Leyendecker Plant Science Research Center

Our mission is to serve the needs of irrigated agriculture in south-central and southwestern New Mexico. The Center's more than 200 acres support research on plant breeding; insect, nematode, and disease control; herbicide effects; aquaculture; and production management techniques to develop more efficient, productive, and profitable means to produce affordable products using sound environmental practices.

NMSU photo by J. Victor Espinoza

Current Research

- Cotton research, including the New Mexico cotton breeding program, precision organic cotton production, cottonseed oil used for food and fuel, and gossypol-free ("glandless") cotton to provide both robust lint and better cottonseed byproducts.
- Research on insecticides, foliar fertilization, fertilization, and irrigation for pecan.
- The IR-4 Project helps provide effective pest control options for food crop producers while ensuring safe and healthful fruits, nuts, and vegetables for consumers.
- The Nematology Lab program focuses on plant-parasitic nematodes, which are persistent and often serious pathogens of many New Mexico crops.
- Weed science research provides sustainable, reduced-risk pest management practices that enhance food safety and maintain market competitiveness for New Mexico-grown crops.
- The NMSU onion breeding program is one of only two active, public onion breeding programs in the United States releasing cultivars and/or germplasm lines. One of the program's objectives is the continued development of onion cultivars that allow New Mexico growers to compete in other onion markets in the United States.
- Using alfalfa in crop rotations helps stabilize soils, improve water quality, and reduce fertilizer, pesticide, and fuel inputs, making it a critical component of sustainable agriculture. Alfalfa hay constitutes most of the diet for New Mexico's rapidly expanding dairy livestock industry. Research at the Center works to develop drought-tolerant alfalfa cultivars for New Mexico growing conditions.
- Aquaculture research to determine the feasibility of using a mix of algae and cottonseed meal to grow saltwater Pacific white shrimp indoors in aquatic systems.
- The NMSU chile pepper breeding program creates high-quality, non-GMO cultivars for New Mexico's chile pepper food industry and value-added products, increasing growers' incomes throughout the state.
- Research examining plant/soil microbiomes and how changes in a soil microbial community influence plant growth and the development of plant/soil microbiome synergies. Research to determine the efficacy of using mustard seed meal to fight Phytophthora blight and Verticillium wilt afflicting our chile crops.

Collaborators, Sponsors, and Contributors

- New Mexico Farm and Ranch Heritage Museum
- NM Chile Commission
- NM Chile Association
- CaJohn's Food
- Mrs. Renfro's Food
- Border Foods
- Biad Chili
- Cervantes Enterprises
- Jurado Inc.
- Vilmorin Seed
- Seminis Seed
- IR-4 Specialty Crop Pest Management Program
- New Mexico Cotton Growers Association
- Mesa Farmers Cooperative
- USDA Cotton Ginning Lab
- New Mexico Dry Onion Commission
- NM Hay Growers Association
- New Mexico Department of Agriculture
- NM Pecan Growers Association
- Western Pecan Growers Association
- Cotton Inc.
- Sun Valley Inc.
- Savage Equipment
- Linwood Nursery

New Mexico State University - Agricultural Experiment Station System

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