FIELD EXPERIMENT HISTORY

Title: Corn and Soybean Rotation Study

Experiment: 09CS-Biochar  
Trial ID 3289  
Year: 2009  


Location: Arlington  
County: Columbia

Supported By: HATCH

Site Information

Field: Preplant: Biochar 122.7 lb/plot  
Previous Crop: Corn/Soybean  
P (ppm) 18  
OM (%) 3.7  
K (ppm) 137  

Date: 5/5/09  

Starter: N/A  

Post plant: 32-0-0 200  

Date: 6/10/09

See Factors

Irrigation: None

Plot Size Seeded: 10' x 75'

Experiment Size: 1.0

Planting Date: Corn: 5/12/09  
Soybean: 5/21/09

Planting Depth: C: 1.5"  
S: 1"  

Row Width: 30"

Target Plant Density: Corn: 32500  
Soybean: 150000

Hybrid: C: DKC52-59  
S: NKS21-N6

Planting Method: Kinze 2000 Interplant planter

Harvest Date: Corn: 11/3/09  
Soybean: 11/4/09

Harvest Method: C: Kincaid plot combine  
S: Almaco plot combine #2

Notes: corn 5yrs. / soybean 5 yrs.

Experimental Design

Design: RCB split-split plot  
Replications: 4

Plot Size Seeded: 10' x 75'

Experiment Size: 1.0

Factors/Treatments:

Tillage: No-Till  
Conventional

Rotation: Continuous Corn or Soybean  
Alternating Corn - Soybean  

Applied Fertilizer: Corn & Soybean: 1-Biochar  
2-UTC

Results: Tables C-36, C-37
Table C-36.  Fertilizer in Corn- Soybean Cropping Systems - Corn

<table>
<thead>
<tr>
<th>Fertilizer</th>
<th>Yield</th>
<th>Moisture</th>
<th>Test weight</th>
<th>Grower return</th>
<th>Lodged Total</th>
<th>Stalk %</th>
<th>Root %</th>
<th>Harvest plants</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>bu/A</td>
<td>%</td>
<td>lbs/bu</td>
<td>$/A</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>plants/A</td>
</tr>
<tr>
<td>BioChar</td>
<td>195</td>
<td>33.0</td>
<td>51.8</td>
<td>632</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>21625</td>
</tr>
<tr>
<td>UTC</td>
<td>203</td>
<td>32.5</td>
<td>52.2</td>
<td>660</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>24826</td>
</tr>
<tr>
<td>Mean</td>
<td>199</td>
<td>32.7</td>
<td>52.0</td>
<td>646</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>23226</td>
</tr>
</tbody>
</table>

**Probability (%)**

| Fertilizer (F) | 43 | 32.2 | 48.5 | 39 | 86 | 42 | 33 | 2 |

**LSD(0.10)**

| Fertilizer (F) | NS | NS | NS | NS | NS | NS | NS | 2285 |


Table C-37. Fertilizer in Corn- Soybean Cropping Systems - Soybean Arlington, WI - 2009.

<table>
<thead>
<tr>
<th>Fertilizer</th>
<th>Yield</th>
<th>Moisture</th>
<th>Grower return</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>bu/A</td>
<td>%</td>
<td>$/A</td>
</tr>
<tr>
<td>BioChar</td>
<td>35</td>
<td>13.3</td>
<td>345</td>
</tr>
<tr>
<td>UTC</td>
<td>41</td>
<td>13.2</td>
<td>405</td>
</tr>
<tr>
<td>Mean</td>
<td>38</td>
<td>13.2</td>
<td>375</td>
</tr>
</tbody>
</table>

**Probability(%)**

| Fertilizer(F) | 2.0 | 55.4 | 2.0 |

**LSD(0.10)**

| Fertilizer(F) | 3.2 | NS   | 31.4 |