WHERE ‘PLOW’ IS A FOUR-LETTER WORD

By Darrell Boone

abash County’s Dean Eppley has had a long-standing problem with the moldboard plow.

“To me, ‘plow’ is a four-letter word,” says Dean. “I believe the plow is one of the chief pieces of equipment for enhancing erosion on soil that has any degree of slope.”

This aversion to seeing irreplaceable topsoil taking a ride down the Mississippi River to find a new home is what led Dean to become a no-till pioneer in the mid-1960s. With encouragement from local conservation people, Dean, a soil and water conservation district supervisor himself, made his first attempt at no-till with a six-row Allis-Chalmers planter that could be used for either no-till or conventional tillage.

“It was a very novel concept back then,” he recalls. “I never heard any negative comments directly from neighbors, but I wouldn’t be surprised if there weren’t some conversations around the area about ‘What’s that nut trying this time?’”

The results were less than he’d hoped for, but still left him encouraged that it was a goal worth pursuing.

“If we’d had 2011 seed back then, we’d have been more successful, even with the equipment we had available,” he says. “Now we have the equipment, the seed, and the herbicide.”

Undaunted in his desire to find a better way to do tillage, Dean soon moved into ridge till, working closely with his late cousin Carl Eppley, who was later inducted into the Ridge Till Hall of Fame. Although Dean liked many of the features of ridge till, especially its ability to loosen the soil and allow it to warm up faster, that tillage system gradually evolved and was eventually replaced by more contemporary methods.

WEIGHING BENEFITS, COSTS OF TILLAGE

While Dean is still active in managing the farm operation, son Barry now handles most of the day-to-day, hands-on management aspects. Today their operation consists primarily of corn and soybeans, with some wheat and alfalfa, the latter of which they sell to a large dairy nearby. For the past few years, they’ve supplied alfalfa and silage to the dairy, and in turn receive dairy manure, which they use for fertilizer.

Their ground is mostly flat, but does include some rolling areas. To protect their soil, but also boost economic returns, Dean and Barry use a combination of conservation tillage and other practices, including no-till soybeans after corn, grass waterways and a variety of cover crops.

However, the Eppleys do continue to use some conventional (chisel plow) tillage on areas where they apply dairy manure or that have compaction issues. While they prefer to use some form of conservation or minimum tillage wherever they can, they also feel that adding the dairy manure where possible is a good thing.

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“Long term, it’s a plus to have the manure,” says Barry. “Besides the nutrients, which we would otherwise be getting from another source, we get additional nutrients like calcium, which helps with the pH, plus some organic matter. Getting the manure is a net gain for us.”

One important piece of the Eppleys’ program today is vertical tillage.

VERTICAL TILLAGE IS ‘GOOD TOOL,’ SAYS FISHER

INDIANA STATE NRCS conservation agronomist Barry Fisher is a tireless and unabashed advocate for conservation tillage.

“I don’t think there is any soil in Indiana that couldn’t benefit from a conservation-tillage system like no-till, strip till or vertical tillage — without any yield loss or loss of economic income,” says Fisher. “If these systems are managed correctly, you will see improved soil health and soil structure. In most cases, soil productivity will ultimately increase under these systems.

Fisher sees vertical tillage as a good intermediate tool that lies somewhere between no-till and conventional tillage. He says it is currently being used in many corn-after-corn situations where there is lots of residue, due to its ability to break down the residue and allow the soil to warm up and dry out more quickly.

There are many different types of tools being marketed as vertical-tillage equipment today, but the common element of vertical tillage is that it does not move soil from side to side. It also does not cause inversion of the soil, and vertical-tillage tools don’t have the concave angle of the traditional disk blades that creates the horizontal pans producers are trying to get away from.

“We want to minimize disruption of the soil aggregates,” says Fisher. “Instead, we want to build soil aggregates and soil stability so we can ultimately improve soil and reduce crusting. If the tool you’re looking at isn’t really doing that, keep shopping.”

He adds that work is also being done to help producers using conservation-tillage systems better incorporate manure into their cropping systems.

“We’re working diligently at providing proper conservation cropping systems where manure is involved,” says Fisher.

Never a better time to reassess tillage approach

Despite the advances in conservation tillage over the past few years, Fisher estimates that only 30% to 40% of what could be done in Indiana’s cornfields is being practiced. He sees the fear of risk as being a major obstacle to more producers using conservation tillage in that crop and elsewhere.

“There’s so much risk in farm operations today,” says Fisher. “We all have a comfort level with what we’ve been doing, and to make a substantial change in the tillage operation is just one more perceived high risk above and beyond what they’re already handling. Many people are reluctant to do that.”

Fisher adds that there’s another side to that discussion, however.

“While there may be a lot of risk in agriculture today, on the other hand, prices are good, yields are pretty good, and the economic stability of agriculture is pretty good,” he says. “It’s during the better times that you want to find those new efficiencies and production systems so you have a more resilient cropping system when things do get shaky. Now is not the time to sit back, but rather to constantly be looking for new, innovative approaches to making more efficient, productive, resilient soil!”

Fisher also feels there is another important reason for reviewing your tillage practices now.

“Never before have we had a better mechanism in place to get farmers assistance to make some of these transitions,” he says. “We have on-farm networks being set up all across the state with different field trials — so many tools are at our disposal today where farmers can get technical and/or financial assistance and find out what other successful farmers are doing.”

Fisher states that by appropriately matching today’s conservation tillage technology with best management practices in related areas such as nutrient management, pest management and improved genetics, producers can maximize both soil health and profitability.

He says Indiana’s Conservation Cropping System Initiative, which includes partners like the Natural Resources Conservation Service, Indiana State Department of Agriculture, Purdue University Extension, soil and water conservation districts, and others, can provide a wealth of information on all of those areas.

“Now is an opportune time to make some advancements in your technologies that will help you grow your yield potential and profitability faster through a system that’s also improving your soil productivity and health,” says Fisher. “I think those possibilities are pretty exciting!”