



Double cropping manure-treated fields can help growers manage phosphorus

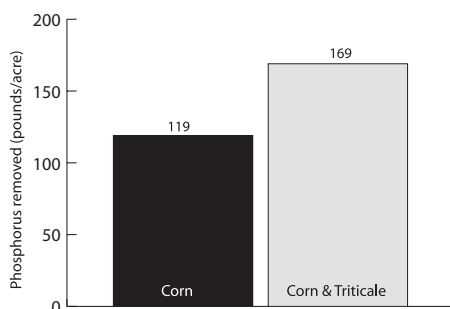
Nutrient cycling on an Idaho dairy goes something like this: cows eat the silage that turns into muscle and milk and the manure that the farmer spreads on the field to nourish the crop that will be made into silage that the cows eat. A healthy system strikes a balance between the amount of manure nutrients the producer applies to his field and the amount the crop takes up. Manure applications that are too heavy pose the risk of phosphorus running off the field into nearby surface waters to feed nuisance aquatic growth such as algae.

Bill Stouder of Stouder Holsteins at Wendell has in recent years been tuning the balance on his dairy through double cropping. Rather than plant just one field corn crop on the 40 acres where he sprays his dairy's wastewater, he puts in a winter crop of triticale for his heifers then follows it right away in spring with his corn crop. "It really helps to put on a second crop to pull out phosphorus," says Stouder.

In field trials at the UI Parma Research and Extension Center from 1999 to 2001, UI Extension Crop Management Specialist Brad Brown has produced research data that quantifies the value of double cropping. Three years of double cropping triticale, a winter cereal, followed by corn removed 50 pounds per acre more phosphorus than three annual crops of corn. Furthermore, the level of phosphorus in the soil dropped from 30 ppm to 11.8 ppm over three years with double cropping versus from 30 ppm to



A field of triticale.



Three years of double cropping pulled 50 pounds per acre more phosphorus from the soil.

just 17.0 ppm with three crops of corn.

That's a difference that dairy producers can appreciate. Like all of them, Stouder is required to keep the phosphorus level in the first foot of his soil to no more than 40 ppm (parts per million) to prevent surface water contamination. Once that threshold is reached, producers can apply only as much manure as that year's crop can use to fill its phosphorus needs.

Producers could transport excess manure to more distant fields at a cost and assuming available land, turn it into compost, or simply produce less milk.

Double cropping, however, has the additional benefit of enabling dairy producers to produce more feed for their herd. Brown's study showed that double cropping produced 2.6 to 4.9 tons per acre more forage dry matter, depending on the winter cereal, than corn crops alone.

In Gooding County, extension educator Bill Hazen says "more and more" producers are adopting double cropping to manage phosphorus, a practice some of them adopted years ago to protect fields from eroding winter winds. "Local sales of triticale seed have been going up 15 to 25 percent a year for the past five years. You hardly ever see a bare field anymore in wintertime," said Hazen.

Brown believes double cropping has even more potential in the Treasure Valley because of its longer growing season. To the east of it, in Gooding County, Hazen says producers ideally should plant their corn crop "within days" of harvesting their winter cereal. "Time is the critical element."

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