Agricultural Experiment Station
Agricultural Science Center at Farmington

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MISSION

The mission of the Farmington Agricultural Science Center (ASC) is to conduct research, demonstration, and educational programs that will best fill the needs of the Agricultural community of San Juan County, and the Navajo Nation in particular, and the State of New Mexico, Four Corners Region, and Nation in general.

Founded in 1968, we are the only 1862 Land-grant University to reside on sovereign First Nations Land, the Navajo Nation.

The Farmington ASC is home to the Yeego Gardening Project which gives the surrounding community access to a community garden.

Weather conditions in the Four Corners region are variable and influence crop growing periods across the region with late spring fronts and early fall frosts.

Value Added to New Mexico

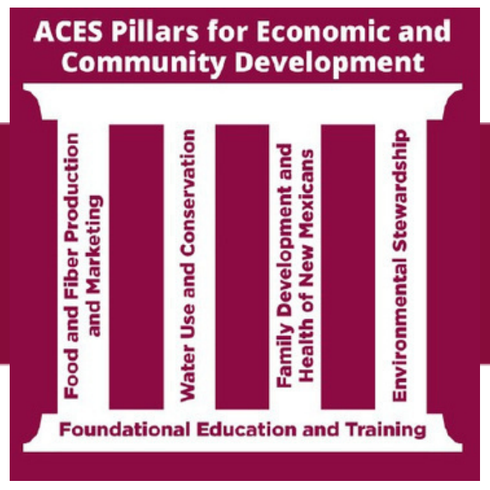
- Center Pivots
- Potatoes
- Alfalfa

The NMSU Farmington ASC is part of the larger Agricultural Experiment Station (AES) system supporting fundamental and applied science and technology research to benefit New Mexico's citizens in the economic, social, and cultural aspects of agriculture, natural resource management, and family issues.

The Farmington ASC consists of two faculty and several staff with core competencies in Horticulture, Soil Quality Monitoring, Irrigation Management, and Cropping Systems. With our collaborators, we conduct soil and crop evaluations and their intersects with community wellness, economic development potential, water conservation and environmental stewardship in support of the 4 Pillars of Economic and Community Development outlined by ACES. Undergraduate and graduate students are integral to the research process.

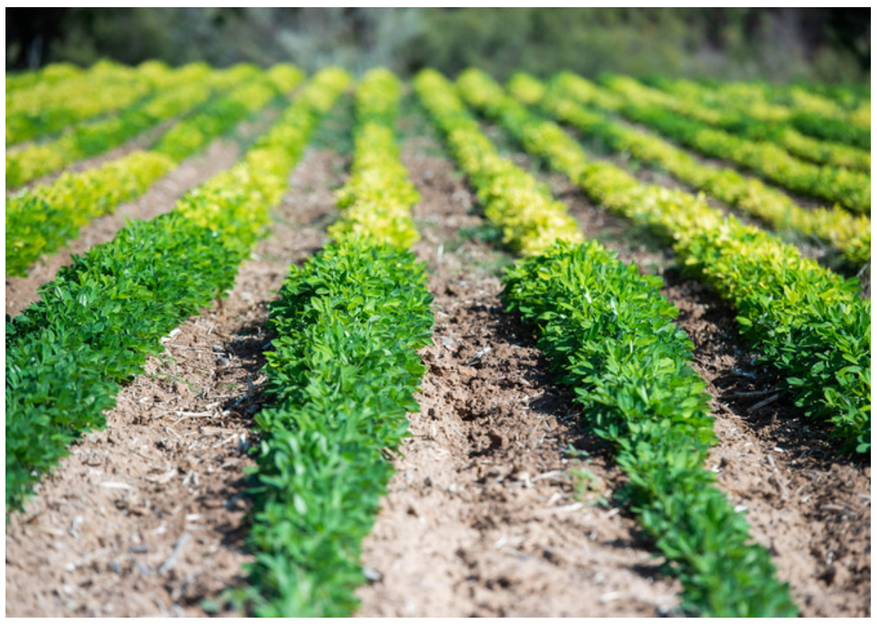
Ongoing Research

- Corn response to nitrogen fertilizer following 4–5-year alfalfa production
  - Take advantage of the nitrogen credit of alfalfa
  - Develop nitrogen fertilizer recommendation for corn following alfalfa production
  - Within that particular cropping system under sandy loam soil
  - Reduce nitrogen fertilizer input
  - Reduce the production cost and increase revenue
  - Reduce a potential soil and water pollution by the nitrates
- Potato response to irrigation and nitrogen fertilizer
  - Develop the response function of two potato cultivars to nitrogen fertilizer under three irrigation regimes
  - Investigate the interaction of irrigation strategies and nitrogen fertilizer rates on physiological parameters of potato plants
  - Explore the best intervals of water and nitrogen input to ensure water and fertilizer conservation while maintaining high yield, quality, and improving crop water productivity



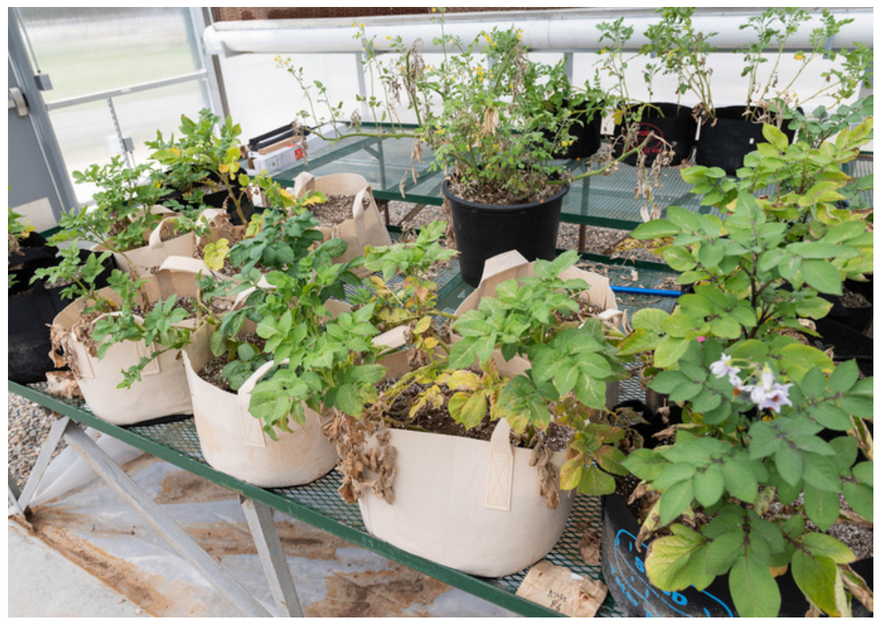
The College of Agricultural, Consumer, and Environmental Sciences is an engine for economic and community development in New Mexico, improving the lives of New Mexicans through academic, research and Extension programs.

Recent Impacts



- The Center's outreach research on the Navajo Nation tested the efficacy of an integrated garden/nutrition curriculum among 3rd and 4th-grade elementary schools and shows the potential for modest increases of healthy foods in the diet. The prevalence of diabetes among the American Indian and Alaska Native populations (15.9%) is more than double the rates compared to the non-Hispanic/Caucasian population (7.6%; National Diabetes Statistics Report, 2014). Six schools participated in this randomized controlled study with the aim of increasing children's and their parent's confidence to garden and eat healthier foods. This project is currently in the write-up phase.

- Cropping systems research. We are conducting crop evaluations to focus on improving soil and crop management practices utilizing center pivot and drip irrigation technologies that enhance efficiency, profitability, and environmental quality in the face of increasing water limitation and climate change. Crops under evaluation include wheat, barley, grapes, hops, potato, corn (including specialty corn), fruit trees, and perennial cereal crops in collaboration with the Land Institute. Perennial crops offer advantages of reduced tillage and increased soil health. Soil moisture probes are being used along with weather station data to aid in making more informed decisions on when and how much to irrigate crops. NMSU-ASC Farmington is participating in multi-site trials investigating transitioning to certified organic production cropping systems through the USDA Organic Agriculture Research and Extension Initiative.



- In 2021, New Mexico State University ASC Farmington joined the Transformation Network (TN) under a $15 million, 5-year award to the University of New Mexico. The Transformation Network is a multi-institutional, multi-disciplinary aims to build resilient communities and ecosystems throughout the Intermountain Western United States through convergent research, including agriculture.

Community Outreach

Farmington ASC community engagement occurs at multiple scales. From backyard gardens to center pivot field production. Field days and farmer visits form the basis for traditional place-based outreach with impacts related to adopting a new crop to adopting a new water conserving practice. Since 2009, Farmington ASC faculty have been partnering with Public Health researchers from the Fred Hutchinson Cancer Research Center to examine the transects of horticulture and diabetes risk reduction. This outreach oriented research is enabling Farmington ASC faculty to work with communities to address solutions that promote both gardening and healthy eating among Navajo elementary school children and their families with the ultimate goal of impacting public policy across the Navajo Nation. Community oriented research takes dedication of time to build trusting relationships. The Farmington ASC continues to assist farmers with understanding the impacts of the Gold King Mine spill of 2015. The impact of this work is aiding a broader effort in San Juan County, New Mexico to reduce the stigma of the spill and build up the agricultural economy of Northwest, NM.

Selected Partnerships

- Four Corners Local Businesses
- Fred Hutchinson Cancer Research Center San Juan County (NM), Montezuma County Cooperative Extension, Colorado State University, San Luis Valley and Southwest Colorado Research Centers
- Navajo Agricultural Products Industry (NAPI) Navajo Mesa Farms
- Navajo Nation
- NM Department of Agriculture
- San Juan College, Dine' College, Navajo Technical University, and Fort Lewis College Wilbur Ellis
- San Juan County Soil and Water Conservation District
- San Juan, Animas, and LaPlatta River Irrigated farms
- University of New Mexico Transformation Network
- USDA-NRCS
- Valley Irrigation

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