

To: Local News

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“Views with Van”

Starter Fertilizer on Wheat

Wheat is considered a highly responsive crop to starter fertilizers, particularly phosphorus (P) and nitrogen (N). Wheat plants typically show a significant increase in fall tillers and better root development with the use of starter fertilizer (P and N). Winterkill can also be reduced with the use of starter fertilizers, particularly in low P testing soils.

Phosphorus fertilizer application can be done through the drill with the seed. The use of dry fertilizer sources with air seeders is a very popular and practical option. However, other P sources (including liquid) are agronomically equivalent and decisions should be based on cost and adaptability for each operation.

When applying fertilizer with the seed, rates should be limited to avoid potential toxicity to the seedling. When placing starter fertilizer in direct contact with wheat seed, producers should use with limits. K-State soil research recommends for medium to fine texture soils with 10 inch spacing, no more than 24 pounds of combined N and K (ammonium not urea) applied with seed; for 7-8” spacing, 30 lbs. combined N & K.

Air seeders that place the starter fertilizer and seed in a 1- to 2-inch band, rather than a narrow seed slot, provide some margin of safety because the concentration of the fertilizer and seed is lower in these diffuse bands. In this scenario, adding a little extra N fertilizer to the starter is less likely to injure the seed - but it is still a risk.

What about blending DAP or MAP with the seed in Hopper?

The N in these fertilizer products is in the ammonium-N form (NH_4^+), not the urea-N form, and is much less likely to injure the wheat seed, even though it is in direct seed contact. If DAP or MAP is mixed with the seed, the mixture can safely be left in the seed hopper overnight without injuring the seed or gumming up the works. However, it is important to keep the wheat mixed with MAP or DAP in a lower relative humidity.

The effects of leaving DAP fertilizer mixed with wheat seed for various amounts of time has little to no negative effect was observed (up to 12 days in the K-State study) as long as the mixture is stored at a relative humidity less than 70%.

In a study at the research stations, 60 lbs. Phos placed with seed at 70 lbs. seeding rate was not affected up to 12 days after mixed in the hopper unit.

Although the wheat response to these starter fertilizer products is primarily from the P, the small amount of N that is present in DAP, MAP, or 10-34-0 may also be important in some cases. If no pre-plant N was applied, and the soil has little or no carryover N from the previous crop, the N from these fertilizer products could benefit the wheat.

Dual-placement of N and P (anhydrous ammonia or UAN plus 10-34-0 applied in the same band below the soil surface) is a fertilizer application method usually used in pre-plant applications. Ammonium-N has long been known to increase P uptake by crops, and dual-placement can be very effective. Sometimes, producers will use this method at planting time, trying to position the band to the side of each row of wheat seed. Be advised to use caution. If adequate separation of fertilizer and seed is accomplished, this is a good application method that fits into many farmers' overall no-till system. If adequate separation of the ammonia/UAN and seed is not accomplished, wheat germination/stand establishment can be affected.

The Twin Creeks offices do have 2019 Wheat Variety Information and performance results available if you are interested.