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Cooperative Extension Service

# Farm Update

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AGRICULTURE & NATURAL RESOURCES EDUCATION
Clint Hardy
Daviess County Extension Office

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**Sidedress or Split Applied Nitrogen**

Over the past 15 years, many farms have moved away from early pre-plant nitrogen application for corn to increasing acres sidedressed with nitrogen from emergence to V-4 growth stage. This is the preferred method because the application is made closer to the time of plant uptake and soils are usually drier, reducing the risk of loss by denitrification. This system works extremely well until a wet June occurs, delaying application. Likewise, with taller equipment, a few have made the effort to apply nitrogen to tall corn, near tassel stage. Extension soils specialists Drs. John Grove and Edwin Ritchey conducted a study in 2023 and 2024 looking at 7 different site locations of early sidedress, late sidedress and combinations of the two to determine the “optimum” nitrogen strategy.

Corn nitrogen uptake might be only 75% complete at VT/R1 (tassel/silking stage). During ear formation about 60% of total nitrogen uptake is allocated to corn grain. Of that, a bit more than half may be relocated from leaves and stalks to the ear. The rest comes from soil organic matter mineralization and earlier nitrogen fertilizer applications. Their question was whether there is any relationship between N uptake after VT/R1 and final grain yield.

All locations were planted in April 2024. Each had 3 rates of early nitrogen (75, 150 and 225 lb N/A) applied at V4, and 2 rates of late nitrogen (0 and 75 lb N/A) applied at VT/R1. The

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Nitrogen source was Super U, a urea co-prilled with both a urease inhibitor (NBPT) and a nitrification inhibitor (DCD). In 2024, the average yield of all plot locations ranged from 86 to 254 bu/A, due to wide variation in seasonal weather across Kentucky. At all sites, the single application of 75 lb N/A at V4 gave the lowest yield. When another 75 lb N/A at VT/R1 was added to these nitrogen deficient plots, yield was not improved at 2 of the 7 sites. When 150 lb N/A was applied at V4, an additional 75 lb N/A at VT/R1 increased yield at only 1 site. When 225 lb N/A applied at V4, yield increased from an additional 75 lb N/A VT/R1 at 2 of the 7 sites.

2024 was the second year of the research, and the results were consistent. Considering both years, there is only low probability of benefit to VT/R1 nitrogen applications when previous soil and fertilizer nitrogen supply is adequate for the crop. But, the VT/R1 nitrogen application prevented most of the yield loss that would have occurred if no attempt to alleviate N stress was made. This yield increase from VT/R1 nitrogen application was strongly related to increased corn kernel size, which would be expected given how late this 'rescue' N application was made.

**Remember Safety**

Nice weather last week brought some machinery out of the buildings and into the fields. There will be a lot more running in the weeks ahead. It is time to remind machinery operators and car drivers that highway safety is important. First are the ammonia wagons out on the road. Triple check hitch and chains before bringing a wagon onto a public road. Drivers, be aware that these wagons will not be operating at 70 mph around the by-pass. Loaded ammonia wagons range in weight from 7,000 to 15,000 pounds depending on size. They are not designed for speed and are hard to stop.

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Regarding machinery, everything is larger than it used to be, but also safer than it used to be. If it has a seatbelt, wear it. If it has flashers, use them. If it's wider than 12', keep a vehicle in front of it to warn oncoming traffic an obstacle is in their path. If you're on the bypass with machinery, keep the warning vehicle in the rear to warn traffic approaching from behind of the obstacle in their path. Replacing a rear-ended pickup in April is much faster and probably cheaper than replacing smashed planter units.

It would be nice if everyone would drive slower and farmers would pull over when a car gets behind them, but time is money and patience is short these days. Just do the best you can and beware of machinery on these roads in months ahead.