

### VISION

*Pioneering new approaches to native and high value crops for sustainable, climate-smart agriculture.*

### MISSION

*The Sustainable Agriculture Science Center at Alcalde's mission is to conduct agricultural and natural resource research on native and high value crops, improving sustainable and climate smart approaches to benefit small family farms and ranches of north-central New Mexico.*

- Partnering with Extension services for information dissemination and outreach efforts and cooperating on acequia hydrology research.



- Research focused on crops and cropping systems for north-central NM.



- Representative of the irrigated farmland along the Rio Grande, Rio Chama, Rio Embudo, and other smaller drainages in the area.



Through testing of different crops, varieties, and production techniques, the goal of the Sustainable Agricultural Science Center at Alcalde is to provide new information that producers can adapt to their operations for greater productivity and profitability. The Center was the first ASC to carry out research on certified organic land and hold an organic certification.

### ONGOING RESEARCH

Research at the Science Center focuses on crops and cropping systems for north-central NM, including various horticultural and agronomic crops as well as acequia hydrology. Current research focuses on jujube variety development and testing (2 acres), pome and stone fruit production (2 acres), table grapes (1 acre), soil health and cover crops (3 acres), pollinator habitat and buffer strips (3 acres), saffron (1/20 acres), hemp (1/10 acres), and high tunnel fruit and vegetable production (five thousand square feet of covered growing space). The Center also includes twelve acres of forage crops including alfalfa, red clover, western wheatgrass, Russian wildrye, smooth brome, tall fescue, and orchardgrass. Six acres of the station are certified organic, and certified crops in 2022 included apple, peach, plum, and sweet corn.

### Value Added to New Mexico

- Cover crop research
- Research for crop and fruit production in the presence of late spring frosts
- Jujube research, production and cultivar development



*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



## RECENT IMPACTS

- The NMSU jujube program evaluated more than 50 cultivars in the past eight years and identified 8-10 fresh eating cultivars, with the potential to provide more choices with extended maturation dates and \$1-2 premium per pound. Since jujube blooms later, can avoid late frosts in most years, and produce a reliable crop, it will be a perfect alternative crop for growers and home gardeners in NM.
- Lavender is not native to NM, but grows well in most parts of the state. Identifying and generating well-adapted and productive cultivars could help make existing operations more sustainable, promote expansion of production, and expand the offerings of small-scale growers.
- Limited research exists on growing methods most suitable for NM apple growers. An investigation into this phenomenon is purposed to address NM production strategies and increase revenue.
- Research is being conducted to determine infrastructure, labor, and energy inputs required to protect tree blooms and produce a more reliable crop when grown under cover.
- An investigation is being conducted to develop improved strategies, models, and metrics to optimize productivity, sustainability, ecosystem services, and climate variability adaptation of organic systems.
- The NM hemp industry is faced with numerous challenges. Investigations are being conducted to develop recommendations for farmers, establish pest management guidelines, disseminate treatments of interest to increase crop yields, and identify crop residues with potential for value-added products.

## COMMUNITY OUTREACH

The Center hosts numerous educational outreach opportunities each year. In 2022, the Center hosted five programs in community outreach efforts. Two online opportunities included presentations on building capacity for agriculture through small-scale drip irrigation and extended season production workshops focused on hoophouse management and maintenance. Partnerships for these projects included San Juan County Extension and Southern Pueblo Extension Agriculture and Flower Hill Institute. Workshop topics presented by the Center included fruit tree pruning, fruit tree training systems and planting density, and fruit tree grafting.

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