

## NREC 2023 Interim Report

Title: Evaluating Selected Soil Health Indices for Predicting Nitrogen Fertilizer Requirement for Winter Wheat in Western South Dakota

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This project intends to examine soil health indices in winter wheat as measures to improve nitrogen fertilizer recommendations. To date, we do not have any results to report. The timing of the funding cycle does not align with the start of the winter wheat season and hence we needed to wait until the Fall of 2022 when we could properly set up the plots and apply fertilizer rates.

As anticipated, two trials were established in late September, 2022, one at the West River Research Farm (WRRF) near Sturgis, SD and the second near Wall, SD. The Fall planting was very dry with spotty emergence, which carried into the Spring, 2023. However, both trials received several strong precipitation events in the Spring and early Summer and both plots have improved with increased tillering.

With respect to our sampling protocols, we are on track and have taken extensive soil samples and are currently running a number of assays on these soils. We have added several new assays, which will be a budget neutral addition. We are roughly three weeks away from harvest. Based on my scouting, I expect average to slightly below average yields, but I do feel that the data will be useable. A new year of study will be implemented in the coming Fall, which has already been funded in the current year's funding cycle.