In-season N application in corn to improve fertilizer efficiency in eastern South Dakota
Update Report for Year 3
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Goals and Objectives
The goal of this project is to investigate the use of split N application in corn production to improve fertilizer use efficiency and optimize grain yield in the eastern part of SD. Specific objectives of the study are 1) compare single pre-plant and split N fertilization in their ability to optimize grain yield and fertilizer use efficiency, 2) determine the in-season N application timings that optimize grain yield and fertilizer use efficiency, and 3) determine whether corn N needs can be predicted using remote sensing tools and soil nutrient sampling.

Both studies (early and late side-dress application) have been planted at three locations. We planted one study on May 8th near Beresford, another one on May 12th near Brookings, and the third locations at near South Shore on May 15th. Initial soil samples have been collected and all pre-plant fertilizer applications have been applied on the same day.
We have completed the V3 and V5 soil, biomass sampling and the fertilizer applications for the V3 and V5 split treatments at all three locations.

Soil and tissue samples is currently being processed and being prepared for nutrient analysis

Presentation from this research in 2020:

> **Kovács, P.** 2020. Corn nutrient management. Water Management N Certification
> Classes, Columbus, NE, January 29, 2020 (invited speaker; approved for CEU credits;
> ~70 attendant at the session)

We will make presentations during the virtual field day and webinar at the Southeast Research farms in July, and we have submitted to present findings from these studies at the annual meeting of the Tri-Society meeting in November if the COVID-19 pandemic allows us for participation.