

BATTLE RIVER AGRONOMY UPDATE

WHAT YOU SHOULD KNOW ABOUT LOW DRAFT OPENERS

In recent years there has been an increase in the availability of after-market “low profile” openers on the market. The advantages are obvious. With an opener that penetrates less deeply into the ground, producers are able to pull larger seeding units with less horsepower, potentially saving time and fuel costs. The benefits of these openers are tempting, but if you are considering switching to them or if you already have them, there are some things you should be aware of when you are evaluating them.

First, just what kind of a start does your crop get with these openers? Low profile openers place the fertilizer beside the seed rather than beside AND below as we are used to seeing in the past. Placing the fertilizer on the same plane as the seed does not maximize the chances for the crop to access the fertilizer band.

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As you can see the majority of the roots develop below the seed and do not have easy access to phosphate and potassium that is banded at the same level as the seed. Only the crown roots will intercept the band and they don't develop until tillering. Garth Massie, who is the corporate agronomist for Morris Industries, has run trials in Saskatchewan comparing crop emergence and establishment using low draught openers. He tested 3 different openers that are available and only one approached the consistency of traditional openers. Under wet conditions, the low draught openers caused more disruption of the seedbed and led to more uneven emergence and establishment of the crop. Plant counts at 12 days after seeding (DAS) showed significant differences in stand establishment vs a “traditional” opener. Later counts showed more favourably for the after-market products, but there was a large variability in crop staging that led to other issues later in the year.

Something else a producer needs to consider is the fate of the fertilizer in the soil. Dr Rigas Karamanos (Koch Industries) has done some interesting work on what happens to urea when it is placed in a tight band. In the first 2 to 4 days after application the urea converts to ammonium form which is prone to losses by gassing off. This process drives the pH of the soil immediately around the band to much higher levels than normal, in turn accelerating the conversion process. When we place the band lower than the seed, there is generally enough soil above the band to intercept the ammonia before it escapes into the atmosphere. Dr Karamanos' study shows that if there is less than 1.5” of soil above the urea band, there is no longer enough soil to “hold” the ammonia in the soil and losses to the atmosphere may be as much as 30% in some soils. This is a shocking number as these losses are higher than we can expect from broadcasting urea in many cases.

In my opinion, the red flags surrounding the use of low draught openers outweigh the benefits. If you are considering purchasing some of these openers, do your research and ensure you understand all the implications of their use. If you have already made the investment, I suggest you talk to your fertilizer dealer and discuss what options are available to slow the conversion of urea to ammonia, so the soil has a better chance of retaining most of the nitrogen fertilizer that is being applied.

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