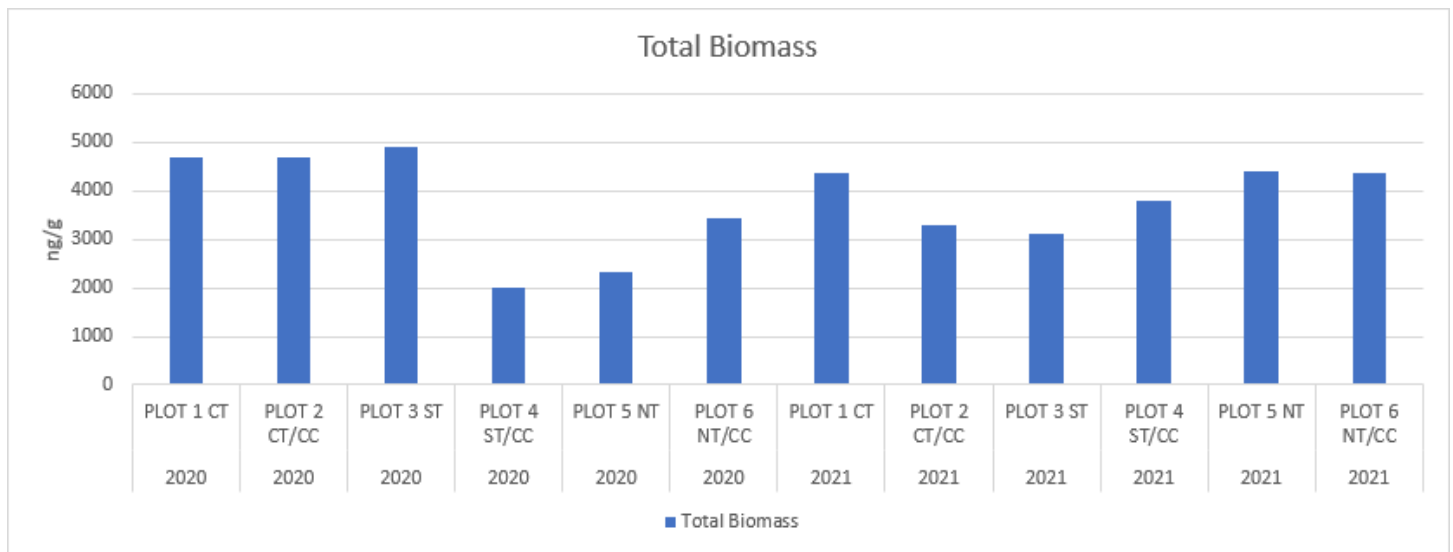


Wilkin SWCD Soil Health Demonstration Site

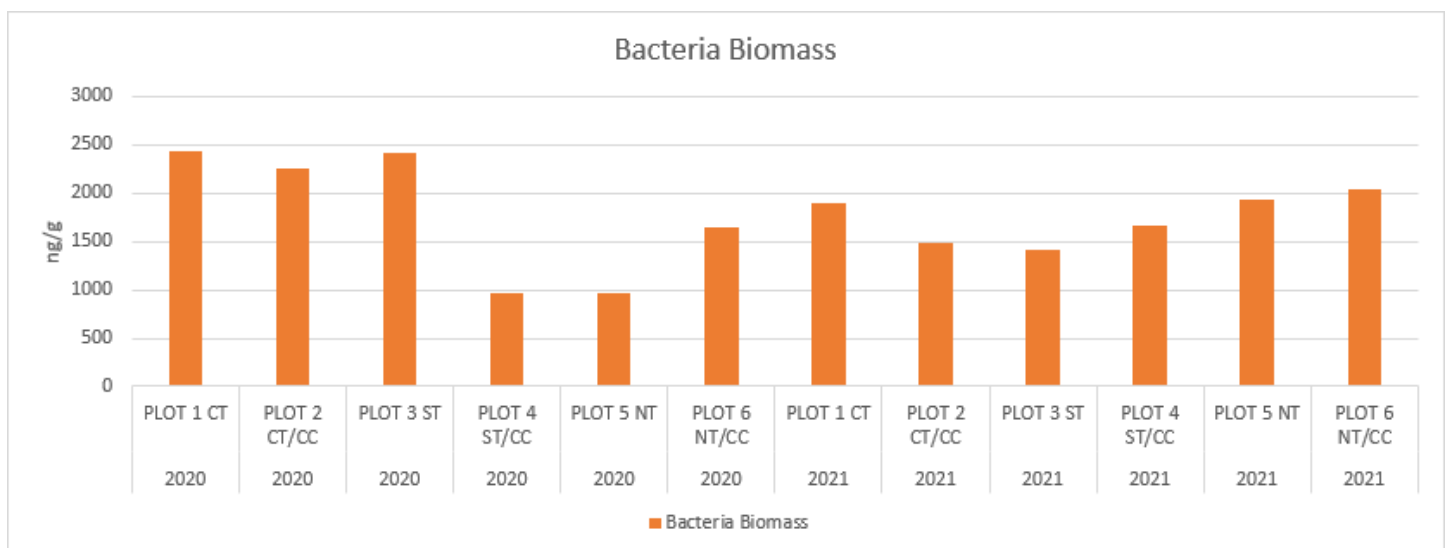
PLFA Data Graphs

PLFA Results for 2020-2021

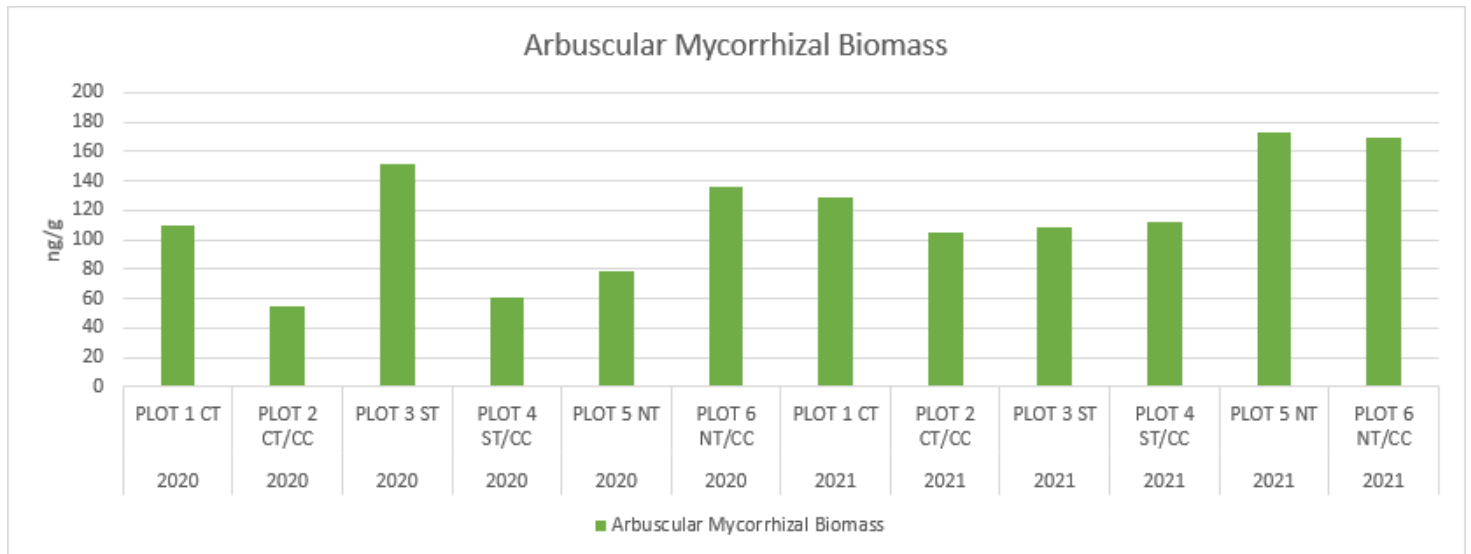
PLFA (phospholipid fatty acids, components of microbial cell walls) tests measure the soil microbial biomass and its composition. It selects for living or very-recently living microbes. It's sensitive to temperature and moisture conditions at the time of sampling, especially bacteria. The benefit for this test is to show the change over time. This test also shows a relative overview of the total biomass in the soil to compare how the different treatments influence these communities.



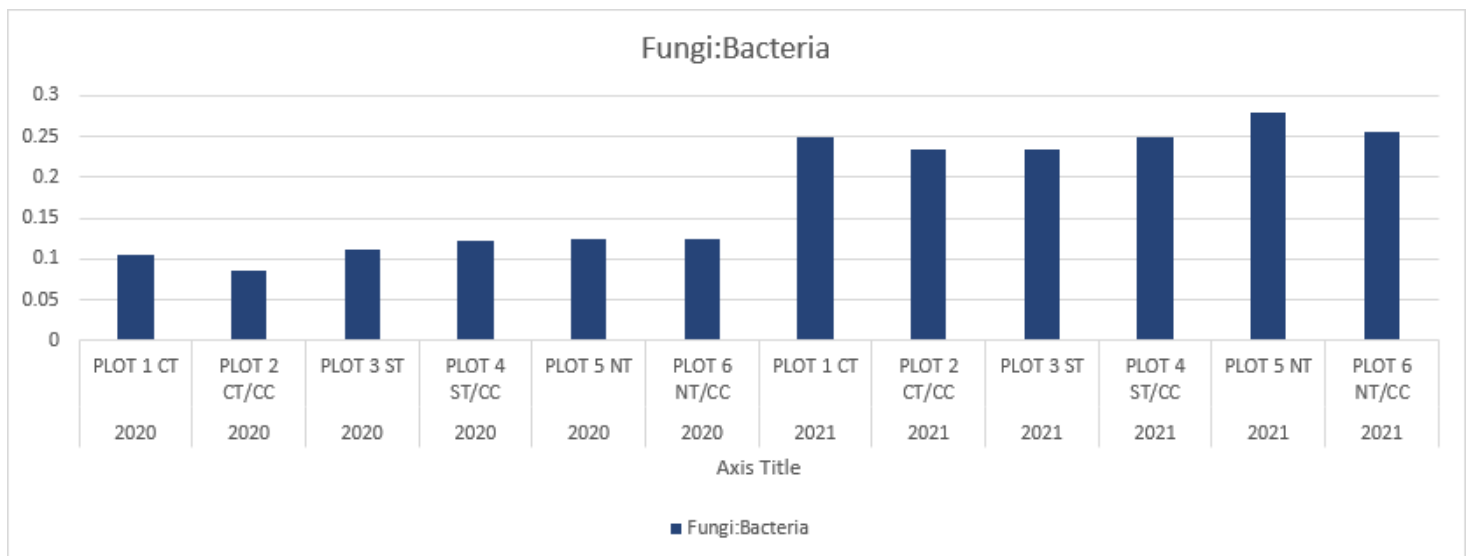
These measures total microbial biomass, including fungi and bacteria. These numbers are relatively stable across time and treatments.



Bacterial biomass measures all lipids thought to come from bacterial cells. Note that these bacterial lipids make up more than half of the total biomass lipids in the previous graph, so they tend to drive patterns in total biomass.



Arbuscular mycorrhizal fungi are fungi connected to plants, helping roots access nutrients and water. They are variable in 2020 but in 2021 the tillage treatment appears to have some effect. No-till systems promote fungi by not breaking hyphae during tillage events. Note that these are a relatively small amount of the total microbial biomass. They are generally pretty sensitive to management.



This represents the ratio of fungal lipids to bacterial lipids. Generally, bacteria are much more abundant. Note that all systems increased fungi in 2021, possibly due to sampling conditions. No-till systems promote fungi by not breaking hyphae during tillage events in some research, but we didn't see any tillage effect here so far.