Flooding Sugarcane

Shallow soil, water-table controlling lysimeters

• 4 Reps of 8 Unique Treatments Using CP 96-1252
  – 2 Water Table
    • Periodic flooding to soil surface during wet season (1 week of flood followed by 2 weeks of drainage to bedrock)
    • Constant level at bedrock
  – 2 Nitrogen Fertilizer
    • Split application of 150 lb/acre N (168 kg /ha) during primary growing (May, August) season using NH$_4$NO$_3$
    • No supplemental N
  – 2 Soil Depth
    • 5” (13 cm)
    • 10” (25 cm)
Shallow soil, water-table controlling lysimeters
1st Year Results

Aerenchyma Area

TKN in Leaf Tissue Collected September 1st 2015

<table>
<thead>
<tr>
<th>Soil Depth</th>
<th>Col 4</th>
<th>Col 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 cm</td>
<td>13782</td>
<td>11333</td>
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<td>13 cm</td>
<td>12668</td>
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25 cm Soil Depth
13 cm Soil Depth
Constant Water Table
Periodic Flooding
1st Year Results

TSA for 8 Treatments

Tons Sugar per Acre

- 25 cm Soil Depth
- 168 kg N ha\(^{-1}\) year\(^{-1}\)
- Constant Water Table
- 13 cm Soil Depth
- No N
- Periodic Flooding

Graphs showing the difference in TSA for various treatments with different soil depths, N applications, and water management practices.