FROM ROUND AGRICULTURE IN DOÑA ANA COUNTY

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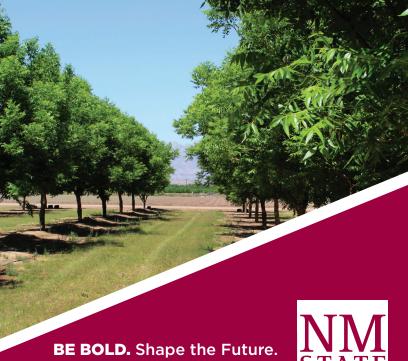
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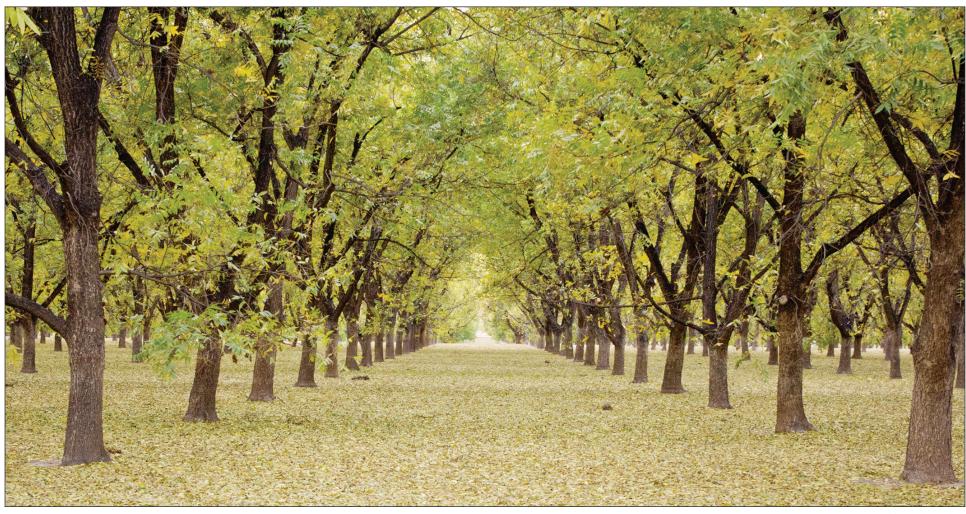
From the classrooms and labs to the farms and ranches, NMSU is helping to sustain communities now and in the future.





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**COURTESY PHOTO** 

Residents of Doña Ana County know the beauty of the pecan orchards from driving down New Mexico 28, the Lou Henson Highway. There's also an economic beauty: The value of pecans produced in the county can top more than \$100 million a year.

# New Mexico, Doña Ana, continue to lead in pecans

By RICHARD COLTHARP Las Cruces Bulletin

Pecans continue to be a vitally important crop for New Mexico, and Doña Ana County in particular.

For the second straight year, in 2019, New Mexico led the nation in pecan production, with 96.6 million pounds, an increase from 2018, when the state generated 91.1 million pounds, valued at more than \$170 million.

Georgia was the secondleading producing state, with 69 million pounds, although the state is still suffering from the damage caused by Hurricane Michael two years ago. In 2017, Georgia led the nation with 107 million pounds, but after the hurricane, its production dropped to 70 million in 2018 and 69 million last year.

Doña Ana County continues to be New Mexico's county pecan leader, with more than 70 percent of the state's production. Other pecan producing counties include Chaves, Eddy, Luna,

Otero, Sierra.

Texas was again the third most producing state, with 42.6 million pounds, although Arizona has made inroads, and finished a close fourth with 36.5 million pounds.

New Mexico and Arizona have much higher yields per acre than other states. New Mexico produced 2,100 pounds per acre and Arizona produced 1,920 pounds per acre.

Georgia and Texas, in contrast, have yields of 550 pounds and 380 pounds per acre, respectively.



**COURTESY PHOTO** 

The flavor and health benefits of New Mexico pecans are sought the world over.

# A letter from the New Mexico secretary of agriculture

cheese, onions, lettuce, cabbage, grapes, wine, milk, beef, greenhouse plants, nursery stock, hemp, tomatoes, sheep, goats, alfalfa, horses, apples, peaches, oats, wheat, barley. And the list goes on and on. Our agriculture community is one of the most diverse in the nation, and that is just in Doña Ana County. This county has a rich and vibrant agriculture and food sector, which leads to a strong base economy. Residents in this county

have a great opportunity to enjoy what makes New Mexico the special place it is. We can relax at one of our many wineries and breweries; we can take a trip back in time at the New Mexico Farm and Ranch Heritage Museum; and we can look to the future with the magnificent research and public service programs at New Mexico State University. Our many restaurants serve up the cuisine that has put New Mexico on the map. A morning at the farmers market provides a

refreshing chance to visit with local growers and pick up fresh products. A drive though the back roads is both peaceful and relaxing, as we enjoy the scenery and see the crops growing before our eyes.

We often forget that there are people behind all this activity – the farmers and ranchers who do the work to provide those products we all enjoy. Doña Ana County is home to over 1,900 farms and ranches, which have farm and ranch sales of over \$358 million,

making it the third highest in agricultural sales in New Mexico. And that does not include agriculture equipment servicing and sales, or agriculture input business which supports that production. And don't forget about our wonderful food processing and retail businesses, which benefit from that production to get it to the consumers. I encourage everyone to take a fresh look at all Doña Ana County agriculture has to offer. Look for New Mexico products every

place you shop, and take our challenge to increase your spending on local products by just \$5 per family per week. The benefits are fresher products for you, and a strong New Mexico economy for all!

Sincerely,



Jeff M. Witte Secretary New Mexico Department of Agriculture



Jeff Witte

# An inseparable bond: New Mexico, NMSU and agriculture

The importance of agriculture in New Mexico cannot be overstated. This is the second edition

the Las Cruces Bulletin has produced of this agricultural update section. Our goal is to provide our readers with an overview of information and trends with agriculture in New Mexico and, specifically, in Doña Ana County.

A lot of New Mexicans are in tune with the agricultural community and business in our state. But many, myself included, don't have a full grasp of agriculture and its impact. Our hope is to help

bridge that information gap. Most Las Crucens know New Mexico State University got its start as a land grant university and agricultural education has always been at the core of NMSU's mission. Not quite as many realize the state's department of agriculture is located on NMSU's campus, or the state's 4H organization is also headquartered here. NMSU's cooperative extension provides outreach in all 33 New Mexico coun-

Did you know know the value of agriculture sector production in New Mexico, which includes crop production, animal products and production, forest products sold, the value of farm dwellings and other farm income has totaled more than \$3 billion for the past four years? You may have heard we are now the leading state in America when it comes to pecan production. But did you know we are only fourth among states when it comes to acreage? That's because we have such a high yield, at more than 90 million pounds per acre. Texas has nearly three times the acreage of New Mexico (112,000 to 46,000), yet it produces barely one-third

of the pecans (33.6 million pounds to New Mexico's 91.1 million pounds). And many may know the legend of Fabian Garcia, a Mexican immigrant who was part of NMSU's first ever graduating class, and is renowned for his work in developing chile, and who last year finally earned national recognition as the first Hispanic and the first New Mexican inducted into the National Agricultural Center's Hall of Fame. But did you know another NMSU ag legend, Fabiola Cabeza de Baca Gilbert, is credited with inventing the U-shaped fried taco shell?

I mean, arguably, the national phenomenon of Taco Tuesday might not even exist without the contributions of our NMSU Aggies. And, more seriously, the tables of New Mexicans would be much barer without the hardworking men and women of agriculture in our state.

Sincerely,

**Richard Coltharp** Publisher Las Cruces Bulletin





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# Ag buildings will change face of NMSU campus

**By MIKE COOK** 

Las Cruces Bulletin

**▼** ven though agriculture is in the very DNA of New Mexico State University - part of its mission, in fact, as one of the nation's more than 100 land-grant universities - there hasn't been a single new ag building built on the Las Cruces campus for a quarter century.

That's about to change. Thanks to a general obligation bond passed by almost two-thirds of New Mexico voters in the November 2018 general election, about \$25 million will be generated for new construction to include the NMSU Food Science Learning and Safety Facility, the Biomedical Research Building and the Feed Milling and Processing Facility, all south of the horseshoe on the university's main campus.

That strong statewide support shows "the interest of the electorate in the importance of agriculture," said Rolando A. Flores,



Rolando Flores, dean of the NMSU College of Agricultural, **Consumer and Environmental Sciences** 

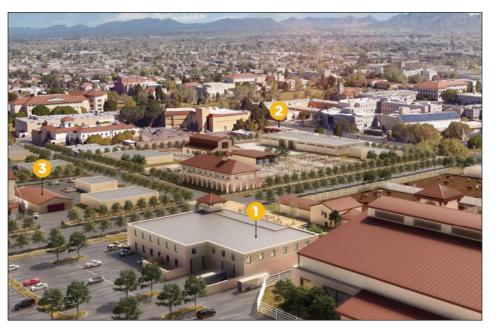
dean of the NMSU College of Agricultural, Consumer and Environmental Sciences (ACES). It also demonstrates support of NMSU's efforts "to develop valueadded alternatives and options" for New Mexico agricultural products, the dean said.

The GO bond-backed facilities will complement NMSU's new Center of Excellence in Sustainable Food and Agricultural Systems established by the 2019 legislature, Flores said. The center will leverage funding from a number of sources to create three interdisci-

plinary faculty positions to address food safety and bioprocessing and sustainable water systems, according to ACES. NMSU is already known worldwide for its work with semi-arid environments as well as pasture and cattle management, Flores said, and is a leader in the production of crops like pecans and onions.

Taken together, the facilities will become "an engine for economic development," the dean said, help protect the environment and have important social impact. They also will create new research and partnership opportunities with private businesses and other universities and provide new and expanded fields of study with additional faculty for ag students. And, they will create interdisciplinary programs that will link students, faculty and staff in ACES and other NMSU colleges, including engineering and business.

"Las Cruces is going to be a very important place not only in the Southwest but in the nation and world-



This rendering from Parkhill, Smith and Cooper shows how the new agricultural buildings will fit into the campus at New Mexico State University. 1 is the food science, security and safety facility; 2 is the biomedical research center; 3 is the animal nutrition and feed manufacturing facility that will be built in part with general obligation bond funds approved by New Mexico voters in November 2018.

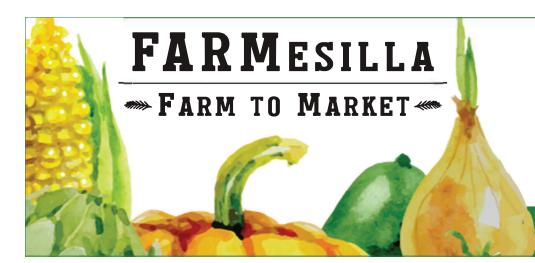
wide," Flores said. "We are really grabbing the future. It's almost like the stars are aligning. Everyone is going to know about NMSU as a hub for agriculture and high-tech agriculture," he said.

Flores said groundbreaking on the new buildings will likely be in the fall of

2020, with construction taking about two years.

NMSU will receive more than \$31 million total in capital outlay projects as a result of the GO bond election. That includes the \$25 million for the main campus, plus \$6.2 million in infrastructure upgrades, renovations and construc-

tion for Doña Ana Community College as well as NMSU branch colleges in Alamogordo, Carlsbad and Grants. Voters approved a total of \$128 million in GO bonds for all New Mexico colleges and universities, with NMSU receiving more than any other university in the state.



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# **Youth Ranch Camp offers** unique opportunity

once-in-a-lifetime experience is available to 30 youth, ages 15-19, at the New Mexico Youth Ranch Management Camp, June 7-12 at the CS Ranch in Cimarron.

Teens will have an opportunity to learn the agricultural science and technical know-how behind ranching at the camp conducted by New Mexico State University's College of Agricultural, Consumer and Environmental Sciences.

"This year, we have reserved three openings for out-of-state youth," said Sid Gordon, NMSU Extension agricultural agent in Otero County. "Last year we had youth from Illinois and Maryland attend the camp, which as a great experience for them and our New Mexico youth."

Going to camp has been a lifechanging experience for the 200-plus youth who have participated in the annual event since the inaugural camp in 2011.

"They don't participate in recreational activities and crafts, but receive college-level instruction in managing a ranch," said Jack Blandford, NMSU Extension agricultural agent in Luna County. "They have gained a greater appreciation of the science and opportunities in agriculture. It is a win-win for our aging agricultural industry with more young

people having interest in going into this type of work."

Gordon and Blandford are co-chairs for the ranch camp committee.

Collaboration between NMSU Extension specialists, county Extension agents and members of the ranching industry provides an opportunity for youth to learn about the many aspects of ranching.

They are introduced to what it takes to run a ranch, from financial statements and marketing strategies, to producing quality beef, and managing natural resources and wildlife. College-level, hands-on curriculum provides participants with information to develop a ranch management plan for a scenario similar to the host ranch.

CS Cattle Company's 130,000-acre ranch at the foot of the Sangre de Cristo mountain range near Cimarron has hosted the camp for the past three years.

"This location allows our camp-



participants learn how to measure the amount of range forage available for grazing. April 10 is the deadline for application for the 2020 ranch camp at CS Ranch near

> ers to see a real-life working ranch," Gordon said. "The CS, a cattle and hunting operation, has been family owned and operated since 1873."

Online application deadline is April 10. Visit https://nmyrm.nmsu.edu/ for more information and to apply.

Completed applications will be reviewed by the committee and applicants will be notified by April 17. The registration fee of \$300, or payment arrangements, is due on or before May 1.

Scholarship opportunities are available to those invited to the camp. Additional information is available once camper has been accepted.

### 4-H has deep roots in New Mexico

By BAYLEE BANKS

-H has provided New \_Mexico's youth with non-formal educational programs for more than 100 years.

Beginning in 1912, the New Mexico Agricultural College held meetings and educational talks with voung children on a Santa Fe Railway train carrying livestock and farm exhibits. Since then, the 4-H youth development program has grown exponentially

both state and nationwide. Today, over 30,000 youths participate in 4-H clubs around the state and 7 million youths are involved globally, making 4-H the largest youth organization in the world.

The 4-H youth development program teaches 9- to 18-year-olds basic values and essential life skills. The program also emphasizes the importance of contributing to environmental education, participating in

community service, and most importantly, having fun. The program offers membership through peer support, year-round community clubs, specialinterest and short-term groups, school enrichment programs, leadership experiences, schools that focus on caring for livestock and farm animals, as well as

> events, camps and activities.

New Mexico State University Cooperative Extension Service (CES), which provides outreach to deliver

research-based knowledge to the community, houses the 4-H youth development program. Within every New Mexico county is a county extension office and a 4-H program. According to 4-H Youth Activities Specialist Amy Zemler, Doña Ana County's 4-H program includes 18 4-H related clubs, each offering different opportunities for kids, such as shooting sports and showing animals at the

SEE 4-H, PAGE 7













WITH QUALITY



# **Extension: NMSU's statewide outreach**

By BAYLEE BANKS NMDA

Between the rise of new technology, constant environmental challenges and the inevitable economic flux, it's safe to say that the agriculture industry is always changing, and with it, the information on how to adapt to such changes.

For those whose livelihoods depend on accurate research to care for their farms and ranches, produce

safe and healthy products for consumers, prepare for



ACES
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natural disasters and ensure the overall wellbeing of others, proper education and awareness of changing conditions and policies can be crucial. Extension faculty can provide the knowledge and resources needed to keep industry workers and the people of New Mexico accurately informed.

Part of New Mexico State University's College of Agricultural, Consumer and Environmental Sciences, Cooperative Extension Service (CES) provides research-based knowledge through programs aimed at educating the people of New Mexico in areas related to agriculture and other subjects. Such areas include animal science and natural resources, economics, family and consumer sciences including health, plant

> sciences, 4-H youth and innovative media research and extension. The

CES operates through the NMSU College of ACES, where agriculture-related research is published and shared with the community through outreach programs and events.

A county extension office is located in each of New Mexico's 33 counties, employing agents who special-



NMSU PHOTO COURTESY OF COOPERATIVE EXTENSION SERVICE

#### NMSU's Cooperative Extension agents are present in all 33 New Mexico counties.

ize in areas relevant to the needs of each county. The number of agents working in each county extension office is dependent upon the size and population of that county, meaning that counties such as Bernalillo and Doña Ana employ more agents than lower-populated counties like Harding and De Baca.

The Doña Ana County Extension Office in Las Cruces currently employs five CES agents, each knowledgeable in different areas, such as nutrition and food safety, health and wellness, gardening, agriculture and youth development.

According to Doña Ana County Program Director Teresa Dean, the ways in which outreach and educational presentations are conducted by each extension office across the state depends on the interests of each county.

"Since gardening is such a prevalent activity among

Doña Ana County citizens, the Doña Ana County Agronomy and Horticulture Agent focuses heavily on outreach opportunities that allow him to provide educational workshops as well as connect with gardeners at events like health fairs and home and garden shows," Dean said.

One such interest prevalent across the state of New Mexico is the newlyexplored field of industrial hemp. In December of 2018, the Hemp Cultivation Rule went into effect. The New Mexico Department of Agriculture issued hemp cultivation licenses for the first full year in 2019. Accurate information regarding regulations, eligibility and how to obtain a grower's license can be easily accessed through each county extension office, as extension is closely connected with the New Mexico Department of Agriculture.

In an effort to inform those interested in growing hemp, Doña Ana County

**Extension Horticulture** Agent Jeff Anderson hosted the first-ever workshop for industrial hemp producers in May of 2019. The conference provided information about the history of hemp, the difference between cannabidiol (CBD) and tetrahydrocannabidiol (THC), regulations and licensing, and several other topics. The Second Annual NMSU Hemp Conference will take place Friday, May 22, at the Las Cruces Convention Center.

CES's presence across the state has helped keep the citizens, farmers and ranchers of New Mexico updated and informed about the ever-changing agriculture industry. Extension offices in every county continually provide accurate, researchbased knowledge in an effort to improve overall quality of life for agriculture industry workers and the citizens of New Mexico. To find out more about CES and to locate your county's extension office, visit extension.nmsu.edu/.

#### 4-H. CONTINUED FROM 6

county and state fairs.

"New Mexico 4-H is an excellent program for youth that provides leadership and personal growth opportunities that may not be offered in other activities or organizations," Zemler said.

Across New Mexico, 4-H is much more than a traditional youth program. Every spring, the program, along with CES and the New Mexico Farm and Livestock Bureau (NMFLB), invite fourthgrade classrooms across the Las Cruces and Doña Ana County areas to the New Mexico Farm &

Ranch Heritage Museum for a field trip. All Doña Ana CES agents participate by providing educational, agriculture-related information to students. Over 1,000 fourth-grade students attend the annual event.

4-H, CES and NMFLB also join forces during fair season, inviting schools across Doña Ana County to visit the Southern New Mexico State Fair. According to Doña Ana County Program Director Teresa Dean, individuals within the local agriculture community have always been aware of the large number of students that visit the State Fair, but only recently began

to recognize the missed opportunity to teach these students about where their food comes from.

"Because of this, a committee headed by the New Mexico Agriculture in the Classroom program, a non-profit educational outreach program funded primarily by NMFLB, was formed to develop AgVenture Days. The program provides a structured educational component to the fieldtrip that encompasses a variety of stations that bring agricultural awareness to the students." Dean said.

For more information about 4-H, visit https://aces.nmsu.edu/4h/.



PHOTO BY CHERYL BUTTERFIELD, 4-H VOLUNTEER AND LEADERSHIP SPECIALIST

2019 State 4-H Officers pictured with Under Secretary of Marking and Regulatory Programs Greg Ibach and New Mexico Secretary of Agriculture Jeff Witte at the 2019, Washington, DC Leadership Experience.

# New Mexico adds hemp to ag portfolio

#### By MIKE COOK AND RICHARD COLTHARP

Las Cruces Bulletin

ast year, during New Mexico's first full year **d**of issuing hemp cultivation licenses, more than 400 were assigned, covering more than 8,000 acres.

The state has the potential "to produce some of the best in the country" because of its climate, elevation and abundance of sunlight, according to New Mexico State University Doña Ana County Cooperative Extension Service Ag Agent Jeff Anderson.

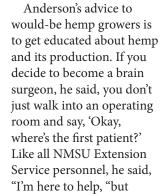
Anderson frequently receives calls from people

who have bought land in the area with plans to plant hemp but know little or nothing  $about \ grow\text{-} \ \textbf{Jeff Anderson}$ ing or har-



vesting the crop except that it could return a high yield on investment. Most aren't aware it likely will cost \$5,000-\$10,000 an acre just for the plants, Anderson said, and that there will be additional costs for permits, water, fertilizer, harvesting, drying, processing, etc.

"You could lose your shirt," he said.



Analysis of hemp plants is also important, Anderson said. Without it, growers won't know what kind of plants they have. Hemp plants with more than .3 percent delta 9 tetrahy-

I'm not your full-time

instructor."

SEE **HEMP**, PAGE **9** 



**COURTESY NMDA** 

Here are some hemp plants growing at Pebble Labs in Los Alamos.

#### **NM HEMP FACTS**

- 2019 was the first full year of New Mexico Department of Agriculture (NMDA) licensing hemp growers in
- There are two types of hemp cultivation licenses: 1) Annual field production for annual hemp crops; and 2) continuous (primarily indoor production where hemp plants are maintained throughout the year)
- In 2019, NMDA issued 276 annual licenses (including 23 in Doña Ana County), covering 7,540 acres

- In 2019, NMDA issued 132 continuous licenses (including 24 in Doña Ana County), covering more than 8.3 million square feet
- Per the state's hemp cultivation rule, "hemp" means the plant cannabis sativa L. and any part of the plant, whether growing or not, contains a delta-9-tetrahydrocannabinol (THC) concentration of no more than three-tenths percent (.3 percent) on a dry-weight basis.
- Doña Ana County has seen an increase in hemp-related jobs in from businesses such as Rich Global Hemp and 420 Valley LLC.
  - During the 2019 legislative session,

House Bill 581 Hemp Manufacturing Act, sponsored by state Rep. Derrick J. Lente, D-Rio Arriba, Sandoval and San Juan, was passed and signed into law by Gov. Michelle Lujan Grisham. The legislation grants NMDA and the New Mexico Environment Department the regulatory authority over manufacturers, processors, labs, researchers and plant breeders.

• The rule accompanies statutory language that provides NMDA specific administrative authorities related to the licensing and inspection of laboratories testing raw hemp for regulatory purposes, as well as the licensing and inspection of

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persons breeding hemp that may possess plants greater than .3 percent and less than five percent THC.

"Being the first year of the hemp program, 2019 was challenging, and it was a learning experience for many involved," said New Mexico Agriculture Secretary Jeff Witte. "I anticipate growers will take what they learned last year, and 2020 will be a productive year. The introduction of the Hemp Manufacturing Act last year should allow for many more value-added opportunities in the state, which should lead to economic growth."

Source: NMDA



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#### **HEMP, CONTINUED FROM 8**

drocannabinol (THC), the chemical compound that gives cannabis its medical and recreational value, are considered marijuana. Of course, marijuana is currently illegal under federal law and, at least for one more year, under state law.

An effort to legalize recreational marijuana in New Mexico failed to make it to a floor vote in the 2020 legislative session, but proponents have said it's likely to come up again in 2021.

Even though you can't get high on hemp, it long suffered from a form of guilt by association. If you laid hemp and marijuana side by side, you couldn't tell the difference, because they are the same basic plant, cannabis.

A New Mexico agronomist once compared the hemp confusion to green chile. We all know some green chile is much hotter than others. But if you laid a mild green chile and a hot green chile side by side, you couldn't

tell the difference. Not until you bit into each, that is.

The visible similarity between hemp and marijuana can create some serious questions. Picture a farmer with a truck full of hemp going through a Border Patrol checkpoint. If it's marijuana, the Border Patrol has a big bust. If it's hemp, there should be no issue. Except, telling the difference is not easy.

The plants themselves add to the complexity.

Only female cannabis plants produce THC. Also, Anderson said, cannabis plants are hermaphroditic and, under certain stresses, can change sexes.

The DAC Extension Service's held its first ever Hemp Workshop last spring in Las Cruces. The second annual conference will be May 22, at the Las Cruces Convention Center.

One of the presentations at the Extension Hemp Conference was on the success of hemp production in Nevada. When he visited a hemp farm during a cannabis conference in New Mexico to have the best."

Pahrump, Nevada, in 2017, Anderson said, plants were being grown in popup tents. When he returned a year later, the farm had a built and filled a huge warehouse, Anderson said, and had tripled its crew.

Other presentations at the Extension Hemp Workshop included the history of hemp, the business and growing of hemp, the challenges, its pests and pathogens, legal hemp in New Mexico, hemp products (which include food, a fiber stronger than cotton, fuel and building materials, among many others) and the state's medical cannabis program. Presenters included specialists from the New Mexico and Nevada Cooperative Extension Services, NMSU, the New Mexico Department of Health, ag industry professionals and a hemp farmer.

"It's an exciting time," Anderson said. "So many things are happening. It's very dynamic right now. We want

#### **CANNABIS DEFINITIONS AND HISTORY**

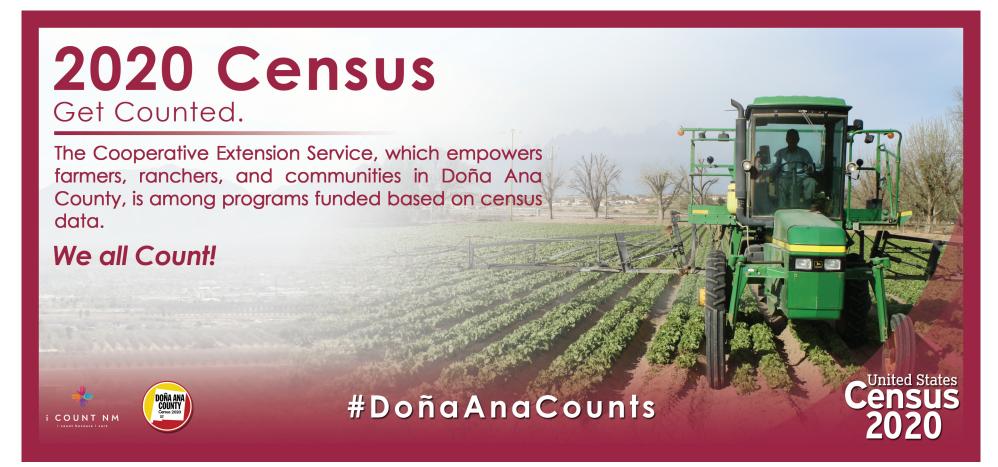
In modern nomenclature, the biggest difference between hemp and marijuana is that hemp won't get you high.

The two are different names for the same plant: cannabis (genus) sativa (species). The difference comes in its breeding and use. Marijuana, the dried buds, leaves and stems of the female cannabis plant, contains a much higher percentage of delta 9 tetrahydrocannabinol (THC), the psychotropic chemical compound used medically, recreationally and spiritually around the world. Hemp contains no more than 0.3 percent

of THC and has a higher concentration of the chemical compound cannabidiol (CBD), which has no apparent psychotropic impact and may have anti-anxiety and anti-psychotic effects. CBD has not been declared "generally recognized as safe" by the federal Food and Drug Administration.

Industrial hemp is cannabis sativa grown for use as fiber, paper, textiles, paint, plastics and other commercial applications.

"Although hemp and marijuana are derivatives of the same plant species, they are two completely different strains," is how the University of North Dakota Law Review says it. In simplest terms, cannabis with 0.3 percent or less of THC is hemp and with more than 0.3 percent THC is marijuana.



#### NMSU Arrowhead Center's business success spotlight: Backyard Farms

By CASSIE MCCLURE

't's a plot of land next to the First Christian Church that appears unassuming, especially in contrast with Las Cruces High School's modern architecture, but if you look closely, you can see a simply built Johnson-Su bioreactor composter creating rich soil for the garden and an outline sections of land ready to grow plants.

For Rachael Ryan, owner of Backyard Farms, the land is a piece of a larger network to cultivate and actively improve lives and farming in Las Cruces, New Mexico. To get from blooming ideas to a fullfledged business, Ryan went through the programs at New Mexico State University's Arrowhead Center.

"First, I had to learn about business to grow Backyard Farms to where it is now," said Ryan, who is a Ph.D. candidate at NMSU with a background in working as a population geneticist.

In 2017, Ryan joined Studio G, a business accelerator providing free services like workshops on marketing and accounting. That same year, Backyard Farms became a winner of Arrowhead Center's Aggie Shark Tank competition. After that, Ryan went through the AgSprint, a six-week incubator for agriculturally focused businesses to get on the fast track of success.

"I had no business experience. For example, I didn't know what a balance sheet was. AgSprint was like going back to grad school," she said.

Ryan delved into learning as much as she could from the business aspect - the customer discovery, marketing, budgets - to create a sustainable model that could support nonprofit efforts, like working with Las Cruces High School students to get their hands dirty. The students were able to build a working composter and chicken tractor for the garden.

Kristin Gustine, an environmental science teacher at Las Cruces High School, said that many students had never thought about growing their own food, or had a conceptual idea of that cycle in their lives.

"Even for high schoolers, they are more likely to eat a new food if they've grown it. It inspires them to learn the story behind their food," she said.

You might have seen more of the Backyard Farms story if you've walked into a Las Cruces local foods market and had a clear carton of speckled mini eggs catch your eye. Those quail eggs are another component of the business, one that's even garnered it global attention. In October 2019, the eggs were served at a charitable dinner event in a collabo-



NMSU PHOTO BY CASSIE MCCLURE

Racheal Ryan, owner of Backyard Farms, stands next to the mobile chicken tractor that students from Las Cruces High School built. To get from blooming ideas to a full-fledged business, Ryan completed small business-focused programs at New Mexico State University's **Arrowhead Center.** 

ration with El Paso's own Taft-Díaz and Mexico City's world-famous restaurant Puiol.

But Backyard Farms is not just focusing on the global marketplace, it's also sharing a bounty with those in need. Some of the produce harvested has been donated to local school programs and food banks at First Christian Church, El Calvario United Methodist Church, and El Caldito Soup Kitchen.

For Ryan, Backyard Farms is also about adapting what comes out of the garden to where it's planted, like cultivating lettuce that can thrive in July.

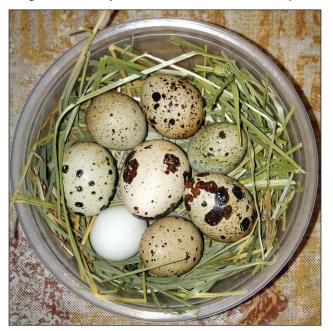
"It's about breeding hardiness because our environment is harsh, not just in the lack of water but low humidity, windstorms and salty alkaline soil," said Ryan. "Working with Arrowhead Center has opened many doors, like access to marketing, accounting, funding and legal help that small businesses need but often can't afford in the early stages. Backyard Farms shows that an agriculture business can sustain conservation."

Along with AgSprint, Arrowhead Center offers programs for businesses in other industries, such as healthcare and clear energy,

along with initiatives that focus on ventures from a variety of sectors.

"Arrowhead Center can help businesses get started, no matter where they are in the journey or what their goals are," said Kathryn Hansen, director of Arrowhead Center. "Our programs can kick off a whole network of opportunities."

For more information for growing a business or even a business idea, check out the business accelerator programs at NMSU's Arrowhead Center at https:// arrowheadcenter.nmsu.edu/ program/sprints/ and https:// arrowheadcenter.nmsu.edu/ program/studio-g.



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# 'Never waste a crisis': Water lawsuit could lead New Mexico to better water management

"settlement negotiations get

serious soon." The Supreme

Court has ruled the federal

government also has an

As part of a settle-

ment plan, King said New

management scheme that

is adaptive and flexible" to

changing climatic condi-

tions. That could lead to

regional water planning

out the arid world."

efforts, he said, and might

New Mexico's current

water management "means

King said. The state's water

managers are "very much

used to doing things the way

they have always done," he

said. They don't consider an

increasingly arid climate or

rising temperatures, and that

"makes what water we do

have go less far," King said.

For the most part, cur-

rent water management

practices in New Mexico

mean pumping water out

of the ground and giving it

we're stuck in the past,"

have "implications through-

Mexico could craft a "water

the side of Texas.

interest in the lawsuit, on

By MIKE COOK

Las Cruces Bulletin

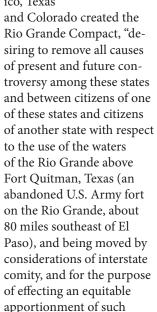
That's the advice of long-time NMSU engineering professor and water expert J. Phillip King to New Mexico in its ongoing legal battle with Texas over water.

King's further advice to the state and to local governments (including the City of Las Cruces) that manage water is to "recognize what is happening and develop a resilient water management plan" that considers climate change and the "protracted drought" that has affected the climate of the Southwest since 2000.

Texas filed a lawsuit in 2013 claiming New Mexico's water management practices have depleted the water Texas is entitled to as part of the Rio Grande Project, which was authorized by the U.S. Department of the Interior in 1906. The U.S. Bureau of Reclamation constructed the project, including Elephant Butte

Dam, to store the waters of the Rio Grande for use by the region's farmers.

In 1938, New Mexico, Texas



The water lawsuit is now before the U.S. Supreme Court and could continue for several more years, King said, although he is hopeful

waters," according to the

compact.



**Phillip King** 

a shot of chlorine, he said.
The state needs to look at surface-water treatment in the lower Rio Grande Valley, he said, including the desalinization of brackish groundwater.

And because of the ongoing drought that began 20 years ago, the state needs to recalculate average

ing drought that began 20 years ago, the state needs to recalculate average precipitation to "bring normal down," King said. The current notion within New Mexico's water culture of "use it or lose it" must be replaced with an agreement

across the board – including farmers, industry and all water-use groups – to cut back on the use of water. Residential water users also have an important role to play in conservation, he said, including converting to low-flow toilets and replacing green lawns with xeriscaping.

"We basically need to start living like desert people," King said. "We have a responsibility to use water wisely." That tends to happen more when the cost goes up, and that's going to happen, King said.

"Water's going to get more expensive," he said. "There's no two ways about it."

King said an acre of agricultural land uses more water than it did 50 years ago because of higher yield crops and the drive to reduce overall acreage. Additional incentives to farmers can help reduce how much water they use, he said.

NMSU is primed to take the lead in water technology, he said. It's home to the New Mexico Water Resources Research Institute and has a water science and management program and about 200 researchers working on state, national and international water issues. "We're up to our gills in water," King said.

Even though the water situation in New Mexico has reached the crisis stage, King said, he doesn't get despondent about it. "Even if your plane is going down in flames, you can still pilot it to the ground. Doing



LAS CRUCES BULLETIN PHOTO

As most Las Crucens know, scenes like this of a flowing Rio Grande only happen for certain periods of the year, as water is controlled at the Elephant Butte Dam as part of the Elephant Butte Irrigation District system.



**COURTESY PHOTO** 

Agriculture in New Mexico is dependent on planned and controlled irrigation. As much as 90 percent of the water used in New Mexico goes to agriculture.

things the way we've always done them is going down in flames," he said. In the way it manages water, King said, New Mexico must "evolve and adapt intelligently."

King has been on the NMSU faculty since 1990 and is associate head of the Civil Engineering Department. His areas of specialty are water resources and agricultural engineering, along with engineering management. His research focuses primarily on the

water resources of the Rio Grande in New Mexico, Texas, Colorado and the Republic of Mexico. He has a bachelor's degree in civil engineering from the University of California at Berkley, a master's and a Ph.D. in agricultural engineering from Colorado State University and an MBA from NMSU. He joined the NMSU faculty in January 1990.

"I came for the water," King said.



PHOTO COURTESY NMSU

Prior to the 1916 completion of the Elephant Butte Dam, farms along the Rio Grande were subject to frequent and devastating floods.



COURTESY PHOTO

A chile field in Hatch, world famous for its wondrous crops. New Mexico chile in 2018 generated nearly \$54 million in value.





COURTESY PHOTO

Cotton has long been a staple crop in New Mexico, generating more than \$53 million in value in 2018.



COURTESY PHOTO

All crops in New Mexico combined to generate more than \$709 million in value in 2018.



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# Chile, Garcia vital part of local ag legacy

#### **BULLETIN REPORT**

You can't talk agriculture in southern New Mexico without talking about green chile.

New Mexico State University is home to the Chile Pepper Institute is the only international, nonprofit organization devoted to education and research related to Capsicum, or chile peppers. Established in 1992, the institute builds on the research of chile peppers since Fabian Garcia began standardizing varieties in 1888. The Institute is in Gerald Thomas Hallon the NMSU campus in Las Cruces.

Garcia is considered the father of the New Mexico chile industry. He was born in 1871 in Chihuahua, Mexico and graduated in 1894 as a member of the first graduating class of New Mexico College of Agriculture and Mechanical Arts (now NMSU). He died in 1948 from complications of Parkinson's Disease.

Among the many events that carry on Garcia's legacy is the state chile conference.

The Chile Pepper Institute hosted the 2020 New Mexico Chile Conference,



NMSU's Chile Pepper Institute hosted the 2020 New Mexico Chile Conference in February in Las Cruces.

which took place in Las Cruces in early February.

The conference included experts on topics including developing and improving the New Mexico chile industry's sustainable competitive advantage, molecular advances in breeding, the H2A program, updates on the New Mexico Chile Certification Program as well as processing and pest management breakout sessions.

Vendor booths in the convention center hallway for the conference included pest control, packaging, fabrication, fertilizer, financing, soil and communications.



Fabian Garcia

The conference honored Fabian

For more information about chile or the institute, call 575-646-3028. To download the Chile Pepper Institute catalog, email cpi@nmsu.edu.



**BULLETIN PHOTO** 

The combined varieties of chile produced in New Mexico in 2018, the most recent full year for statistics, generated \$53.8 million of value, a 20 percent increase over the prior year.



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# Wine vital to state's culture and agriculture

#### By RICHARD COLTHARP and JESS WILLIAMS

Las Cruces Bulletin

t is one of our planet's most familiar commodities and has been around seemingly forever.

Wines have been made from plums, apricots, cherries – even rice (although Japan's sake, often called "rice wine," is technically not a wine because, well, rice is not a fruit.)

Wine has long been an important part of many cultures. We use it to toast at weddings, we use it as a heartfelt gift, we even use it as part of solemn worship services.

And mostly, we mean the wine made from grapes.

While California gets a lot of love for its wines, often compared favorably with the great wines from France or other parts of Europe, New Mexico is no newcomer when it comes to wine. You don't often hear the terms "rebel" and "monk" in the same sentence, but the New Mexico wine industry may owe a debt to rebel Franciscan monks in the early 1600s.

In the 1590s, when Spain began settling and exploring the Land of Enchantment, missionary work was part of the effort. That meant a need for sacramental communion wine.

The wine was imported from Spain, where grapes were big business. To protect the huge revenue generated by wine exports, Spain outlawed removal of Spanish grapevines.

The rebel monks had other ideas, and began sneaking grapevine cuttings on the boat trips from Spain to the new world. Monks first planted the vines near Socorro, New Mexico, around the 1620s. That Mission Grape varietal survives to this day.



COURTESY PHOTO

The history of wine in New Mexico goes back 400 years, and today, the state's wineries continue and expand the tradition, while providing a wonderful variety of venues for events and relaxation.

By 1884, New Mexico Territory was among the top wine producers in America. That got another boost in the early 20th century – particularly in southern part of the state – from the agricultural research from New Mexico A&M (now New Mexico State University).

Flooding on the Rio Grande in 1943 washed out vineyards statewide, but in the late 1970s a few hardy vintners got things going again. The rising popularity of wine in the past decade or two has fueled the industry once again.

Here along the Rio Grande

in southern New Mexico, the rituals of wine are celebrated in a number of venues.

With many sporting both indoor and outdoor event spaces, wineries offer visitors unique views, service and space for capturing special occasions in close proximity to nature and vineyards.

Southern New Mexico's temperate weather – particularly in the autumn months – lends itself to venues that offer both indoor and outdoor amenities.

Wineries are popular event venues because of the unique spaces they offer and – in many cases – the astonishing views from down in the fertile valley looking up and out to the mountains and New Mexico's signature azure skies.

Winery owners are no strangers to special events, and they can help with everything from the event setup to a wedding rehearsal and reception.

Gordon Steel, owner of Rio Grande Winery south of Mesilla, said he works with about 25 couples a year to stage their weddings and receptions. He said he and his fellow winery owners take great pains to create settings that lend themselves to memorable events.

"You think about it, a winery is a place to relax and let go of what's going

on in your life for a little while," Steel said. "When you set up a good place to enjoy a glass of wine, it makes sense that the same space would work for larger gatherings, whether it's a wedding, a baby shower or a bridal shower. It's a place to relax and be in nature. It's an atmosphere no walled-in reception hall can match."

Mesilla Valley wineries boast nine locations.

They include, in Las Cruces: Fort Selden Winery, Amaro Winery, Heart of the Desert Pistachios & Wines (inside the New Mexico Farm & Ranch Heritage Museum), Rio Grande Vineyards & Winery, Luna Rossa Winery, D.H. Lescombes Winery & Bistro; in Mesilla, Heart of the Desert Pistachios & Wines (on the Mesilla Plaza); in Anthony, Sombra Antigua Vineyard & Winery and Mesa Vista Winery Tasting Room; and in La Union, La Viña Winery.

In 2017, the most recent year for which statistics are available, New Mexico counted 378 grape farms and harvested 1,280 acres. By comparison, New Mexico farmers harvested 7,900 acres in chile in the same time period.



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