Use of Chemical Ripeners to Enhance Sugar Yield

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Glyphosate

6302714-10

Roundup POWERMAX HERBICIDE

PULL HERE TO OPEN

GROUP 9 HERBICIDE

Touchdown HiTech

Herbicide

Nonselective Foliar Systemic Herbicide for Weed Control

Active Ingredient:	
*Glyphosate: N-(phosphonomethyl) glycine, In the form of the monopotassium salt	52.3%
Other Ingredients:	47.7%
Total:	100.0%

**Contains 5 pounds per U.S. gallon of glyphosate acid equivalents.*

KEEP OUT OF REACH OF CHILDREN.

CAUTION

See additional precautionary statements and directions for use inside booklet.

EPA Reg. No. 100-1182
EPA Est. 100-LA-001

SCP 1182A-L1D 0409
296130

2.5 gallons
Net Contents

syngenta®

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Palisade® EC

syngenta.

For growth management of perennial ryegrass grown for seed in Idaho, Oregon, and Washington

Active Ingredient:

Trinexapac-ethyl (CAS No. 95266-40-3)	12.0%
Other Ingredients:	88.0%
Total:	100.0%

Palisade EC is an emulsifiable concentrate.

WARNING/AVISO **KEEP OUT OF REACH OF CHILDREN.**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

See additional precautionary statements and directions for use inside booklet.

EPA Reg. No. 100-949 EPA Est. 62171-MS-001

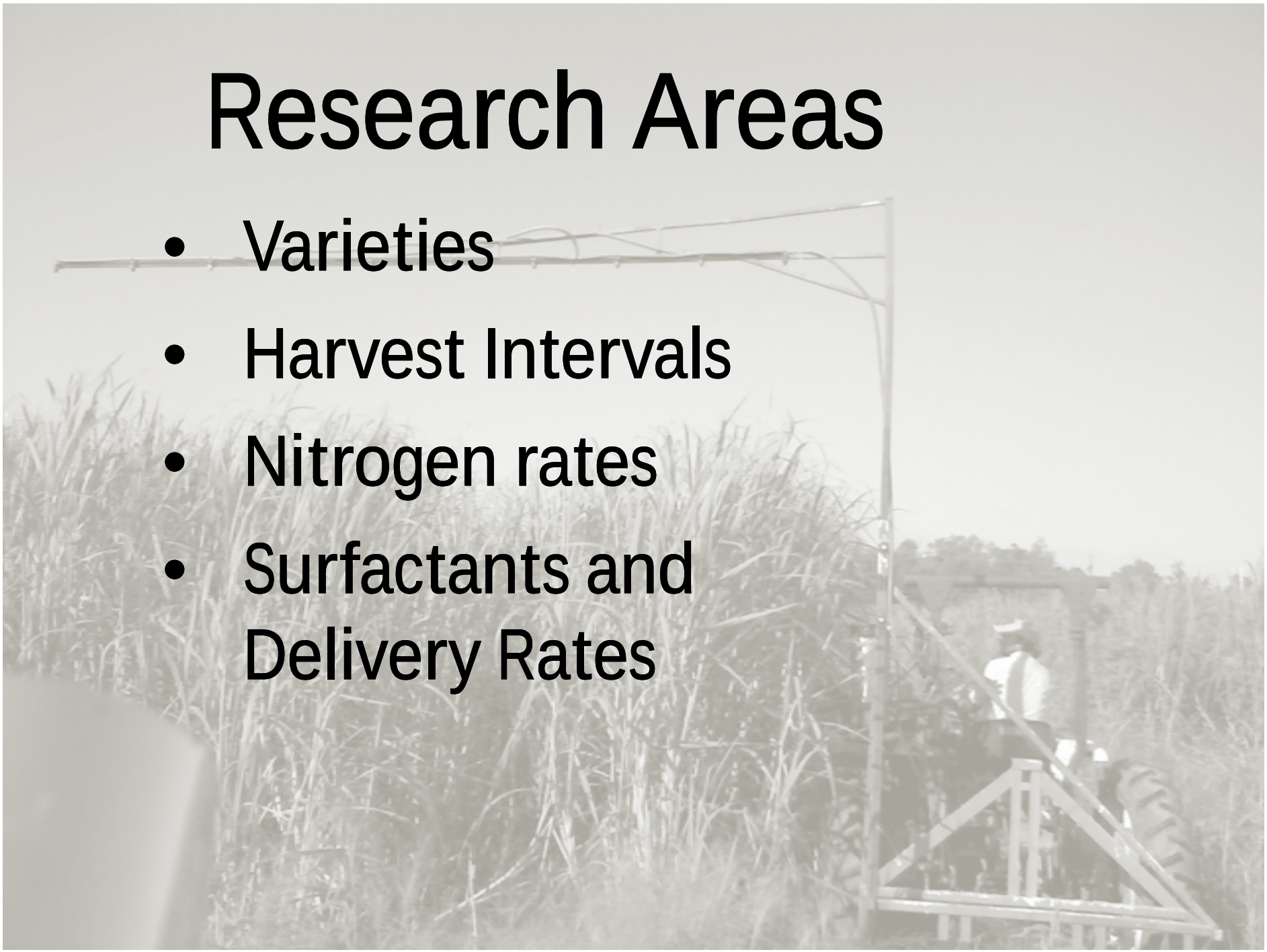
Product of Switzerland
Formulated in the USA

SCP 949A-L1E 1109
306729

2.5 gallons
Net Contents

Research Areas

- Varieties
- Harvest Intervals
- Nitrogen rates
- Surfactants and Delivery Rates



Sugarcane Variety by Ripener Study

- Varieties: 540, 226, 233, 950, 283
- Ripener treatments:
  - Glyphosate (Touchdown Total®) @ 5.7 oz/A (equivalent to 6 oz/A Polado L®)
  - Palisade® @ 16.9 and 19 oz/A
  - Nontreated control
- Plot size: 6 ft wide by 50 ft long
- Experimental design: Randomized complete block (5 x 4 factorial), 4 reps
- Years: 2009 (plant cane); 2011 (second stubble)
- Harvested: 8 weeks after treatment

Sugarcane Tonnage
8 Weeks After Treatment

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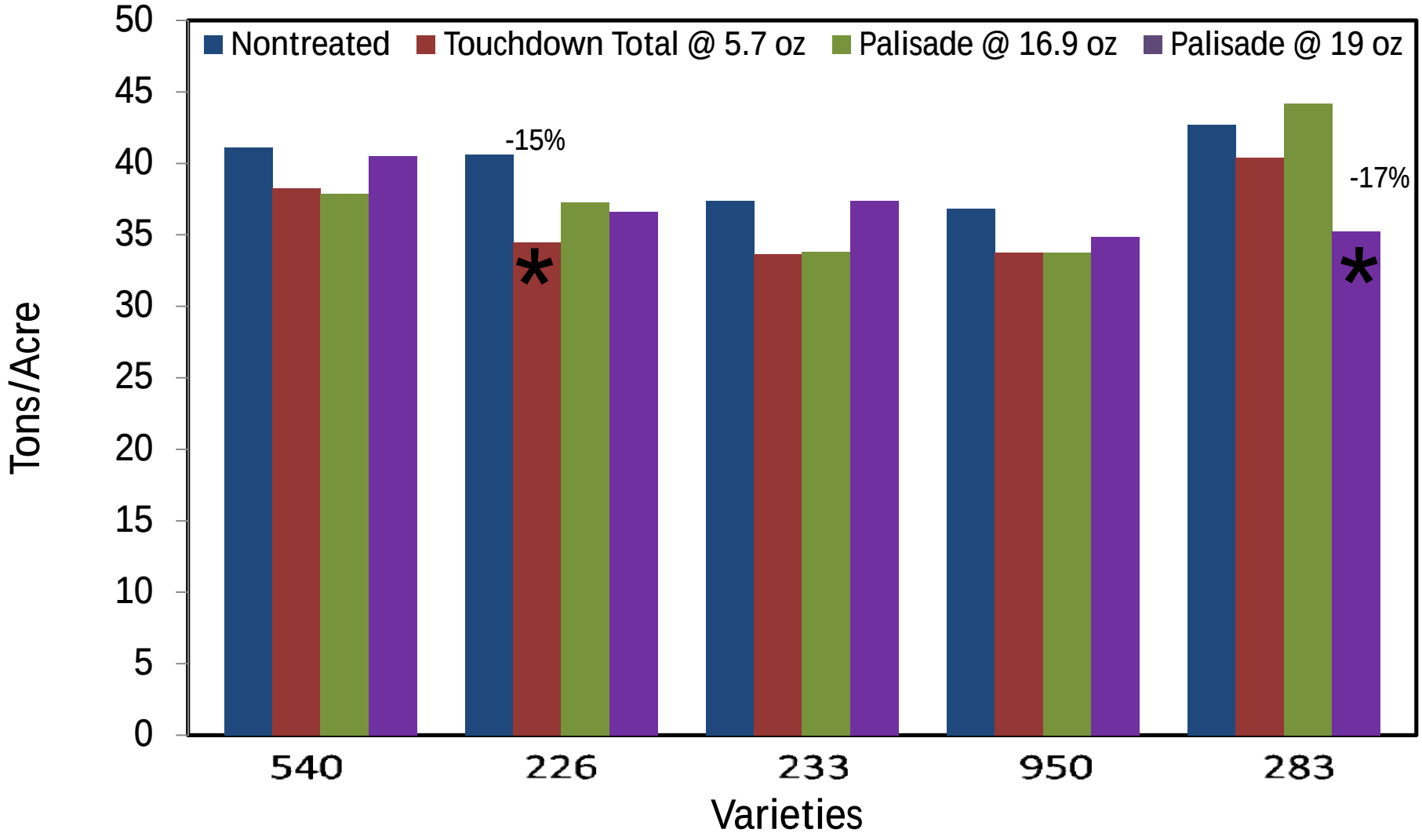


Percent Change in Cane Yield (Tonnage)

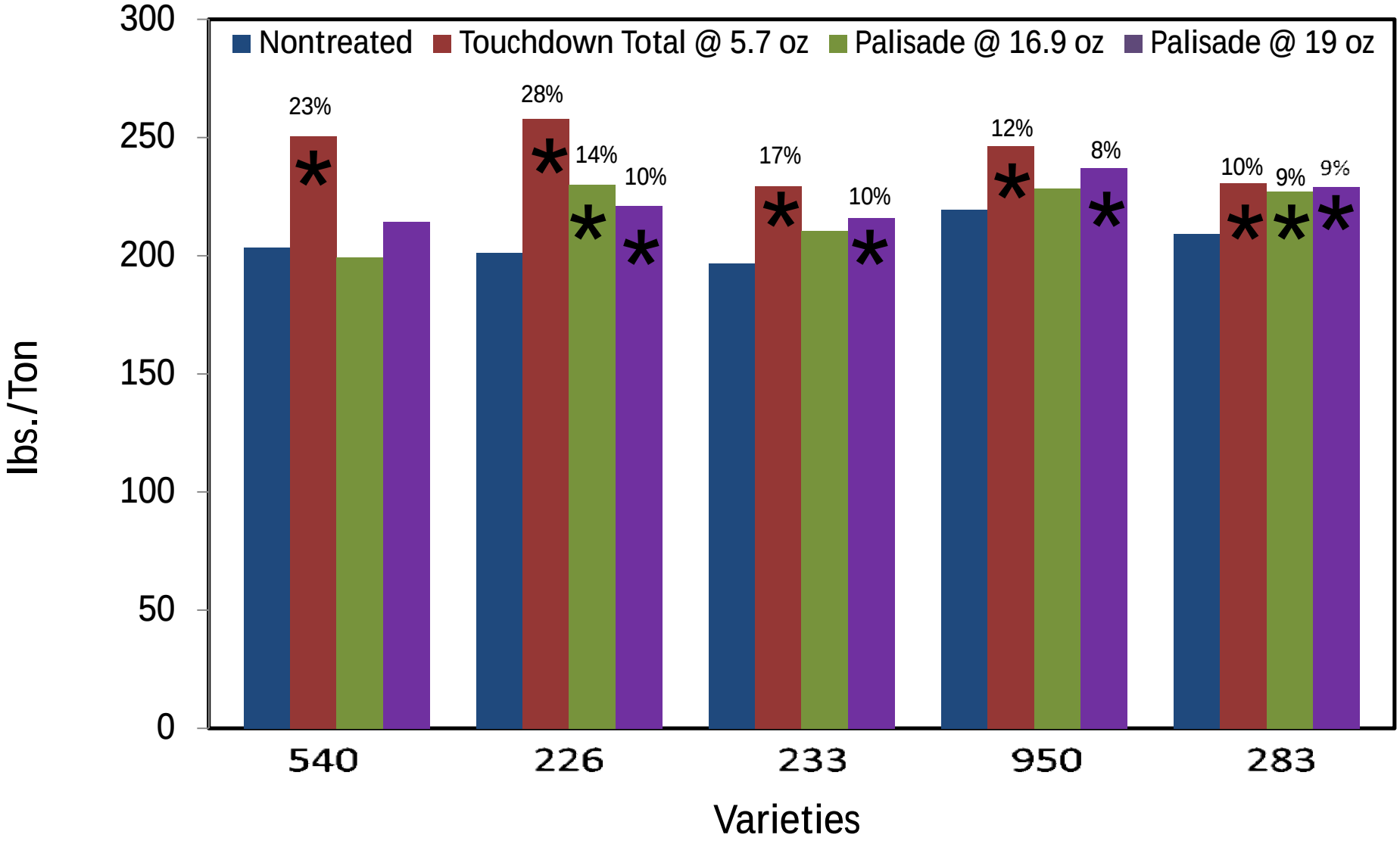
Averaged Across Varieties

Nontreated 39.7 tons/Acre

Ripener treatment	Average
Touchdown Total® @ 5.7 oz/A	-9.2% *
Palisade® @ 16.9 oz/A	-6.1% *
Palisade® @ 19.0 oz/A	-6.9% *

Theoretical Recoverable Sugar (TRS)
8 Weeks After Treatment

(P<.05)



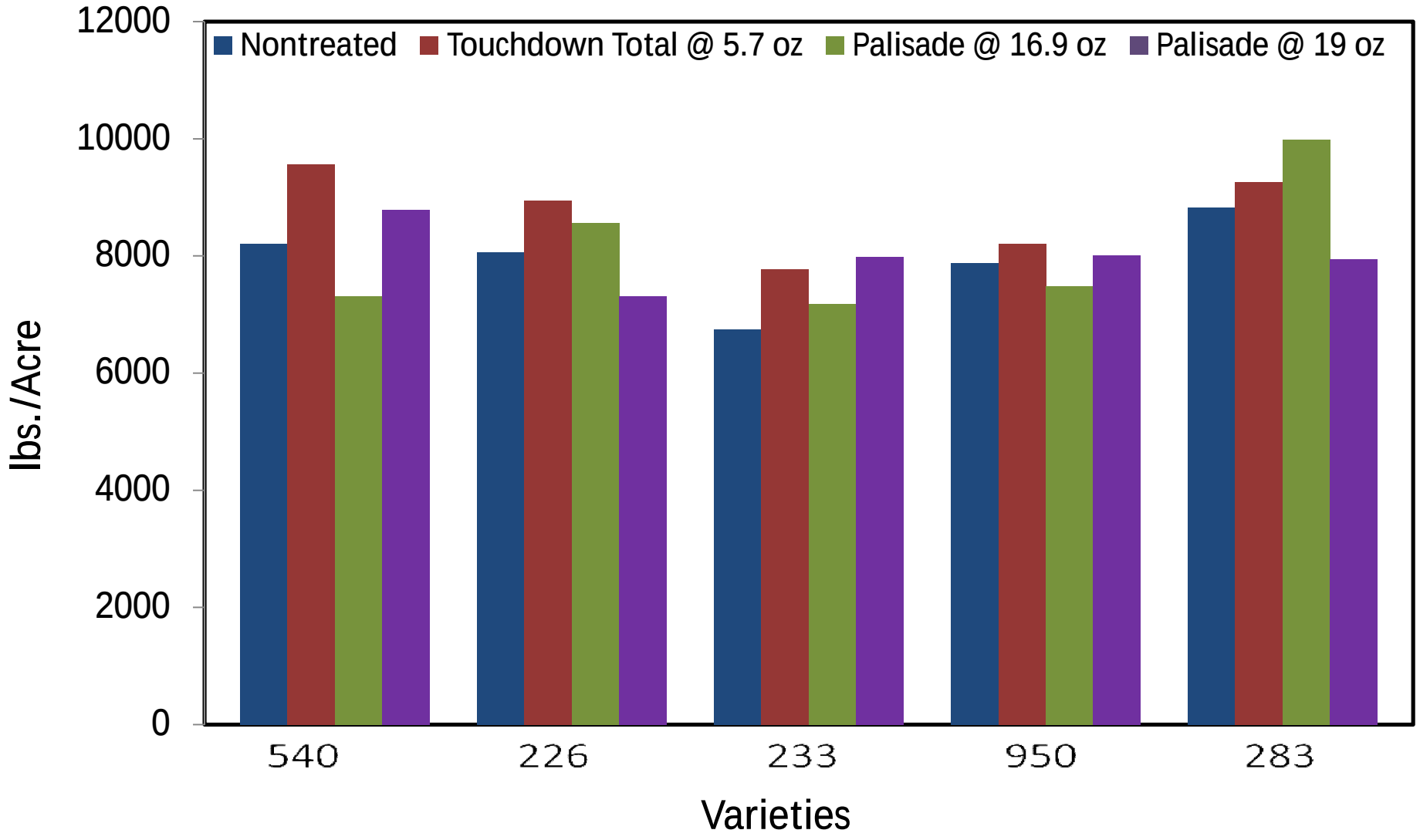
Percent Change in Theoretical Recoverable Sugar (TRS)

Averaged Across Varieties

Nontreated 206 lbs./Ton

Ripener treatment	Average
Touchdown Total® @ 5.7 oz/A	18.1% **
Palisade® @ 16.9 oz/A	6.4% *
Palisade® @ 19.0 oz/A	8.5% *

Sugar Yield (SPA)
8 Weeks After Treatment



Percent Change in Sugar Yield (Sugar Per Acre)

Averaged Across Varieties

Nontreated 7941 lbs./Acre

Ripener treatment	Average
Touchdown Total® @ 5.7 oz/A	10.4% *
Palisade® @ 16.9 oz/A	2.0%
Palisade® @ 19.0 oz/A	1.5%

Conclusions

- Sugarcane tonnage as an average of all varieties was negatively affected by both glyphosate (Touchdown Total®) and Palisade®.
- TRS and sugar per acre for all sugarcane varieties treated with glyphosate were greater compared with their respective nontreated controls. TRS was increased an average of 18% and sugar per acre an average of 10%.
- A significant increase in TRS was observed with Palisade® applied at both rates for 226 and 283 (9 to 14%) and for the high rates for 950 and 233 (8 and 10%). TRS was not affected when applied to 540.
- Sugar per acre averaged across varieties was increased by 10.4% with Touchdown Total® and no more than 2% for Palisade®.
- Sugar per acre response to Palisade® was inconsistent amongst varieties and sugar per acre was not significantly increased as an average of all varieties.

Variety by Glyphosate by Harvest Interval Study

- Varieties: 540, 226, 233, 950, 283, 299, 371, & 838
- Ripener treatments:
  - Touchdown Total® @ 5.7 oz/A (equivalent to 6 oz/A Polado L®)
  - Nontreated control
- Harvest interval: 4 and 6 weeks after treatment
- Plot size: 6 ft wide by 20 ft long
- Experimental design: Split Plot, 3 reps
- Year: 2011 (plant cane)

Glyphosate Effect Averaged Across Varieties and Harvest Intervals

Ripener treatment	Tonnage	TRS	SPA	MSTWT	Fiber
Glyphosate	34.7 B	237 A	8270 A	2.09 A	11.3 A
Nontreated	37.0 A	215 B	7838 A	2.13 A	11.5 A

Harvest Interval Effect Averaged Across Varieties and Ripener Treatments

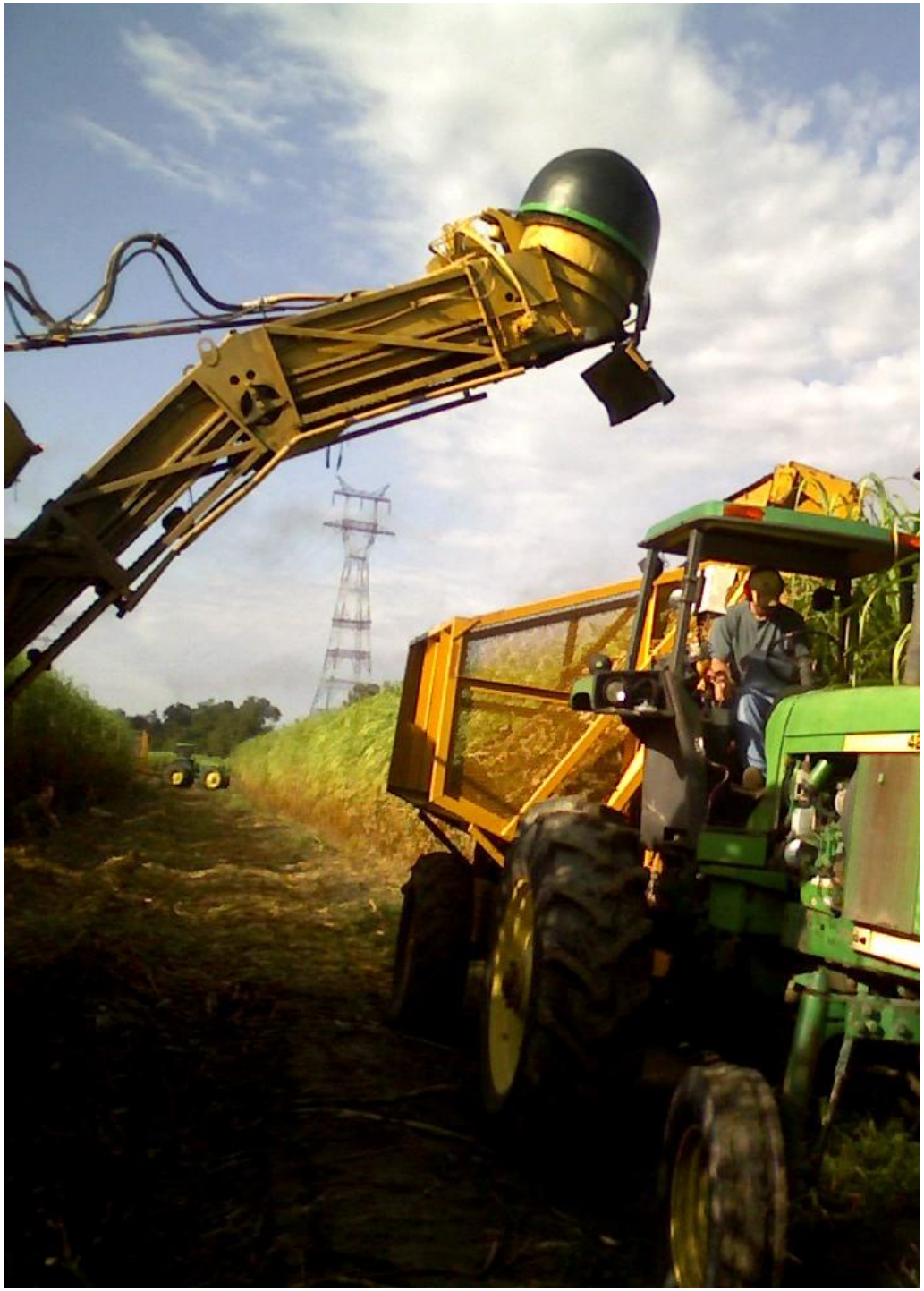
Harvest interval	Ripener treatment	Tonnage	TRS	SPA	MSTWT	Fiber
4 weeks	---	29.9 B	211 B	6186 B	2.07 A	10.9 B
6 weeks	---	41.8 A	241 A	9923 A	2.15 A	11.9 A
Harvest interval	Ripener treatment	Tonnage	TRS	SPA	MSTWT	Fiber
4 weeks	Glyphosate	29.0 A	221 A	6362 A	2.07 A	10.9 A
4 weeks	None	30.8 A	201 A	6009 A	2.07 A	11.0 A
6 weeks	Glyphosate	40.3 A	254 A	10179 A	2.10 A	11.8 A
6 weeks	None	43.3 A	228 A	9667 A	2.19 A	12.0 A

Conclusions

- Averaged across varieties, sugarcane tonnage decreased and TRS increased when glyphosate (Touchdown Total) ripener was applied. Sugar per acre was numerically greater when glyphosate ripener was applied.
- Cane tonnage, TRS, and Sugar Yield was much greater at 6 weeks compared to 4 weeks, indicative of favorable growth conditions during the additional 2 weeks.

THANKS

- American Sugar Cane League for Research Grant Support.
- LSU AgCenter's Sugarcane Research Station for Labor.
- Collaborators: Dr. Ben Legendre, Dr. Jim Griffin, Dr. Kenneth Gravois, and Dr. Mike Pontif



Questions?