

THE LEADING EDGE

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A PUBLICATION DEDICATED TO MAXIMIZING YIELD POTENTIAL

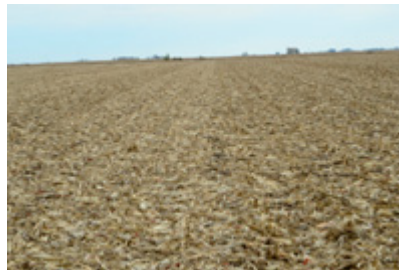
Focus on Fall Factors and Experience a Better 2012

For many growers and their crops, 2011 was a year of ups and downs. Some saw near record yields, while others were disappointed at the decrease in yields from 2010. With the 2011 crop in the books, now is the time to begin planning for 2012. The decisions growers make this fall, especially in the critical areas of residue management, nutrient application, and weather preparedness, will have a significant effect on whether yield expectations are met in 2012.

Manage residue now

If growers want to take advantage of the benefits of leaving residue on the ground over the winter—benefits such as reduced erosion, improved soil quality, better water infiltration, and more—there are several options.

With the combine – Properly spreading and sizing residue in the fall saves both the time and expense associated with extra tillage passes. As platforms and drapers continue to get bigger, adjust choppers and spreaders accordingly. Also worth considering are stubble-managing attachments which knock over stalks, putting them in close contact with



Well-managed cornstalk residue.



the ground, which result in better residue breakdown over the winter.

With vertical tillage – You can still combat excess residue this fall by using a vertical tillage (VT) tool to cut and size residue. Most shallow, coulter-based VT tools have fairly low horsepower requirements and can be operated at relatively fast speeds of 6 to 10 mph. A quick pass at this speed will provide more soil-to-residue contact and better breakdown over the winter. Residue is chopped to a manageable size but left on the soil surface as an erosion preventing cover.

Typically, a stubble managing attachment's (see above) primary goal is to limit tire or track wear and tear by crushing tough cornstalks.

Thoughtful nutrient management

When determining needed N for next year's crop, take your soil sample at a depth of at least 3 feet.

Fall is also the time to start making next spring's fertilizer plan. Since nitrates in the soil are mobile, a **fall soil sample** is the best way to determine residual levels. Making the investment in a soil analysis provides a road map for managing input costs by pinpointing nutrient needs and placement.

Information from the soil tests plus fertilizer prices and the expected selling price for corn should all be considered when calculating the recommended nitrogen (N) rate.

Extra time, lower work load, typically dry soils, and a desire to apply prior to fall tillage are good reasons to apply phosphorus (P) and potassium (K) soon after harvest. Fall P and K application works well in soils with little or no "fixing capacity," therefore P and K applied in the fall are equally available for crops the next year (or several years, in some cases).



Fall anhydrous application.

For fall nitrogen application, anhydrous is a popular choice because nitrification is delayed when it is applied in soils below 50 degrees. Many states have soil and water organizations that publish 4-inch soil temperatures on their web sites for producers to track. Some sample links to some resources are:

- [Illinois](#)
- [Iowa](#)
- [Minnesota](#)

Anhydrous is also still the most economical choice for supplying crops with nitrogen. However, experts typically warn that application of fall anhydrous in sandy or poorly drained soils could result in significant nutrient loss by spring planting.

For more information on building the right nutrient management plan, read Issue 72 of the Leading Edge: [Build a Fertilizer Management Plan That Makes Economic Sense and Agronomic Sense.](#)

Consider cover crops

The use of cover crops is experiencing a revival as sustainable agriculture practices gain momentum. Different cover crops provide different benefits, and no cover crop is a magic bullet. Producers considering cover crops must have a clear goal in mind and choose the cover crop to match.

Cover crops can:

- Protect the soil during winter months.
- Mobilize and recycle nutrients.
- Improve soil structure and break up compaction.
- Serve as a crop rotation.

- Control weeds and pests.

Plan to balance out Mother Nature

While growers are used to facing challenges, conditions the last three years have presented more than their fair share, some of them extreme. While no amount of planning will ever make adverse weather during the growing season a non-factor, strategic use of certain tools and practices will keep its negative impact on yield in check.

Drainage tile – Producers who experienced their third consecutive year of overly wet field conditions may experience far fewer headaches in 2012 if drainage tile is installed. Tile is next to essential in no-till soils, and extremely beneficial for consistently wet fields under any tillage practice. While it can be a significant up-front investment, it can also result in significant yield improvements.

Rob Hoyt with Controlled Drainage Systems, Inc., in Scranton, Iowa, said he's talked to customers who have gleaned a full return on investment in less than two years after installing new tile lines, more than Fall anhydrous application. Two years before they expected that to happen. Hoyt added that some customers who are installing tile lines on ground for the first time are seeing yield improvements of 30 to 40 bushels/acre.¹

Higher yields translate into greater returns, and with grain prices on the rise, the case for tiling is improving. Growers should base their decision on whether the higher crop returns will justify the investment in tiling. Read more information on the [economics of tile drainage](#).

Tiling has other benefits. In fields that dry out more quickly, planting and harvesting can be completed earlier in the spring and fall. In dry fields, there is a wider window of time in which to plant and harvest the crop.

Compaction control – Compacted soil and too little rain are a bad combination. In dry soil, plants are already fighting to grow healthy roots, and a packed seedbed compounds the issue and leads to stunted root

systems. The best course of action is to avoid compaction in the first place by operating heavy equipment along controlled traffic paths and avoiding extra passes through the field.

Emerson Nafziger, University of Illinois Extension agronomist, said that it's wise to review your soil management practices of last fall if you were unhappy with your crop's response to stressful conditions this year. "Soil management was certainly not the only issue, but we might at least keep in mind that breaking down soils with tillage almost to the point that they're ready to plant in the fall might not be that helpful come spring," he said. "It's appropriate to till this fall to break up compaction again in many fields, but we should always ask ourselves if the second trip this fall is necessary."²



Adding vertical tillage attachments to an old chisel plow frame results in a versatile tool that can eliminate compaction.

If compaction is unavoidable, a pass with a vertical tillage tool in the fall goes a long way toward eliminating this yield-robbing culprit. A second pass ahead of the planter in the spring further aerates soil. If the year turns out to be dry, soil will be prepared to handle it.

Plan ahead for 2012

Whether through residue management, nutrient application, or strategic use of practices such as subsurface drainage tile or compaction control, a successful planting season begins at harvest. Start deciding now which practices and tools can help increase your yield next season.

¹ [Jeff Caldwell](#), "[Drainage tile a hot commodity this fall](#)," Agriculture.com, November 5, 2010.

² Jennifer Shike, "[Plan Now for the Next Cropping Season](#)," University News Release,

University of Illinois
November 7, 2011.

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