

Pumpkins

#1 in Pumpkins

Illinois farmers grow more pumpkins than anywhere else in the world!

In fact, they grow 90-95% of the pumpkins used for processing. Most of that processing takes place in **Morton, Illinois—The Pumpkin Capital of the World.**



What are Pumpkins?

Pumpkins are members of the gourd family, which includes cucumbers, honeydew melons, cantaloupe, watermelons, and zucchini. These plants are native to Central America and Mexico. Even though pumpkins originated in the western hemisphere, they are now grown on all continents except Antarctica. Pumpkins have been grown in North America for five thousand years.

Pumpkins are grown primarily for processing, with a small percentage grown for ornamental sales through U-Pick farms, farmers markets, and retail sales.

Most pumpkins are processed into canned pumpkin and canned pie mix. Processing pumpkins are similar in size and shape to a watermelon with a lighter colored shell than most ornamental pumpkins.

Pumpkins can range in size from less than one pound to more than 1,000 pounds. Miniature-sized pumpkins weigh less than one pound and are used for decorative purposes. Pie pumpkins come in many sizes, but the five- to 10-pound pie pumpkin varieties are most common. Pumpkins in the 10- to 25-pound range are primarily used for jack-o'-lanterns, but they can also be used for processing.



Illinois Pumpkin Production

Source: USDA National Agricultural Statistics Survey

Yield Measured in Pounds/Acre

37,000	2017
47,000	2018
38,500	2019



Top 5 Counties for Number of Pumpkin Acres Harvested in 2017

- Stark 800
- Peoria 1,281
- Tazewell 3,754
- Mason 4,308
- Moultrie 759

1 acre = 43,560 square feet



• Morton, IL
Tazewell County



Over 85% of the world's canned pumpkin is processed in Morton, Illinois at the Libby's Plant.



Pumpkin pie filling is the best-selling pumpkin product on the market. Pumpkin spice lattes come in second, but can you guess what comes in at a close third? Pumpkin-flavored dog food!

Top Five Health Benefits of Pumpkins

Pumpkins are high in beta-carotene. Beta-carotene is found in orange fruits like pumpkins, carrots, and sweet potatoes. It can also be found in leafy green vegetables such as spinach. Beta-carotene is converted to vitamin A in the body, which helps with bone and cell development. Current research shows that foods containing beta-carotene may help reduce the risk of developing certain types of cancer and can help protect against heart disease and some aspects of aging.

Pumpkins are also packed with vitamin C. Eating foods with lots of vitamin C helps increase your body's white blood cell production, helps strengthen your immune system, and can even make wounds heal faster.

Eating pumpkins is a delicious way to help protect your eyesight. Pumpkins are excellent sources of vitamins C and E, as well as lutein and zeaxanthin, which all help promote healthy eyes.

Even though they are packed with important vitamins and minerals, pumpkins are surprisingly low in calories. Pumpkins contain only 50 calories per cup since they consist of more than 90% water.

Pumpkin products are easy to add to your diet since they are available year-round. Pumpkins taste great in both sweet and savory dishes. The next time you buy canned pumpkin, it is likely that it was grown right here in Illinois!



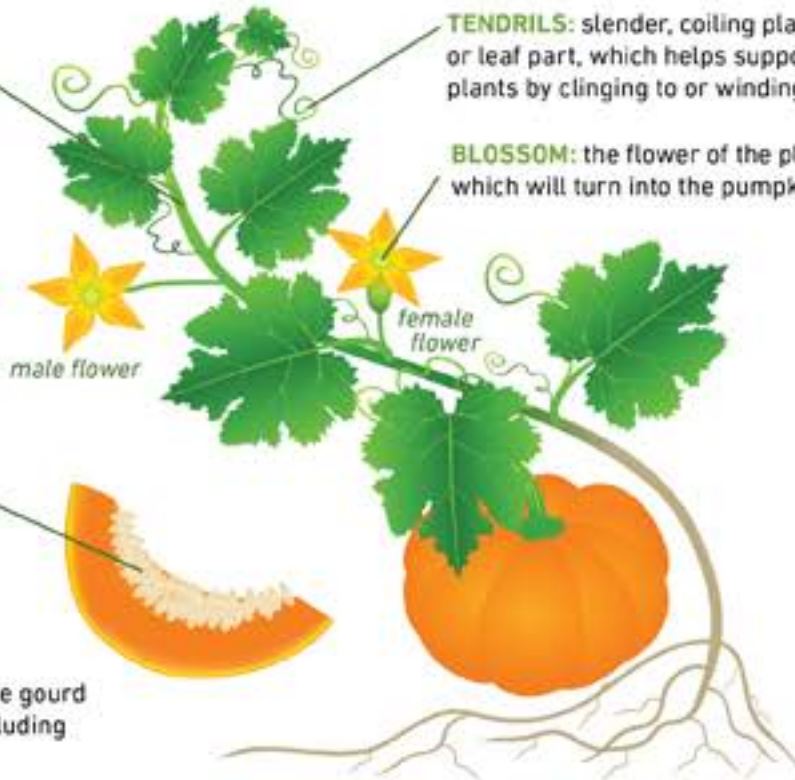
Pumpkin Vocabulary

VINE: long flexible stems that trail or creep along the ground or climb by clinging to a support with tendrils.

POLLINATION: the transfer of pollen from the male anther to the female stigma.

PEPITAS: the edible seed of a pumpkin or squash, used in cooking and often dried or toasted to be eaten as a snack food.

CUCURBITA: a genus in the gourd family, Cucurbitaceae, including squash and pumpkins.



TENDRILS: slender, coiling plant parts, often a modified leaf or leaf part, which helps support the stem of some climbing plants by clinging to or winding around an object.

BLOSSOM: the flower of the plant, which will turn into the pumpkin.

ANGIOSPERM: a flowering plant with its seeds enclosed in an ovary.

CARVE: to cut, as in to carve a jack-o'-lantern.

CROSS-POLLINATION: the transfer of pollen from the flower of one plant to the flower of a plant with a different genetic makeup.

VARIETY: a kind or type.

70%
of pumpkin-related sales occur in September, October, and November.



Pumpkin Pie-in-a-Bag Recipe

Early American settlers used to make pumpkin pie inside of the pumpkin shell. First, they sliced off the pumpkin's top. Then they removed the seeds and filled the insides with milk, spices, and honey. It was baked in the hot

ashes of a fireplace. It didn't look like the kind of pie that you get at Thanksgiving, but it was still yummy. You can make your own unique pumpkin pie, too. Just follow this recipe.

Items Needed:

Gallon Ziploc freezer bag
2 2/3 cups cold milk
2 packages (4 serving size) instant vanilla pudding mix
1 can (15 ounces) solid-pack pumpkin
1 teaspoon ground cinnamon
1/2 teaspoon ground ginger
Graham cracker crumbs
25 small cups
Scissors
1 can whipped topping
25 spoons

Directions:

Combine the milk and instant pudding in the Ziploc bag.
Remove the air and zip it shut.
Squeeze and knead with hands until blended for 1 minute.
Add the pumpkin, cinnamon, and ginger.
Remove the air and zip it shut.
Squeeze and knead with hands for 2 minutes until blended.
Place 1/2 teaspoon of graham crackers in the bottom of small cups.
Cut the corner of the freezer bag and squeeze pie filling into cups.
Garnish with whipped topping.
Add a spoon. Eat up!

How are new types of pumpkins created?

Pumpkins come in all different types of shapes, sizes, colors, and flavors. Different types of pumpkins are called varieties. When pollen from one variety of pumpkin pollinates another variety, this is called cross-pollination. Sometimes farmers and seed breeders cross-pollinate pumpkins on purpose to create a new variety of pumpkin.

The variety of pumpkins used for processing into pumpkin-flavored foods, such as pumpkin pie, have been bred for good flavor. These processing pumpkin varieties look very different and taste a lot better than the pumpkins we carve into jack-o'-lanterns for Halloween.





Pumpkins & American History

Long before the discovery of corn, Native Americans used pumpkins to help them through long winters. Over the centuries, they found many ways to enjoy the sweet inner meat of the nutritious pumpkin. They baked, boiled, roasted, fried, parched, or dried it. They added pumpkin blossoms to soups, turned dried pumpkin pieces into rich flour, and munched on the seeds as a tasty snack. They also dried pumpkin shells to create storage containers and even wove mats from pumpkin fibers.

Native Americans developed a way to grow pumpkins called the "Three Sisters." They planted three crops—corn, beans, and pumpkins—together in one place. The plants of the "Three Sisters" worked together to help each other grow. The corn stalk grew sturdy and supported the bean plant, which grew and twisted around the corn stalk. The bean plant added nitrogen to the soil, which helped the corn plant grow. The pumpkins provided a ground cover of shade, which helped the soil stay moist and kept weeds from growing.

When European settlers first arrived in America, the pumpkin, which they called "pompion," helped keep them alive after they failed at growing wheat and corn. The first American cookbook, which was published in 1796, had two recipes for "pumpkin pudding." One of these recipes is very similar to pumpkin pie recipes used to this day.

In early colonies, pumpkin shells were used as a template for haircuts to ensure a round and uniform finished cut. This resulted in New Englanders sometimes being nicknamed "pumpkinheads."



Pumpkins and Halloween

Have you ever carved a face into a pumpkin? Many people associate Halloween with the tradition of carving jack-o'-lanterns. Did you know that this tradition actually started centuries ago in Ireland? People carved frightening faces into turnips, put a candle in them, and placed them in their windows to scare away an evil ghost called "Jack of the Lantern."

When colonists from Ireland arrived in America, they found pumpkins. Pumpkins are larger and easier to hollow out than turnips. A new American tradition was born! Do you have any other holiday traditions that involve pumpkins?

The top six pumpkin-producing states

Illinois, California, Indiana, Michigan, Virginia and Texas harvest about 40% of U.S. pumpkin acres. Illinois harvests more than twice as many pumpkin acres as any of the other top states.



How Do Pumpkins Grow?



Pumpkin Seed: All pumpkins start out as seeds. With plenty of sunlight, water, and rich soil, the pumpkin seed grows into a pumpkin vine.

Pumpkin Blossom: As the pumpkin vine grows, it starts to produce pumpkin blossoms, or flowers. After pollination, these blossoms will begin to grow into pumpkins. Insects, such as bees, are important for pollinating pumpkins.

Mid-Season Pumpkin: After pollination, a tiny green pumpkin, or bud, starts to grow at the base of the blossom. Over time, this bud grows and changes in color. Most pumpkins turn from green to orange.

Mature Pumpkin: Pumpkins are harvested once they have finished maturing and their rind is hard.

How are pumpkins pollinated?

Before a pumpkin can begin to grow inside the female flower, a grain of pollen from the male flower must land on the stigma at the top of the pistil. This is called pollination. Pollination can happen in different ways. Wind can blow pollen from flower to flower. Insects help pollinate pumpkins, too. As they search for food, pollen rubs onto their legs and bodies. As these insects visit other flowers, the pollen is rubbed off without them even knowing it.

One of the most important insects for pumpkin pollination is the squash bee. Unlike honeybees, which live aboveground in huge colonies, squash bees live solitary lives in underground nests. They are also faster fliers and hairier than honeybees. These traits make them much more effective pollinators for pumpkins. Pumpkin farmers do many things to help pollinators thrive on their farms.



Pumpkins & Pollination

How do pumpkins grow?

Pumpkin plants have both male and female blossoms. Male flowers grow on top of a thin stem that shoots up several inches above the vine. The center stamen contains the pollen. There are usually several male flowers for every female flower. Male flowers usually bloom 1-2 weeks before female flowers.

Female flowers grow closer to the vine than male flowers. In the center of the female flower is a multi-segmented stigma. After pollination, a tiny baby pumpkin will begin to grow between the stem and the flower.



Female flower with baby pumpkin.



Male flower

CAREERS



Michael Deppert
Pumpkin Producer

Deppert Farms
Tazewell County, Illinois
Size of Farm: 1500 acres, with 80-120 acres in food grade processing pumpkins
Year Established: 1959
Primary Market: Wholesale contract with Nestle (Libby's)

Can you describe your farming operation?

We're a very diverse farm operation growing corn, seed corn, soybeans, green beans, wheat, rye, alfalfa, and pumpkins. We also use our rough ground as pasture for our 30-head beef cattle herd.

What products are produced from the pumpkins you grow on your farm?

All pumpkins are canned and used for food.

How are your pumpkins different than the pumpkins we use for Halloween decorations?

Canning pumpkins have a thicker shell, creating more material to process into food-grade products.

How did you become interested in farming?

I developed a strong passion for agriculture and the farm life growing up on the farm. Raising the calves and helping with the crops was fun for me and helped me develop a strong work ethic. When I moved away to college and then onto my first job in Southern Michigan my desire to farm and raise livestock strengthened and became clear. I was able to accept a job in my local area in Central Illinois working with farmers. I was then able to help out again on the family farm and my passion was evident.

What is your favorite part about your job?

I really love growing and raising food for the community and also the world! It's exciting to know the impact I can make raising crops and cattle. Farming requires many hours, but it's comforting to carry on the family tradition!



Mohammad Babadoost
Professor of Plant Pathology and Extension Specialist

University of Illinois
Urbana-Champaign, IL

Can you tell us about your job?

I am a plant pathologist and my primary role is to identify Extension needs for vegetable and fruit crops disease management, conduct the necessary research for problem-solving, and develop effective recommendations for management of the problems. My research programs help Extension educators, commercial growers, and home gardeners. I also teach a course on "Plant Disease Diagnosis."

How did you develop this interest in fruits and vegetables?

I grew up in a farming community with diverse vegetable and fruit production. I have experienced devastation of crops by plant diseases. I did not study plant pathology for having a job. The goal of my education was protecting crops against diseases for helping in establishing food security in the world. After receiving my Ph.D. degree, I continued to conduct research on and teach about vegetable and fruit pathology.

What is your favorite part of your job?

My favorite part is problem-solving. I get to use my experience to find cost-effective, environmentally-protected solutions for disease problems of vegetables and fruit crops.

Why are jobs like yours important in the agriculture industry?

Vegetables and fruit crops are essential food crops. Each vegetable and fruit crop has several important diseases. Conditions in Illinois are very conducive for plant diseases. Without research-based management strategies, we may have 100% losses of crops, as we had on processing pumpkins in 1999. Without credible research and Extension programs in crop production, our national security may be at risk. Our efforts are focused on raising high quality crops while protecting our environment and human health.



Kaylee Heap
Pumpkin Producer

Heap's Giant Pumpkin Farm
Agritourism Destination
Minooka, IL
Size of Farm: 160 acres
Year Established: 1866, pumpkins added in 2001
Primary Market: Retail sales

Tell us about your family farm and business.

My husband, Kevin, and I, along with our two boys run a U-Pick pumpkin patch located in Minooka, Illinois. We grow over 90 different varieties of pumpkins, gourds, and squash. We also have a wide variety of U-Pick sunflowers, zinnias, mums, and other fall produce all grown on our farm. We have several activities for families when they visit, including mazes, hayrides, animals, and playground areas. We are best known for our Milo's Castle Playground, a giant fort complete with a couple of pirate ships.

What special skills do you need to farm pumpkins?

Patience is definitely a special skill needed to farm pumpkins, as with farming any crop! Specific to pumpkins, it is important to understand the plant. Pumpkins are prone to disease and insects that can completely wipe them out. Having the ability to recognize when the pumpkin plant is in trouble is key to raising a healthy pumpkin crop.

Does your family specialize in giant pumpkins?

Yes, we do! My husband spends quite a bit of time getting the giant pumpkins started in the greenhouse before any of the other pumpkins go in the field. Giant pumpkins are fun to grow and families who visit our farm usually can't leave without trying to pick one up (nice try) or taking a picture by one. Our largest to date weighed over 750 pounds!

How did you get involved in the pumpkin business?

My husband always had a passion for growing pumpkins. He started his pumpkin farm business around the age of 14, when he had a farm stand in the front yard. We met just after high school and I learned quickly that if I wanted to see him, I would have to get involved and help on the pumpkin farm! Once Kevin returned from college, he was able to return to the farm full time and began growing the pumpkin business into the pumpkin farm it is today.

When working at the pumpkin farm, what is your favorite part of the job?

Fall is a fun time of year! My favorite part is when families come out to our farm to learn about pumpkins and agriculture while having a good time! I always enjoy hearing the stories from families who have visited our farm. Many have been visiting from the time it was just a farm stand in the front yard or after their school came out for a field trip. We pride ourselves in growing all our products on the farm and love the opportunity for our guests to pick fresh produce and their pumpkin straight off the vine!



The average pumpkin contains about 1 cup of seeds. Consider roasting those seeds for a unique snack!



The largest pumpkin pie ever was baked on September 25, 2010 and weighed in at 3,699 pounds! It was 20 feet in diameter. The pie was made with 1,212 pounds of canned pumpkin, 233 dozen eggs, 109 gallons of evaporated milk, 525 pounds of sugar, 7 pounds of salt, 14.5 pounds of cinnamon, and 3 pounds of pumpkin pie spice.



The heaviest pumpkin on record weighed more than 2,624 pounds. This mammoth gourd was grown in Belgium in 2016.



In North America, the heaviest pumpkin ever grown was in 2018 in New Hampshire and weighed 2,528 pounds.

Information in this Ag Mag may be linked to the following Common Core, Next Generation Science, and Social Science Standards:

Common Core Standards:
ELA-Literacy.RI.4.1; ELA-Literacy.RI.4.3; ELA-Literacy.RI.4.5; ELA-Literacy.RI.4.7; ELA-Literacy.L.4.3; Math.Content.4.MD.A.1; Math.Content.4.MD.A.2; Math.Content.4.MD.A.3; Math.Content.4.NBT.B.4

Next Generation Science Standards: 3-LS4-3; 3-LS4.C; 3-LS4-4; 3-LS1-1; 3-LS1.B; 3-LS3-2; 3-LS3.B; 4-LS1-1 4-LS1.A
Social Studies Standards: SS.G.3.4; SS.H.1.4

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For more information, visit www.AgintheClassroom.org