

THE LEADING EDGE

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A PUBLICATION DEDICATED TO MAXIMIZING YIELD POTENTIAL

The Corn Stalk Conundrum: How to Manage Last Year's Residue

Wet fall conditions prevented many producers from tilling after harvest last year. Now, as producers prepare for spring planting, the heavy corn stalk coverage is a cause for concern.

Consider this amazing fact researched by Purdue University agronomists: The amount of residue left behind after harvest is roughly equal to the weight of grain harvested from the field. That means a field that yielded 180 bushels per acre last fall and didn't receive tillage may still have as much as 10,000 pounds of crop residue! That is a lot left standing between growers and a well-prepared seedbed.



Due to conditions last fall many growers are planting into conditions they never have before.

If not properly managed, this corn residue can severely impede the planting process, resulting in , poor seed spacing, uneven emergence, and disease potential —all factors that will contribute to lower yields.

Producers faced with this problem may be tempted to resort to conventional tillage methods to deal with residue, but Iowa State University agronomist Mahdi Al-Kaisi cautions that the drawbacks of this practice far outweigh the benefits, especially in wet soils.

Plan to Deal With Residue in the Fall

Residue management should begin in the fall, weather permitting. If a residue management plan is not part of your normal fall harvest process, consider adding the

Conventional tillage in soils with high moisture content can result in:

- Significant soil compaction.
- A seedbed where large, unbroken soil clods will form.
- Sidewall compaction and therefore impaired root development.

following steps to your fall routine.

When combining, the corn head should be positioned to leave only 8 to 10 inches of stalk standing, allowing for air movement and encouraging residue breakdown.

Use residue management tools such as vertical tillage units. They lightly till the soil and incorporate and size residue, which facilitates residue decomposition.

- The potential for potassium deficiency from sidewall compaction.

There are other residue management options available to producers for spring planting. In well-drained soils, no-till planting is still an option, as long as the right equipment is used.

For ultimate control in tough residue conditions, consider equipping your planter with residue managers or row cleaners, updated coulter systems, fertilizer attachments, and spike closing wheels to help close the slot, fertilize, and plant in one field pass.

The correct planter and residue management combination for your operation should eliminate row unit bounce, hair-pinning of residue, and plugging of the v-closing wheels, while facilitating the warming of soil without throwing residue over the row.

Investing in the right row cleaners will take conventional tillage out of the equation and make planting into heavy corn residue possible for producers this spring. Row cleaners that move heavy residue will improve row unit bounce, seed placement, and emergence in no-till and minimum till operations.

Research shows that row cleaners are very effective during planting to move residue away from the path of the seed opener.



Proper residue management tools allow virtually any field to be ready to plant.

Planter residue management equipment is available in a design with a coulters and residue manager combination and also as a residue manager only. Look for wheels with backward-angled teeth that sweep and sever residue for easier removal and are guaranteed not to plug, even in the toughest residue conditions. These designs are less likely to pick up wet residue and will make for a smoother planting operation. The attachment should allow for constant contact with the soil surface and minimize soil disturbance.

As an added bonus, many of these residue managers are compatible with fertilizer application tools. "Twenty-inch rows mean we achieve more plants per acre, but it also means we have more residue to plant into," said Gary

Knude. "The Yetter Sharktooth? wheels caught my eye because they self-clean as well as move residue." "Our goal is to get seed in a precise location. The Yetter residue managers work the way we want them to and do not interfere with planter performance."

Another option for spring residue management is running a toolbar with vertical tillage tools attached. This multi-purpose tool helps warm and dry the soil, which will be important for producers this spring.

Vertical tillage tools will give the residue a light fluffing and also fracture the soil surface to encourage aeration and leave the perfect seedbed for maximum yield potential. In addition, vertical tillage attachments allow for shallow seedbed preparation, which decreases the risk of excess soil density below the root zone.

Avoiding compaction in no-till fields covered with heavy residue will improve drainage and result in better plants. A penetrometer can gauge the effectiveness of the current process and alert producers to correlations between unhealthy plants and poor root systems resulting from compaction.

Most toolbars with vertical tillage attachments can be used in a wide range of conditions and have low horsepower requirements resulting in lower operating cost per acre. In order to maximize productivity, vertical tillage attachments should be operated at 8-10 mph.

Most producers can add residue managers or vertical tillage attachments by modifying equipment they already own. Residue management tools, vertical tillage attachments, or other options for spring tillage should move residue only from the row, avoid hairpinning, and leave room for residue flow-through to avoid planter clogs.

Adjustable residue managers from the cab are another option for dealing with tough residue. They give producers more control and the ability to get better performance from tools, resulting in better residue management in tougher conditions.

No matter what residue management option is used, producers can often adapt operating practices to help manage tough residue. Varying driving speeds or changing depth of operation will give producers additional control over the residue situation.



Existing equipment may be modified to use as soil warm-up tools for earlier planting.

There are many options available to help producers contend with this spring's abundance of cornstalks. Instead of resorting to conventional tillage operations, producers should still consider minimum tillage and no-tillage using the right tools for the job--residue managers, vertical tillage attachments, coulter combinations and other options are all items to consider for a successful spring planting season.

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