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UI Helps Northwest Growers Farm Without Plows

Even as wheat prices stay dishearteningly low, Craigmont-area farmers Nathan and Steve Riggers are having another profitable year. "I feel optimistic, which not many farmers now do," says Nathan, a 1987 University of Idaho graduate in agriculture. "We have our costs down to a point where we can compete."

Nathan attributes their enviable bottom line to their decision in 1996 to go to 100 percent direct seeding, sometimes called "no till." Rather than spend long days plowing their fields before planting, the brothers sow seed right into the stubble of the previous crop and fertilize it at the same time.

The Riggers' had experimented with direct seeding for 15 years, but it wasn't until they unloaded their conventional equipment and doubled their size to 4,200 acres that their fixed costs fell 20 percent.

Yields have responded favorably. Pea yields documented by the UI in a three-year on-farm trial at the Riggers'—and in trials at the UI's Kambitsch Farm—were at least as high under direct seeding as under conventional tillage. Direct seeding also left the most crop residue on the soil surface at every point in the spring cereal-peas-winter wheat rotation, reducing soil erosion and improving water storage.

"Several growers who went into direct seeding for improving profitability now say they're just as excited, if not more excited, about the improvements in soil quality and soil productivity," says Roger Veseth, conservation tillage specialist at UI and Washington State University.

In 1998, just 5 percent of Idaho cropland was direct seeded, well behind international competitors Argentina (28 percent), Brazil (25 percent), western Australia (50 percent), and Canadian prairie provinces (20 percent).

"It's a fundamental change in the way crops are raised," says UI crop management specialist Stephen Guy. "It affects the whole system."

Direct seeding requires longer crop rotations, up to three or four years, to control pests conventionally managed with tillage. UI oilseed breeder Jack Brown thinks his mustards and canolas will fit profitably into these longer rotations, and has built a one-of-a-kind no-till plot drill to screen his varieties under direct-seed conditions.

Photo by Ellen Mallory

From left, Steve and Nathan Riggers check the depth of their spring wheat seeding into winter wheat stubble.

Across northern Idaho, UI weed scientist Donn Thill is assessing weed shifts under direct seeding. In a peas-wheat sequence, he has found also that the herbicide Pursuit, which normally requires incorporation with tillage, can be successfully incorporated with rain, if applied early enough.

UI plant pathologist Bob Forster is cooperating with land-grant and ARS counterparts in the region to find ways to control cereal root diseases under direct seeding, where they can be particularly intense in short crop rotations. Other UI scientists are studying insect pests, soils, and other elements of the new system.

To help farmers learn from each other as they transition to no-till, UI, WSU, and Oregon State University are co-publishing a series of direct-seed "case studies" of growers' experiences, including the Riggers'. The universities' third regional direct seed conference, which drew upward of 900 participants in each of its first two years, was held January 4-6 in Pendleton.

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