

# The Old Still Works

## Specialist Says Present Nitrogen Recommendations Still Stand

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**D**ifferent sources of nitrogen and additives that can be applied with them was the topic of a presentation by Dr. Lloyd Murdock, University of Kentucky extension soils specialist, recently. He also touched on different additives that can be sprayed or applied to the plant in addition to the fertilizers.

"A lot of them are tried and true," he said. "Our recommendation of 40/80, spring application (40 in February and 80 in March) on no-till wheat looks great. Compared to the others, there's no question that this recommendation is good and solid.

The demonstration plots included different nitrogen sources such as ammonium nitrate, urea, urea with different additives to it, and Agrotain, as well as coated urea (ESN). All look good.

"Probably the weakest of those this year is ESN which is usually a really good performer for us. We applied it Feb. 1, but with the colder than normal temperatures the release as slow," he said. "In order to cover all bases with ESN you need about a third of it as straight urea, two-thirds as ESN, and then you cover all your bases because the ESN release is going to depend on temperature as well as moisture. We've had plenty of moisture but the temperatures have been cool this spring so there has been a slow release. If you put a third of the urea down with the ESN you get immediate available nitrogen and the slow release rate is not a problem. That practice is proven here today in this demonstration."

The demonstration also included chicken litter that had been placed on the soil, and many in attendance asked questions about that.

"It's the same thing as with ESN, you have to have good temperatures on litter for it to be broken down and be available to the plant," he explained. "It has to break down to the ammonium and then to the nitrate form of nitrogen. You can see that with the cool spring that we had that we didn't get a rapid breakdown that you would sometimes get. So if you're going to use chicken litter you have to supplement it with a significant amount of nitrogen so that you know you've got the nitrogen out there."

Actually chicken litter works best with the summer crops when it's warm and the nitrogen breaks down in a more predictable manner.

"We have some humic acid materials here, that are being sold. They are biological natural extractants, humic acid, and humic acid derivatives," Murdock added. "Humic acid is naturally present in the soil, as organic matter breaks down. These people have taken these different compounds, extracted them and sprayed them on the plant or on the soil. They've been around for awhile, there's been quite a bit of research done by universities on these compounds and, as far as I know at this particular time, no university recommends these derivatives as an approved practice. They're purported to increase yields by increasing plant health, nutrient uptake and things like this. They are suggested to encourage more

rapid breakdown of the organic matter.

"We have three different sources out here in the demonstration today and it's difficult to see any effect on the wheat that is different than when only early nitrogen was used," Murdock explained. "We do have one in a trial here that we are testing more extensively, we put it on in the fall, again in early spring and then a third application in late spring. There's a small difference in vegetative growth between the humic acid with nitrogen and the one that has nitro-

**Dr. Lloyd Murdock, University of Kentucky Extension Soils Specialist, recently spoke about different sources of nitrogen and additives that can be applied with them.**

Photo by John LaRose, Jr.



gen only on it. At harvest there was little or no difference in yield.

"Now when you start putting on the humic acid treatments with three different trips you're adding up some costs; so the yields are going to have to be quite a bit more," he said. "At this particular point, many researchers have questions about these derivatives having a consistently positive effect on the plant. The different additives may help stimulate the plant from time to time, but it's unpredictable and most of the time it does not result in a yield increase."

Murdock's take-home message is to follow the recommendations, the sources of nitrogen presently accepted.

"They're good, they're solid," Murdock said. "The ESN is something that we have proven the last few years and it's a solid material, there's no question about that. The timings that we recommend are outstanding, we can't beat those. All the nitrogen at one time can work, but we recommend a split because it covers all your bases and it's good insurance."

One demonstration at the field day included a calcium sulfate mixed with ammonium nitrate. That may be a new product because by mixing calcium sulfate with ammonium nitrate the compound loses its explosive properties and is no longer a hazardous material.

"It's 27 percent nitrogen, and it looks good too," Murdock commented. "So basically, our old recommendations are good, our old sources are good, there are some new ones coming along, but there is a number of materials being sold that are unproven and if you want to try it on a small acreage basis, that's fine; but at this particular point we don't recommend spending a lot of money and time on it." △

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