

AGRONOMIC ADVANTAGES OF IN-FURROW FERTILIZER APPLICATION FOR MODERN HIGH YIELD CROP PRODUCTION SYSTEMS.

THE STARTER FERTILIZER CONCEPT:

Use of starter fertilizer in crop production provides purposeful placement and timing of nutrients that are otherwise relatively immobile so that they can be easily accessed by developing seedling roots and efficiently utilized. Proximity to the seed is an important factor in determining the type and rate of fertilizer used. Placed too close to the seed and salt injury can occur whereas placing farther away delays access to the nutrients as well as creating the potential for other difficulties.

The impact of proper placement and timing makes the planter an important part of this process to deliver fertilizer through special modifications and attachments. When utilized appropriately, the additional planter attachments involved in applying starter fertilizer will pay dividends through healthier seedlings, earlier crop maturity, improved test weight, and of course increased yield.

PLACEMENT STRATEGIES:

The 2X2 band placement strategy places fertilizer in a band two inches over and two inches below the seed. It is considered a complacent strategy because although larger quantities of fertilizer can be safely placed away from the seed, it requires seedling roots to grow into and proliferate the fertilizer zone. Further, reaching the desired depth will often result in side-wall smearing of the "V" formed by the fertilizer discs. Smeared side-walls harden and prevent efficient root access to nutrients and can also bring mud to the soil surface creating issues with planter depth gauge wheels and seeding depth (figure to right).

In-furrow fertilizer placement is an active starter fertilizer strategy because it intentionally places fertilizer near or directly in contact with early seedling roots thereby avoiding a lag time for roots to grow into "the zone" (figure to left). In-furrow placement combines both depth and linear placement strategies and when used in combination with the effective and stable o,o EDDHA chelate found in West Central in-furrow fertilizer products, maximizes root interception and uptake efficiency. Since Phosphorus and many other nutrients are relatively immobile in soil, this increase in nutrient efficiency is imperative for quick access to developing seedlings, resulting in a quicker start and increased yield potential.