

Spring preplant banded nitrogen is hot for corn in dry springs!

There is no single best way to fertilize corn in Manitoba. A recent survey of MB growers identified 13 ways to meet the nitrogen needs of the corn crops (STRATUS). The 4 most common N application methods are spring broadcast and incorporated, fall banded, banded at seeding and preplant banded.

In a dry spring like 2018, those broadcasting and incorporating fertilizer before seeding risk drying out the seedbed. Many farmers, especially on clay-textured soils prefer not to disturb their seedbed in the spring and so prefer to fall band their N. And although spring preplant banding is a very efficient way to place nutrients for a corn crop, it comes with some particular cautions.

The past few years, more often in dry springs, we have seen stand thinning using this practice. When the corn row falls directly over the N band (be it ammonia or urea), seedlings are injured, stunted and sometimes killed (Figure 1). This leaves a repeating pattern in an angle across the field (Figure 2-3).

There are some standard guidelines if using this practice:

- Stand thinning may occur where the seed row intersects the N band. Band N on an angle so that it intersects just a short length of row
- Place the nitrogen deep. Banding at 3" depth may be sufficient for slot closure and N retention in the soil – but this will only be an inch or so below the seed. The original guideline calls for 4" vertical separation of injection point and seed.
- The toxicity will be worse under dry conditions and on sandier soils, low in organic matter with high pH.
- Waiting a certain period of time offers only a slight increase in safety
- Increasing plant populations to account for such thinning, will not eliminate the appearance of gaps in the row

If conditions are dry, one might consider placing only a portion of the N in this fashion and applying the remainder as a side dress in the corn crop.



Figure 1. Corn injury as the row crosses over the previous ammonia band.



Figure 2. preplant banded ammonia on an angle.



Figure 3. Corn injury over preplant banded urea.

Reference.

STRATUS Ag Research. 2017. Fertilizer Use Survey. 2016 Crop Year.