Agricultural Experiment Station
Leyendecker Plant Science Center

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The Leyendecker Plant Science Center (PSC) headquarters was purchased by the University in 1969 and features approximately 200 acres of land dedicated to a variety of research and demonstration trials to enhance the sustainability of southern New Mexico. Projects occurring at the Leyendecker PSC include cotton, chile, alfalfa, and onion plant breeding, precision farming, pecan research, drip irrigation research, soil health research, and a multitude of other projects and programs.

VISION

Leading the arid southwest in climate-smart and precision agricultural management systems for sustainable and climate-resilient irrigated cropping systems.

MISSION

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

VALUE ADDED TO NEW MEXICO

- Evaluating interaction between chile growth and solar panel energy production
- Development of guayule trials with potential to facilitate domestic demand
- Evaluating and breeding commercial varieties of Alfalfa
- Evaluating the impacts of hydrogels on soil moisture retention and crop water use efficiency.

ONGOING RESEARCH

Research conducted at the Leyendecker Plant Science Research Center is purposed to improve the lives of New Mexicans, the nation, and the world through research, teaching, and Extension. The Leyendecker Plant Science Research Center serves as the outdoor agronomic laboratory for researchers located on the NMSU main campus in Las Cruces. Leyendecker is an emerging hub for the application of digital agriculture tools to southwestern agriculture.

One project includes a long-term soil health research field established to evaluate how different practices affect crop productivity, carbon sequestration, soil resiliency, soil water management, and greenhouse gas emissions.

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

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RECENT IMPACTS

- In 2024, research conducted at Leyendecker Plant Science Research Center advanced agricultural productivity and sustainability in southern NM. The impact of these projects includes developing and disseminating the best management systems and improving the yields of commodity crops such as chile, alfalfa, cotton, pecan, guayule, guar, and corn. Diseases, weeds, nutrients, and irrigation management strategies were developed and shared with producers and stakeholders in southwestern NM during field days that occurred at the station. A groundbreaking NSF-funded project is exploring the potential of seaweed-derived biological hydrogels to significantly enhance soil moisture retention, offering a promising solution for sustainable agriculture and water conservation.

- Soil health research at the center demonstrated a 32% increase in crop water use efficiency when winter cover crops are planted before a cash crop. Similarly, applying compost-biochar to the soil increased crop water use efficiency by 28%. Funding for research projects was procured from several agencies, including the US Department of Agriculture-National Institute of Food and Agriculture; National Science Foundation the Foundation for Food and Agricultural Research; the New Mexico Chile Commission; Western Sustainable Agriculture Research and Education; the New Mexico Department of Agriculture; and private companies.

- Leyendecker PSRC provided opportunities for training for different categories of clientele, ranging from K-12 school students to university students, agricultural professionals, farmers, and stakeholders in southern NM, by using research plots as living labs. Research and outreach activities at Leyendecker PSRC are well-positioned to address the needs of producers, agricultural support professionals, students, and other stakeholders in southwestern New Mexico.

COMMUNITY OUTREACH

The Center is an integral asset in outreach efforts purposed to engage with youth, undergraduate, and graduate students, along with state, national, and international academics and stakeholders. The Center hosts numerous educational events throughout the year. Annual field days are hosted at the Center. These free events enable participants to learn about research being conducted at the Center while providing the opportunity to ask questions and engage with research personnel in a one-on-one, in-person environment.