

Soil Science Division

Soil Survey Region 6

Mill Hall, Pennsylvania, Soil Survey Office

Soil Health Field Day

Purpose

On August 29, 2018, staff of the Mill Hall Soil Survey Office assisted with Soil Health Field Day. NRCS partnered with multiple agencies including the Regional Conservation Partnership Program, Pennsylvania Department of Natural Resources, Chesapeake Bay Foundation, Chesapeake Conservancy, Lycoming College, and the Lycoming County Conservation District to provide insight into managing soil health. The 60 in attendance included local farmers, technical service providers, students, and local, State, and Federal agency representatives who were interested in management practices that can build soil health.

Soil scientists from the soil survey office explained how “managing your soil microbes” is a key principle in improving soil health. To demonstrate, they used a pit dug in glacial soil in a field that has been under no-till for 18 years. They discussed differences between inherent soil properties and dynamic soil properties. Participants learned about soil formation and how management practices can impact the soil ecosystem. The soil in the no-till field, which showed no compaction, was compared to the compacted areas of wheel tracks to highlight the ability of soil health practices to reduce soil compaction. A major principle of soil health—keeping a cover of growing plants or plant residue throughout the year—was demonstrated in the soil pit. The rye cover crop that the producer planted the previous winter had roots that reached several feet into the ground. The deep roots access deeply leached nutrients and feed microbes in the soil. Dave Albert, owner of Misty Mountain Farms and host of the day’s event, discussed how his no-till fields produced little to no runoff and continued to drain well despite the heavy rains in July.

Soil health tests, including a slake test and infiltration test, were used to demonstrate how tools like no-till and cover crop practices improve soil quality by increasing soil aggregate stability and increasing infiltration rates. Dave McLaughlin, a local farmer and member of Pennsylvania’s No-Till Alliance, shared that his “aha moment” came when he started including cover crops with his no-till practice. He noticed a large increase in amounts of soil organic matter, improved infiltration rates, and reduced nitrogen fertilizer costs. Data he collected using the Haney Test for soil health confirmed his observations.

Key Outcomes

The field day provided an opportunity for local farmers to see the benefits of healthy soil first hand. Participants were able to discuss the advantages and challenges of soil health practices with experts and industry leaders. One major point of discussion was the cost savings that resulted from converting to no-till and using cover crops. Removing the need for tillage operations also meant that the producer could limit trips to the field to just planting, fertilizing, and harvesting.





NRCS Soil Scientist Yuri Plowden discusses how conservation practices influence dynamic soil properties.

Local farmers benefitted from the field day by gaining knowledge about soil health and the practices that can help increase soil quality. Combining cover crops with no-till practices can help producers reduce erosion, increase infiltration rates and organic matter content, suppress weeds, and reduce costs. Participants walked away from the field day with a network of farmers supporting soil health and a better understanding of how to assess soil health.



Participants listen to a discussion on soil health.