Nebraska Agriculture Overview
Part Two
Bees
Bee Colonies

There are approximately 50,000 bee colonies in Nebraska. Nebraska honey bee colonies produce more than 3.75 million pounds of honey annually.

One honey bee will produce 1/12 of a teaspoon of 20 honey in its lifetime (about three weeks).
Beekeeping

Beekeeping is a niche market in Nebraska agriculture, with more than 300 active members of the Nebraska Beekeepers Association across the state. According to the U.S. Department of Agriculture, there were 46,000 honey-producing hives in Nebraska in 2013.
Approximately 90 percent of the sugar beets grown in the state are produced in the Panhandle.
Fifth in the Nation

Nebraska generally ranks 5th in the nation for production of sugar beets and averages more than 1.3 million tons of production.

The sugar beet is a root crop that’s used for sugar production. In fact, more than half of U.S. sugar production comes from sugar beets.

When fully grown, a sugar beet is about a foot long, and it weighs between 2 and 5 pounds.
Approximately 300 western Nebraska farmers grow 1.3 million tons of sugar beets a year on 50,000 acres, with an end product equal to about 4.5 million hundred-pound bags of crystallized sugar. This sugar is packaged and sold under 35 different labels, including Great Western (GW), Roundy’s, Surfine and Walmart’s Great Value brand.
Western Sugar Cooperative

Not only are sugar beets grown in the Panhandle of Nebraska, they also are processed there. In 2002, farmers joined forces and formed the Western Sugar Cooperative (WSC), purchasing five midwestern processing plants, including one in Scottsbluff. Across a four-state region, WSC has approximately 1,100 farmers whose production makes up about 10 percent of the nation’s sugar beet market. The United States produces 70 percent of the nation’s sugar consumption, and about 55 percent of that is derived from sugar beets.
Nebraska Beets

Sugar beets have been successfully produced in Nebraska for more than 100 years. Nebraska-grown sugar beets are a major contributor to the United States sweetener industry and are found in a wide range of food products, with some by-products going into livestock feed.
Sugar beet production traces its history back more than 100 years in the North Platte Valley. The name of one of the towns in the region, Melbeta, even means “sweet beet” in German.
Crop Rotation is Key

Sugar beet growers are often required to plant on a multiyear rotation to prevent the spread of disease.
Sugar content and tonnage are often considered inversely related. As tonnage increases, sugar content typically goes down. While sugar can range anywhere from 12% to 21%, it can still increase 1% every 10 days, from maturity (usually around late August or early September) until a killing frost.
Panhandle beet growers in 2018 faced extended periods of 90-plus-degree-F temperatures, late-season hail events and a pest that’s becoming more problematic every year for the region — Palmer amaranth. In other crops they use chemicals to control it but with sugar beets growers are limited in what they can use.
This year the Panhandle also received up to 5 inches more than the average annual rainfall — one of the reasons for this year’s above-average sugar content and tonnage.
Better Seeds

Sugar beet production has greatly improved over the years, with better seed that is more resistant to pests and disease.
Multiple Ways to Harvest

Some producers with large acres of sugar beets usually have the resources to harvest the crop by themselves. Other producers may have their sugar beet crop custom harvested, while the remaining producers may work with their neighbors to harvest the crop. One producer may have the defoliator; the other is “the puller” and all usually have semi-trucks to haul the sugar beets to the factory.
Weather and Temperature

The weather and temperature will dictate when and how much of the crop can be harvested at one time. If the weather is too warm, the sugar beets will not store well in the piles and rot. If that occurs, the harvest is postponed until the weather is cooler.
Berries
An alternative crop has made its way to Nebraska.

Some farmers are now growing the aronia berry, also known as the chokeberry.
Aronia Berry

• Rader Farms told NTV News they started growing the aronia berry three years ago because they heard the income potential was 10 times more profitable than corn.

• At a low time for farmers across Nebraska, Rader Farms says it was the perfect time to put some of their acres towards the aronia berry.

• "They were recommended to us by a friend. There are some people in Hastings who have planted them and are doing well with them. We just thought it's an alternative crop. We are hoping there is going to be a good market for them. There is starting to be," said Rader.

• Rader said this is the first year they are truly harvesting them, bringing in equipment all the way from Poland.
Aronia Berries

Now, Rader Farms has over 38,000 plants on around 28 acres collecting around five pounds per bush.

"They're selling well on the coasts already. There's going to be a company trying to get it into Colorado more. Around here it's in the Hyvee stores, and then Hastings has it in a few stores too," said Rader.
Disease Fighting Properties

People consume the berries because of their antioxidant properties. "Because of all of the disease fighting properties that also come along with it like cancer, diabetes, inflammation, and macular degeneration, etc. People are always looking for something to help prevent any type of disease, so it's definitely becoming more and more popular," said Kaiti George, a registered dietitian with Hyvee.
Corn
Corn is the most widely grown crop in Nebraska and has a variety of uses, from feeding livestock and poultry, to producing ethanol, distillers’ grains and even bioplastics.
Nebraska has a unique advantage, known as the “Golden Triangle,” where the combination of corn, livestock, and ethanol production provides significant opportunity to add value at every step along the production chain.
Nebraska is the third largest producer of corn in the country and second in ethanol production and distillers’ grains.
Distillers Grains

Nebraska produces more than 2 billion gallons of renewable fuel annually. Meanwhile, distillers’ grains, a co-product of ethanol production, is important as both a domestic livestock feed ingredient and as a foreign export product.
Adding Value to Corn

In essence, Nebraska’s Golden Triangle is a perfect way to add value to corn – via a renewable biofuel, distillers’ grains, and meat production – all within Nebraska’s borders, providing an incredible economic engine for the state.
Distillers’ grains are the major by-product from the production of ethanol. To produce biofuels, cereal grains are heated and fermented. The starch is converted into ethanol and removed. The mixture of concentrated protein, fiber, oil, and minerals, which remains is called stillage.
Stillage Uses

Stillage is sold either wet (20 to 30% dry matter) or dry (90% dry matter). Stillage remaining after the fermentation and distillation process is low in solids and is sometimes fed directly to livestock through the watering system (thin stillage).
Typically, stillage is further separated into distillers’ grains and solubles. Solubles are recovered and incorporated into the distillers’ grains, called distillers’ grains with solubles (DGS). DGS can be used wet (WDGS) but is often dried (DDGS) in order to reduce shipping costs. There is considerable variation in the composition of distillers’ grains. Composition may be partially reflected by whether grain is processed by dry or wet milling before it is fermented.
There are 23,000 corn farmers across the state, producing six times more corn than in the 1920s.
Ethanol Plants

Nebraska is home to approximately 25 operating ethanol plants that use corn to produce around 2 billion gallons of ethanol each year.
Top Producer of Popcorn

An ample irrigation supply, favorable climate, and rich soils have allowed Nebraska to be the top producer of popcorn in the country for several years. Approximately 45 percent of the U.S. popcorn supply is produced in Nebraska.
The production process for popcorn is very similar to that of field corn, and to most people, a corn plant and popcorn plant will look very similar. Yields from one acre of popcorn range from 50 to 100 bushels, depending on production techniques and the use of irrigation.
Small Bump Up

After decades of decline, the number of registered dairies in Nebraska bumped from 181 in 2014 to 184 in 2015, according to the state Department of Agriculture.
Continued Drop

But it turned out to be more of a blip than a renaissance. The state lost 20 registered dairies as of September, dropping the total to 164.
Plenty of Interest to Come

It’s not because of a lack of interest in the state. Nebraska has a list of dairy farmers who have said in writing they’d be happy to move here, state Ag Director Greg Ibach said during a recent interview. The problem is that they can’t find anyone to buy their milk.
“All of the sudden the plants that were begging for more milk, the cows caught up with the amount of processing capacity,” said Rod Johnson, executive director of the Nebraska Dairy Association. “The pipeline is full. “It’s an issue up and down the Interstate 29 corridor, the dairy belt of the Midwest, Johnson said.
Supply Outpacing Demand

Dairy Farmers of America, the main cooperative force in Southeast Nebraska, confirmed it doesn't need any more milk from the state. “Due to a number of factors, including the export market, supply is currently outpacing demand in the Nebraska area,” spokeswoman Kim O’Brien said in an email.
In August (2016), the U.S. Department of Agriculture announced it would buy 11 million pounds of cheese to help reduce a 30-year-high national surplus. The cheese is to be distributed to schools and food banks across the nation. U.S. butter and cheese has been expensive on the world market for much of the past couple years compared with dairy from other places like Europe and Australia, causing U.S. suppliers to lose market share, although price disparities have narrowed in September, according to the U.S. Dairy Export Council.
Cash Cows

Dairy is an economic development cash cow. A study done last year by the state Ag Department at the direction of the Legislature found a single cow has a $5,000 local economic impact.
“Taken a step further, Nebraska’s 55,000 dairy cows generate $275 million annually in local economic activity,” the study said. That doesn’t include the value added by Nebraska’s 10 milk processing plants.
Statewide Economic Impact

In two other studies, economists at Iowa State University and the University of Minnesota estimated a dairy cow’s statewide economic impact with in-state processing at $23,000 and $25,000, respectively. Hoping to tap into the rich dairy bounty, a coalition of state commodity groups has been sinking time and effort into attracting new processors to Nebraska. They call the initiative Grow Nebraska Dairy.
The issue is that processors want to know there are enough cows and milk to meet their needs, but to get more farmers to come, the state needs a processor.
“If we had more dairies in the area ... there would be more support industries, the equipment dealers, the repair people,” dairyman Dwaine Junck said. “Well, we can’t get more dairies in the area if there is no place to sell the milk.” His milk went to a string cheese processing plant in Ravenna until Leprino Foods closed it in 2013 citing, among other reasons, difficulty in getting enough milk.
Producing More Milk Per Cow

Nebraska’s dairy herd peaked in 1934 with 820,000 cows producing 2.9 billion pounds of milk annually. Today, the number of cows is closer to 55,000, but each of them produces more milk.
Improved Nutrition and Genetics

In 1934, each cow produced an average of 3,500 pounds of milk; today, an individual cow produces an average of more than 21,000 pounds, thanks to improved nutrition and genetics.
Farm Consolidation

Nebraska’s dairy farms have also gone through consolidation. The state lost 553 dairy farms over the past 15 years, a 75 percent decrease. The average number of cows per dairy farm went from 98 in 1999 to 214 in 2010, according to USDA statistics. In 2015, 52 percent of the dairy cows in the state were housed on just 14 farms.
The amount of milk produced in the state has remained relatively stable at just over 1.1 billion pounds a year, according to USDA statistics. The vast majority of Nebraska’s remaining dairy farms are in the eastern portion of the state, where they are closer to processors, highways and population bases like Lincoln and Omaha that have plenty of mouths to gobble up ice cream and cheese.
Nebraska

- In the state of Nebraska, there are about 160 licensed dairy herds.
- Nebraska is the 26th largest milk-producing state in the U.S.
- Nebraska dairy farms produced approximately 151 million gallons of milk in 2015.
- Nebraska farms generate more than $232 million in milk sales annually.
- In Nebraska, the average dairy cow produces about 7 gallons of milk per day. That’s more than 2,620 gallons of milk over the course of a typical year.
- Nebraska has 6 plants that process one or more dairy products.
- It takes about 48 hours for milk to travel from the farm to the dairy case.
NEBRASKA AG FACTS

- 1st in Irrigated Acres
- 2nd in Ethanol Production
- 3rd in Corn Production (66% irrigated)
- 4th in Alfalfa Production (43% irrigated)
- 5th in Soybean Production (48% irrigated)
- 9th in Silage Production

Courtesy of USDA NASS

NEBRASKA WATER FACTS

- The High Plains Aquifer under Nebraska has five times the amount of water as Lake Erie.
- Ground water is managed by local Natural Resource Districts with a long-term goal of sustainability. Regulations vary based on location.

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Robotic milking machines are not completely new technology, but they are fairly new in Nebraska. There are currently three robotic dairies operating in the state (Plainview, Carlton, and Creston) with more expected in the future. The dairies feature automated equipment that washes the cows’ udders and then attaches the milking machine with no human interaction needed.
Electronic Collars

The robotic dairy setup accommodates up to 60 cows at a time. The cows also wear electronic collars that identify them and their movements and collect other data.
Computers and Automatic Sweepers

The sophisticated computer setup at some of these dairies can measure the amount of feed each cow eats, how much milk it produces each day and health information about each animal. In addition to the robotic milking equipment, there can be large automatic sweepers that roam the parlor floor pushing scattered feed back to where the cows can reach it. When the task is completed, the robotic sweepers hook themselves back up to be recharged.
Rod Johnson, executive director, Nebraska State Dairy Association and Midwest Dairy, said the primary advantage of robotic dairies is labor force management at a time when it can be difficult to find enough outside employees. “It’s been a good way to bring back the next generation to our dairy farms,” said Johnson.
Nebraska is Behind the Curve

According to robotic dairy building Walter Aschoff, the owner, and president of Aschof Construction of Osmond, Nebraska is behind the curve when it comes to robotic dairy farms. In particular, Iowa, Minnesota, and Wisconsin have large numbers of automated and robot-equipped dairy farms.
Netherlands is Ahead

What’s more, the United States, as a whole, is still behind some other nations. A Netherlands-based agriculture manufacturer, which specializes in robotic milking machines, estimates that 2 percent of dairy cows in the U.S. are milked using robots. By comparison, that number is about 30 percent in the Netherlands.
Farmers
Low commodity prices and declining farm incomes have some folks believing the ag economy has entered a “new normal.” But Tina Barrett, executive director of Nebraska Farm Business Inc., says the current conditions are more like a return to the “old normal” of the late 1970s to the mid-2000s.
We Forgot

“The good times lasted long enough that we forgot the previous 20 years,” she says. “We’re witnessing new struggles for crop producers we haven’t seen in many years.”

The ag economy isn’t likely to improve next year, either, she says, and the impact of steadily rising property taxes weighs on the bottom line.
Average net farm income for member crop operations (those with 70% of their gross income from crop sales) dropped almost 50%, from $196,870 in 2013 to $99,630 in 2014. Twenty-three percent farms actually saw negative farm incomes last year, and almost all of them were crop operations.
Also, troubling is the rise in debt load among member farms. In 2014, average total debt rose to $1,009,704, the first time the average climbed above $1 million. That figure varied widely, with some borrowing little or nothing. Producers have a wide range of production costs and debt load. “This includes not only inputs but a wide range of land costs from both cash rents or ground that is paid for,” she adds.
Barrett lists three scenarios that will likely cause problems:

1. high-costs producers, including those locked into high cash rents,

2. farmers who didn’t take the opportunity in recent years to pay down debt, and

3. farms with high living expenses. “If you meet just one of these cases, you may still be OK, but if you fit two or three, it’s a problem.”
Many farms and ranches in Nebraska have been in families for generations. Unfortunately, bringing the next generation back to a family operation is more difficult than ever before. With the current price of land and fluctuation of commodity prices, beginning farmers are finding it difficult.
Fruits and Vegetables
Fruit and vegetable production have experienced steady growth in Nebraska. While some areas may be more productive than others, production can be found throughout the state to varying degrees. This includes standard vegetables, such as tomatoes and cucumbers, to melons, pumpkins, squash, onions, berries, sweet corn, and many other types of produce.
Highly Intensive

This highly intensive enterprise requires specialized equipment, a large labor supply, and the knowledge to produce and market a profitable crop. Innovative, time honored methods such as high tunnels, mulches, cold frames, and row covers are becoming increasingly popular among growers who wish to extend their harvest seasons to increase farm profitability.
Continues to Increase

The number of Nebraska produce growers has increased 700 percent over the past decade from 78 in 2000 to more than 600 in recent years.
Nebraska has approximately 100 farmers’ markets, 240 roadside stands, and 40 u-pick operations.
Grapes
Nebraska-grown grapes are produced into fine wines. Nebraska has more than 40 wineries and tasting rooms located across the state.
Grape and wine production gained momentum in the 1990s and has continued to grow the past 20 years. Nebraska’s fertile soils, topography, and humid continental and semiarid climates have been conducive to producing premium quality grapes that have resulted in award winning wines.
Nebraska Grows

Nebraska grows many French-American hybrids and American varietals. Winter hardy grape varieties, among thereds, include Frontenac, Marechal Foch, and de Chaunac and, among the whites, Brianna, Edelweiss, LaCrosse, and Traminett.

Nebraska has 611 acres of grapes and 550 vines per acre. More than 100,000 gallons of Nebraska wine are produced each year.
Hay or Alfalfa
Hay

Hay is grown in every county in Nebraska and is a vital to the state’s success as a cattle-producing state. Grass hay is either grazed in the pasture or baled in a variety of round and square bales where it is fed overwinter or shipped around the country. Hay can be grown in parts of the state where other crops may be unprofitable or unsuitable for the soil, including the Sandhills region, which is rich with sub-irrigated meadows. In these meadows, the water table is very close to the surface, making it difficult to grow crops but allowing hay to have constant water throughout the growing season.
Sixth Largest

Nebraska is the nation’s 6th largest producer of hay and alfalfa.
Alfalfa is well known for its high protein content which is especially important for the nutrition of dairy cattle.

Nebraska also produces dehydrated alfalfa pellets, which can be economically exported to other states and countries.
Alfalfa has a reputation for having the highest nutritional quality and highest yields amongst all forage crops and is used extensively in beef and dairy operations. Alfalfa is typically baled, and several cuttings are possible each growing season.
Alfalfa is a legume like soybeans, peas, and dry edible beans, which means it is capable of capturing nitrogen from the air and storing it in its root system. This allows alfalfa to act as a fertilizer, and it is commonly rotated with other crops like corn to keep soil productive and healthy.
Alfalfa is primarily produced as a food source for dairy and beef cattle. Farmers send samples of alfalfa they grow to labs to determine its quality, and that level of quality determines where it ends up.
Exported Hay

Some of Nebraska’s alfalfa hay stays in state, while a large portion is exported.

“The typical market for square bales going outside Nebraska is from the Rocky Mountains east,” says Barb Kinnan, executive director of the Nebraska Alfalfa Marketing Association. “We have had producers ship hay to most every state east of that line, including Maine and Florida and every state in between.”
Colorado has been a profitable market for Nebraska’s alfalfa producers in recent years, thanks to a tremendous growth in the number of dairies there.

“Colorado has a huge cheese plant in Greeley that makes mozzarella cheese for national pizza chains, for example,” Peterson says.

Cows fed high-protein Nebraska alfalfa are producing some of the milk used to make the cheese.
Not every bale of hay you see along a Nebraska country road is made of alfalfa. Farmers also produce grass and meadow hay, and Nebraska ranks No. 7 nationwide in the “Other Hay” category.
Round Bales

“You can usually tell by the shape of the bale what type of hay it is,” Peterson says. “Round bales are mostly grass hay for local markets. The large square bales are more for commercial alfalfa operations like ours because they’re easier to ship on trucks.”