Fall Strip Tillage and Fall Fertilizer for Corn
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Objective
To compare yields and stand counts for corn receiving strip tillage and no tillage as well as to investigate fertilizer placement programs for strip tillage.

Background
Cooperator: Dave Lotz
Fertilizer: 10 gal/A 28% N and 10-34-0
County: Hardin
(5 gal/A) at planting
Nearest Town: Kenton
40 gal/A 28% N sidedressed
Previous Crop: Soybeans
Herbicide: 2,4-D (0.5 pt/A), Princep (0.75 lb/A)
Soil Test: pH 6.7, P 31 ppm, K 205 ppm, OM 3.3%, CEC 13.9
Variety: Midwest 7667
Planting Date: May 14, 1998
Emergence Date: May 21, 1998
Harvest Date: October 27, 1998

Methods
Experiment design was a randomized complete block design with three replications of each treatment. Strip tillage was performed in late November of 1997. Broadcast and deep placement (8" deep in zone) of 150# 0-46-0 and 200# 0-0-60 was applied to the two strip till treatments in the fall. Individual strip plots were 24 rows in width and varied in length from 750' to 950' in length.

Results

<table>
<thead>
<tr>
<th></th>
<th>Emerged Population (plants/A)</th>
<th>Harvest Population (plants/A)</th>
<th>Yield (bu/A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No-till/No pre-fertilizer</td>
<td>27,000 A</td>
<td>26,333 A</td>
<td>134.3 A</td>
</tr>
<tr>
<td>Strip till/No pre-fertilizer</td>
<td>31,667 A</td>
<td>32,667 B</td>
<td>147.5 A</td>
</tr>
<tr>
<td>Strip till/Broadcast fertilizer</td>
<td>29,833 A</td>
<td>27,667 A</td>
<td>138.4 A</td>
</tr>
<tr>
<td>Strip till/Deep fertilizer</td>
<td>30,000 A</td>
<td>28,000 A</td>
<td>140.4 A</td>
</tr>
</tbody>
</table>

F-statistic 2
CV (%) 8

Treatment means followed by same letter are not significantly different from each other at P = 0.05
Overall, strip tillage plots yielded 7.8 bushels/acre more than the no-till plots. However, no statistically significant differences among yields were found at the 5% and 10% levels of probability. When a contrast comparison is made between the strip-till treatments as a group (average = 142.1 bushels/acre) and the no-till treatment, the F-statistic is 1.80 with the probability of a greater F being 23%. This means the odds are about 3:1 that there is a real difference between strip till yields and the no-till yield which is not due to chance variation.

Averages of emerged and harvest populations among the four treatments were not significantly different from each other at the 5% level of significance. However, at the 10% level of significance (10% probability differences are due to chance alone), there are significant differences among the harvest population means. Pairwise comparisons indicate harvest plant population for strip-till/no pre-fertilizer was significantly higher than all other treatments.

However, the population comparison of more interest is the contrast between strip till populations as a group versus the no-till treatment. The emerged and harvest populations of the strip till treatments as a group (average 30,500 emerged and 29,444 harvested) were significantly different from the no-till treatment (27,000 emerged and 26,333 harvested) at the 10% level of probability.

With relatively high phosphorous and potassium soil test levels, no yield advantage was shown with the extra pre-fertilizer applied either broadcast or deep placement in the strip tillage plots in the fall.

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