

SOIL AND PLANT SCIENCE DIVISION

Technical Soil Services

Northwest Soil Survey Region and Colorado NRCS

Fort Collins and Fort Morgan, Colorado, Major Land Resource Area (MLRA) Soil Survey Offices (SSO) and Colorado NRCS

Colorado State Future Farmers of America Land Judging Contest: More Than Just a Day Out of School

Purpose

Every May, hundreds of Colorado Future Farmers of America (FFA) students converge on the main campus of Colorado State University (CSU) in Fort Collins to compete in Career and Leadership Development Events. This year 1,637 students competed in 13 separate agricultural-related events, including our favorite Land Judging contest.

A major part of the Land Judging contest was coordinated by Kari Sever (Fort Collins MLRA SSO soil scientist), Denver Federal Center, and Morning Fresh Dairy Farm and supported by several Colorado NRCS offices. Contributors included Andy Steinert (Fort Morgan MLRA SSO), Chris Fabian, Dylan Casey, and Matt Wellick (all out of the Fort Collins MLRA SSO), and Mary Ellen Cannon (Colorado, Greeley Area Office). In addition, Suellen Melzer, Associate Professor of Pedology, CSU, and several students who work in the local MLRA SSO under an agreement with CSU assisted with the setup of contest materials, proctoring, and grading scorecards.

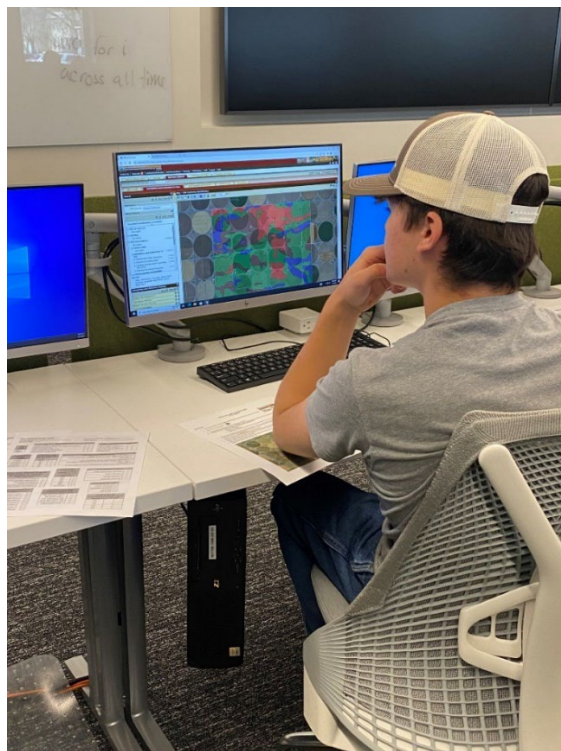
Key Outcomes

The Colorado FFA Land Judging contest, comprised this year of 14 school teams and 57 individual students, is unique from other FFA contests across the country because one part is centered around using Web Soil Survey (WSS). The WSS portion of the competition challenges students to navigate to a soils map and create an area of interest, utilize the search tools to find interpretations, answer specific science-based questions about the soils, and perform a virtual off-site investigation at a given location. The students are tasked with critical thinking about how different soil characteristics affect land use and planning and following directions.

After the WSS competition, the students were bused 15 miles northwest of Fort Collins to the Morning Fresh Dairy Farm to compete in judging two open soil pits. The students used the first soil pit to complete a Soil Characterization and Agricultural Interpretation, describe the physical properties of the soil, identify problems affecting use, and make recommendations for land use, conservation practices, and fertilizer treatment. The students used the second soil pit to complete a Homesite Evaluation to assess a list of land factors (soil texture, permeability, runoff, etc.) and rated each one for a specified land use (foundations for buildings, lawns and landscaping, septic systems, etc.).

Following the contest, the students learned about infiltration and soil physical properties. The MLRA SSO staff set up a dye infiltration experiment at the edge of one of the pits to demonstrate water movement through soil. With no rain in the forecast, the MLRA SSO staff poured 30 gallons of water colored with food-grade blue dye into a galvanized fire pit ring near the edge of the soil pit and allowed it to soak in for three days. On the morning of the contest, the MLRA SSO staff removed the ring and excavated the vertical wall of the soil pit to show the movement pattern of the blue water through the soil.

The Land Judging contest provided an ideal venue for technical soil services by allowing NRCS staff to interact with contestants over a three-day period. Before and after the contest, NRCS staff discussed possible career choices in natural resources, soils, and NRCS with FFA contestants.



An FFA contestant contemplates the ratings for soil interpretations using WSS to answer questions on the scorecard.



FFA contestants work through the WSS section of the contest in the new Nutrien Agricultural Sciences Building on the CSU campus.



With a backdrop of the foothills, the Soil Characterization and Agricultural Interpretation pit was located at the edge of a center pivot cornfield. Located in a strike valley, the soil was moderately deep to bedrock.



Matt Wellick, SPSP Soil Scientist, explains how to use a clinometer to an FFA contestant. Some students do not have prior experience measuring slope with a clinometer.



The infiltration study used a galvanized fire pit ring, blue food coloring, and 30 gallons of water to demonstrate water movement through the soil. The colored water was allowed to saturate the surface and soak into the ground for three days.



The wall of the soil pit, stained with the blue dye, shows that physical properties of soil, such as organic matter, root channels, worm casings, soil structure, and soil texture, are important factors for water movement in soil.



A close-up of a soil ped showing blue dye in the root channels.