Wheat Rotation Economics
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Research Question
The objective of this research is to determine whether enterprise financial data can be linked to rotation history to evaluate crop rotation economics.

Results
Data has been collected from previous year’s crops showing present and previous crop yield and gross sales figures from a cropping unit. Preliminary analysis from the 362 data points collected, indicated a positive response of rotating wheat to either dry beans or sugar beets in comparison to following soybean, sunflower, or wheat (Figure 1). Cursory analysis further reveals that these differences are not just a function of higher grain yield but also differences in input costs as illustrated by the difference in return per acre between wheat following soybeans versus wheat following sugar beets. Similar contrasts are observed for soybean (Figure 2).

Application/Use
Looking at whole farm cropping rotations rather than just enterprise analysis may offer insight into the economics of the rotations and why there may be economic benefits for including wheat in the crop rotation. This research should help producers make better crop rotational choices.

Materials and Methods
A team of Northland College Farm Business Management instructors agreed to assist with the collection of crop and financial data through their normal collection for Finpak. We developed a key for participating farmers to complete that linked their crop history and financial data and analyzed the data to look for differences in yield and profitability due to previous crop rotation history.

Figure 1. Effect of previous crop on grain yield and return per acre of wheat in northwest Minnesota.
Figure 2. Effect of previous crop on grain yield and return per acre of soybean in northwest Minnesota.