

# Sugarcane Fertilizer Recommendations

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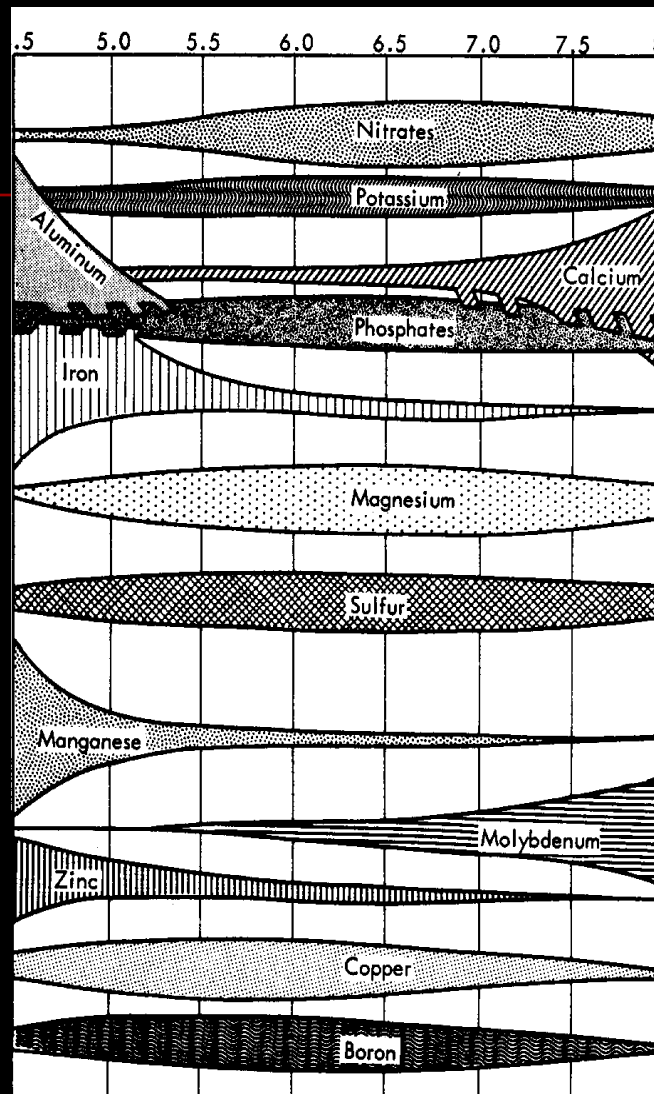


# Essential Nutrients

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|----------------------|--------------------------------|
| • <b>Nitrogen</b>    | <b>Micronutrients</b>          |
| • <b>Phosphorous</b> | <b>Zinc, Boron, Manganese,</b> |
| • <b>Potassium</b>   | <b>Molybdenum, Chlorine,</b>   |
| • <b>Calcium</b>     | <b>Copper , Iron</b>           |
| • <b>Sulfur</b>      |                                |
| • <b>Magnesium</b>   |                                |

# Effect of Soil pH on Nutrient Availability



# Pounds of Nutrients per Ton of Cane

<b>N</b>	<b>P<sub>2</sub>O<sub>5</sub></b>	<b>K<sub>2</sub>O</b>
<b>1.43</b>	<b><u>Millable stalk</u></b> <b>0.83</b>	<b>2.93</b>
<b>4.24 (127 lb)</b>	<b><u>Total Plant</u></b> <b>1.71 (51 lb)</b>	<b>6.74 (202 lb)</b>

# Phosphorus (P<sub>2</sub>O<sub>5</sub>)

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	Soil Test	Plant	Stubble
○ Availability depends on pH and soil type	Very Low	50	60
	Low	45	50
	Med.	40	40
○ Soil Test	High	0	0
Recommendations:	Very High	0	0

# Potassium (K<sub>2</sub>O)

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- **Natural abundance depends on soil type**

- **Soil Test**

**Recommendations:**

<b>Soil test</b>	<b>Plant Stubble</b>	
Very Low	130	140
Low	110	120
Medium	80	80
High	0	0
Very High	0	0

# **Sulfur (S)**

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- **Stubble cane more likely to respond**
- **Response more likely on heavy soils**
- **Apply 24 lbs Sulfur per acre if recommended by soil test.**

# Nitrogen (N)

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- Nitrogen recommendations are not based on soil tests in Louisiana
- Based on average yield response in N-rate studies conducted over the decades
- This approach fails to take into account seasonal changes in availability and varietal differences in N use efficiency



# Results of N-rate Studies With New Varieties

N -rate	Location		
	Iberia First stubble	Ascension First stubble	Iberville Plant cane
0	-	6492	8820
40	8720	8099	9616
60	-	-	9933
80	8962	8355	9683
120	9755	8395	9873
160	9561	-	10031

# Summary of Nitrogen Studies

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- L 97-128, CP 89-2143, PC: Optimum Rate – 80 lb N/A
- Ho 96-540, 1<sup>st</sup> Stubble : Optimum Rate – 120 lb N/A
- HoCP 95-988, L 97-128, LCP 85-384, 1<sup>st</sup> Stubble:  
Optimum Rate - 80 lb N/A
- CP 89-2143 > HoCP 96-540 > Ho 95-988 > L 97-128 >  
LCP 85-384

# Hurricane Rita

## September 23, 2005





**30,000 to 40,000 acres flooded**

in

Loreau

New Iberia

Erath

Abbeville

Delcambre

Lydia

Jeanerette

Charente

Baldwin

Franklin

Patterson

Morgan City

# **Damage Threshold in Literature**

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**1,100 ppm or EC of 1.7 dS m<sup>-1</sup>**

<b>Site</b>	<b>Initial salinity, ppm 0-12 in</b>	<b>Salinity at harvest, ppm 0-12 in</b>	<b>Yield lb sugar/acre</b>
<b>Erath 1 plant cane</b>	<b>338</b>	<b>156</b>	<b>14,076</b>
<b>Erath 2 stubble</b>	<b>1083</b>	<b>1084</b>	<b>5,189</b>
<b>Highway 14 plant cane</b>	<b>2428</b>	<b>860</b>	<b>9,333</b>
<b>Pebbles plant cane</b>	<b>572</b>	<b>106</b>	<b>9,085</b>
<b>Burns Point plant cane</b>	<b>2554</b>	<b>736</b>	<b>11,152</b>
<b>Houma plant cane</b>	<b>3212</b>	<b>186</b>	<b>14,234</b>

# Evaluation of Biologicals for the Amelioration of Soil Salinity

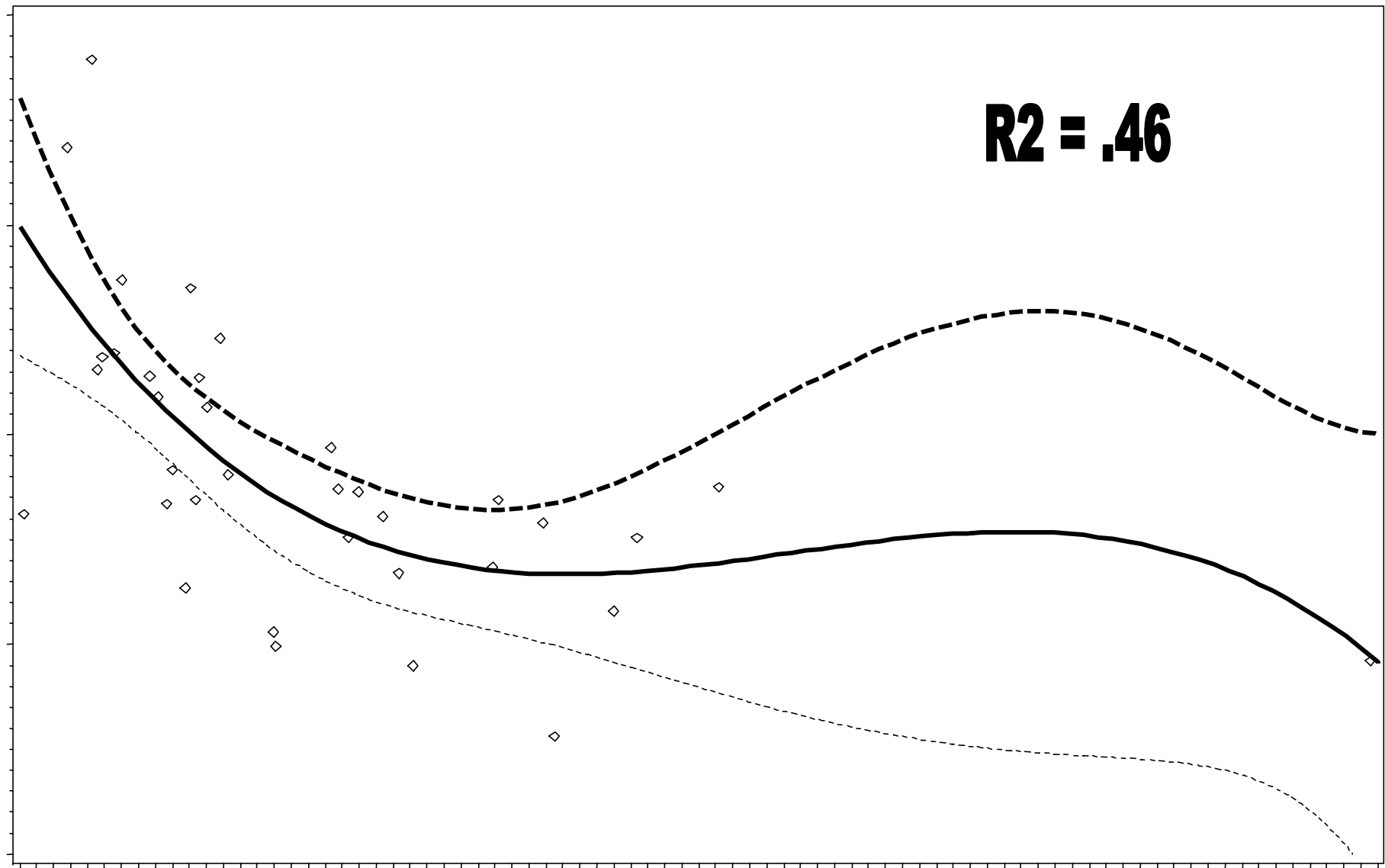
Treatments	Houma site	Vermilion site
Check	6,249 lb/a	8,497 lb/a
Ag Blend™	5,883 lb/a	8,853 lb/a
Soil Builder™	5,936 lb/a	8,744 lb/a
LSD .05	NS	NS

# Comparison of Flooded and Non-flooded Areas of 14 Partially Flooded Fields

Field position	Tons/a	Sugar/a lb	TRS lb/t	Salinity at harvest, ppm
Flooded	27.8	6,259	226	878
Non flooded	30.3	7,218	240	333
LSD .05	NS	NS	NS	NS



# HARVEST SALT WITHIN CROP



# **Observations About Soil Salinity**

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- *Rainfall lowered soil salinity 90%*
- *Several sites with high salinity produced over 9,000 lb of sugar per acre*
- *Statistical evidence that salinity/flood waters lowered yield, especially for plant cane*