

Guide to Arizona Agriculture



December 2018



Douglas A. Ducey
Governor, State of Arizona



From seed funding to sustainable growth, every economy has its roots in agriculture. The importance of agriculture and its contributions to the citizens and the state of Arizona cannot be overlooked. Agriculture is estimated to be a \$23.3 billion industry, resulting in the creation of 138,000 jobs. Representing three of Arizona's "5 C's" – cattle, citrus and cotton – agriculture is a fountain of economic opportunity for tens of thousands of Arizonans and a source of sustenance for millions more.

My pride in our state's agricultural achievements has no words. Arizona is the 3rd largest producing state for fresh market vegetables, and it is 4th in the country in acres of organic vegetables. Arizona-grown fresh produce shipped 112 million cartons last year. And we're still leaders in making the country shine – our beautiful rosebushes will represent 75% of the national market in the near future.

Additionally, our state produced 455.7 million pounds of red meat and more than 4.2 billion pounds of milk. Arizona takes pride in our farmers and ranchers and is always striving to lessen their regulatory burdens so that citizens can pursue their dreams, expand their operations, and reach for the stars.

The Grand Canyon State has one of the lowest corporate tax structures, touts a young and healthy work force, and is the national model when other states need new ideas. So, whether a business decides to begin in this great state, expand here, or relocate from somewhere else, Arizona is open for business.

If you're looking to learn more about our state's agriculture industries, find information that can enhance your life, or considering relocating to Arizona, this *Guide to Arizona Agriculture* is for you. Enjoy.

A handwritten signature in black ink that reads "Douglas A. Ducey". The signature is fluid and cursive, with a distinct script style.



December 2018



Mark W. Killian
Director, AZ Dept of Agriculture



Did you know, Arizona's agriculture industry generated \$23.3 billion to our state's economy and directly and indirectly supported more than 138,000 full and part-time jobs, employing more than 162,000 unique workers?

Did you know that Arizona grows some of the best alfalfa, red durum wheat (for pasta) and pecans? Arizona is the second leading producer of cantaloupes, honeydews, pistachios and dates for the nation.

Did you know that Yuma, Arizona is the “Winter Salad Bowl” capitol of the United States – when it provides 90% of all leafy greens to the nation?

Did you know Arizona agricultural producers export to over 70 countries?

Not only does agriculture supply our food, it's vital to the Arizona economy, and provides open space, wildlife habitat and efforts to protect and conserve our natural resources. As Thomas Jefferson stated, "*Agriculture is our wisest pursuit because it will in the end contribute most to real wealth, good morals and happiness.*"

A large part of the Arizona Department of Agriculture's (AZDA) mission is to support and promote agriculture in this great state. We take that job seriously. If you are interested in learning about Arizona agriculture, we can help.

The Guide to Arizona Agriculture provides you with a well-rounded perspective into Arizona agriculture and illustrates how vital it is to society. Contact the AZDA at agriculture.az.gov to learn more about agriculture and the AZDA.

Sincerely,

Mark W. Killian



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Open for Business

The Grand Canyon State boasts natural beauty and wonderful weather. It also provides an excellent climate for business. Located in the Southwest, Arizona has access to international and interstate markets, many within a day's drive. The competitive tax structure and available workforce add to the benefits for Arizona business.

The well-planned infrastructure provides quick access for products to quickly go to market, as well as for supplies to come into the state. Arizona offers more than 66,000 miles of highways, over 40 public transit systems, two Class I railroads and more than 80 airports. Companies have access to 65 million consumers through the transportation system. The state's location gives proximity to some of the world's largest economies – Texas, Mexico and California as well as shipping ports on the West Coast.

Arizona has one of the lowest corporate tax structures in place at the rate of 4.9%.

Businesses find tax credit programs for manufacturing, research and development, renewable energy and the creation of quality jobs. Quality jobs are defined by the areas in which the business locates, based on average wages and health insurance.

The state's workforce tops 3 million and has a relatively young median age of 37. It is a Right to Work state and has some of the lowest labor costs in the country.

Whether a business decides to start, expand or relocate, Arizona is Open for Business.



Water in the Desert

There are four deserts in the Grand Canyon State leading many people to believe there is no available water in the state. Truthfully, Arizona acknowledged the water situation decades ago and planned for growth and protected its water resources.

The state is blessed with a network of rivers and streams including the Colorado, Verde, Salt, Gila, San Pedro, Santa Cruz and Little Colorado Rivers. There are also many tributaries that contribute to those rivers. Each watershed connects communities that are dependent on their flows for sustaining life and agriculture.

The past provides a foundation for efficient use and conservation of water. The Hohokam and other indigenous people used canals to divert water for crops and sustain communities. Modern water leaders work to share the water among various users: agricultural, municipal,

industrial, tribal and environmental users.

Leaders at all levels of government and the private sector have taken action for the sustainable use of Arizona's water supply. Other efforts provide storage capabilities above and below ground in an effort to save for future needs.

Agriculture uses water the same way it uses the land. Modern technology helps farmers and ranchers use what they need and no more. Water not used in the fields returns to the rivers and storage. Most importantly the water used by agriculture is not wasted; it provides food and fiber to the people of Arizona, the United States and many other countries.



Arizona Agriculture

Long before Arizona was a state, and before there was a United States, agriculture thrived in the region. Agriculture's history in the Grand Canyon State stretches back more than 4,000 years. Archaeological records show Indigenous people growing gardens to sustain their families.

When explorers traveled through the state in the early 19th century, they found people growing corn, wheat, barley and raising cattle. They also found one of the most amazing irrigation systems, one that is still used today. The Hohokam people built the canals to move water from the Gila and Salt Rivers to their fields. The canals were engineered to move the water at the correct speed to maintain the flow, without clogging the canals with silt and debris.

Since then, producers have found the diversity of Arizona's climate and soil supports hundreds of food crops, beautiful landscaped plants, poultry, swine and cattle for dairy and meat. Arizona agriculture exports vegetables, fruit, nuts, seeds, wheat, hay, cotton, eggs, beef and milk to 70 countries and across the U.S.

Today, agriculture in Arizona contributes more than \$23.3 billion to the state's economy. One study puts the number of jobs supported by agriculture at approximately 138,000, and the number of workers employed at 162,000.



Some of the many people that make agriculture work in Arizona include field workers, harvest crews, distributors, farmers, ranchers, fertilizer and pesticide suppliers, scientists, engineers, fuel companies and equipment dealers.

Arizona's climate provides year-round growing for hundreds of types of crops. Besides crops such as cotton, alfalfa and wheat, Arizona farmers raise numerous specialty crops. The specialty crop sector includes thousands of varieties from nursery plants to the fresh vegetables eaten every day. Leafy greens, cabbage, dates, melons, lemons, oranges, apples, potatoes and tomatoes are just some foods harvested from Arizona's nourishing soil.

The state also boasts a growing nut and date crop industry. Pistachio trees have a small presence in the Grand Canyon State, but the pecan business is developing quickly. The state has the largest pecan grove in the country and the largest date plantation in the world.

The animal industry, led by cattle ranching, dairy and dairy production, is the largest agricultural sector. The egg industry is growing as companies see the excellent economic opportunities. There are also facilities licensed for growing fish and shrimp.



Indigenous Farmers

Indigenous farmers predate Arizona statehood by several hundred years, with some areas going back centuries. The United States Department of Agriculture National Agriculture Statistics Service's census from 2012 paints a picture of indigenous farming and ranching.

Currently there are 18,475 indigenous farmers and ranchers operating in Arizona making up 57% of the agricultural operations in the state. They operate on over 20.6 million acres producing over \$86.7 million in direct agricultural sales.

The largest use of the agricultural land is used for animals including beef cattle, sheep, goats, fish and other animal products.

They grow a variety of crops including, but not limited to alfalfa, hay, corn, cotton, wheat, citrus, olives and potatoes. The average age of an indigenous producer is 58, virtually the same as their non-native counterparts. Unlike the rest of the state, women make up the largest number of indigenous producers.





Arizona Farm Bureau



Organized agriculture thrived in the area now known as Arizona hundreds of years before it was settled by current residents. Shortly after statehood in 1912, citrus joined cotton as a major commodity in the state. In 1922 the state's first dairy, Shamrock, opened in Tucson solidifying agriculture as a major economic player in Arizona. The different industries joined together to ensure strong representation in economic decisions and legislation.

Through the next 90 years, Arizona agriculture grew as more producers recognized that the fertile soil and substantial sunshine allowed for year-round growing of exceptional quality crops.

Today, Arizona ranks tenth in organic sales, third in lemon production, and during winter months, first for lettuce and other leafy greens. Arizona agriculture and agribusiness have more than a \$23.3 billion impact on the state's economy.



325 S. Higley Road, #210
Gilbert, AZ 85296
480-635-3605
azfb.org

› **The Arizona Farm Bureau was organized in 1921 to represent all agriculture: small, medium and large, animal, and organic, conventional and biotech farmers and ranchers.**

› **As the largest farm and ranch organization in Arizona, Arizona Farm Bureau projects the Voice of Agriculture in the state.**

ARIZONA FARMS AND RANCHES

26 Million
acres

\$23.3 Billion
is the size of
Arizona agriculture's
industry

40%
of farmers
are women



COUNTIES

Includes all counties

APPROXIMATE
ECONOMIC IMPACT

\$521 Million
export value

43%
exports outside of Arizona

Year-round
production



COUNTIES

Includes all counties

Arizona Beef Council



1401 N. 24th Street, Suite 4
Phoenix, AZ 85008
602-273-7163
arizonabeef.org

More than 30% of Arizona's 20,005 farms and ranches raise cattle, totaling almost 1,000,000 head.

Besides caring for livestock, a top priority for beef farmers and ranchers is conservation and stewarding the land, water and wildlife. Arizona's ranches, feed yards and dairies work together to make the best use of resources to raise nutrient-rich beef in a way that is sustainable for the future. In fact, sustainability is not a new concept: 54% of farms and ranches have been in the same family for three generations or more.

Beef provides 10 essential nutrients to Arizona families including zinc, iron, protein and B vitamins. Protein can help in maintaining a healthy weight, building muscle and fueling physical activity – all of which are important to a healthy life and disease prevention.

In Arizona, the beef community is more than cow-calf ranches, feed yards and dairies. It also includes cattle processing, finishing, leather and hide tanning.

- › ***The Arizona Beef Council, created in August, 1970, helps develop and maintain state, national, and foreign markets for beef and beef products.***
- › ***The Beef Checkoff Program funds education, research and promotion of beef in Arizona.***

Arizona Cattlemen's Association



Cattle and other livestock moved into Arizona over 300 years ago after conquistadors discovered the area. The cattle industry in Arizona plays a very important role in the overall economy of the state. For every 100 jobs in the industry, they support another 65 jobs outside of the industry.

Arizona ranches produce some of the best beef in America. This beef is exported both domestically and all around the world.

You will find cattle operations in every county in Arizona. These operations provide jobs for thousands of people in the state

and the economic impact is substantial. Almost every rural community in Arizona is dependent upon the cattle industry for its purchasing power driving their economies.

The Arizona cattle industry supports some of the most productive ranches in the world. Millions of dollars in range land improvement not only help to better the landscape but also improve the wellbeing of the wildlife found in abundance on these ranches.



1401 N. 24th Street, Suite 4
Phoenix, AZ 85008
602-267-1129
azcattlemenassoc.org

- › ***The Arizona Cattle Growers' Association was organized in 1904 to help create orderly, systematic laws to protect livestock and property.***
- › ***The Association is the only organization that exclusively represents Arizona's beef producing families.***

CATTLE INDUSTRY

8 Million

people could have been fed by Arizona ranchers in 2015

1.4 Billion

beef meals were raised by Arizona ranchers in 2015

Year-round
production



COUNTIES

Includes all counties

ARIZONA'S DAIRY
INDUSTRY REPORTED

4.2 Billion

lbs of milk produced per year

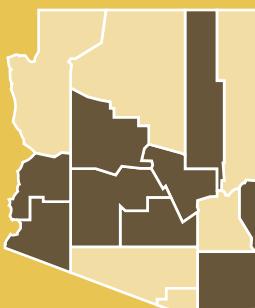
205,000

cows

48 Hours

for milk to get from
the dairy farm to the store

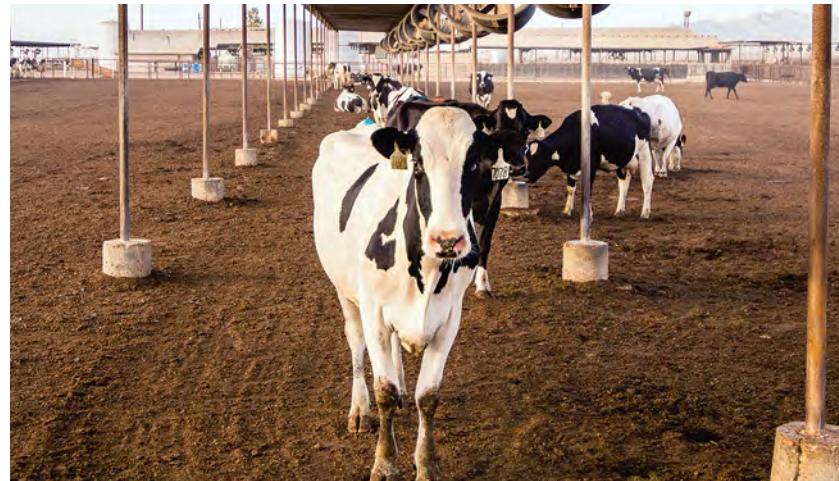
Year-round
industry



COUNTIES

Cochise, Gila, Greenlee,
La Paz, Maricopa, Navajo,
Pinal, Yavapai and Yuma

Dairy Associations



Founded in 1960, United Dairymen of Arizona (UDA) is Arizona's largest milk marketing cooperative. The cooperative merged two local dairy associations to ensure an adequate supply of fresh milk and dairy products of the highest possible quality for customers.

UDA's membership consists of approximately 89 farms, averaging 2,800 head per dairy.

UDA's modern manufacturing facility in Tempe operates 24 hours a day, 7 days a week, and can process over 1 million gallons of milk per day.

Incorporated in 1966, Dairy Council® of Arizona is the premier nutrition education organization in the state. Funded by Arizona's dairy farmers through a federal checkoff program, Dairy Council of Arizona provides evidence-based resources to schools, health professionals, and consumers encouraging the consumption of three servings of milk, cheese or yogurt. As active members of their communities, dairy farm families take pride in maintaining natural resources. That means preserving the land where they live and work, protecting the air and water they share with neighbors, and providing the best care for their cows – the lifeblood of their business.



2008 S. Hardy Drive
Tempe, AZ 85282-1211
480-966-7211
uda.coop



510 S. 52nd Street
Tempe, AZ 85281
480-656-7163
arizonamilk.org

- › **United Dairymen of Arizona (UDA) is one of the strongest producer-owned cooperatives in the country.**
- › **UDA is the sixth largest private employer in the state.**
- › **The Arizona Milk Producers and Dairy Council of Arizona, funded by a checkoff program, promote dairy and nutrition education.**

Egg Producers



The commercial egg industry in Arizona started the same way many small businesses begin – in someone's home. In this case it was in Nell Hickman's backyard in 1944. Egg production soon outgrew the backyard coops, growing from 50 hens to 500. Hickman's Family Farms has about 10 million hens in several sites in Arizona. Beginning in 2017, another family-owned company, Rose Acre Farms, began producing eggs in La Paz County. As the second largest egg producer in the U.S., the Rust family began the company from its home in the 1930s.

Hickman's is the only egg brand in the USA using 100% PET containers.

By 2025, Hickman's expects to have transitioned all laying hens to cage free.

Hickman's was the first USA egg company to ship eggs to Korea, due to having the highest food safety rating and superior customer satisfaction. The Tonopah egg processing technology was the most expedient computer adaptability for Korean labeling requirements.

Today's egg facilities are economical, efficient and environmentally friendly. Operations utilize conveyor belts and robots to speed the packing process and reduce human contact with the eggs.



6515 S. Jackrabbit Trail
Buckeye, AZ 85326
623-872-1120
hickmanseggs.com



Post Office Box 1250
Seymour, IN 47274
812-497-2557
goodegg.com

› **An egg can go from farm to table in less than 24 hours.**

› **Hickman's Family Farms and Rose Acre Farms are family owned and operated.**

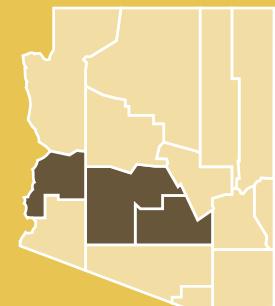
EGG INDUSTRY

360 Million

dozens of eggs
are sold in Arizona
each year

Year-round

production



COUNTIES

La Paz, Maricopa
and Pinal

ABWC has 20 irrigation districts and other water user organizations who represent approximately 510,000 irrigated acres and 2.5 million acre feet of water used on average per year.

ABWC, working with Arizona State University, has a very successful “Water Management Certificate Program,” which is designed to help train the next generation of water managers in Arizona and other states.



COUNTIES

Apache, Cochise, Graham, LaPaz, Maricopa, Mohave, Pima, Pinal, Yavapai and Yuma

Agribusiness & Water Council of Arizona



The Agribusiness & Water Council of Arizona (ABWC) is a not-for-profit trade association whose membership represents irrigated agriculture and agribusiness in Arizona. ABWC was established in 1978 to respond to proposed water legislation and later to serve as the state affiliate to the National Water Resources Association (NWRA). Its members are comprised of irrigation and electrical districts and other water user organizations; growers; ranchers; suppliers of equipment, seed, chemicals and other services; attorneys; consultants; agricultural processors; financiers of agribusiness enterprises; educational institutions and trade associations.

Purpose:

To maintain the integrity of Arizona's water supplies and the industries that rely on these essentials for the benefit of Arizona's economy.

Mission:

To represent irrigated agriculture and agribusiness by working to promote and protect water resources in the state of Arizona and to actively educate, support and promote all aspects of water, agriculture and agribusiness.



1819 E. Southern Avenue, Suite E-10
Mesa, AZ 85204
480-558-5301
agribusinessarizona.org

› **In Arizona, approximately 70% of water is diverted to agriculture in the year-round production of food and fiber in many parts of the state. The water used in production ultimately benefits millions of end-users or consumers throughout Arizona and beyond.**

› **ABWC provides a forum for the exchange of information to enhance the agricultural and agribusiness communities in Arizona and to also educate elected officials at the various levels of government.**

Arizona Leafy Greens



Leafy greens have a special place in Arizona agriculture. The state ranks second in production of lettuce and spinach in the country. The production of leafy greens carries a large responsibility for public health. For the most part, leafy greens are eaten raw. Growing, harvesting and shipping this produce must all be done with Good Agricultural Practices/Good Handling Practices to protect against foodborne illness.

Arizona's producers created an innovative food safety program in 2007. The voluntary plan assures buyers that the leafy greens grown with this program are produced

using strict protocols for food safety. The comprehensive program sets a high standard that other commodities across the country have followed.

Certification from the Arizona Leafy Greens Marketing Agreement covers the 15 leafy greens grown in Arizona: iceberg, romaine, baby leaf, spring mix, green, red and butter leaf lettuces, spinach, cabbage, kale, arugula, chard, endive, escarole and radicchio. To receive certification, shippers must make sure that those who grow and harvest their product have complete food safety compliance plans and written trace-back programs.



Arizona Leafy Greens
Food Safety Committee
1688 W. Adams
Phoenix, AZ 85007
602-542-0945
azleafygreens.org

A new federal Food Safety Modernization Act Produce Safety Rule requires many of the food safety measures that Arizona's leafy greens industry already has in place.

› ***Started in 2007, the Arizona Leafy Greens program is a model for other states.***

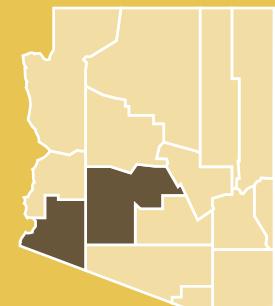
› ***Arizona Leafy Greens' Food Safety Training Kit received industry recognition in 2012, 2014 and 2017.***

IN 2015, THE LEAFY GREENS INDUSTRY CONTRIBUTED

\$2 Billion
in sales to the
Arizona economy

\$779 Million
on-farm production

\$1 Billion
in sales generated
through indirect
and induced effects



COUNTIES

Maricopa and Yuma

U.S. FARMS

80%
of food eaten
in the country
comes from
U.S. farms

ARIZONA FARMS

Year-round growing season

Most fields return
to production
days after harvest



COUNTIES

Includes all counties

Western Growers



Western Growers is a non-profit trade association that represents local and regional family farmers growing fresh produce in Arizona, California, Colorado and New Mexico. Western Growers' members and their workers provide over half the nation's fresh fruits, vegetables and tree nuts, including nearly half of America's fresh organic produce.

Western Growers' mission is to enhance the competitiveness and profitability of its members. The organization accomplishes this by providing agriculture-minded products and services, including state and federal advocacy, health

benefits for farm workers, food safety and regulatory compliance, logistics solutions and agtech initiatives.

Arizona's diverse weather and soil conditions, along with well-managed water resources, allow for year-round growing of a variety of fresh produce crops across more than 149,000 acres.

Western Growers' members produce lettuce, spinach, broccoli, cauliflower, cabbage, melons and many other crops in Arizona, the perfect location for producing fruits, vegetables and tree nuts. Many agricultural companies are moving to Arizona because



1110 E. Missouri Avenue, Suite 340
Phoenix, AZ 85014
602-682-9146
wga.com

of the productivity and the growing environment.

Arizona cash receipts for crops in 2016 totaled \$2.6 billion with vegetables and melons accounting for 50% of crop cash receipts.

› **Western Growers was founded in 1926 to enhance the competitiveness and profitability of members.**

› **The group helps members with health care, labor, international trade and transportation.**

Yuma Fresh Vegetable Association



If you eat a salad containing lettuce anywhere in the United States during the winter months, most likely that lettuce was grown in Yuma. In fact, Yuma farmers annually produce enough iceberg lettuce for every man, woman and child in the United States, Canada and Mexico to have their very own head of Yuma-grown lettuce. And there would still be nearly 90 million heads of lettuce to send to other countries in the world. That's why Yuma is known as the "Winter Lettuce Capital of the World."

With fertile alluvial soil, water from the Colorado River and 90% sunshine each year, Yuma area farmers grow over 40 kinds of vegetables and melons on more than 100,000 acres. For all the counties in the United States, Yuma County ranks in the top 0.1% for sales of vegetables and melons and for acres of vegetable crops. To plant, grow and harvest all those vegetables requires tens of thousands of workers. All that vegetable production makes the Yuma area a national center for agricultural production and contributes almost \$3 billion annually to the Arizona economy.



Post Office Box 1647
Yuma, AZ 85366
928-783-9355
yumafreshveg.com

› **In 1947, Yuma producers established YFVA, a non-profit association dedicated to promoting and protecting the needs of the Yuma vegetable industry.**

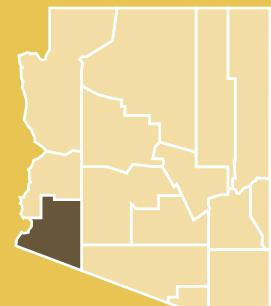
› **Each February, YFVA holds the Southwest Ag Summit, a forum providing participants with research findings and technological advancements to help them compete in an ever-changing industry.**

AGRICULTURE
IN YUMA COUNTY

1 in 4
jobs tied to agriculture

\$2.8 Billion
for Yuma County economy

Year-round
growing season



COUNTIES
Yuma

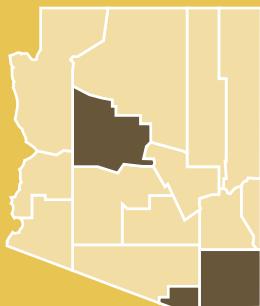
IN 2015, ARIZONA'S
WINE INDUSTRY

1,250
acres

300,000
gallons produced

\$25 Million
estimated worth

Year-round
wine availability



COUNTIES

Cochise, Santa Cruz
and Yavapai

Arizona Wine Growers Association



Arizona wine traces its roots to the 16th century. Spanish Jesuit priests planted grapevines and made wine for sacramental use in their missions.

Historical accounts show that just before the beginning of the 20th century, two farmers started wine grape vineyards near Sedona and Douglas. A study completed in 1980 launched the modern wine industry in Arizona. The feasibility study showed the viability of grapes in certain areas of the state depending on climate and soil. There are several areas around the state that are suitable for growing grapes: Willcox Basin, San Simon Basin, and areas near Kingman, Sonoita and the Verde Valley.

Grapes thrive above 3,500 feet, a region which isn't suitable for many crops. Grapes also use little water which makes them ideal for a state that cherishes every drop. Armed with that information, the wine industry in Arizona began to grow – slowly at first.

Sonoita Vineyards was the first, licensed shortly after the state passed a Farm Winery Law in 1982. By the time the state updated the law in 2006, there were 9 licensed wineries. The next 10 years brought exponential growth for the industry. In 2015, 97 licensed wineries produced 300,000 gallons of wine.

› ***Arizona Wine Growers Association, founded in 1983, represents wine growers and licensed wine producers.***

› ***The association works to market, promote, advocate and educate about Arizona's wine industry.***

Arizona Pecan Growers Association



Arizona can brag about its pecan industry. The Grand Canyon State has the largest pecan farm in the world with over 8,000 acres of trees. Keith Walden, Farmers Investment Company, ventured into the pecan business in the early 1960s when he planted the trees on part of his cotton farm in Green Valley/Sahuarita, south of Tucson. The trees produced well in Arizona's soil and sunshine, and he planted more. Pecan trees now cover over 5,000 acres on that farm and 3,000 acres in San Simon.

Farmers Investment Company is the only major pecan shelling company in Arizona, New Mexico and Mexico. Besides Walden's pecans, it buys nuts from growers in Arizona, New Mexico and Mexico. The pecans are marketed under the Green Valley Pecan brand.

Walden isn't the only grower anymore. There are 22,000 acres of mature pecan trees in the state. Since the trees flourish in Arizona's climate, acreage in the state is increasing. Planted pecan acreage in Arizona is projected to grow to 30,000 acres in the coming years.



Post Office Box 7
Sahuarita, AZ 85629
520-403-4613
arizonapecan.com

2016 ESTIMATES

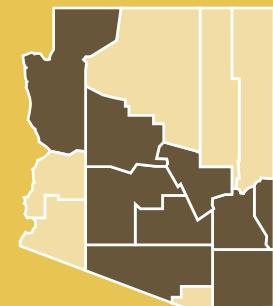
22 Million
pounds of production

\$55 Million
gross revenue

PECAN TREES

7-8 Years
to produce after planting

Larger harvests
every other year



COUNTIES

Cochise, Gila, Graham,
Greenlee, Maricopa, Mohave,
Pima, Pinal and Yavapai

NURSERY AND
LANDSCAPE INDUSTRY

\$1.6 Billion
sales

\$710 Million
payroll

30,000
jobs

Year-round
growing season



COUNTIES

Includes all counties

Arizona Nursery Association



Arizona Nursery Association
Where Growing Businesses Can Thrive

1430 W. Broadway Road, Suite 110
Tempe, AZ 85282
480-966-1610
azna.org
plant-something.org

Nurseries started in the Grand Canyon State when Arizonans demanded beautiful, low-water plants that California nurseries couldn't supply. Arizona's nursery industry covers retail and wholesale plant and tree growers. Professionals in the nursery industry are called horticulturalists; they understand and teach their customers about landscape design, choosing plants, caring for them and detecting disease, among other skills.

During the last 40 years, the state's nurseries have changed and diversified the plants they offer based on what the public wants. Horticulturalists develop and raise

new beautiful plants that need less water and are suited for the state's unique climate.

Arizona's rose industry does more than develop varieties suited for Arizona. Many new varieties are sent throughout the U.S. and exported. Most of the roses bought across the country at nurseries, hardware stores and superstores have their roots in Arizona soil.

Plant Something is a national nursery promotion which highlights the money, health and environmental benefits of planting. To learn more, please visit: plant-something.org

› **The Arizona Nursery Association represents the retail and wholesale plant and tree growers in the state of Arizona.**

› **Formed in 1959, the association provides communication, education and promotion services for members.**

Arizona Cotton Growers Association



Cotton has a long history in Arizona, but the greatest evolution came in the late 19th century. When the popularity of Egyptian cotton grew, Arizona farmers worked to grow an American hybrid. The longer fibers found in the hybrid cotton are stronger than the short staple cotton. This cotton, later called Pima cotton, was valued for its strength. The cloth made from it is soft and silky.

During World War I, the stronger cotton grown in Arizona was used in tires and airplane wings. The Goodyear Tire and Rubber company bought land and grew the Pima cotton in the Salt River Valley. Other tire makers followed suit.

The Goodyear company also brought an aircraft corporation to the area. The town of Goodyear is named for the company.

Almost all the plant is used when it is processed. The seed, stalk and even the lint have a use in our society. Seed is sold for future planting. Cottonseed oil is used for cooking (cholesterol-free) and in a variety of industrial products (soap, margarine, cosmetics and pharmaceuticals to name a few). The stalks can be processed into mulch. The lint is used for bandages and cotton swabs.

Arizona's generous sunshine and fertile soil grow some of the best cotton in the world.



Arizona Cotton
Growers Association

9885 S. Priest Drive, Suite 102
Tempe, AZ 85284
602-437-1344
azcottongrowers.com

› ***The Arizona Cotton Growers Association, started in May, 1942, represents all cotton growers in the state.***

› ***The mission is to protect and improve the economic viability of the Arizona cotton producer.***

1 BALE OF COTTON =

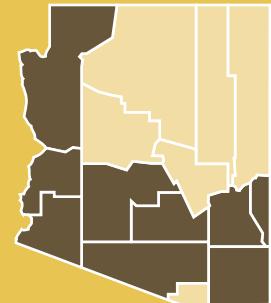
215
pairs of jeans

1,200
t-shirts

ECONOMIC IMPACT

\$400-500 Million
per year

3,000
jobs



COUNTIES

Cochise, Graham, Greenlee,
La Paz, Maricopa, Mohave,
Pima, Pinal and Yuma

BARLEY AND WHEAT

**\$200-350
Million**

annual economic impact

100

bushels per acre each
(average yield in Arizona)



COUNTIES

Cochise, Graham, La Paz,
Maricopa, Pima, Pinal
and Yuma

Arizona Grain Research & Promotion Council



Arizona farmers have grown barley and wheat for more than a century. These grains now typically comprise 15-20% of the state's annual cultivated crop acreage, depending on market demands. Barley is an important livestock feed as either grain or forage. Arizona's wheat, of the durum market class, is known globally for its superior milling and semolina flour traits. Recent research is demonstrating that growing these grains in rotation with vegetable and produce crops, in particular, provides valuable soil conditioning that enhances the productivity and sustainability of those soils for producing vegetables and other produce.

Arizona's durum wheat grain is known as Desert Durum®. The state's routinely favorable climate, combined with superior genetics and measured production resources (water and nutrients), yields a consistently large low-moisture grain kernel that produces high semolina flour extraction. This flour contains a strong gluten protein and a dark yellow color and is widely used to blend with and improve semolina from other sources, resulting in consistent pasta quality. Desert Durum® grain meets the needs of millers and pasta-makers in domestic and foreign markets. Approximately 50% of each Desert Durum® crop is exported.



1688 W. Adams
Phoenix, AZ 85007
602-542-3262

- › **The Arizona Grain Research and Promotion Council (AGRPC), formed in 1986, uses checkoff funds to improve profitability of grain growing for growers.**
- › **Desert Durum® is a service and certification mark owned by AGRPC and the California Wheat Commission.**







Education

Universities and colleges work closely with the agriculture industry in Arizona to enhance quality and efficiency. Creation of knowledge through research at universities is of the utmost importance for the advancement of the Arizona agricultural economy.

The state's three public universities, Arizona State University (ASU), Northern Arizona University (NAU), and the University of Arizona (UA) have programs that interact with the industry. Midwestern University, a not-for-profit private school, has a College of Veterinary Medicine. Arizona Western and Yavapai Colleges offer degrees and coursework in agriculture technology.

Established in 1891, the state's land grant university, UA, is located in Tucson. Its College of Agriculture and Life Sciences provides a comprehensive program in all aspects of the commerce of agriculture. Degrees in



all of the traditional agricultural disciplines as well as biomedical sciences, engineering, economics, education, and family and consumer sciences, including a top-ranking retail science program are offered. The UA is committed to developing a public School of Veterinary Medicine particularly to address the need for rural veterinarians, to support our important food animal industries and public health. The UA also maintains Arizona's Cooperative Extension System and statewide network of Experiment Station units. cals.arizona.edu

NAU in Flagstaff features earth sciences and environmental sustainability degree programs related to protecting natural resources through agricultural and land-use management practices. nau.edu/cefns/natsci/seces

ASU offers robust programs and research in the areas of sustainability, biological sciences and agriculture.

Key programs include the W. P. Carey School of Business Morrison School of Agribusiness, which focuses on the business side of agriculture and the School of Nutrition and Health Promotion, which works with various agriculture industry groups to promote Arizona grown products. asu.edu

Arizona Western College in Yuma works closely with the agriculture industry to offer up-to-date hands-on learning in production agriculture. It offers agricultural degree and certificate programs in crop production, food safety, animal production and agricommerce. azwestern.edu

Yavapai College, with six locations in Yavapai County, offers programs that teach how to start, manage and market agriculture businesses. It also hosts an academic center to support the wine industry. Classes and hands-on training provide opportunities for current and future viticulture and enology professionals. yc.edu



Cooperative Extension

University of Arizona College of Agriculture and Life Sciences (UA) puts science to work, creating innovative solutions to the challenges of arid-land agriculture. With 150,000 acres of farm and ranchland located in Graham, Coconino, Pima, Pinal, and Yuma counties, UA's Experiment Station research sites allow for developing cutting-edge programs that address the specific needs of Arizona agribusiness.

As Arizona's land-grant institution, UA researchers continue to build on a legacy of more than a century of supporting and transforming Arizona agriculture through scientific research. Plant and animal genomics, crop breeding, dairy systems, technology, beef production, irrigation water management, soils and fertility, and integrated pest management are only a few of UA's focus areas.

With programs in all 15 Arizona counties, Cooperative Extension's economic impact analysis team partners with

industries that have helped change conversations, especially around water.

Two public private-partnerships complement the work. The Yuma Center of Excellence for Desert Agriculture (YCEDA) is a unique public-private partnership, connecting the scientific community, the desert agricultural industry, and technology partners. The Natural Resource Users Law and Policy Center (NRULPC) is the first law center to focus on the use of natural resources as a foundation to our economy and national security. A collaboration between Cooperative Extension and University of Arizona's James E. Rogers College of Law, the NRULPC educates, researches, and brings new solutions to bear on the practical legal and policy problems of our natural resource stakeholders.

Learn more at cals.arizona.edu/research-home



Youth

Arizona youth have a variety of ways to begin learning about agriculture. The Arizona Farm Bureau and the UA Cooperative Extension offer Ag in the Classroom/Ag Literacy programs and lessons for K-12 classroom teachers as well as direct delivery of educational programs to students in kindergarten through seniors in high school. The Arizona Agriculture Teachers Association instills a passion in students for agriculture and learning.

UA's College of Agriculture & Life Sciences Cooperative Extension 4-H Agents guide 4-H programs around the state working with individual communities and youth. Proven to create leaders and active adults, more than 130,000 4-H students learn practical skills for success. With the best STEM (Science, Technology, Education and Math) afterschool program in the state, it's no wonder Arizona 4-H is a leader in the country.

4-H/FFA youth grow up to be leaders who give back to the community.

The FFA opportunity for students starts with secondary education. Expanding on leadership, communication and emotional, social and professional growth provides a sound foundation for teens to achieve success. FFA opportunities continue through college, preparing young adults opportunities to pursue agriculture, business, engineering, education and many other professions.

Of course, the basis for all education of young people begins with good teachers. Learning often begins at home from generations of agriculture experience. Sometimes, it doesn't start until a child finds the right teacher in school. No matter when it starts, the love of agriculture instilled at a young age fosters a love for the land, respect for animals and appreciation of a hard day's work.



Food Safety

The U.S. has one of the safest food supplies in the world and that's because agriculture prioritizes food safety. Working with the Department of Agriculture, USDA and FDA, Arizona producers protect the food supply starting at the farm.

The Arizona Leafy Greens Food Safety Program leads the way in produce safety, setting a standard for other states and national food standards. The monitoring of soil, water, environment and worker sanitation protects against germs.

The sanitation of milk and dairy products begins on the farm and continues through production. Dairy farms must meet cleanliness standards before milk is collected. Transportation to the processing plant has additional sanitation and safety standards. Once at the dairy plant, milk is protected throughout processing and bottling; it is tested several times before it goes to the store.

Egg production is monitored from the chicken houses through packaging and into the retail stores for safety and sanitation. Chicken coops, processing, packaging and distribution have standards for pest control, biosecurity, safe handling, temperatures and other key safety elements. The USDA stamp on egg cartons is for quality and size.

The Department of Agriculture ensures public health by monitoring food from the farm and barn to the customer.

Cattle health begins on ranches, watching for disease and continues at processing plants, where inspectors make sure the cattle are healthy. Staff thoroughly reviews food safety, plans and records. Inspectors monitor the temperatures, testing records, worker's health and cleanliness of the facility before, during and after processing.



EGG SAFETY AND DILUTION

RADING LINE:

- * 100% RADING
- * 100% EGG
- * 100% FRESH

Arizona Harvest Schedule

Arizona produces food for a well-balanced diet all year long – from the high country, to the desert, to the lush river valleys. There is always something – fruits, vegetables, dates or nuts – being harvested from January to December. Follow the harvesting calendar to see what is available every month of the year.

FRUIT OR HERB

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
ANISE	●	●	●									●
APPLE, AMBROSIA									●			
APPLE, FUJI								●	●	●		
APPLE, GALA							●	●	●	●		
APPLE, GOLDEN DELICIOUS						●	●	●	●	●		
APPLE, GRANNY SMITH							●	●	●	●	●	
APPLE, PINK LADY							●	●	●	●	●	
APPLE, RED DELICIOUS						●	●	●	●	●		
APPLE, SUNDOWNER							●	●	●	●	●	
APRICOTS						●	●					
CHERRIES							●					
CILANTRO	●	●	●	●	●						●	●
DATES		●	●	●	●			●	●	●		
DILL	●	●	●							●	●	●
FIGS						●	●					
GRAPEFRUIT, RED BLUSH	●	●	●	●	●	●	●	●	●	●	●	●
GRAPEFRUIT, WHITE	●	●	●	●	●	●	●	●	●	●	●	●
GRAPES, CONCORD								●				
GRAPES, VARIOUS WINE					●	●	●	●	●	●		
LEMONS	●	●	●	●				●	●	●	●	●
MELONS, CANARY	●	●	●	●	●	●	●	●	●	●	●	●
MELONS, CANTALOUPE					●	●	●	●	●	●	●	●
MELONS, CASABA					●	●	●	●	●	●	●	
MELONS, CRENSHAW					●	●	●	●	●	●	●	
MELONS, HONEYDEW					●	●	●	●	●	●	●	
MELONS, ORANGE FLESH					●	●	●	●	●	●		
MELONS, SANTA CLAUS					●	●	●	●	●	●		
MELONS, SHARLYN					●	●	●	●	●	●		
MELONS, SPECIALTY					●	●	●	●	●	●		
MELONS, WATERMELON					●	●	●	●	●	●	●	
ORANGES, BLOOD	●	●										●
ORANGES, MANDARIN	●	●	●	●								
ORANGES, NAVEL	●	●									●	●
ORANGES, SWEET	●	●	●	●							●	●
ORANGES, TEMPLE	●	●										●
ORANGES, VALENCIA	●	●	●	●	●	●	●	●	●			
PARSLEY	●	●	●	●	●				●	●	●	●
PEACHES					●	●	●	●				
PEARS								●	●			
PLUMS						●	●	●	●			
TANGERINES, FAIRCHILD										●	●	●
TANGELOS, MINNEOLA	●	●								●	●	●
TANGELOS, ORLANDO	●	●								●	●	●

● WINTER PRODUCE • SUMMER PRODUCE

VEGETABLE

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
ARTICHOKE												
ARUGULA	●	●	●	●							●	●
ASPARAGUS			●	●	●							
BEAN, FAVA		●	●	●								
BEAN, GREEN					●	●			●			
BEAN, PINTO						●	●	●	●	●		
BEAN SPROUTS	●	●	●	●	●	●	●	●	●	●	●	●
BEETS	●	●	●							●	●	
BOK CHOY	●	●	●							●	●	
BROCCOLI	●	●	●					●		●	●	
BROCCOLI, BABY	●	●	●							●	●	
BRUSSEL SPROUTS	●	●	●								●	
CABBAGE, GREEN	●	●	●	●	●	●	●	●	●	●	●	
CABBAGE, RED	●	●	●	●	●	●	●	●	●	●	●	
CARROTS	●	●	●	●	●	●	●	●	●	●	●	
CAULIFLOWER	●	●	●	●						●	●	
CAULIFLOWER, GREEN	●	●	●	●						●	●	
CELERY	●	●	●	●						●	●	
CORN, SWEET					●	●	●	●	●	●	●	
CUCUMBER	●	●	●	●	●	●	●	●	●	●	●	
DAIKON (JAPANESE RADISH)	●	●	●	●								
DANDELION	●	●	●	●						●	●	
FRISEE	●	●	●	●						●	●	
GREENS, BEET	●	●	●	●						●	●	
GREENS, COLLARD	●	●	●	●						●	●	
GREENS, MUSTARD	●	●	●	●						●	●	
GREENS, TURNIP	●	●	●	●						●	●	
KALE	●	●	●	●						●	●	
KOHLRABI	●	●	●	●							●	
LEAKS	●	●	●	●						●	●	
LETTUCE, BUTTER/BOSTON	●	●	●	●						●	●	
LETTUCE, ENDIVE	●	●	●	●						●	●	
LETTUCE, ESCAROLE	●	●	●	●						●	●	
LETTUCE, ICEBERG	●	●	●	●						●	●	
LETTUCE, LEAF	●	●	●	●						●	●	
LETTUCE, ROMAINE	●	●	●	●						●	●	
LETTUCE, SPRING MIX	●	●	●	●						●	●	
MACHE	●	●	●	●						●	●	
NAPA	●	●	●	●						●	●	
NAPA CABBAGE	●	●	●	●						●	●	
ONIONS, SWEET (DRY)					●	●	●	●	●			
ONIONS, GREEN	●	●	●	●	●			●	●	●	●	

• WINTER PRODUCE • SUMMER PRODUCE

VEGETABLE & TREE NUTS

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
PARSNIPS					●	●						
PEPPERS, GREEN BELL							●	●	●	●		
PEPPERS, RED BELL							●	●	●	●		
PEPPERS, GREEN CHILI							●	●	●	●		
PEPPERS, RED CHILI								●	●	●	●	
POTATOES, RED								●	●	●	●	
POTATOES, RUSSET						●	●	●	●			
PUMPKIN										●	●	
RADICCHIO			●	●	●							
RADISHES			●	●	●	●	●	●		●	●	
RAPINI			●	●	●							
SALAD SAVOY			●	●	●						●	
SPINACH			●	●	●					●	●	
SQUASH (SUMMER) CROOKNECK							●	●	●	●		
SQUASH (SUMMER) SCALLOPED							●	●	●	●		
SQUASH (SUMMER) STRAIGHTNECK							●	●	●	●		
SQUASH (SUMMER) ZUCCHINI							●	●	●	●		
SQUASH (WINTER) ACORN									●	●	●	
SQUASH (WINTER) BANANA									●	●	●	
SQUASH (WINTER) BUTTERNUT									●	●	●	
SQUASH (WINTER) GOLD ACORN									●	●	●	
SQUASH (WINTER) HUBBARD									●	●	●	
SQUASH (WINTER) KOBACHA									●	●	●	
SQUASH (WINTER) SPAGHETTI									●	●	●	
SQUASH (WINTER) TURBAN									●	●	●	
SWISS CHARD			●	●	●	●					●	
TOMATOES			●	●	●	●	●	●	●	●	●	
TURNIP			●	●	●	●					●	
PECANS		●										
PISTACHIOS								●	●			



LB. NET WT.
13.6 Kg.
Product of USA



Exports

The diversity of Arizona agriculture produces many types of crops. Arizona grown crops and products are in demand around the world and throughout the United States.

Different crops and seeds are sold to 70 countries all around the world. The full list is too long to include, but some of the countries are China, Panama, France, Hong Kong, Canada and Mexico. The seeds grown here are in demand for agriculture in Colombia, Denmark, Jamaica, Egypt, Italy and many more. Arizona pecans are demanded in several countries because of their size and quality. The annual value of all Arizona agricultural exports is over \$4.2 billion.

According to a 2016 U.S. Department of Agriculture National Agriculture Statistics Service report, animal products exported were worth more than \$220 million.

Exporting of high-protein foods to countries where there is a lack of animal protein can contribute to better learning. A study published from UCLA in 2010 shows that test scores increased 45% with the addition of meat protein over five school terms.

Arizona's exports are only expected to grow in the future. In partnership with the Western United States Agricultural Trade Association (WUSATA), the Department is connecting producers with exporting companies and markets in other countries.

wusata.org





Department

Mission: To support and promote Arizona agriculture in a way that encourages farming, ranching and agribusiness, protects the well-being of people, plants, animals and the environment while safeguarding commerce, consumers and natural resources.

The Department preserves the health of people, animals, plants and natural resources. Every day, department staff protect the food supply and ensure food safety. They reduce cost and increase efficiency for Arizona businesses by providing federal services. Each division/program within the Department delivers a variety of services for industry:

Agricultural Consultation and Training – providing training on pesticide safety, food safety and agricultural air quality; council and grant management

Animal Services – inspecting livestock, meat, egg, dairy and animal health

Citrus, Fruit and Vegetable – providing produce inspections and food safety audits

Environmental Services – licensing, consumer protection, worker safety and proper pesticide use

Pest Management – protecting consumers with licensing and compliance for residential and landscaping pesticide use

Plant Services – inspecting plants for export, preventing and containing pest threats

State Laboratory – testing of milk, meat, feed, seed, fertilizer and pesticides

Weights and Measures Services – protecting consumers and industry with accurate measurements



Partners



extension.arizona.edu/4h



agribusinessarizona.org



arizonabeef.org



azcattlemenassoc.org



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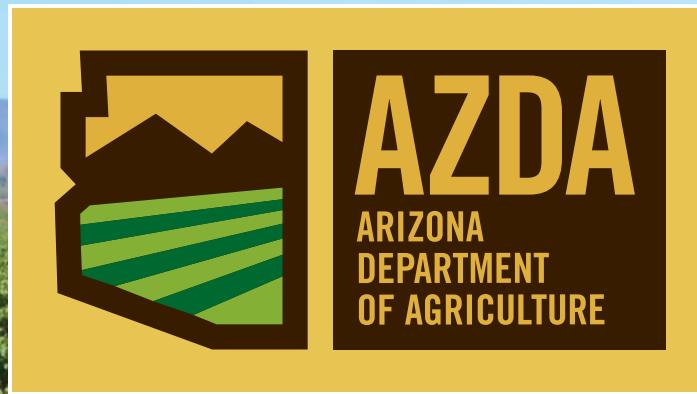
Research

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Civano Nursery
Department staff
Mark W. Killian, Director
Steven Lomadafkie
Chris J. Minnick
Julie Murphree
Joan Murphy
Kurt D. Nolte
Dr. Barry Pryor
Edwin Remsberg
David W. Schafer
Colleen Tessay
Bart Worthington





Arizona Department of Agriculture
1688 W. Adams Street, Phoenix, AZ 85007

agriculture.az.gov