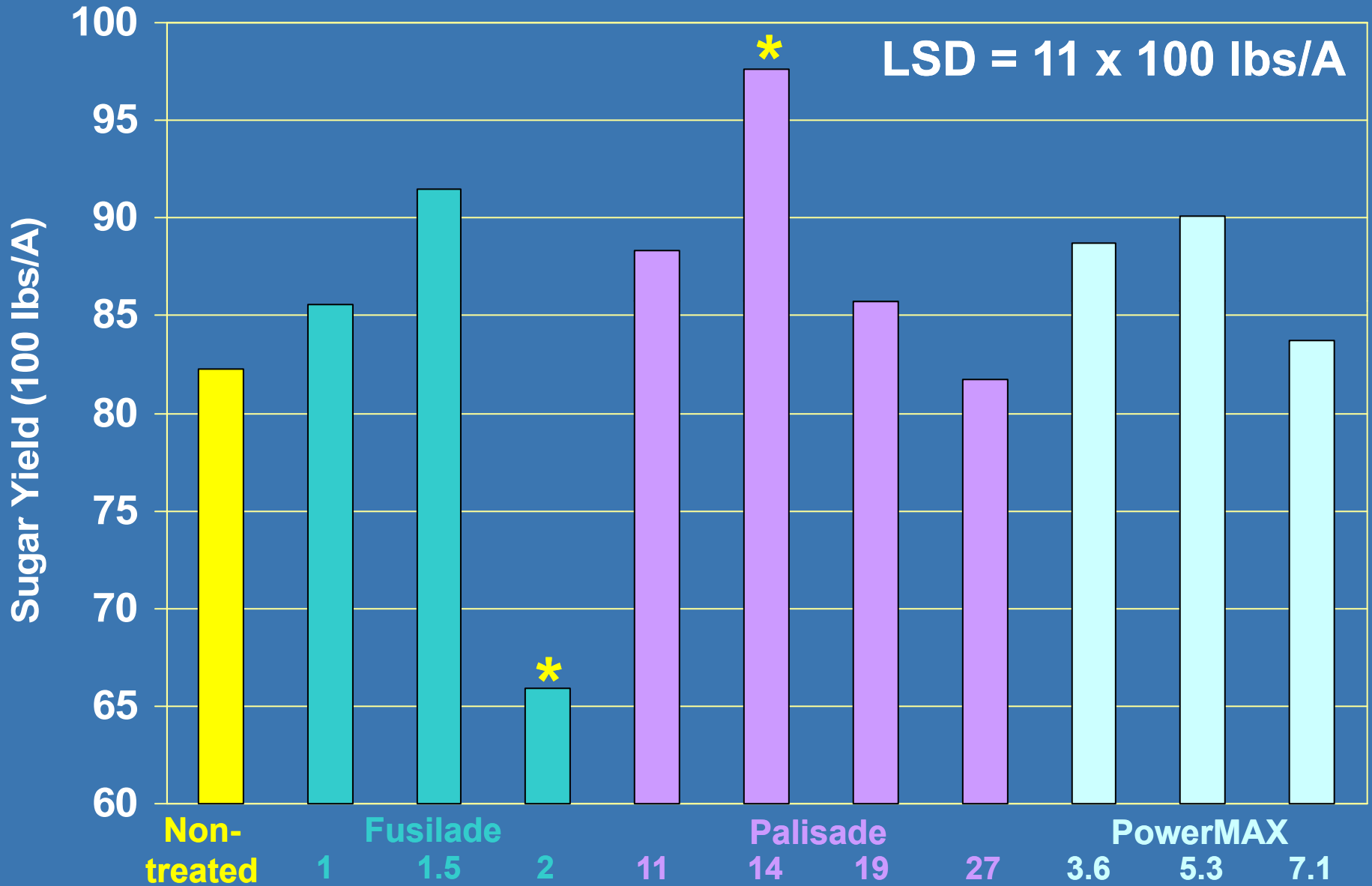
Sugarcane Response to Ripeners

Chopper Harvested at 8 WAT



Sugarcane Response to Ripeners

Chopper Harvested at 8 WAT



Conclusions

- Sugarcane response to ripeners decreases with later application timings
 - No need to apply to late-harvested cane
- Greatest response to ripeners seen in top third of stalk
- All current varieties except L01-283 responded to ripener in 2009
 - 283 already has higher TRS than most other varieties without use of ripener
- Palisade looks to have potential as a sugarcane ripener in Louisiana
 - No carryover injury to stubble-cane crop
 - Need to evaluate in all sugarcane varieties

