



# Sustainable Agriculture Science Center at Alcalde

Our mission is to conduct agricultural and natural resource research to benefit small family farms and ranches of north-central New Mexico. The Center also serves as headquarters for the Cooperative Extension Service's Rural Agricultural Improvement and Public Affairs Project (RAIPAP), providing programs in sustainable agriculture, financial planning, and public policy skills in twelve northern counties, as well as the Jicarilla Apache Tribe.



NMSU photo by Geraint Smith

## Past Activities and Impacts

- The first organically certified research acres at NMSU were established at the Center to assist fruit, medicinal herb, and specialty crop growers interested in producing and marketing organically. Studies under certified organic management were carried out on organic codling moth control in apples, peach cultivar evaluation, sweet and tart cherry cultivar evaluation, plum cultivar evaluation, wine grape soil management, table grape cultivar evaluation, bramble cultivar evaluation, and native medicinal herb production.
- Relay-intercropping annual forages into sweet corn and chile has shown that high levels of total seasonal crop production can be attained under local climatic conditions.
- Research indicated that, besides providing for agricultural production, local acequia irrigation systems provide critical hydrologic functions. Water seeping out of the acequia ditch and percolating below irrigated fields is stored in the aquifer for several months and then

released to the river as groundwater return flow. These systems take spring and summer runoff from the river and retransmit this flow to the river later in the year.

- Research on medicinal herbs as alternative high-value crops. Depending on market prices, returns per acre can be substantial.
- Research was conducted with under-tree sprinkler systems in tree fruit to protect against late spring frosts.
- Research on kura clover, birdsfoot trefoil, and brassicas evaluated the extent to which these alternative forages can provide options to forage and livestock producers.

## Current Research

- Evaluation of jujube (Chinese date) fruit for adaptation in New Mexico. Jujube fruit is nutritious and can be relied on to produce a crop every year because it flowers late and so avoids late-frost crop losses common with apples, peaches, cherries, and other traditional tree fruit.
- Evaluation of strawberry cultivars under two management systems. Strawberries can provide large gross returns per acre, but available cultivars vary greatly in their ability to grow in the high-pH soils typical of New Mexico.
- Low-cost high tunnels (hoop houses) for production of winter greens, blackberries, and apricots.
- Collaborating on further acequia system research at Alcalde, Rio Hondo, and El Rito from hydrological, ecosystem, socio-economic, and cultural perspectives. Research is investigating connections between the irrigated valleys and their associated uplands, and seeks to understand and enhance the sustainability and resilience of these systems in the face of urbanization and severe drought.

## Partners

- New Mexico Acequia Association
- Apple/fruit growers
- New Mexico Department of Agriculture

## New Mexico State University - Agricultural Experiment Station System

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