Soil Temperature Effects on No-Till Corn Emergence and Yield in Wheat Residue

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Objective

To assess the influence of soil temperature on corn emergence and yield in wheat stubble.

Background

Crop Year: 1997  
Soil Test: pH 6.4; P 44 lbs./A; K 298 lbs./A  
Cooperator: Larry Lotz  
County/Town: Fayette/ Washington C.H.  
Drainage: Improved- 60 ft.  
Fertilizer Applied: 220-46-120  
Herbicide: 1 qt. Roundup; 1 pt. 2,4-D burn.  
Major Soil Type: Crosby  
Previous Crop: Wheat  
Tillage: None  
Variety: DeKalb 604

Materials and Methods

Plots were established at three planting dates to determine the influence of soil temperature under wheat residue on the emergence of corn. Minimum and maximum soil temperatures were determined by averaging the daily soil temperatures from date of planting until emergence. Individual plot size was 30' x 160' with two replications.

Results

<table>
<thead>
<tr>
<th>Plating Date</th>
<th>Emergence</th>
<th>Min. Soil Temp.</th>
<th>Max. Soil Temp.</th>
<th>Planted Population</th>
<th>Harvest Population</th>
<th>Harvest Moisture (%)</th>
<th>Yield (bu/A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 21</td>
<td>May 8</td>
<td>47.8</td>
<td>58.8</td>
<td>31,800</td>
<td>27,500</td>
<td>18.2</td>
<td>182</td>
</tr>
<tr>
<td>May 2</td>
<td>May 17</td>
<td>48.8</td>
<td>60.7</td>
<td>31,800</td>
<td>28,000</td>
<td>20.4</td>
<td>173</td>
</tr>
<tr>
<td>May 21</td>
<td>May 29</td>
<td>53.1</td>
<td>69.6</td>
<td>31,800</td>
<td>28,750</td>
<td>21.5</td>
<td>184</td>
</tr>
</tbody>
</table>

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