

# AG MAG

# NORTH CAROLINA



# Pork



## History of Pigs

Scientists believe pigs have been around for **40 million years**. Descendants of those animals are known to have been domesticated between 7,000–9,000 years ago in China.

Domesticated pigs first arrived in North America in the 1500s. It is believed that Christopher Columbus had eight pigs traveling with him to the “New World.”

In the 1600s, **raising pigs for food** became popular in the eastern United States. Settlers heading west in the 1700s took pigs with them. Pig farms and processing facilities popped up across the U.S. as the demand for pork grew.

By the mid-1900s, farmers realized the value in raising pigs indoors to better control feed costs and pigs’ growth. Advancements in reproduction and disease control in the 1980s propelled the United States as the world leader in pork production. Today, 26% of U.S. Pork is exported and relied upon by **over 100 nations**.

At Lamb Family Farms, a nursery farm in Sampson County, farming is a family affair. Learn more here! >>>



## Did you know pigs are **video game pros?**

In the 1990s, Penn State University conducted a research study using several animals. The study showed that pigs are so smart that they learned how to play a game involving a joystick better than chimpanzees and a dog. Next time you are playing video games at home you may think about how a pig could someday be trained to play against you.

## FUN FACT:

Pigs are among the smartest of all domesticated animals including dogs.



The average American eats approximately **49 pounds** of pork **per year**.

**NC** ranks **2<sup>nd</sup>** in U.S. pork production. (behind Iowa)

The world’s largest bacon plant is in Wilson County.

Pork is the most consumed protein **IN THE WORLD!**

A pig will roll in the mud to stay cool because they lack sweat glands.



**Duplin** and **Sampson** are the largest pig producing counties **in the country!**

DID YOU KNOW???

What you never knew about pigs...

Adult pigs can run a **7-minute mile!**

Pigs can drink up to **14 gallons** of water every day. **WOW!**

There are more than **2,100 pig farms** in North Carolina.

A pig has **15,000 taste buds** while humans only have 9,000.

The world’s largest pork processing plant is in **Bladen County**.

## Many Thanks!

Thank you to Christie Frederick, Wayne County Farm Bureau Kenan Fellow, for her efforts in assembling the content necessary to produce this publication.

**THANK YOU!**

# The Life Cycle of a Pig

## GESTATION & FARROWING



The gestation phase for a female pig is 3 months, 3 weeks, and 3 days. Once a gilt, also known as the female pig, gives birth it is called a sow. Sows are housed in a farrowing barn where the piglets are born. The sow is put into a special area called a farrowing stall. This specially designed stall has adjustable rails so that the sow won't hurt the piglets accidentally when she lies down or rolls over. It allows the piglets to safely nurse, run around and stay warm under heating lamps. When the piglets are born they weigh approximately 2-3 pounds. At about 21 days, weighing 13-15 pounds, they are weaned from their mother and moved to the nursery. There is a high level of **biosecurity** on a farrowing farm. What does this mean? Biosecurity is the process of washing items in and around the farrowing barn and wearing clean clothing and boots to keep livestock healthy. When entering a farrowing/sow farm all visitors and employees are required to shower before entering. They then put on clean clothes and boots provided by the farm. This helps to keep all outside germs away from the newborn piglets.



## EVERYTHING BUT THE OINK!

Have you ever wondered what happens to the parts of the pig we don't typically eat? Did you know that every ounce of a pig can be used to help create an astonishing 185 products? Here is a list of 15 items made from pigs.

- Ice Cream** contains pork gelatin to regulate the sugar crystallization and slow down the melting process.
- Fabric softener** receives its color from fatty acids taken from the pig's bone fat.
- Paint brushes** are made from pig hair.
- Paper** contains bone gelatin used to improve stiffness and reduce moisture.
- Insulin** is taken from the pig's pancreas to generate insulin; medicine used by diabetics.
- Toothpaste** contains glycerin from bone fat to provide texture.
- Candles** have fatty acids from bone fat to stiffen the wax and raise the candles melting point.
- Tambourines** are made from a pig's bladder.
- Bread dough** softens from the protein found in pig's hair.
- Soap** contains fatty acids from bone fat to act as a hardening agent and give it color.
- Candy**, such as chewing gum and gummy bears, use gelatin as a binding agent and create texture.
- Dog snacks**, such as deep fried pig noses or pig ears, are tasty treats.
- Heparin** is taken from the mucus of the pigs' intestines and used to stop the formation of blood clots in humans.
- Shampoo** contains fatty acids from bone fat to give it a pearl-like appearance.
- Alternative energy** can be used as fuel to produce electricity that comes from waste products of the pig.

## VOCABULARY

- Biosecurity** – procedures intended to protect humans and livestock animals against disease and harmful biological agents such as washing and disinfecting the animal's living area while wearing clean clothing and boots.
- Boar** – an castrated male hog of breeding age.
- By-Products** – items other than meat (pork) made from pigs after the meat is harvested; used to make a variety of items.
- Castration** – the removal of testicles from a male animal.
- Farrowing** – birthing of pigs.

- Farrowing barn** – a space designed for sows and piglets during farrowing that allows piglets to be alongside their mother and room for the sow to move around without harming the piglets.
- Feral pig** – a pig living in the wild.
- Finishing barn** – a space designed to house pigs during the last stage before market; pigs spend approximately 16 weeks here before reaching their final weight.
- Gestation** – the name for pregnancy in livestock animals; a sow's pregnancy lasts 3 months, 3 weeks, and 3 days.
- Gilt** – a female pig that has never given birth.

- Manure** – waste from livestock animals such as pigs, cattle, and sheep.
- Microorganisms** – any organism too small to be viewed by the unaided eye, such as bacteria.
- Nursery** – a place designed to house newly weaned pigs until they reach the finishing stage.
- Piglet** – a baby pig.
- Sow** – an adult, female pig that has given birth to at least one piglet.
- Wean** – time which a piglet is big enough to eat on its own and doesn't nurse from the sow.

## What is the "We Care" pork initiative?

The pork industry's "We Care" initiative is a promise that farmers are committed to the well-being of their animals. This initiative is a pledge by producers in the pork industry to produce safe food, while being stewards of the environment and good neighbors. There is a core set of six principles in the initiative. They are as follows:

### Producing safe food

Providing safe, wholesome food is the most important responsibility. Farmers work hard to employ a wide variety of technology and techniques to minimize food safety threats.

### Protect and promote animal well being

Today's pigs are raised on farms that are dedicated to the health and well-being of the animal from the day they are born. To help in this fight most pigs are raised indoors with limited access to people and other

animals. Farmers manage biosecurity by logging everyone and everything that comes in contact with their animals.

### Protecting public health

Farmers are using new technology to improve the health of their pigs and reduce the impact of their farms on the environment. Today's pork is safer and more popular than ever.

### Safeguarding natural resources and the environment

North Carolina farmers are committed to protecting our natural resources.

One example of sustainable animal agriculture is the cycle of using animal manure as natural fertilizer for crops. These crops then eventually become feed for the animals.

### Providing employee safety and education

Education and training help keep the work environment safe. Pork Quality Assurance (PQA) is a comprehensive food safety and animal well-being program that trains farmers and employees in farm operations to keep everyone (employee, farmer, animals) safe and happy. This



program documents compliance of the "We Care" principles.

### Giving back to the community

Farmers are committed to supporting their local communities. They help the local economy, volunteer their time in the community and strive to be good neighbors.

To learn more about the We Care initiative, visit our YouTube channel here



## NURSERY



The nursery is the next farm of the process. In the nursery the pigs receive a specially mixed starter diet of corn, soybeans, and supplements of vitamins and/or minerals. This mixture is designed to help them grow quickly while staying healthy. As a pig matures their diet changes to meet their health needs at each life stage. The pigs stay in the nursery for 42-56 days (6-8 weeks). At this point in the process the pigs weigh between 50-60 pounds. Some of the female gilts will be moved to a breeding room while others move to a finishing barn.

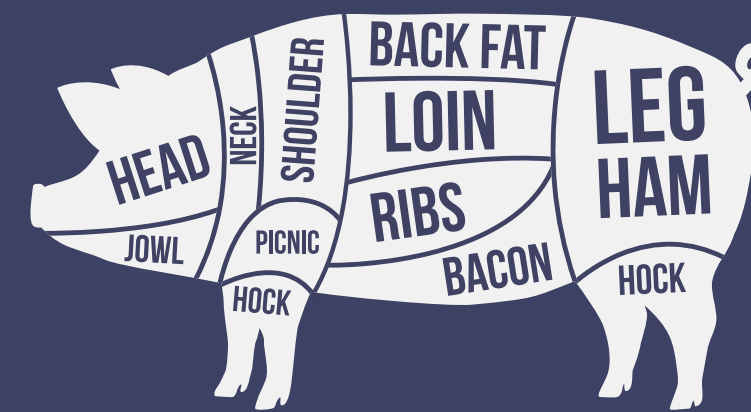


## FINISHING



From the nursery the pigs are moved to the finishing barn to help accommodate their growing size. They stay in the finishing barn for 115-120 days (16-17 weeks). During this phase they consume 6-10 pounds of feed daily to ensure proper health and growth. In the finishing barn, pigs have constant access to food and water. But did you know that pigs are one of the few animals that won't overeat? Their diet is pretty constant at this point and by 6 months, the pigs weigh about 280 pounds and are ready to go to market.

Scan here for a pig farm virtual tour!



## Parts of a Pig

There are many parts of a pig which are edible, such as the loin, head, shoulder, neck, leg and jowl.

Did you know... all pigs have small eyes and poor eyesight.



## What are hog lagoons?

Hog lagoons are pools of waste. Lagoons are used to collect manure and urine from the animals as waste to be broken down when mixed with water. Manure and urine are washed out from underneath the barns and into a lagoon 4 to 12 times a day. Most new flush swine facilities have slotted floors that allow manure to fall through the floor onto a sloped concrete alley. The flushed manure goes through a pipe to the lagoon or storage pond. **Microorganisms**, or beneficial bacteria, that decompose the manure and create a nitrogen-rich fertilizer. Farmers remove water from the top of the lagoon and spray it on their fields to feed the crops as a fertilizer. This process also creates methane gas, which can be captured and used to create electricity.



Click here to find out more



## Career Corner



### Jay Archer

Farm Manager

#### Tell me a bit about your job.

I am a 2,400-sow farm manager for Smithfield Hog Production in Tarboro, NC. The farm style is Batch Farrowing, meaning I only sell wean pigs once a month (4,500) as opposed to weekly. My hours range from 45–60 hours a week.

#### What would a typical day on the job look like for you?

That depends on what week we are on in the cycle. For two weeks, we are busy weaning pigs, washing farrowing rooms, loading farrowing rooms, breeding, and farrowing. The following two weeks are much slower. These are spent doing farm maintenance and personalized pig care.

#### What is the best part of your job?

I love animals and enjoy the mix of people I have the pleasure to work with. I have worked with people from all over the world and really enjoy hearing their stories about what brought them to the industry.



### Denise W. Mason

Career Development Coordinator

#### Tell me a bit about your job.

I work directly with production trainees and new employees while focusing on developing their leadership skills as well as animal husbandry and stockmanship skills. I also teach Pork Quality Assurance and CPR to all of our company employees at Maxwell Foods, a division of Goldsboro Milling Company.

#### How has education helped you in your current job?

Education taught me the science behind how we raise our animals and also about the discipline needed to start and finish projects. I learned the importance of educating others about agriculture.

#### How do you advocate for the industry?

I serve on the Board of Directors for the North Carolina Pork Council. I am also currently a member of Pork Leadership Institute (PLI), a joint leadership program between the National Pork Board and the National Pork Producers Council.



### Maurice Zarate

Swine Nutritionist

#### Tell me a bit about your job.

One of my responsibilities at Goldsboro Milling Company is to design diets based on a pig's needs at each stage when growing. Because the nutritional needs of a pig changes as it grows, diets are changed about nine different times. By feeding a diet of exactly what the pig needs, we can reduce waste into the environment. I also ensure farmers order the correct diet based on the stage of pig they have. We continually run research trials to learn what diets are better to help pigs grow faster.

#### What does a typical day on the job look like for you?

I review reports showing the quality of ingredients as they arrive at the mill and make sure we are using the right amounts by checking inventory reports. I meet with mill managers or the production team to discuss how pig growth is responding to feed we are giving them.



### Robert Parker

Livestock Transporter

#### Tell me a bit about your job.

I work for TDM Farms, Inc. and transport different sizes of swine, from young weaned pigs to adult hogs. My hours of weekly work depend on transportation schedules for moving livestock.

#### What does a typical day on the job look like for you?

I start by checking transport equipment and prepare animal bedding in the trailer. If needed, I adjust winter slides according to outside temperatures to keep animals as comfortable as possible. Then I travel to a farm for a scheduled loading time. I finally load and transport animals to an assigned destination.

#### How has education played a role in your current position?

Education is an important part of this job, you use different skill sets from operating transport equipment to figuring correct spacing of animals on transport trailers.



### Candied Bacon

Candied bacon is a wonderful food that combines salty, sweet, and crispy. If it's made correctly the bacon will have crispy edges and a sugary crust.

#### Ingredients

12 slices of bacon

1/3 cup of light brown sugar

\*\*Optional ground black pepper

1. Preheat oven to 325° F.
2. Place bacon in a bowl and coat with sugar. \*\*Optional-sprinkle black pepper in with sugar.
3. Cover a baking sheet with parchment paper and place bacon in a single layer on top of the parchment paper.
4. Sprinkle any remaining sugar on top of the bacon that you have placed on the baking sheet.
5. Put the baking sheet into the oven and bake for 20 minutes. After 20 minutes check to see if the bacon is crispy and brown. If not, bake for an additional 10 to 15 minutes.
6. Remove from the oven once crispy and enjoy!

#### Our mission statements:

**Ag in the Classroom (AITC)** is a unique educational program founded and affiliated with **North Carolina Farm Bureau (NCFB)** in 1985. AITC is dedicated to promoting the importance of agriculture to all Pre-K through 12th grade public and private school teachers and students through the North Carolina Standard Course of Study-based curricula, workshops for in-service and pre-service teachers, grants, ag literacy books, and county Farm Bureau support. **NCFB** was formed in 1936 as a non-profit grassroots general farm organization and along with **Wayne County Farm Bureau**, aims to serve farmers and provide a unified voice for the interests and needs of the farming community through special projects and partnerships with AITC.

The **Kenan Fellows Program for Teacher Leadership (KFP)** at **NC State** connects outstanding public-school teachers with mentors in local industry and research settings, creating opportunities that build meaningful relationships. Kenan Fellows are K-12 public school educators who spend three weeks during the summer interning at a local mentor site where they develop a deeper understanding of workforce needs, and how they can make relevant connections for students. Fellows are given unprecedented opportunities for networking, professional growth, and leadership development. **KFP** supports these exceptional teachers through its proprietary professional development that focuses on instructional leadership, project-based learning, elevating teacher voice, strengthening ties between the school and the local community, peer coaching and mentoring, and growing professional learning networks. Teachers who complete the program say they feel empowered to lead within their content-area teams, their schools, and their districts. Many become empowered to influence and lead educational innovation at state and national levels.

The **North Carolina Pork Council** aims to promote and educate to ensure a socially responsible and profitable North Carolina pork industry.

This Ag Mag complements and connects to the following Common Core Standards:

#### English/Language Arts

3rd Grade RL.3.1, RL.3.7, RI.3.1, RI.3.4, RI.3.5, RI.3.7

4th Grade RI.4.1, W.4.1, W.4.6, W.4.7

5th grade W.5.1, W.5.3, W.5.6, W.5.8, W.5.9, RI.5.1, RI.5.4, RI.5.7

6th grade W.6.8, W.6.9, RL.6.1, RI.6.4

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