

## USE OF FERTILIZER WITH SEED IN CORN PRODUCTION SYSTEMS

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There has been a considerable amount of interest in using liquid fertilizer materials at corn planting. Most producers are open to this as long as the fertilizer can be applied on the seed and thus they do not need to use a starter attachment. The major concern with this practice is germination damage from the fertilizer. In the past, the damage has been attributed to the salt and ammonium content of the fertilizer. Several questions have arisen about this practice. How much fertilizer can I put on? Does the soil texture make a difference on fertilizer damage to the seed? Does soil moisture affect the damage? Is it the ammonium or the salt index of the fertilizer that is most important in evaluating the damage? Are difference crops more sensitive than others.

A study conducted from 2004 to 2006 in Minnesota attempted to answer these questions. The current guidelines in Minnesota based on this and other studies are as follows:

1. In the sensitivity to seed placed fertilizer for most to least as follows: soybean, sugar beet, then corn.
2. Plant populations of seeds planted in sandy soils can be affected by seed placed fertilizer.
3. Plant populations can be reduced by seed placed fertilizer in drier than normal soil moisture conditions.
4. For corn, 7 to 8 gallons per acre of 10-34-0 can be applied at planting in a moist non-sandy soil.
5. For soybean, no seed placed fertilizer should be applied.
6. For sugar beet, 3 to 4 gallons per acre of 10-34-0 can be applied at planting in a moist non-sandy soil.
7. In Minnesota, the ammonium content of the seed placed fertilizer is more of a problem than the salt content.

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