Agricultural Experiment Station
Fabian Garcia Science Center

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The first deed for Fabian Garcia Research Center was signed in 1906 and today the center has 41.1 acres of land. The Center not only houses the Chile Pepper Institute, but includes, and is not limited to research plots and greenhouses supporting chile and alfalfa breeding and genetics, viticulture, cotton breeding and genetics, horticulture, algae management for biofuel, enhancing native habitat and pollinators, and onion breeding research. In addition, the Center includes a botanical garden, gazebo, and the Chile Pepper Institute Teaching Garden, which are all open to the community for seasonal outdoor enjoyment.

VISION

Advancing innovations in high-efficiency agriculture.

MISSION

Researchers at the Fabian Garcia Science Center strive to carry on Fabian Garcia's legacy of innovation in agriculture and passion for educating the next generation of agriculturalists.

VALUE ADDED TO NEW MEXICO

- Onion and chile pepper research
- Investigations into the usage of brackish groundwater in agricultural systems
- Forage and alternate crop research
- Algae as an alternative fuel

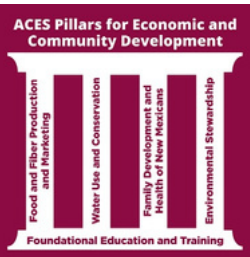
ONGOING RESEARCH

Current research at the Center focuses on drought-resilient varieties of alfalfa, onion cultivars resistant to diseases and pests, and chile peppers that can be mechanically harvested. Investigations are being conducted to reduce reliance on declining freshwater through irrigation with brackish water, using regionally adapted cover crop mixtures for hotter and drier climates, and testing alternative, water-saving crops such as guar.

NEW RESEARCH

New research projects include vertical gardening in hydroponic systems, growing chile peppers in saline conditions and researching water resilience for arid and semi-arid small farms as well as studies on the use of aquaponics.

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.



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RECENT IMPACTS

- Investigations for irrigating crops with brackish groundwater may assist in reducing stress on declining freshwater supplies. Improved phytonutrient profiles could change the perception of salinity from being an agricultural threat to being a value-added product.
- Integrated analysis of Alfalfa DNA sequence and field-based data are conducted to identify genetic factors influencing forage yield and nutritive value to develop drought-resilient cultivars for the arid southwest.
- Onion stakeholders identify onion thrips and Iris yellow spot virus as the greatest pest and disease threats to onion yield and economic sustainability. Onion germplasm is being developed and evaluated for onion thrips and Iris yellow spot impact. Also, Fusarium basal rot (FBR) is a soil-borne fungal disease that causes disintegration of the onion bulb basal plate. Investigations are being conducted for breeding for host plant resistance to FBR, which may eliminate the detrimental effects of the disease.
- Identifying various vineyard and orchard floor management systems using native plants and integrating IPM will enhance the sustainability and profitability for New Mexico vineyards.
- An investigation to develop new Chile cultivars with higher mechanical harvested yield and improved quality can help mitigate longstanding labor issues for New Mexico chile growers.
- Evaluating guar, a drought tolerant crop, and its performance under different salinity levels will help identify tolerant genotypes as well as understand the underlying tolerance mechanisms. Guar can also be used as an alternative legume forage crop in the region that uses less water and produces an optimum amount of good quality forage.

COMMUNITY OUTREACH

The Center is highly involved in outreach efforts and hosts numerous educational opportunities each year. In 2024, several different opportunities were offered, including the DACC Community College Cohort-Alliance for Minority Participation, an Aquaponics open house, the NMSU Onion Field Day, Cooperative Extension Service Tour, a USDA Immersive Workshop, a Tree Steward workshop, the Chile Pepper Institute Fiery Futures Camp for High School Students and the Fabian Garcia Research Center Field Day.