

# Winter Tillage Effect on Corn Yield

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## Objective

To determine if delayed fall tillage into winter has an impact on corn yield.

## Background

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Crop Year: 2012	Tillage: Varies with treatment
Location: Western Ag Research Station	Soil Test: pH 6.5, BpH 6.8, OM 2.0%, P 63 ppm, K 159 ppm
County/Town: Clark/ South Charleston	Planting Date: April 24, 2012
Soil Type: Crosby silt loam	Nitrogen: as NH <sub>3</sub> 180 lbs N/A
Drainage: Pattern tiled	Seeding Rate: 32,097
Previous Crop: Soybean	Harvest Date: October 9, 2012

## Methods

With a late, wet harvest in 2011, planned fall tillage was delayed into the winter months. A trial was established in a commercial field at the Western Agricultural Research Station, with treatments 15 feet wide and 300 feet long in a randomized complete block with four replications. Winter tillage (Win-till) with a chisel plow was conducted on February 8<sup>th</sup> under frozen soil conditions. A field cultivator pass was made on the day of planting to the Win-till plots; no-till plots were used as the check for comparison. A CaseIH 2388 combine and weigh wagon were used to harvest and weigh the crop.

## Results

Results are shown below for corn yield in bushels per acre, crop moisture in percent and stand count in thousand plants per acre. An ANOVA (analysis of variance) was conducted to determine the differences between the treatments: NSD indicates no significant difference. The C.V. (coefficient of variation) gives a measure of the spread of the data. A low number indicates good results; double digits may be cause for concern.

<u>Treatment</u>	<u>Yield</u> <u>bu/A</u>	<u>Moisture</u> <u>%</u>	<u>Stand count</u> <u>1,000 pl/A</u>
No-till	167.7	19.6	29.8
Win-till	184.0	18.5	26.5
<i>LSD 0.10</i>	<i>15.4</i>	<i>0.9</i>	<i>NSD</i>
<i>C.V.</i>	<i>5.3</i>	<i>3.0</i>	<i>9.0</i>

## Summary

Results of the trial indicate that winter tillage did not reduce yield. With a yield of 184.0 Bu/A for the Win-till treatment and a least significant difference (LSD) of 15.4, results indicate that there was no loss of yield for the winter tillage. We anticipated that tillage practiced during the

winter months, when limited drying can occur, would lead to increased soil compaction and likely reduced yield.

Crop moisture was also significantly impacted by the treatments with dryer corn in the Win-till treatment. There were no significant differences in the stand counts.

Although the wet fall in 2011 delayed harvest and tillage in many areas, by February the drought of 2012 had begun and conditions for tillage had improved. The station received 0.96 inch of rain in February of 2012.

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