The mission of the Agricultural Science Center at Clovis is to conduct crop research and disseminate viable strategies that benefit New Mexico’s citizens and agricultural production. We also aim to anticipate challenges, solve problems, build relationships, and secure funding.

**SELECTED PROGRAM IMPACTS**

**NUMEX 01**, a high-yielding, high-oleic Valencia peanut cultivar developed and released by NMSU’s peanut breeding program, has a 13% higher pod yield compared to existing cultivars, which could generate more than $500,000 per year for the New Mexico peanut industry.

**SERENUT 5R AND SERENUT 6T**, two new peanut cultivars, have been developed internationally in collaboration with the National Semi-Arid Resources Research Institute in Uganda. The net profit for growing Serenut 6T is $566 per hectare, compared to $351 per hectare for Serenut 4T, which represents a 61.3% increase in additional income. The net profit gains have helped offset the reduced shelling percentage of Serenut 6T.

**WEED MANAGEMENT PROGRAM** focuses on identifying and developing methods that enhance weed control and reduce crop yield losses due to weed competition. Results show that, depending on the weed species and density, controlling weeds early in the season could reduce crop yield losses by 50–75%.

**CROP DIVERSIFICATION AND COVER CROPS RESEARCH** revealed improvements in efficiency, profitability, and environmental quality in dryland and limited-irrigation cropping systems, which could increase water use efficiency by up to 25% over time.

**TILLAGE SYSTEMS RESEARCH** evaluating conventional and conservation tillage practices such as strip-tillage, minimum-tillage, and no-tillage revealed that conservation tillage systems in drylands offer up to 27% reduction in soil erosion and up to 17% increase in soil health indicators.

**CROPPING SYSTEMS AGRONOMY OUTREACH PROGRAM** has been supporting eastern New Mexico producers on innovative cropping and soil management strategies for improving the sustainability and resilience of cropping systems.
ALTERNATIVE CROPS PROGRAM is developing well-adapted, water-efficient new crops like winter canola, safflower, and guar for the region, which can reduce irrigation requirements by 30–40%. New crops add crop diversity, reduce water withdrawal to help sustain the Ogallala aquifer longer, improve resource use efficiency, and improve the sustainability of existing crop rotations.

NOVEL CROPPING SYSTEMS LIKE CIRCULAR BUFFER STRIPS are being developed to improve the water cycle of center-pivot irrigation systems in the Southern Great Plains. The buffer strips conserve high-intensity rainfall, reduce wind and water erosion, improve crop microclimate, reduce evaporative loss of soil moisture, improve system biodiversity, increase net primary productivity of the system, and improve resiliency of the irrigated cropping system under an uncertain future climate.

DEVELOPING WELL-ADAPTED GUAR CULTIVARS to increase local production of guar gum for the oil and natural gas, food, and cosmetic industries. In the process, it will develop a low-input desert crop for the region for cultivation under limited irrigation and dryland conditions that offers many rotational benefits, including nitrogen fixation, forage production, and cover crop benefits.

SELECTED PARTNERSHIPS AND COLLABORATORS

- Bayer Crop Science
- NMSU Agricultural Experiment Station System
- New Mexico Peanut Research Board
- National Peanut Research Board
- USAID Peanut & Mycotoxin Innovation Lab (PMIL)
- USDA–Agricultural Research Service (ARS) National Peanut Research Laboratory
- USDA–ARS Cropping Systems Research Laboratory
- USDA Natural Resources Conservation Services (NRCS)
- Seed Companies
- USDA National Institute of Food and Agriculture
- South Central Sun Grant
- Ogallala Aquifer Program
- USDA–NRCS Conservation Innovation Grants
- USDA–ARS, Bushland, TX
- USDA–ARS, El Reno, OK
- Other universities, including Kansas State University, Texas A&M University, Texas Tech University, and the University of Florida
- International universities, including Northwest University (China), China Agricultural University, Agriculture and Forestry University (Nepal), Chitedze Agricultural Research Station (Malawi), Khon Kaen University (Thailand), Zambia Agriculture Research Institute, Instituto de Investigação Agrária de Moçambique (Mozambique), and the International Crops Research Institute for Semi-Arid Tropics (India)