Objectives

1. Assess long-term variability in N, P, K, Zn, and pH levels at a specific point within farmer fields around the state.
2. Evaluate the effects of crop removal and soil moisture on the consistency of soil test values over one or more years.

**Trial needs:**

The goal of this project is to track soil test levels over time in a single spot within fields. The reason for monitoring is to study if and how soil test values change over time. The initial interest in this study was due to comments on soil P test changing more rapidly than expected. With more interest in the moist K test, this would also allow us to study the effect of drying soil on the test itself and to look at differing soils across the state.

- Two year monitoring in a single location (I currently have enough funding for two years, the study could go longer if there was interest and additional funding was secure). Mark the spot with GPS if possible so you can go back.

- Crop is not important, but I would like to have a small area harvested if possible. Bags can be provided and the threshing would be done on campus. I wouldn’t need more than about 10-20’ of row depending on the crop. This is to measure crop uptake and nutrient removal.

- Soil samples collected every 4 weeks ideally, 4-6 would be okay but it would be best to keep with a set interval plus or minus a few days. 0-6” sample would be taken at a minimum. If there was interest, periodic deeper sample for nitrate could be done as well as there is money to do so. I just need to know what the samples are that are being sent. What I would suggest is separate 0-6” and 0-24” samples. Samples need to be made of multiple cores. To have enough sample for the moist test about 800 grams or two pounds of field moisture sample would be needed which would be 15-20 cores. All samples would need to be stored in either a zip-loc bag or a lined bag, and kept in a refrigerator (not a freezer) for longer storage. The sample should be taken within a 10-20 foot radius from around the sample center as close as you can.

- The samples would be sent directly to Daniel Kaiser at the University of MN St. Paul campus in order to sieve, split, and dry the sample prior to being sent off to a lab for analysis. This is to make sure all samples are being analyzed the same way and to get a thoroughly mixed sample for the moist analysis. Shipping boxes can be sent out to each cooperator to ship the samples at no-cost.
The goal of this project is to have some variability in locations and soils. There is funding available for at least 20 locations over the two year period. Upon establishing each site will be identified with a unique code with the first three letters of the county, followed by site designator and finally the date the sample was collected. For example, a site in Waseca County taken on May 1 WAS010501. This will help identify each sample and reduce on errors associated when the sample arrive at St Paul.

Money is also available for monitoring of soil temperature and moisture. Soil moisture will be determined on the sample directly but soil temperature data loggers will be purchased for use at each site. The units can be buried and left in the soil through the season and dug up prior to tillage and sent back to campus to have the data taken off of them.

For this study I need the following information

County___________

GPS Coordinates___________

Current Crop___________

Last fertilizer application (N, P, K, S, Zn, Lime in lbs per acre) ___________

**The GPS coordinates will only be used to determine the soil type and not be released for public access on any report. The fertilizer application data will be used only to explain some difference in the change in soil test levels and to know what was applied and when. The application data is not intended to survey rates being applied and will be kept confidential.

Contact Information

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