For top corn yields kill vetch promptly

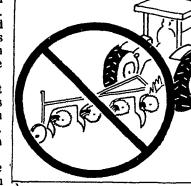
NEWARK, Del. - Hairy vetch has proven itself as a mulch and nitrogen source for no-tillage corn. But how about growing corn and vetch together for a few weeks after the corn emerges, to let vetch plants get a bit bigger and fix more nitrogen before killing them?

"This may sound like a great idea, but don't try it," says University of Delaware Extension agronomist William Mitchell. "You'll likely end up with a drastically reduced corn yield."

If feasible, letting vetch continue to grow for a short time after corn comes up would solve a major problem for farmers who have trouble getting much growth out of their vetch before corn planting time. Mitchell says he tested the idea last summer at the university substation in Georgetown, with disappointing results.

The project started with a seeding of hairy vetch following corn harvest the previous fall. On March 31, when vetch plants were still only 2 to 3 inches high, the field was no-till planted with corn.

The corn was slow to emerge, so the agronomist delayed treatments to kill the vetch and provide



residual weed control until April 15. By then, the vetch was 12 inches high and the corn was still several days away from emergence. Paraquat, Dual and Aatrex were applied then as a tank mix. But some parts of the field were deliberately left untreated, except for Dual for grass control.

Corn emerged on April 18 and grew with the vetch in those untreated plots until April 29, when 2,4-D was applied to kill the vetch and scattered broadleaf weeds. Again, part of the block was not sprayed. Vetch plants there were allowed to grow until May 13 when

they, too, were treated with 2,4-D. "By this time, vetch was more than 2 feet high and completely tangled with the corn and anything else that was standing," Mitchell says. A shortage of moisture developed and there was obvious competition between vetch and corn for the limited water.

Good weed control resulted from the April 15 treatment with the three herbicides. But where vetch kill was delayed, fall panicum control became progressively worse. "Although all the corn was planted on the same date, there was a 3-foot height difference between the early and late vetch kill plots in favor of the one sprayed with a tank mix April 15," he says.

Grain yields reflected the competition among corn, panicum and vetch where cover kill was delayed, Mitchell mur The

average yield from plots where vetch was killed promptly was 116 bushels. Delaying kill until April 29 cut the yield to 80 bushels. A further delay until May 13 chopped yield to 61 bushels.

These results show that good notillage corn yields can be produced on sandy soil with a little planter fertilizer and a good vetch cover crop, the specialist says. They also show it doesn't pay to put off vetch control in hopes of getting a better stand of this nitrogen-producing cover.

Let the vetch grow until just before corn emergence, advices Mitchell. Delaying cover kill until after corn is up in the hope of producing more growth and fixing more nitrogen can disastrously affect yield. "The message is clear," he says. "You can't have it both ways."

Decline of weeds

annual weeds under no-till cropping have been shown to increase initially and then decline under some situations. This may be due to leaving the weed seed near the surface in no-till while burying it conventional tillage

Lake Forest

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location last summer and the yields are realistic for corn grown in that part of the state, the specialist says.

The better response of no-till corn to later applied N suggests that it is more important for farmers who no-till to sidedress with nitrogen later in the season, Webb says.

Another aspect of the work at Lake Forest has involved methods for applying liquid nitrogen. Over the past two years, crop response has been the same with both 30% UAN dribbled in a concentrated band down row middles and knifed in. Results have been similar in plots at the University of Delaware Georgetown substation.

Webb calls this work encouraging. "There has been a big question in everybody's mind whether there might be losses to volatilization with dribbled 30% liquid N," he says. "We know there are significant losses from spraying it on. But so far it looks like dribbling works as well as knifing."

Because of the time and energy required to knife, the results of this demonstration are particularly noteworthy, he says. It costs at least \$1,000 more to set up equipment to knife. In addition, knifing requires more energy, disturbs no-till cover and takes

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