



Anhydrous system allows the Harms to evenly apply anhydrous across the width of applicator. Anhydrous is kept in liquid form right down to the knives.

New Way To Monitor Anhydrous Application

Loren and Larry Harms, Lexington, Ill., apply strip-till anhydrous ammonia on their corn ground. Last year they checked yields across the rows and found 15 bu. per acre higher yields in four out of each 12 rows of their applicator.

They blamed the inconsistency on their NH₃ applicator and the fact that there was no way to monitor each row during application.

Now the two men are working with Lauren Kiest, a chemical engineer based in Denver, Colo., who also owns farmland in Illinois. He has developed a new anhydrous monitoring system that makes use of a Red Ball monitor.

The key to the system is designing it so the NH₃ is handled as a liquid right down to the knives. To do that, you have to have back pressure from the nozzles that keeps the NH₃ from vaporizing. To do that, they had to control the orifices as close to the knives as possible. They were able to apply ammonia at between 100 and 180 psi.

With the NH₃ in liquid form, Kiest was able to plumb in a Red Ball monitor which consists of clear plastic tubes with balls floating in there. They tell you at a glance how each row is operating.

Kiest says that after running the system last year, he's convinced it's possible to evenly apply anhydrous across the width of an applicator, boosting yields by preventing over or under application. Now that he has made the basic idea work, he says he needs



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to develop specific equipment for the system before he can bring it to market. For example, Red Ball monitors are not made to handle high-pressure NH₃.

"We plan to talk to the Red Ball people about making a version geared to ammonia," Kiest says. Another problem to be worked out is developing a way to release ammonia if it gets trapped in the lines going back to the knives. He needs a way to bleed the lines safely. And as the system is currently set up, there are clouds of NH₃ that develop when making turns, the result of fluid being held in a liquid state until the applicator is lifted to make turns.

Contact: FARM SHOW Followup, Lauren Kiest, Denver, Colo. 80259 (ph 303 331-9696).

Make Your Own Seed Tapes

"You can make your own seed tapes using scotch tape and toilet paper. I make these on the kitchen table during the winter. Planting them is a lot easier on my knees and it saves a lot of thinning," says George Handel, Ohio, in *Countryside Magazine*.

To make them, just stick an inch or so of one end of the tape to a flat work surface. Stretch out about 2 ft. of tape, sticky side up

and stick the loose end to the table. Place seeds on the tape at the desired spacing. Then lay a strip of toilet paper over the tape.

At planting time, just make a trench as deep as required by the seeds, lay the tape in the trench, cover and tamp. The plants will come up normally. Works especially well with small-seeded crops like carrots or flowers.

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"Side Slide" Marker For Field Cultivators, Air Seeders

Concerns about overlapping passes with seed, fertilizer, or chemicals when pulling air seeders and field cultivators prompted Bernie Toews and his son Dean to develop the Side Slide Field Marker.

The marker swings forward and telescopes to the desired length and leaves a groove of usually about 2 inches in the ground. Since measurements are based on marking to the center of the tractor, the operator simply has to drive over the center of the groove to eliminate overlap.

The marker mounts on the rear corner of air seeders and cultivators so it can be close to the packing wheels and walking axles. Toews says this provides better weight distribution of the big marker.

A hydraulic cylinder swings the arm out as a motor extends the slide arm. It has adjustable stops, which allows you to adapt easily to different equipment. The disc angle is adjustable for different field conditions.

"The compact design doesn't interfere with turning at the end of the field or folding the implement for transport," explained Toews.

The marker is shear bolt protected so if you hit an obstruction in the field, the entire

marker swings back.

Toews says it was simple economics which convinced him that such a field marker would attract the attention of other farmers. For example, he notes that a quarter section typically takes about 80 passes to seed. Just 1 ft. of overlap would leave an 80-ft. strip not seeded.

"With a 33-ft. implement, this would require three additional passes to finish seeding the field. Three more passes will increase your input costs by four per cent. If you allow \$70 per acre for seed, fertilizer, chemical and seeding equipment, this one foot overlap will cost you \$2.10 per acre seeded," notes Toews. For a farmer seeding 2,000 acres, the additional costs could be as high as \$4,200.

Toews produces the Side Slide Field Marker through his company, Triple Star Manufacturing Ltd. It's available to fit cultivators in widths from 24 to 64 ft., including five folding units.

Contact: FARM SHOW Followup, Bernie Toews, Triple Star Manufacturing Ltd., Box 149, MacGregor, Manitoba, Canada R0H 0R0 (ph 204 685-2045).

"Double Plastic" Bale Wrap Kit

"It lets you wrap twice as fast and is three times as puncture-resistant as plastic put on one layer at a time," says Oscar Frey of Horst Welding about the company's new double plastic bale wrap system.

Horst Welding makes the Tube-Line bale wrapper which wraps long lines of round or square bales. Until now, bales have been wrapped with single layers of plastic that are overlapped to apply multiple layers of plastic.

The new system "laminates" two layers of plastic together as it's wrapped around the bale. The two rolls mount together. A set of knurled aluminum rollers stretch the plastic tightly together as it comes off the rolls. The plastic sticks tightly together, forming one heavy layer which Frey says is stronger than simply wrapping two layers around a bale.

"You can't separate the two layers of plastic with your fingers. They bond together, forming a much stronger barrier that's harder to penetrate," notes Frey. You can wrap faster because you only have to overlap half as much and the plastic goes further so you don't have to reload rolls of plastic as often.

Frey says the concept of laminating two layers of plastic together would work on any



Two rolls of plastic are unrolled at once. As they're pulled, they bond tightly together forming a laminated double layer of plastic that's much more resistant to puncturing, says Horst Welding.

bale wrapper. He sells a kit to fit his Tube-Line bale wrapper for \$225 (Canadian).

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