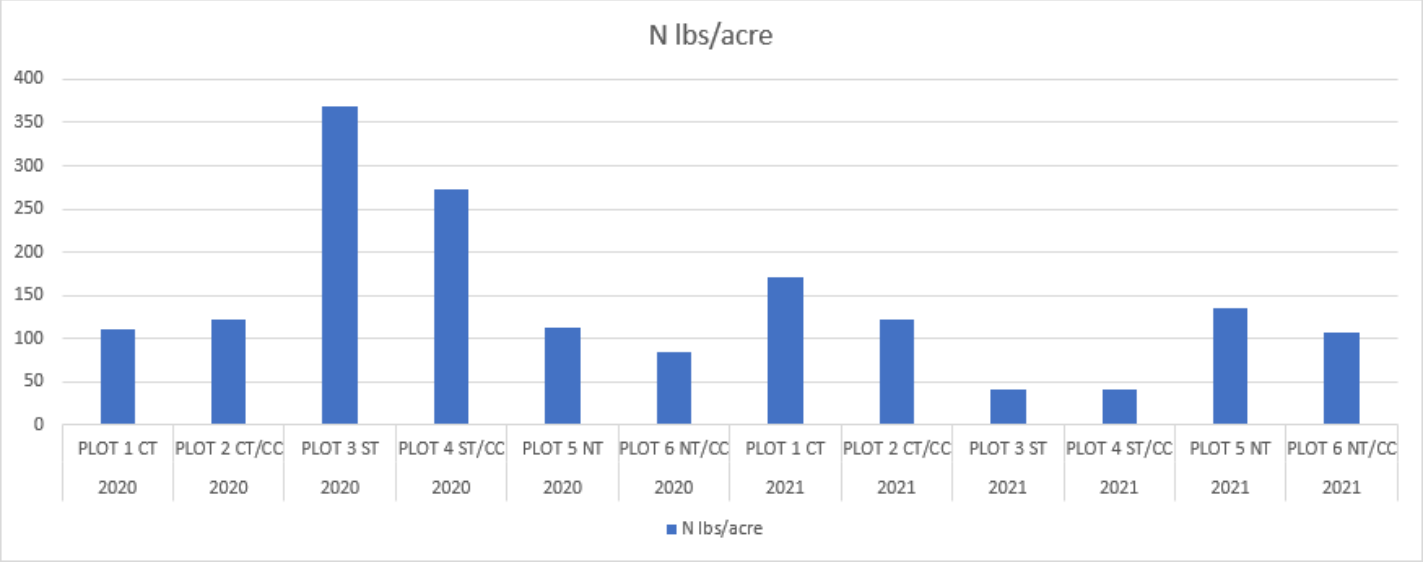
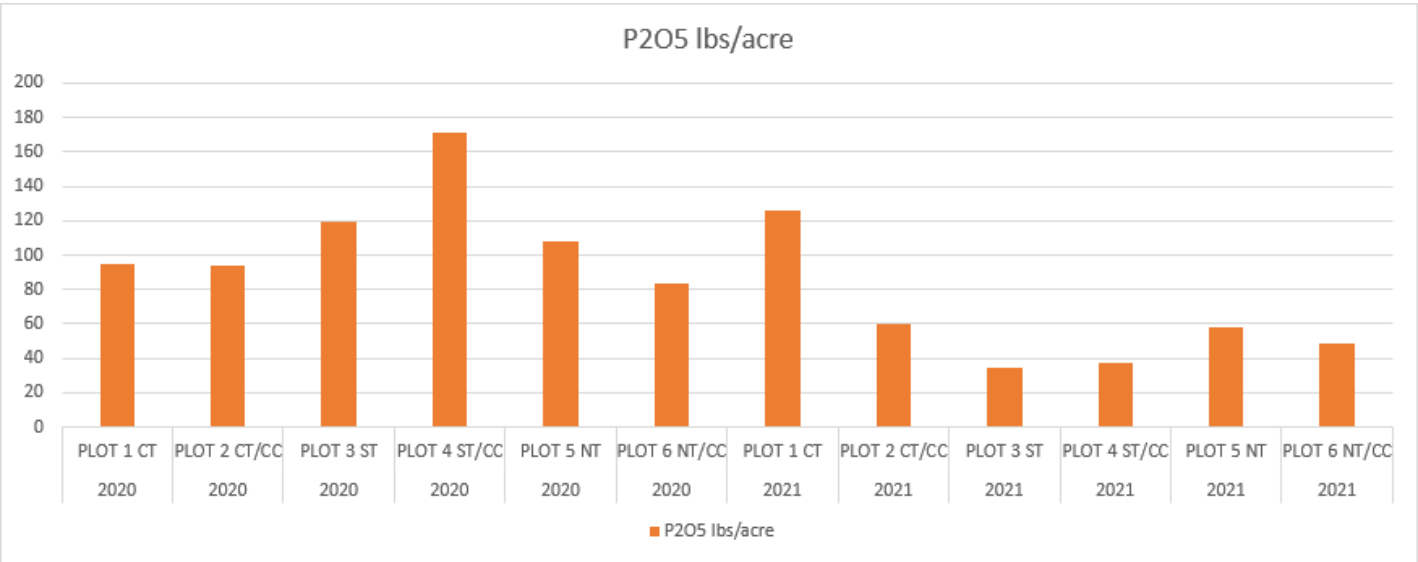
Wilkin SWCD Soil Health Demonstration Site
Haney Data Graphs

Haney Data Analysis 2020-2021

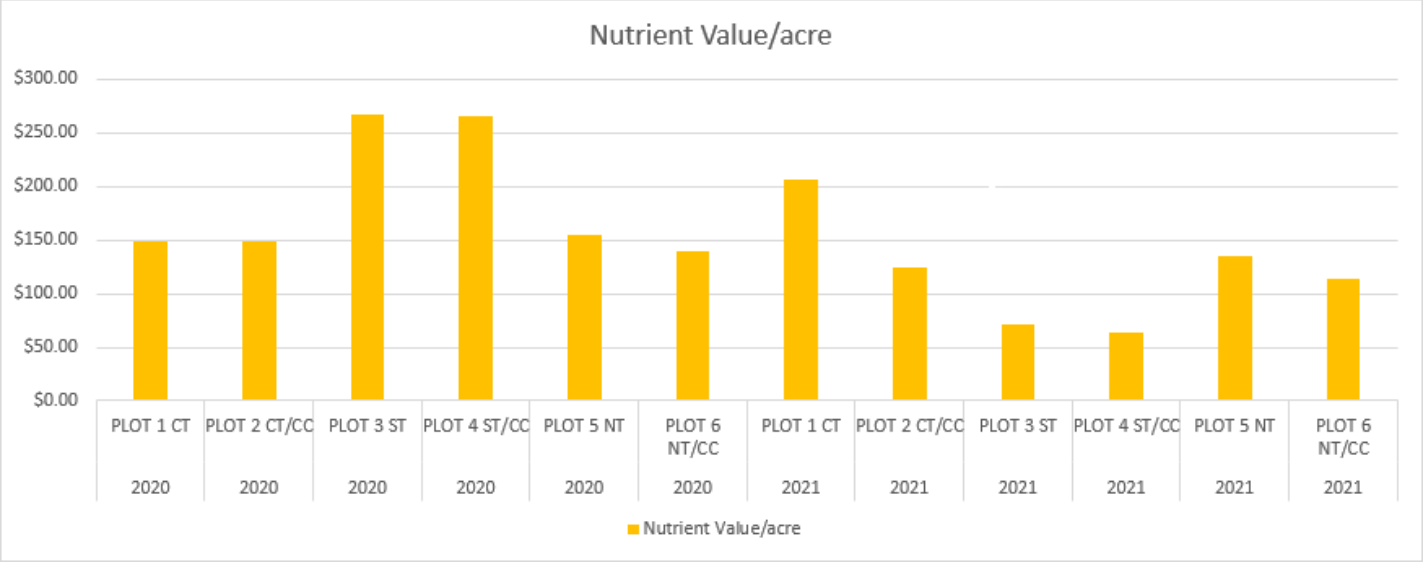
Haney tests are a soil test used to measure N and P levels based off pounds per acre for the quantities available to microbes in the soils. Comparing these values with those from the inputs put into each treatment allow the values to be compared and start to gather data as to which treatments can hold onto these nutrients and/or which are locking these nutrients up.



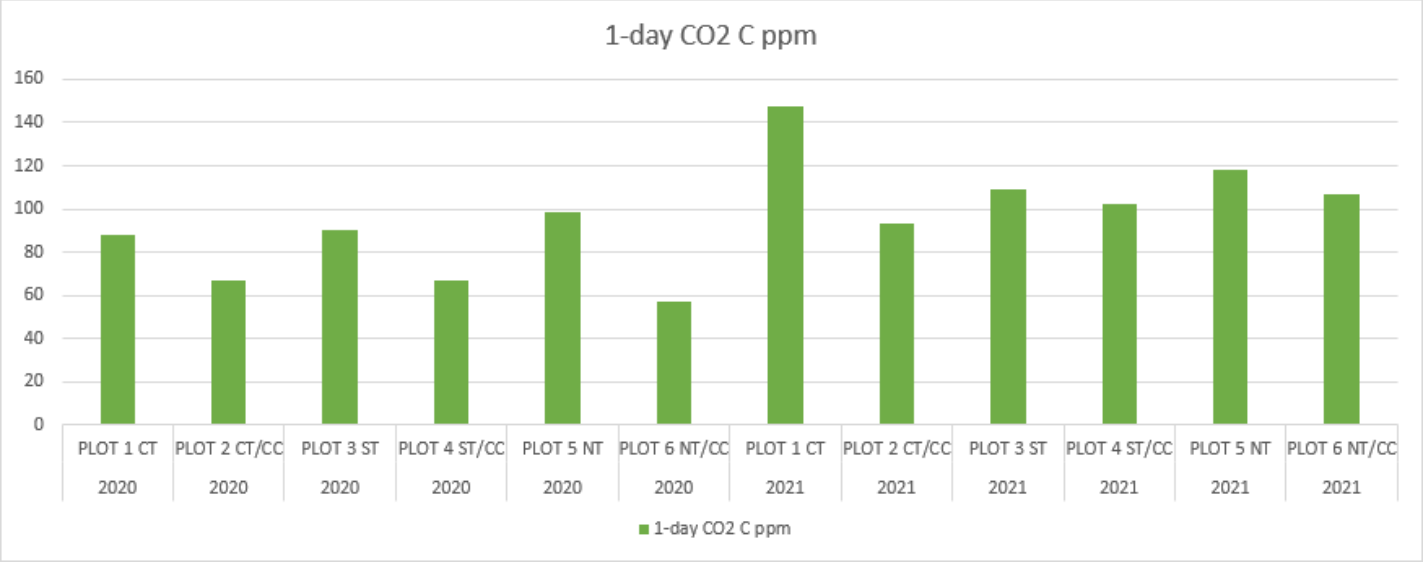
This Haney-test N is extracted with an acid mixture, making it different than traditional soil nitrate tests- so the numbers can't be compared. N leaches easily in wet conditions, so generally low numbers in 2021 after a couple of wet seasons makes sense. (This is reflected in the standard N measurements too.) Strip-till seems to have lost the most among these systems, which will be something to watch in coming years. But, lower values in strip-till may reflect samples taken between rows while fertilizer was banded in the crop row.



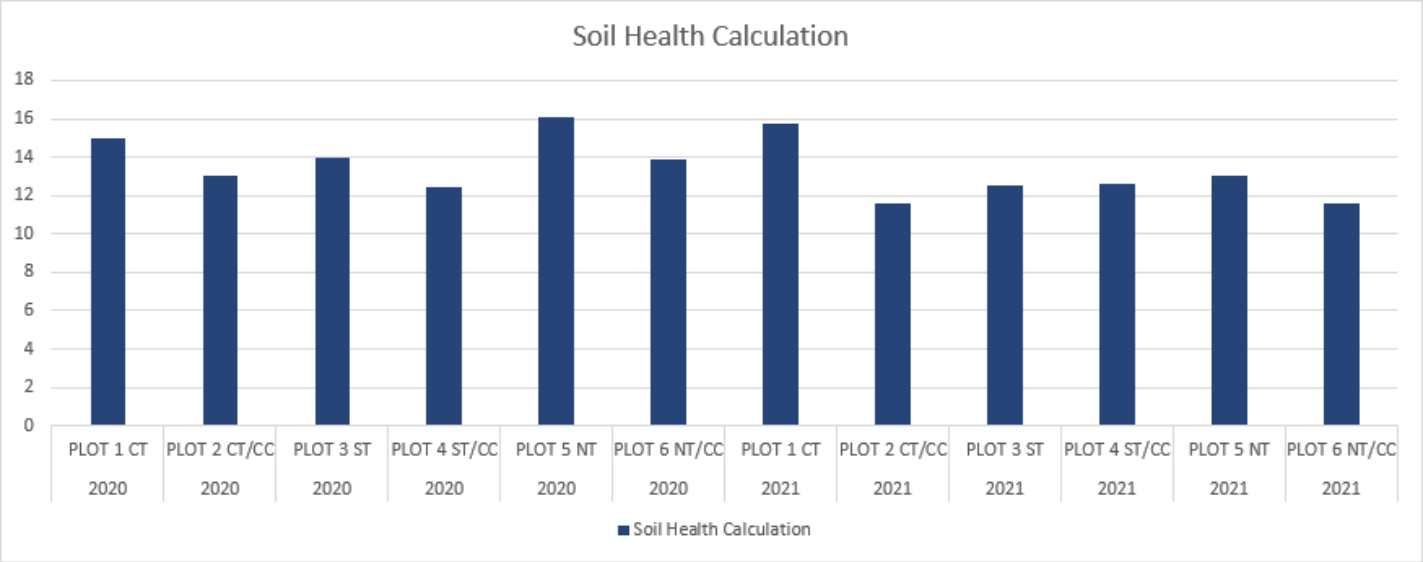
This Haney-test P is extracted with an acid mixture, making it different than traditional soil nitrate tests- so the numbers can't be compared. Generally, the acid extraction measures less P than traditional extractions. The traditional P extraction is more stable 2020-2021 than the Haney-test P, suggesting this extract might be more affected by seasonal conditions. Lower values in strip-till may reflect samples taken between rows while fertilizer was banded in the crop row.



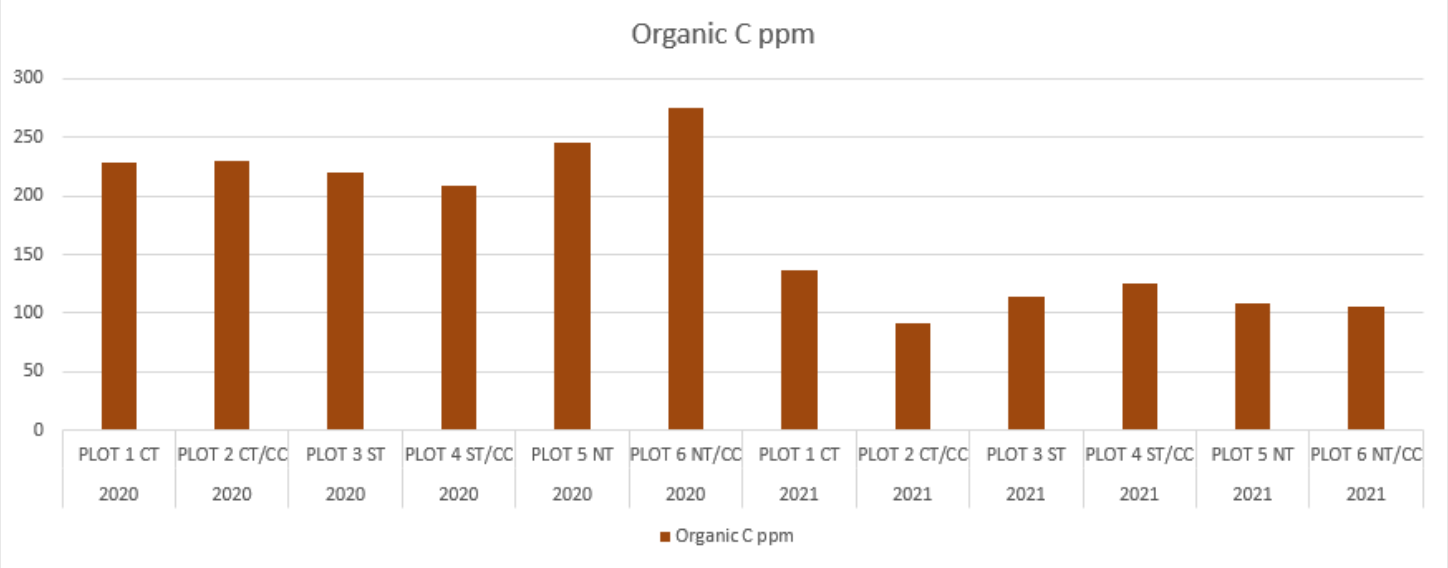
This number is calculated based on the N and P extractions pictured above. It is somewhat misleading as the nutrients extracted may not all be plant available. However, given current fertilizer prices the soil organic nutrient pools are certainly more and more valuable. Lower values in strip-till may reflect samples taken between rows while fertilizer was banded in the crop row.



This is measured by putting the soil into ideal temperature and moisture conditions and measuring how much CO2 is respired. This is a measurement of how much food microbes have access to, and how active they are. Sometimes this number responds to cover crop treatments and can be predictive of yield, as the microbial activity drives how much organic matter may be mineralized to plant-available forms. Lower values in strip-till may reflect samples taken between rows while fertilizer was banded in the crop row.



This calculation is based on water-extractable C and N and the CO2 respiration shown above. It is a way of indexing other values. Generally, Minnesota soils are high relative to other regions because of naturally high organic matter.



This is carbon extracted by water from the soil. Again, lower values in 2021 may be due to generally wet conditions in the prior year. In research up in Crookston over 2020 and 2021, we found also higher values in the spring, and lower values during the dryer summer and fall seasons. More water-extractable C generally means more food for microbes, a positive thing for your soil food web.