

The NMSU Agricultural Science Center (ASC) in Farmington has provided science-based information since 1966 for large and small agricultural producers, industrial operators interested in natural resource management, rural and urban home owners, and interested growers in the Four Corners region. Since its inception, support has been provided through the Agricultural Experiment Station (AES) by state and federal allocations as well as third party grants. Operational budgets for AES as well as the Cooperative Extension Service have been rescinded by 6.5% for FY10 and possibly by a similar extent for FY11.

Following is a brief synopsis of value added contributions to northwest New Mexico and the rest of the state as a result of investments made in agricultural research at ASC-Farmington. Reductions to operational budgets will significantly impact the capabilities of ASC-Farmington to generate revenue through grants and maintain the added value of investments achieved to date.

Agronomy

Research providing best and mean yielding varieties for the 'Big 3' crops (alfalfa, corn, winter wheat).

Alfalfa 2005-2009 Collaborative state-wide project funded through 'Entry Fees'

- 2007 District 10 alfalfa mean 3.9 ton/ac at average price \$167/ton, representative value \$51 million
Selecting a research-based alfalfa would have increased District 10 value by 187%

Corn 2005-2009 Collaborative state-wide project funded through 'Entry Fees'

- 2007 District 10 corn mean 177 bu/ac at average price \$5.2/bu, representative value \$12 million
Selecting research-based grain corn would have increased District 10 value by 25%

Winter Wheat 2005-2009 Collaborative projects with Mark Marsalis including Southern Regional Performance Nursery

- 2007 District 10 winter wheat production 99 bu/ac at \$5.5 bu/ac, representative value \$5.5 million
Selecting research-based winter wheat would have increased District 10 value by 15%

Horticulture

ASC Farmington provides viticulture research for 50% of New Mexico wineries which are located in northern half of state.

- 2006 34 NM wineries and tasting rooms produced over 400,000 gallons wine per year, industrial revenues \$60 million
- 2009 46 wineries currently operating in New Mexico

Over 3,000 New Mexicans died of cancer last year. Total health care and related costs for treatment of diabetes in the U.S. are estimated at \$174 billion. Type-2 diabetes in the Navajo people is more than 4 times the rate found in the general U.S. population. The Fred Hutchison Cancer Research Center and NMSU partnership program at ASC Farmington is to develop and pilot cancer/diabetes intervention program involving, in part, gardening.

Potential benefits

- Reduce taxpayer funded health related expenditures for the treatment of diabetes
- Boost food and economic security

Hybrid Poplar

Since 2002, research has demonstrated adaptation of hybrid poplar to the region. Products can include excelsior for cooler pads and soil conservation blankets, peeler logs, biofuels, and sequestered carbon.

- Economic analysis indicates large scale hybrid poplar and biofuel production could return a 8-12% internal rate of return with an approximate net annual return per acre that would be \$175 to \$200
- A 10,000 acre development project is estimated to generate an annual return of \$1.75 million to \$2.0 million requiring 8-10 permanent jobs and another 20-30 seasonal labor positions

Water Management

ASC Farmington conducts irrigation research that is beneficial to local large and small farms, and urban residents located in the Four Corners region.

Potential benefits

- Small farm producers utilizing ASC Farmington 'Irrigation trial' data could acquire a gross return of \$50,000/ac for tomatoes and \$15,000/ac for chile peppers under careful irrigation and fertilization
- Homeowners utilizing the ASC Farmington 'Irrigation Scheduling' program could decrease water use by 50%, saving an estimated \$96 per summer month per 5,000 sq. ft. lawn in Farmington
- Homeowners implementing a 'Xeriscape', which can be maintained with 25% of the volume of water used on cool season turf, could save \$140 per summer month, per 5,000 sq. ft. landscape

Weed Science

Over 29 years of ASC Farmington weed research, at on- and off-station locations, was made possible by securing external grant funding of \$900,000, thus benefiting NAPI, in-state, and out-of-state producers.

Potential benefits

- NMSU's ASC Farmington research resulted in 'Pursuit' labeled first for SJC (first in the U.S.) for use on NAPI dry beans
- At least a 50% reduction in yield and/or quality if registered herbicides are not used by a grower
- Added income, to the Navajo Agricultural Products Industry by using registered herbicides for weed control on all crops grown, would be approximately 28 million dollars per year
- Weed research at ASC Farmington equals maximum yields and quality

Collaborative research efforts between ASC Farmington, BLM/FFO, Sandia National Lab., Biosphere Environmental Science and Technology (BEST) and ConocoPhillips seek to produce a beneficial and economic use for coal-bed methane produced water.

- 32 million barrels of coal bed-methane produced water at \$3.50/barrel, resulting in a \$87 million disposal fee

Through collaborative research efforts coal bed-methane produced water may become more beneficial for road maintenance, grassland establishment, and for domestic use.

Live**Learn****Thrive**

NMSU ASC Farmington produces valuable and applicable research-based information for stakeholders utilizing expertise of:

- 2009 Thirteen full time employees
- 2008-2009 Twenty seasonal student employees on grant-funded projects

NMSU's ASC Farmington offers educational and work experience opportunities for:

- Navajo Agricultural Products Industry (NAPI)
- Diné College Environmental Sciences Program
- San Juan County Home School Students
- Navajo Housing Authority Housing Applicants
- NMSU's CES Master Gardeners Program
- San Juan College Horticulture Students
- Navajo Indian Youth Council
- Navajo Workforce Development

NMSU's ASC Farmington research and outreach depend on federal, state and grant funding plus the collaborative efforts of an advisory board, universities, colleges, industry, governmental agencies and non-profit organizations, including:

- 30 ASC Farmington Advisory Board Members
- 12 University and College collaborators
- 45 Industries that are collaborators and/or research fund grantors
- 6 Non-Profit organizations

Thank you to all collaborators who make our research feasible for the Four Corners population.