

Cover Crops Can Provide Many Benefits

COLUMBIA, MO.

Having plant growth in fields year-round can improve the soil, according to Tim Reinbott, superintendent of the University of Missouri Bradford Research Center. He says using cover crops in the fall and spring can provide large benefits.

“We have our grain crops in the summertime, but crops in the fall and spring are extremely important in helping soil health,” Reinbott said.

Cover crops promote microbial activity and loosen the soil. Several studies conducted at Bradford show that cover crops will help rain-fall more easily soak into the soil, he said.

“Using a cover crop, you’ll get a lot more water infiltration, maybe up to 50 percent more than without a cover crop,” Reinbott said. He said cover crops are particularly helpful with water infiltration on no-till fields.

Cover crops can also put nutrients down in fields. Reinbott says that winter annual legumes like hairy vetch, Austrian winter peas or crimson clover biologically fix nitrogen, which then can be released to a succeeding crop. He says that the seed cost of cover crops is considerably less than other nitrogen sources.

“Our studies show maybe 50 to 75 pounds of nitrogen a year,” Reinbott said. “Another part of this is that our cereal ryes or tillage radishes can capture a lot of the nitrogen that is left over at the end of the year. So instead of nitrogen being washed off or lost through leeching or denitrification, cover crops can actually help capture that nitrogen, and when they are destroyed, it’s released back to the next crop.”

Reinbott says researchers at Bradford are looking at several different methods of destroying the cover crops, including applying herbicides, using a roller crimper, and mowing them down.

The best results have been when they plant directly into the standing cover crop and then desiccate it, he said. “It’s easier to get good seed-to-soil contact that way. When we mow it down or roll it down, we’re dealing with 6 to 7 inches of mulch that we have to try to plant through, and that becomes a problem. One of the things we’re going to have to look at is how to manage that thick cover that we want, yet at the same time get a good stand.”

Cover crops can also provide weed control, reduce water runoff and pull up phosphorus and potassium from below the claypan.

There are a wide variety of cover crops that have different advantages. Hairy vetch has a wide window of planting, is winter-hardy and produces a lot of biomass. Crimson clover blooms early enough in the spring that you can plant corn and, if allowed to bloom, it will reseed itself. Tillage radishes and cereal rye have tremendous roots that can loosen the soil. Less compaction equals greater root density deeper in the ground following rye and radishes.

“Cover crops are very exciting and I encourage farmers to try some,” Reinbott said. “Don’t plant your whole farm because each farm is a little different. Try to figure out how to make it work on your property. I guarantee there is a system that will work with your soil type and slopes.” Δ