Cotton Precision Planter Technology
Pedro Andrade and John Heun
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A. Variable-speed drive for seed metering
B. Additional downward force
C. Auxiliary equipment

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Seed tube sensor feedback
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Seed firmer sensor feedback
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2020 Cotton season - Field testing of planter settings and seed-bed soil strength conditions

- Randomized experiment with four replications
- Experiment repeated in two fields of contrasting soil texture

1. Record seed delivery and distribution
2. Test effect of soil compaction at the time of planting  \(\rightarrow\) Seedling emergence
3. Test the effect of downward force  \(\rightarrow\) Vegetative growth
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Planter settings and Soil seed-bed conditions

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John Deere
1770 NT Planter
Weight Bracket

Bracket holds up to 8 weights

**PARTS LIST**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QTY</th>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>JD 1770 NT Weight Bracket</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>Weight Bracket Bottom Plate</td>
<td>1/2 x 10 x 10</td>
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**Screw List**

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<tr>
<th>QTY</th>
<th>Description</th>
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<tr>
<td>6</td>
<td>3/4 x 5 1/2 Bolts</td>
</tr>
<tr>
<td>8</td>
<td>3/4 in Lock Washers</td>
</tr>
<tr>
<td>8</td>
<td>3/4 in Nuts</td>
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</tbody>
</table>
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Force transducer feedback

![Force transducer feedback](image)

![Force transducer feedback](image)
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Force transducer feedback

“Compacted” = 48.5 psi (Cone Index)
“Consolidated” = 36.9 psi
“Firm” = 28.9 psi
“Loose” = 19.5 psi
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Force transducer feedback

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Effect on crop stand count
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Effect on crop stand count
37 DAP
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Effect on crop stand count

37 DAP
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Effect on vegetation
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Effect on size of vegetation
38 DAP
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Effect on size of vegetation
56 DAP
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Thanks for your attention!

Special Recognition to:
CottonInc
Precision Planting LLC