



When sidedressing, John Blacksmith of Argyle, Iowa, pulls a 1,000-gallon tank mounted on a wagon running gear that straddles four rows for stability.

# Early sidedressing cuts risk

Split applications and starting early let farmers cut nitrogen rates 15%

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**A**lmost without exception, the primary concern farmers have about sidedressing nitrogen is whether they will be able to complete the job before the corn gets too tall.

John Blacksmith, who farms near Argyle, Iowa, reduces that risk by starting sidedressing when the corn is relatively small. Because he simply injects a stream of liquid nitrogen (32%) directly behind a smooth coulter, he doesn't have to worry about an applicator knife rolling chunks of dirt over on small corn.

Another reason he can start sidedressing when the corn is small is that he shares some equipment and fieldwork with his brother-in-law, Lewis Higbee. Blacksmith plants all the corn for both of them and applies some nitrogen with the planter. Higbee plants all the beans and does most of the spraying on both operations. That leaves Blacksmith free to start sidedressing early in the growing season.

With a dozen years under their belts, the two southeast Iowa farmers have only been caught once. "One year, I got rained out with 5 or 6 acres left to sidedress," Blacksmith recalls.

Because of the increasing popularity of hi-boy applicators, getting com-

pletely shut out is less of a concern than it used to be for many growers, including Blacksmith and Higbee.

Blacksmith figures the rewards outweigh the risks. "We feel we get the most out of each dollar spent by split applying nitrogen," he says. He figures they use about 15% less nitrogen than they would with a preplant program.

There's another reason they prefer sidedressing. "We have some sandy soils," says Blacksmith. "If we put the nitrogen on early and then get a lot of rain, we're going to lose some of it."

### Recycled applicator

Blacksmith's sidedressing machine was simple to build and is easy to run. The main frame is an old anhydrous ammonia toolbar. He replaced the old anhydrous ammonia knives with Yetter coulters that have solid-stream nozzles attached to a pipe nipple mounted behind the coulter.

A lot of liquid sidedress machines use ground-driven pumps. That is what Blacksmith uses on his planter to apply 8 gallons of 32% nitrogen, 10



**A solid-stream nozzle shoots a stream of 32% nitrogen into the slot made by a smooth coulter.**

## Injecting vs. dribbling

**U**rea and ammonia fertilizers are less subject to loss when placed in the soil rather than on the soil. “However,” says Iowa State University agronomist Alfred Blackmer, “placing fertilizer in the soil often increases application costs and makes it more difficult to cover large numbers of acres.

“Better information is needed to help producers weigh the trade-offs between decreased performance of the fertilizer and increased costs of application,” says Blackmer.

In 2002 and 2003, he conducted studies to compare the performance of dribble and injected urea-ammonium-nitrate solution (28% N) applied to no-till cornfields after the corn had emerged. The injected fertilizer was placed about 3 inches deep behind a coulters. The treatments were applied when the top inch of soil was dry because urea can be lost when it’s applied to wet soil surfaces.

“The average difference in yield due to placement was relatively small,” says Blackmer. Averaged over the two years, the mean yield for injecting the nitrogen was 5 bushels better than the yield for dribbling it at the 100-pound rate (164 bu. vs. 159 bu.) and also at the 150-pound rate (167 bu. vs. 162 bu.).

Typically, shooting a stream of nitrogen behind a coulters would not cover the nitrogen as completely as Blackmer did ■

## Sidedressing

gallons of 11-37-0, and 2 gallons of thiosulfate. However, he opted to use a hydraulically driven centrifugal pump on his sidedress machine so he could adjust the application rate easily.

“We will run from 90 to 120 pounds of actual nitrogen at sidedressing,” Blacksmith says. That’s a range of



**Above: John Blacksmith has sidedressed liquid nitrogen for 12 years. He starts when the corn is small.**

**Right: Blacksmith uses a hydraulic pump because it lets him change the application rate from the cab by changing the flow of oil to the pump.**



about 26 gallons to 34 gallons. “I can change the pressure and the application rate by changing the flow of oil to the hydraulic pump.”

Blacksmith can cover about 200 acres per day by running 7 to 7½ miles per hour and having someone haul nitrogen to him in the field. **SF**