N P K Studies in Sugarcane

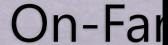
Louisiana Agricultural Technology & Management Conference February 14, 2014 Paragon Casino Resort, Marksville, LA

Brenda S. Tubaña, Sonny Viator, and Rich Johnson

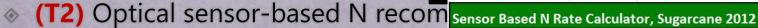




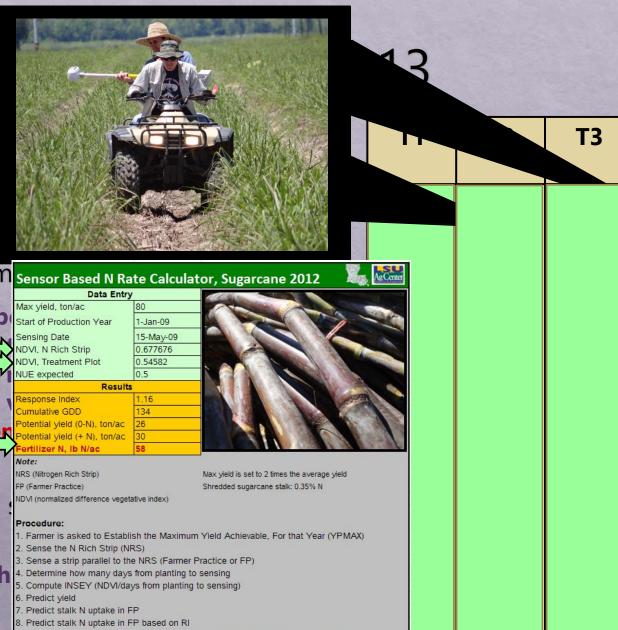
Different Nitrogen Recommendation Approach



- (T1) Farmer standard N practice
 - N fertilization is done betw
 - N rate based on current LSI



- N-rich strip is established by Start of Production Year
- 15-21 days after T1 and the two will be taken from the two
- Sensor readings plug the to get the N rate recommental relation (1-N), ton/ac Potential yield (1-N), ton/ac
- (T3) N recommendation based on stalk N removal rate
 - Soil samples (0-6, 6-12 inch plots for nitrate testing.
 - N rates = [(cane tonnage) x



N rate = (stalk N uptake in FP based on RI - stalk N uptake in FP)/expected NUE

Contributors: Brenda Tubana, Richard Johnson, and Sonny Viator

N-

Rich

On-Farm Demonstration 2013

- Replicated 3 times
- Established at 3 locations
- Plots size
 - Sugar Research Station 9000 ft²



Results

Table 1. Nitrogen rate, sugar yield and net return of sugarcane under different N recommendation approach.

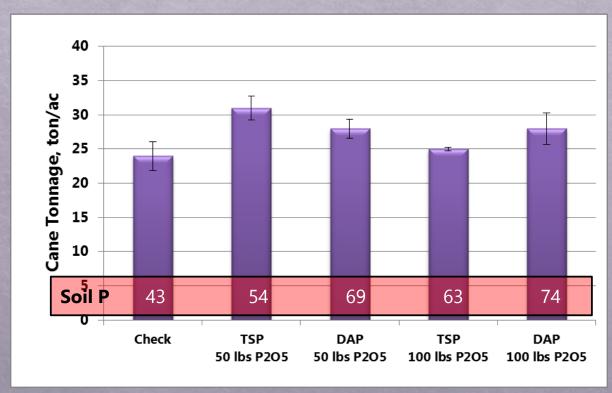
Site	N Approach	N Applied lbs/ac	Sugar Yield Ibs/ac	Income: Sugar yield		Saving: N fertilizer		Net
				lbs/ac	\$/ac	lbs/ac	\$/ac	\$/ac
Dugas	Current/Farmer's							
	Soil test NO₃							
	Sensor-Based							
C	C							
Gravois	Current/Farmer's							
	Soil test NO₃							
	Sensor-Based							
SRS	Current/Farmer's							
	Soil test NO₃							
	Sensor-Based							

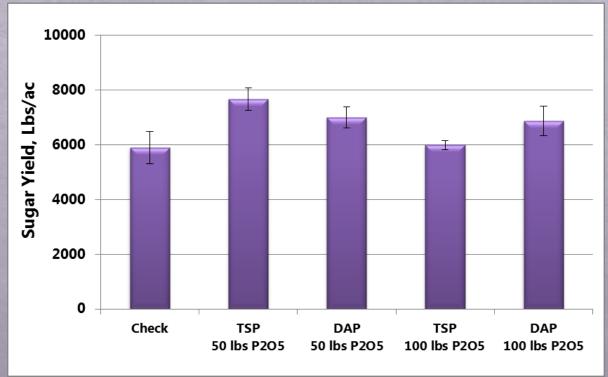
SRS – LSU AgCenter Sugar Research Station

Raw sugar price - \$0.20/lb

Price of N fertilizer - \$0.60/lb

Current/Farmer's Standard Practice – reference to compute for economic return



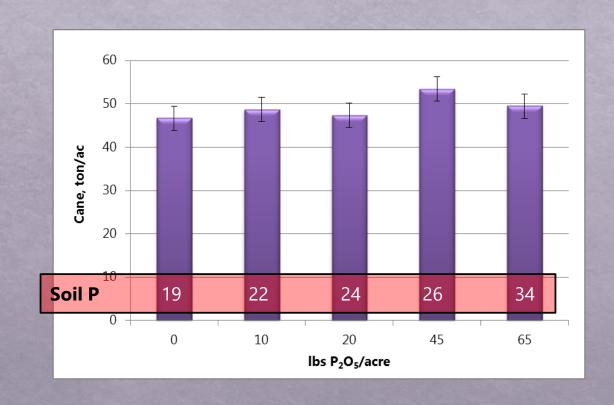


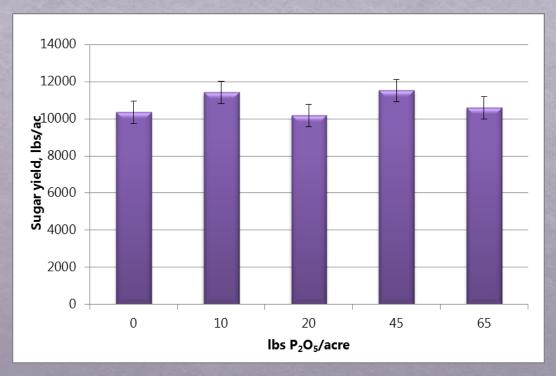
NOTES:

540 – 2nd stubble, 2011; heavy-textured soil

TRS – no response to P rate and source

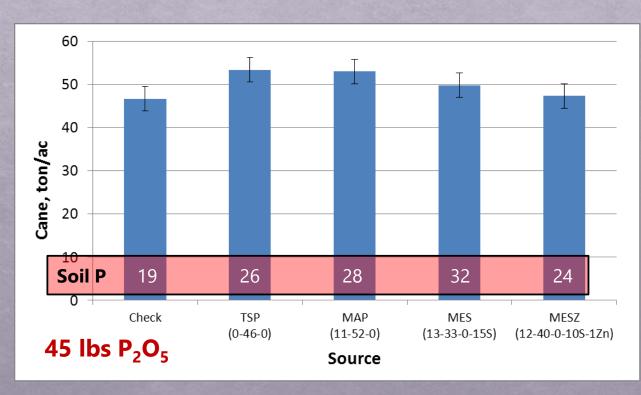
Based on contrast analysis – source had no effect

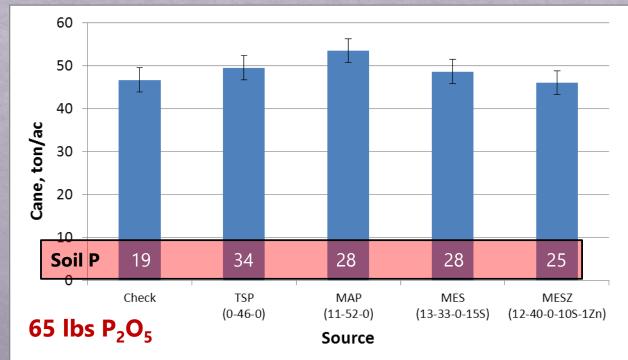




NOTES:

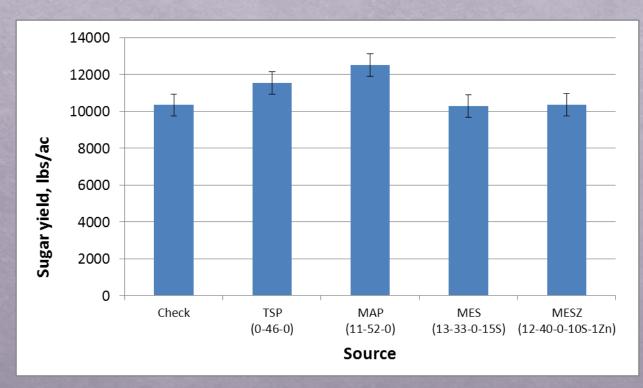
L01-299 Plant cane, 2013 TRS – reduced with increasing P rate

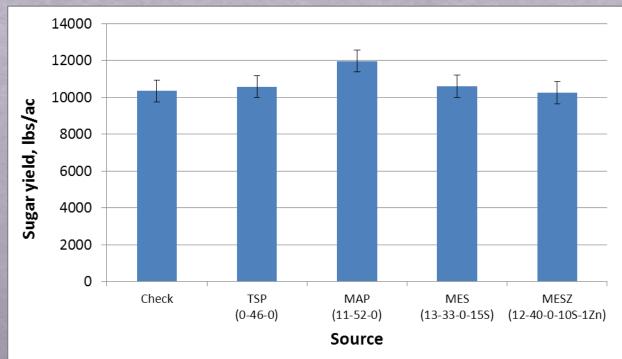




NOTE:

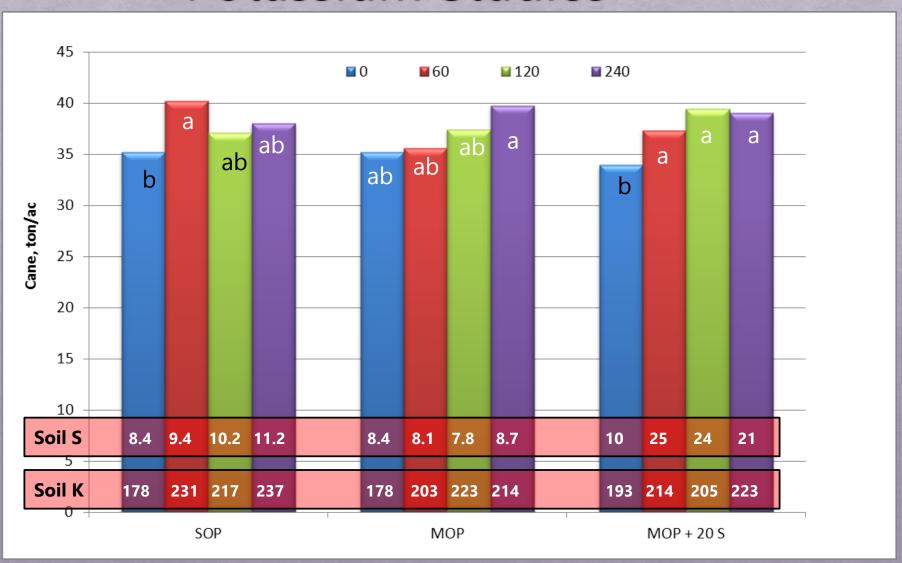
L01-299 Plant cane, 2013; coarse textured soil





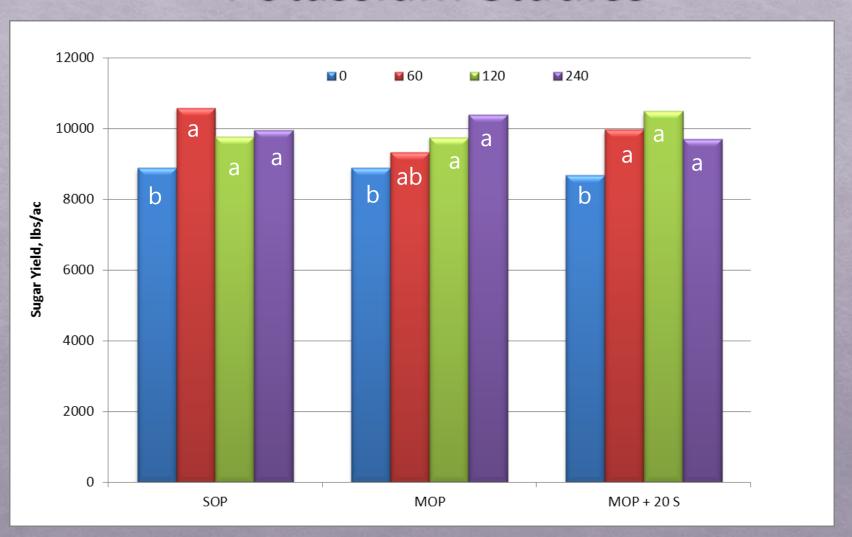
NOTE:

L01-299 Plant cane, 2013



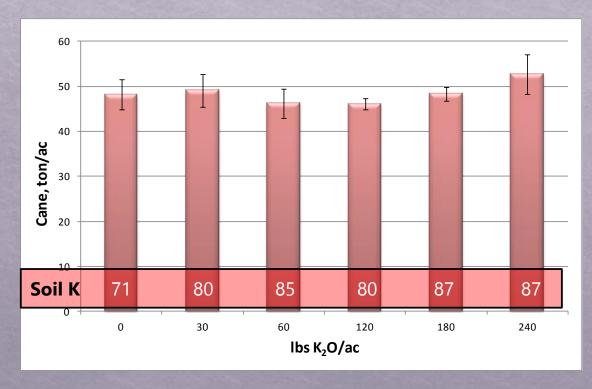
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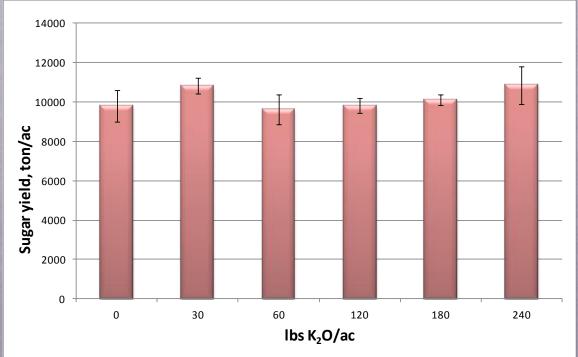
540 1st Stubble Cane, 2010; Heavy textured soil



NOTE:

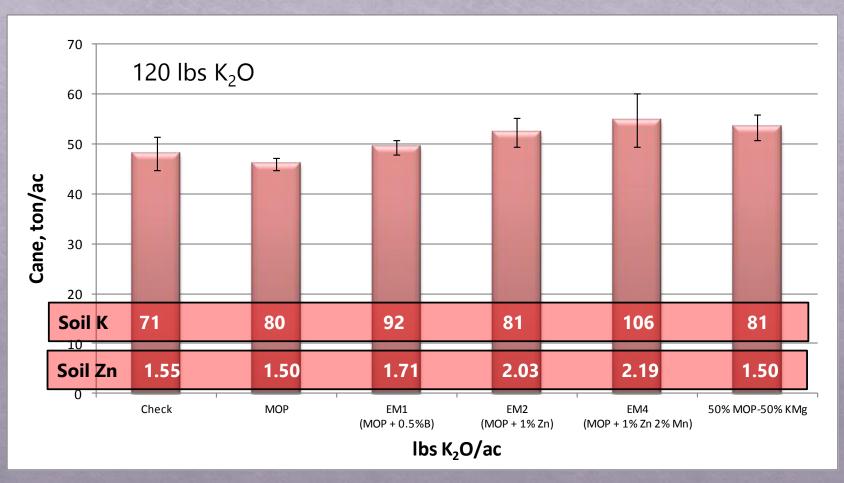
540 1st Stubble Cane, 2010





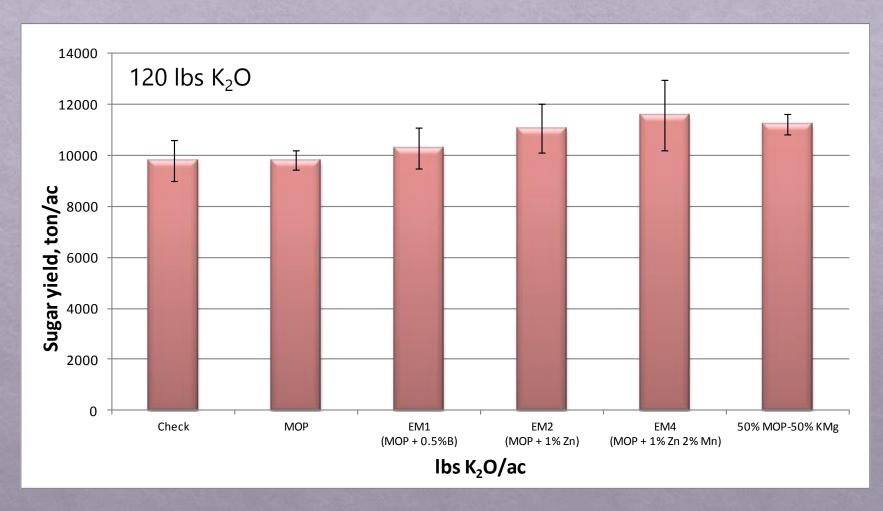
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L01-299 Plant cane, 2013; Coarse-textured soil



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L01-299 Plant cane, 2013



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L01-299 Plant cane, 2013

Questions?