Agricultural Experiment Station
Agricultural Science Center at Artesia
artesiasc.nmsu.edu | 575-748-1228

Artesia Agricultural Science Center (ASC) faculty collaborate in local, regional, national, and international research and extension efforts, and are often asked to bring their expertise to colleagues and clientele across the U.S. and in foreign countries. The Center's goal is to be the premier off-campus center for novel research and extension programming in integrated pest management, water management, soil health, soil fertility and remediation, and the evaluation of new crop genetic material.

VISION

Developing solutions to agricultural and water challenges.

MISSION

The Agricultural Science Center at Artesia conducts research and extension programs in soil, water, crop, and entomological sciences to enhance the agricultural, economic, environmental, and social well-being of southeastern New Mexico.

VALUE ADDED TO NEW MEXICO

- Resident research/extension scientists regularly respond to insect pest outbreaks in NM
- Biological control optimization
- Saline water usage investigations

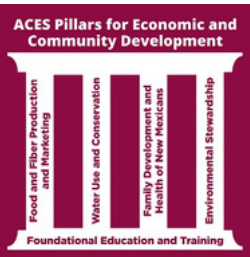
ONGOING RESEARCH

The Artesia ASC is dedicated to providing high-caliber research efforts toward sustainable crop production. Variety development and deficit irrigation strategies are utilized to accomplish these efforts in food and fiber production. Investigations are also conducted to decipher crop productivity utilizing saline water sources.

Of note, the Artesia ASC conducts insect research concerning agricultural pests such as the bollworm, alfalfa weevil, and pecan weevil, and medically important pests such as Kissing Bugs. Biological control targets include bollworm, pecan nut casebearer, pecan weevils, and alfalfa weevil.

Additionally, the Artesia ASC is home to a field that has been in continuous cotton production for over 30 years. This field is the research plot to test cotton varieties for resistance to Verticillium wilt, which severely constrains cotton production in the United States.

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

- Awareness of risks associated with kissing bugs will prompt citizens to mitigate risks by controlling kissing bugs or making homes more secure from kissing bugs. Understanding risks to dogs will also cause the public to reduce risk to dogs with simple measures such as not keeping dogs kenneled outside at night or at least turning off outside kennel lights that attract kissing bugs.

- Growers need tools to manage insect pests that are continually adapting to our changing environments and controls. For example, southwestern corn borer caused extensive damage to corn in southwestern New Mexico in 2022 and 2023 becoming resistant to Bt proteins. Researchers are working with a variety of collaborators to determine the level of resistance to one or more Bt proteins in our NM population of southwestern corn borer. An obvious concern is the migration of resistant insects to new areas of NM beginning in the Mesilla Valley. Researchers are working on determining their ability to migrate over time to predict possible issues in other corn-growing areas of NM. Bollworm and tobacco budworm will ultimately become resistant to Bt proteins. Researchers have been working with Cotton Incorporated and seed companies to evaluate resistance to Bt proteins in NM populations of insects and by looking at field damage in NM in multiple varieties of cotton and corn. They are developing tools to control insect pests for when Bt genes no longer provide good control.

- Enhancing biological control of alfalfa weevil alone stands to save NM growers over $1.2 Million per year. Pecan weevil and pecan nut casebearer are targets of our biological control efforts. Pecan nut casebearer eggs often have 80% control in SE NM. Bollworm eggs frequently have 60-70% predation in only 48 hours in the field. An appreciation of the level of free control may cause growers or gardeners to adjust practices for example providing alternate habitats or using insecticides that have less impact on beneficials. For diseases, growers can use soil amendments and biological controls for soil-borne diseases. The impact of more precise identification will be huge and hard to measure particularly with new and emerging pests. A new nematode was identified in NM recently but researchers need to develop in-house molecular techniques to do further identifications for NM growers.

COMMUNITY OUTREACH

Every year the Center conducts research and events that involve and serve the community. During the annual field day, this free event brings together the community to interact and share ideas about ongoing agricultural research projects. The Center also hosts the Entomology and Soils Workshop for 6th-grade STEM students, allowing participants to sweep alfalfa hay for insect pests. They also learn about soil types and identify insect pests in the field.