



5 TIPS FOR SYSTEMS SUCCESS

Managing multiple production systems is the last step to precision farming

You're fortunate – much of your soil is relatively flat, well-drained and easy to farm. But that west 80 is droughty, with a sand knob that blows. That farm you picked up three years ago stays wet because it needs more tile, but the landlord isn't ready to invest in it. And the previous operator of Uncle Ned's 40 acres used a moldboard plow and field cultivator, leaving varying density layers beneath a poorly-structured surface that crusts.

One-size-fits-all farming doesn't work for all those situations. You already manage weaknesses by varying hybrids, population, planting date and pest control measures. Now you're ready to add one or more additional production systems to accommodate soil conditions – what Farm Journal Field Agronomist Ken Ferrie calls systems management. Here are some tips to complete the final step into precision farming. ~By Darrell Smith

1. MOVE ALL YOUR FIELDS INTO A VERTICAL FORMAT

"No-till, strip-till, vertical tillage and cover crops all work on soil in a vertical format. You can mix and match," Ferrie says. "For example, if weather prevents you from running a vertical tillage tool in the fall, you can strip-till or no-till in the spring.

"If you implement a new system, such as strip-till or no-till, on soil with layers of varying density, you are using only part of a system. You probably won't realize the maximum benefit," he adds.

A vertical format means removing all horizontal barriers and not putting them back in. "These barriers are created by a tool such as a moldboard plow, disk or soil finisher that creates an abrupt change in bulk density," Ferrie explains.

2. THE SYSTEMS YOU USE MUST BE COMPATIBLE

Ferrie shares this example: You no-till soybeans into corn stalks to obtain the benefits of no-till. The next year you run a field cultivator before planting corn to save money on weed control and get faster emergence. You now have corn growing on a horizontal layer. Corn roots will grow along the top of the dense layer, rather than pushing through it. Water will spread out on top of the layer instead of penetrating into the soil.

"So you saved money up front, but you probably will harvest less grain," Ferrie says. "A compatible option would have been to apply a fall burndown herbicide after harvesting soybeans and make one pass in the spring with a vertical harrow to dry the field. That would preserve a vertical environment for roots and water."

3. CHOOSE A SYSTEM TO MANAGE WEAKNESS IN EACH SOIL

For example:

▶ If the field is well drained (and the owner approves), no-till it. Remember, the last tillage pass before no-till must be with a vertical tool.

▶ If a field is wet, and crop emergence is a challenge, strip-till or run row fresheners to prepare a strip for planting.

▶ If drainage is moderate, and a field is slow to dry, run a vertical harrow ahead of your planter.

▶ If a field has poor soil health or structure, and the surface crusts and runs together, plant cover crops and no-till or strip-till. >