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## Fall tillage and tillage equipment

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## Fall tillage and tillage equipment

### **Abstract**

It is not too soon to start planning for crop year 2002. When the crops come out this fall, producers will again face tillage choices. The first decision is what tillage, if any, needs to be done after harvest. Because crop residue from harvest is still on top of the soil, fall is the best time to move to a no-till system.

### **Keywords**

Agronomy

### **Disciplines**

Agricultural Science | Agriculture | Agronomy and Crop Sciences

# INTEGRATED CROP MANAGEMENT

A photograph of a person in a field, possibly a farmer or researcher, with large, stylized text overlaid. The text reads 'INTEGRATED CROP MANAGEMENT' in a serif font. The background shows a field with tall grasses and a person in the distance.

## **Fall tillage and tillage equipment**

It is not too soon to start planning for crop year 2002. When the crops come out this fall, producers will again face tillage choices. The first decision is what tillage, if any, needs to be done after harvest. Because crop residue from harvest is still on top of the soil, fall is the best time to move to a no-till system. The benefits of no-till include less time in the field, lower fuel consumption, and improved soil physical and chemical properties such as infiltration rate, reduction of soil erosion, conservation of soil moisture, and improvement of organic matter and other nutrients. For more information about the benefits of no-till, see the series of articles about tillage options in the fall 2000 issues of the Integrated Crop Management newsletter.

## **Smart tillage**

If the decision is made to use tillage, then choosing a tillage practice is the single biggest factor that affects residue management. You must consider crop rotation, topography, soil type, and weather conditions. Every field is different, but targeting a residue cover of least 30 percent (at planting time) on the soil's surface can result in a significant reduction in soil erosion.

## **What will tillage accomplish?**

First, determine why a tillage pass is necessary. The most common reasons for tillage are to break up soil compaction, to provide for the next crop in the rotation sequence (e.g., limited tillage in heavy corn residue or leveling a field for seeding a cover crop), and to redistribute crop residue.

If you decide you must do fall tillage, the next step is to consider the condition of the soil. Is it dry enough to work? Working wet soils can cause soil compaction. If tillage is to break up compaction, tilling when the soil is still wet can compound the problem. For more information on wet soils and compaction, see the June 11, 2001, ICM article [Wet soils vulnerable to compaction](#) [1].

Also, soil slope is a major factor in determining type of tillage system to minimize soil erosion. Disturbing or turning under residue on slopes leaves soil exposed to wind and water erosion.

If tillage is required to redistribute residue, go back a step and see whether the combine can be set up to distribute residue more evenly.

## **Check tillage equipment**

Other things to check before heading to the field include maintenance status of equipment. Improperly functioning equipment can translate into bothersome issues from inefficient use of time and fuel and unsatisfactory tillage results to real dangers to the operator. Check the condition of the equipment's frame--look for sprung or broken welds and repair them before doing anything else. Also check for worn or broken tillage components, e.g., sweeps, chisel points, and disc blades.

Make sure that the weighting, ballasting, and condition of tractor are set up for efficient drawbar pull. Your tractor's manual or the local equipment dealer can quickly confirm the best set up for each piece of tillage equipment.

After hooking up, test the equipment and check for leveling of frame, which may involve hitch, frame transport wheel adjustments. Then travel through the field on a test run and observe the function of components that engage the soil, e.g., sweeps, chisel points, disc blades. Are they working as intended? Are they leaving an even distribution? Are they penetrating at an even depth? Do the down-pressure springs need adjustment for even penetration?

### **Plan your work, then work your plan.**

This fall, instead of just heading to the field after harvest, make the process around tillage decisions an informed one. Establish a goal of at least 30 percent residue cover at planting time. Be diligent about the quality of your equipment and the work performed.

Going the extra mile may mean taking a few extra minutes, but it pays off in the long run in terms of efficient use of time, reduced soil erosion, operator safety, and maybe even a better yield from more uniform tillage operations.

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[1] <http://www.ipm.iastate.edu/ipm/icm/2001/6-11-2001/wetsoil.html>

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