

## Nitrogen use down, yields up

By Tim Hoskins, Iowa Farmer Today

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STOCKTON — Keith Schlapkohl concedes he doesn't know everything about farming.

That hasn't stopped him from trying new things on his Scott County farm.

"It seems for every one question I get answered, 10 more are raised," he says.

Schlapkohl has been trying different ideas dealing with improving nitrogen efficiency and using gypsum on his Eastern Iowa fields.

During this time, his yields have averaged about 300 bushels per acre for corn and 60 bu. for soybeans.

Schlapkohl has been working on nitrogen management after an incident his father had with anhydrous ammonia in 1984.

A hose popped off an anhydrous tank, spraying his father in the face. The elder Schlapkohl survived the accident.

However, the incident made the Schlapkohls question why they use anhydrous.

At one time, they were applying as much as 200-240 pounds of nitrogen per acre, and the soil was like a brick, he notes.

Schlapkohl reduced his application to a 32 percent UAN and found that didn't produce as many lumps in the soil. He then moved to a program with Midwest BioAg.

Now, he uses some of his crop management methods combined with the Nu-Till system by Ag Spectrum.

Schlapkohl foliar feeds corn at the V4 stage and side dresses again at V7 to V10. He does a third application in August.

At that time, he applies an insecticide that has a chemical found in watermelons, which attracts corn rootworm beetles. That is done on continuous-corn acres to kill the beetles before they lay eggs for the following year.

For his foliar feeding program, Schlapkohl uses a modified Walker sprayer.

He has modified the sprayer so the spray levels are adjustable. The nozzles are arranged so they spray up to the underside of the leaf, instead of on top of the leaf.

That works more like a direct injection of nutrients because the waxy cover on the topside of the corn leaf prevents some nutrients from being absorbed, Schlapkohl explains.

The sprayer is equipped with Soil Doctor sensors and a computer.

The sensors do "on-the-go" nitrogen testing. The computer helps calculate and records the amount of nutrients applied to the crop.

"I don't mind technology, if does something for you," he says.

Schlapkohl believes gypsum increases production by improving water infiltration.

He says gypsum helps loosen heavier soils, such as a clay soil. The soil becomes more sponge-like and less compact, Schlapkohl notes.

The current compaction levels on his fields are 175 pounds per square inch (psi) at eight inches deep and 155 psi deeper than eight inches.

For comparison, soil compaction is considered a problem when it is greater than 300 psi, which prevents root penetration.

He also has noticed more worm holes in the soil.

"Its chemical tillage," Schlapkohl he says of using gypsum.

By using gypsum, he has been able to lower the magnesium levels in his soils. Higher magnesium levels tighten up the soil, he explains.

His phosphorus and potassium levels have increased without applying those nutrients.

Using gypsum also has increased the amount of oxygen in the soil and increased N efficiency, Schlapkohl notes.

He uses a calcium-sulfate product from Cedar Rapids that has a higher ratio — 3:1 — of calcium to sulfur, compared with other sources that have a 1:1 ratio.

Schlapkohl says there is more available calcium and less heavy metals in this product compared with regular gypsum. This substance is not as powdery as typical gypsum.

Using a floater to spread it, he can apply on days with higher winds and not have any problems.

The floater spreads the gypsum on frozen ground, which Schlapkohl says is ideal.

He has a business that spreads the gypsum product over the winter. Because he also farms, Schlapkohl likes to spread the product between harvest and planting and stay close to home.

When planting starts, he prefers to park the floaters and work on his farm.

He wanted to improve his farm, so planting was the only spring operation he wanted to do.

"Our goal is one pass in the spring," Schlapkohl says.

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#### Comments »

**Ed Winkle** wrote on *Sep 18, 2006 6:17 AM*:

" I had the opportunity to visit Keith in August, take pictures, talk to him and look at his crop. His soil health is amazing. Thanks for publishing his story. Ed Winkle HyMark Consulting LLC Martinsville, Ohio "

