STRIP TILLAGE FOR SUGARBEET PRODUCTION IN NORTH DAKOTA AND MINNESOTA

FORUM – REDUCED/STRIP TILLAGE

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STRIP TILLAGE FOR SUGARBEET PRODUCTION IN ND AND MN
Extent of Implementation

- Strip till is not used widely for sugarbeet production in ND and MN.
  - ND
    - 800-1000 acres for sugarbeet
    - 15,000 – 20,000 acres for all crops
  - MN
    - 1000-1500 acres for sugarbeet
    - 25,000 acres for all crops
Greatest Challenges to Implementation

- Cold, wet soils in early spring are colder and wetter in strip tillage systems
  - Planting delays
  - Delayed germination and early season growth
  - Perception or Reality?
- Heavy residues more difficult to manage for 22-inch row spacings
- Heavy clay soils
Ground Preparation Practices for Strip Tillage in ND & MN

- Prepare strips in fall
- Corn stalks may require chopping
- Fall or spring herbicide app. for weed control
- One pass in fall with strip tiller, applying fertilizer in same pass
- Plant directly into strips in spring
- RTK or other positioning systems
STRIP TILLAGE - FAQs

- How much $$ can strip-till potentially save?
  - Just OPERATING costs

<table>
<thead>
<tr>
<th>FALL OPERATIONS</th>
<th>CONVENTIONAL TILLAGE ($/ac)</th>
<th>STRIP TILLAGE ($/ac)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chisel Plow</td>
<td>6.49</td>
<td>0</td>
</tr>
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<td>Chisel Plow</td>
<td>6.49</td>
<td>0</td>
</tr>
<tr>
<td>Fertilize (spreader)</td>
<td>3.59</td>
<td>0</td>
</tr>
<tr>
<td>Strip Tillage*</td>
<td>0</td>
<td>8.35**</td>
</tr>
<tr>
<td>Savings by ↓P &amp; K 20%</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>26.57</td>
<td>8.35</td>
</tr>
</tbody>
</table>

**Assumes a 24-row 22-inch strip tiller
**Includes depreciation, interest, and insurance

Data Sources: Amer. Crys. Growers’ Cost Benchmark And Strip Till for Field Crop Production (NDSU Ext. Bull)
STRIP TILLAGE - FAQs

- How much $$$ can strip-till potentially save?
  - Just OPERATING costs

<table>
<thead>
<tr>
<th>SPRING OPERATIONS</th>
<th>CONVENTIONAL TILLAGE ($/ac)</th>
<th>STRIP TILLAGE ($/ac)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall or Spring chem. burn</td>
<td>0</td>
<td>$16.72</td>
</tr>
<tr>
<td>down</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cultivator/Harrow</td>
<td>6.71</td>
<td>0</td>
</tr>
<tr>
<td>Cultivate</td>
<td>5.27</td>
<td>0</td>
</tr>
<tr>
<td>Spring Total</td>
<td>11.98</td>
<td>16.72</td>
</tr>
<tr>
<td>FALL + SPRING TOTAL</td>
<td>38.55</td>
<td>25.07</td>
</tr>
</tbody>
</table>

Data Sources: Amer. Crys. Growers’ Cost Benchmark And Strip Till for Field Crop Production (NDSU Ext. Bull)
STRIP TILLAGE - FAQs

- How much does a strip tiller cost?
  - A: $1500-3000 per row unit

- How much horsepower is required to pull the equipment?
  - A: 12-30 HP per row unit

- Can the fert. app. rate be reduced since fertilizer is banded with the strip tiller?
  - A1: For P & K – probably
    - Univ. of Minn. Recommends a one-third rate reduction for P & K fertilizer with banding.
  - A2: For N, not recommended at this time
STRIP TILLAGE - FAQs

- What kind of strip tiller should I buy?
  - A: Tough one! Consider the following:
    - What kind of residue will you be stripping into (small grain or soybean vs. corn)?
    - How you want to apply fertilizer (liquid, dry, anhydrous)?
    - Shank-type or Coulter-type?

- What kind of cost-share or conservation credits are available for strip-tillage?
  - Through ND NRCS-EQIP, $8/acre /yr for up to 800 acres (MN $24/a /y for 320 acres?) for ST practices
  - Others: for ND sugarbeet growers – Red River Valley Special Initiative