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ROOTING FOR STARTER FERTILIZER

Higher fertilizer prices. Although no one can say for sure, they probably aren't a flash in the pan. More likely, they are here to stay, at least for awhile. Energy costs remain high and world demand for fertilizer is greater than in the past. Since fertilizer is not as cheap as it has been historically, people are now paying more attention to it. A lot of the concern is centering around getting the biggest bang for the buck. In such an environment, starter fertilizers can have a good fit.

What is a starter fertilizer? This term refers to an application of nutrients placed near the seed at the time of planting. The most common placement methods are: with the seed, where fertilizer is placed in the furrow, 2 in. below and 2 in. to the side of the seed (2x2), and, in the case of air-seeders, seed and fertilizer mixed together in various combinations of band widths.

How do they work? Starter fertilizers address a highly specific, time-sensitive nutrient need by the crop. Early in the season, plant roots do not extend very far into the soil, so access to nutrients is limited. On top of that, soils in the northern areas are usually cool and wet, limiting root and top growth. This means that plants have trouble accessing all but the nutrients they find close to the seed. Throw into that situation one more factor. For some crops such as corn, the rate of nutrient uptake by roots is highest early in the season. That means a plant root can exhaust limited supplies near the seed quickly. So what's the fix? A concentrated supply placed near the seed assures that roots can easily find the nutrients early in the season.

What's the best placement? Nutrient placement must be done with an understanding of how the root systems of various crops develop. For corn, 2x2 placement is well positioned, since initial root growth occurs at an angle from the seed. This placement also works well for wheat. For soybean and sugarbeet, initial root growth is characterized by elongation of the taproot, so placement directly below the seed is probably best, although research for these crops is more limited.

How efficient are starter applications? If we define efficiency as how much of the applied nutrients are recovered in the first year, recovery rates as high as 70% have been documented in the research literature. The small, concentrated supplies appear to be well used by plants.

Do starters always provide benefits? They don't always, but cool, wet spring conditions favor getting an economic response, as does late planting of longer-season corn hybrids. The overall effect of starter fertilizers is to hasten maturity, so any time crop development gets delayed, they usually help. Measurable benefits include higher yield and lower grain moisture at harvest, both of which have their economic benefits, especially with the currently higher propane costs. While benefits are not always seen, starter fertilizer applications are considered a best management practice for many crops and provide a measure of protection against unforeseen adverse growing conditions. These benefits, combined with relatively high recovery rates, make starter fertilizers a worthy addition to successful nutrient management programs.

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