



# Fabian Garcia Research Center

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## Mission Statement

The mission of the Leyendecker Plant Science Research Center and the Fabian Garcia Research Center is to improve the lives of New Mexicans, the nation, and the world through research, teaching, and Extension. The Fabian Garcia Science Center is oriented toward horticultural research.

## CENTER INFORMATION

The first deed signed for Fabian Garcia Research Center was in 1906. Currently, the center has 41.1 acres of land available. Fabian Garcia, professor of Horticulture from 19906-1945, was named the first director of the State Agricultural Experiment Station in 1913. He produced the first reliable chile pod, which was the beginning of the hot "Sandia" pepper.

Fabian Garcia Research Center now not only houses the Chili Pepper Institute, but includes, and is not limited to research plots and greenhouses supporting alfalfa breeding and genetics, viticulture, cotton, horticulture, nematology, micro-plot, turf grass water management, IR-4, and onion research.

## OUTREACH ACTIVITIES

Due to COVID-19 restrictions, outreach activities were suspended in 2020. Under New Mexico State guidelines, the 2021 Annual Field Day will be hosted on the Fabian Garcia Research Center site on September 22nd.

The Fabian Garcia Botanical Gardens are a public facility at the Fabian Garcia Research Center consisting of a Gazebo available for rental, demonstrations/ classes, and a walking path through labeled scenery. The gardens are temporarily closed due to COVID-19 restrictions. Refer to <https://fabiangarciasc.nmsu.edu/facilities-fgsc.html> for updated hours.

NMSU Viticulture hosts and facilitates the lab session of Wine Production and Marketing for Boutique Wineries each fall semester as part of student coursework. With the exception of COVID-19, this class is also offered as a public workshop. Students gain exposure and "hands-on" learning of the entire process of winemaking from grape harvest, applied grape and wine lab analyses, fermentation, finishing through bottling. The curriculum is made relevant and possible via the NMSU teaching vineyard and functioning grape and fermentation lab at the Fabian Garcia Research Center.



The NMSU Alfalfa Breeding and Genetics program currently maintains 500+ greenhouse plants at the Fabian Garcia Research Center.



Early evaluation of breeding and genetic studies for chile pepper varieties use the facilities at the Leyendecker Plant Science Research Center and the Fabian Garcia Research Center.



The NMSU onion breeding program is one of the only two active, public onion breeding programs in the United States that is releasing cultivars and germplasm lines.



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.

### ACES Pillars for Economic and Community Development

- Food and Fiber Production and Marketing
- Water Use and Conservation
- Family Development and Health of New Mexicans
- Environmental Stewardship

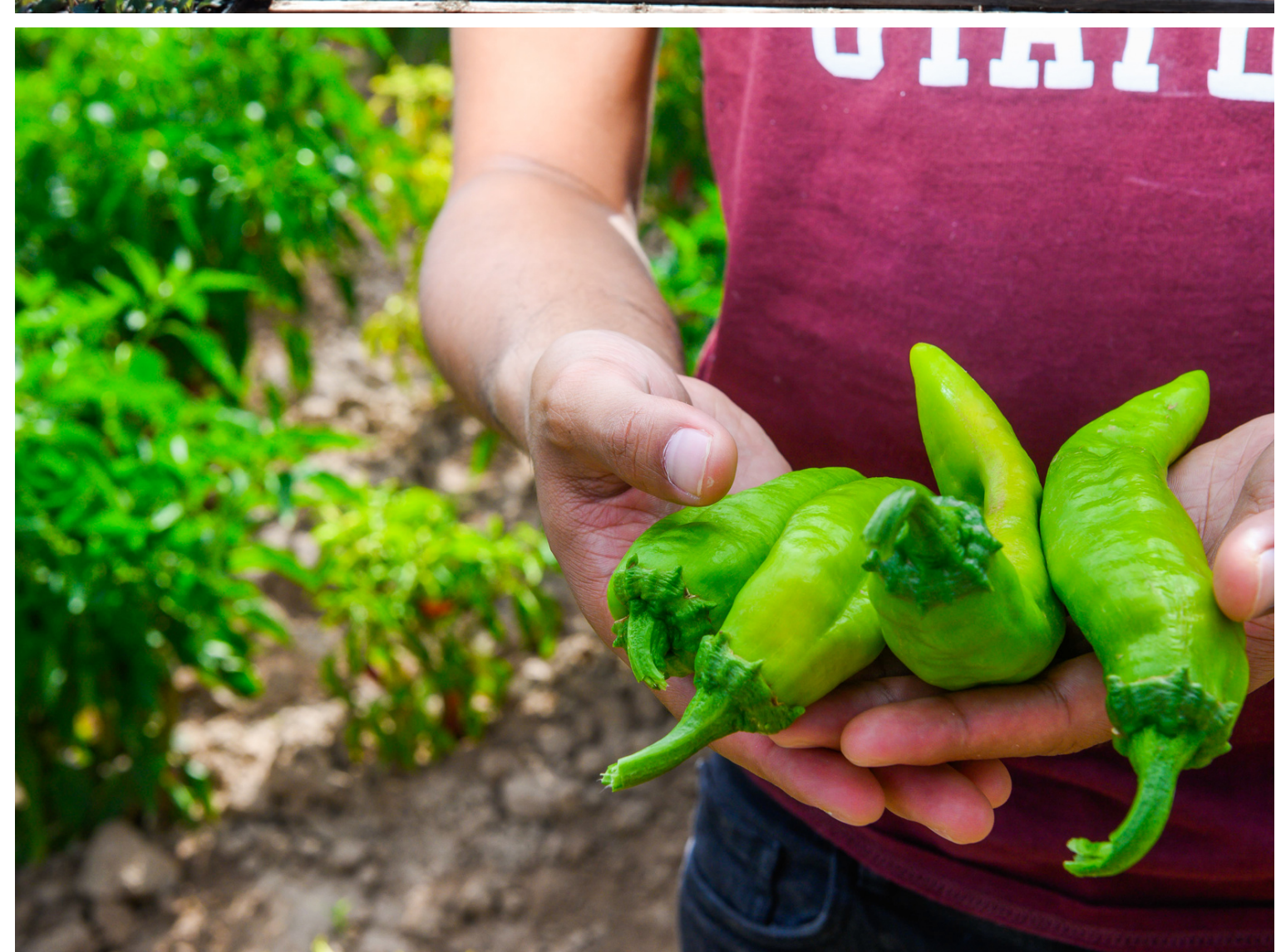
Foundational Education and Training

## 2021 Impacts

- Open-pollinated, male-sterile, maintainer, and pollinator breeding lines were screened for disease resistance, bulb yield, bulb quality, maturity date, and bulb color. Fifty-nine different lines were evaluated this past year. Seeds of 261 different lines were produced this year. This work contributes to the progress of developing a commercial onion cultivar that can be used by growers.
- The Applied Chile Pepper Research for NM Growers program includes projects focused on improved red pigmentation of paprika varieties for added value, development of open-pollinated cayenne varieties with mechanical harvest traits, improved fruit size of heritage variety "NuMex Heritage 6-4," and New Mexico-type green chile that is amenable to mechanical harvest. This year marks the release of "NuMex Odyssey," which possesses traditional New Mexican green chile pepper flavor, low heat, and provides a higher percentage of mechanically harvested marketable green chile fruit without mechanical damage compared to current, standard industry NM type green chile pepper cultivars.

## Ongoing Research

- The Jose Fernandez Memorial Garden involves the cultivation of a vegetable research and demonstration plot at the Fabian Garcia Research Center that will introduce vegetable crops and/ or varieties relatively unknown in New Mexico and determine which selections have the potential to perform well in southern New Mexico.
- Various ground covers are compared to a cultivated control within the vineyard to determine impacts on Malbec wine grapes (yield and quality), vineyard soil health, the occurrence and frequency of pollinators, and beneficial insects. We are investigating the impact and practical feasibility of using cover crops and simultaneously measuring any effects the ground covers may have on the yield and primary grape chemistries at harvest. This project is in its early stages and is designed as a multi-year, ongoing research platform for multi-disciplinary graduate students.
- We have made significant infrastructure upgrades to the algae testbed facility and Fabian Garcia Science Center. These infrastructure investments have allowed us to maintain constant activity in the DOE biofuel portfolio by providing outdoor algae cultivation. Currently, Dr. Holguin serves as one of the co-investigators on the following two DOE grants being facilitated at the Fabian Garcia outdoor algae testbed.



### Fabian Garcia Research Center

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