NORTH CAROLINA

AG MAG

Peanuts

PEANUTS: The World Travelers

Why do peanuts like warm weather and sandy soil? Peanuts are native to the Western Hemisphere, which is a tropical and subtropical region. Spanish Explorers discovered peanuts in Brazil as early as 1500 B.C. They found that peanuts were grown as far north as Mexico. Peanuts were taken back to Europe to trade with other countries. The trade allowed peanuts to spread to Asia and Africa. Africans introduced peanuts to the United States in the 1700s.

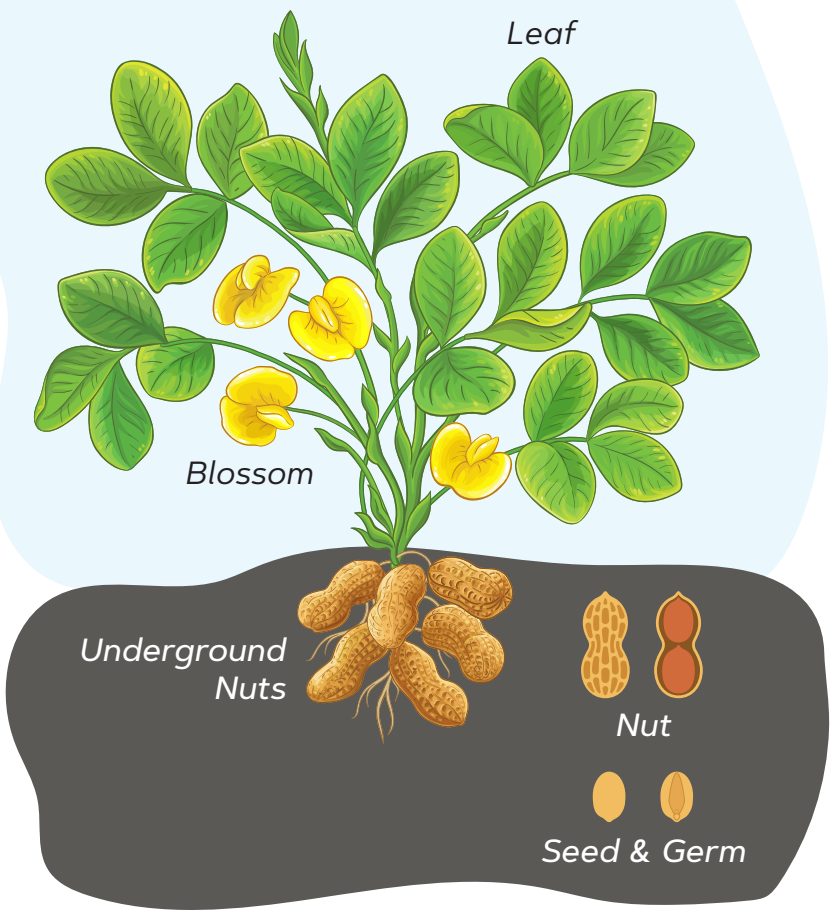
GET YOUR PEANUTS! GET YOUR PEANUTS!

Where can you buy peanuts? North Carolina has several places to buy peanuts. Farmers sell their peanuts to shellers and processors. You can get peanuts still in the shell (in-shell) and shelled. Farmers use 10% of peanuts for the next year's crop, so what about the 90%; where do they go?

First, the peanuts are inspected and graded by the Agricultural Marketing Service of the U.S. Department of Agriculture to determine the quality. Once the peanuts have been graded, they are sent to the processor or processing plant, where they are cleaned or shelled.

Next, the peanuts will go through a machine that will separate the kernels from the shells, and companies sell the shelled peanuts.

Parts of a Peanut Plant



DID YOU KNOW?

September 13 is **NATIONAL PEANUT DAY**

North Carolina is **ranked number 5** in the United States for **producing peanuts**

It takes about **540 peanuts** to make a **12-ounce jar** of peanut butter.[2]

The average peanut farm is **100 acres.**[2]

Two peanut farmers have been elected president of the USA – **Thomas Jefferson** and **Jimmy Carter.**[2]

Peanuts are not nuts. They are legumes! Legumes are flowering plants that have seeds in pods which grow on the roots of the plant. Peanut pods develop underground.

Many Thanks!

A big thank you to LeAnn Nixon, Chowan County Farm Bureau's Kenan Fellow, for her efforts in assembling the content necessary to produce this publication.

Farmers plant the peanut seed 1 to 2 inches apart. They start planting from late April to the first of May. Peanuts are drought tolerant once established, but do need rainfall to help in the growth stage after planting.

This picture is Day 5 after planting. Seeds have started to germinate in the soil. Peanut seedlings will begin breaking the seed shell as growth continues.

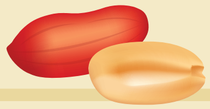
This picture was taken around Day 14. The peanut plant has grown and spouted out of the ground. It will take about 10 days for the peanut seedling to break the ground. Peanut seeds grow into a green oval-leafed plant about 18 inches tall. The plant will grow steadily for a month.

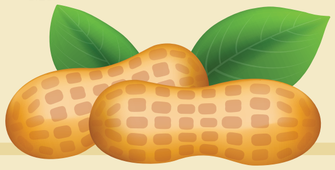
Day 35: You can see the seed and the downward growing roots. The peanut plant has doubled in size.

Day 45: Between 30 and 45 days after planting, peanut plants will begin to blossom. A small yellow flower will appear in the lower part of the peanut plants. The flowers will pollinate and lose their petals. These are pegs. A peg is a tube-like structure that is formed after successful fertilization in flowers. After 10 days, the peg will bend down and penetrate the soil. The embryo will develop underground, and eventually become a pod, or peanut. The peanut plant will continue to grow and flower. Peanut plants can have 40 or more pods.

Day 89: Peanut plants continue to grow. The peanut pods are soft and small. The peanut's plant cycle will take about four to five months. Peanuts are nitrogen-fixing plants; their roots form nodules that absorb nitrogen from the air and provide enrichment and nutrition to the plant and soils. These nodules are enlargements of the root hair composed of plant cells.

PEANUT LIFE CYCLE





Fall is Harvest Time!

1. Mid-September is when farmers will start the process to harvest the peanuts. It is now between 140 to 150 days from planting. First, farmers will use a tractor and a peanut digger. The digger moves the peanuts upward until the vines are inverted and shakes off the dirt. Peanuts have a moisture content of 25 to 50 percent when they are first dug. Farmers will leave the peanuts in the fields for a few days before harvesting them to allow them to dry.
2. The farmers use a peanut picker to remove the peanut pods from the vines. The peanut picker or combine (also known as a thresher) will shake the peanuts and vines apart. The peanuts are blown into a hopper on top of the machine. The vines are deposited back in the field to improve soil fertility. Farmers will also use the peanut vines for livestock hay.
3. The peanuts are placed into a drying trailer, where they continue to cure. The curing process for peanuts will force warm air to circulate through the trailer until the moisture content is at the correct percentage. To be stored, peanuts must have 10% or less moisture content. Peanuts will stay in the trailers until they are sold to shellers and processors. Some farmers keep 10% of their peanuts for next year's crop.

Take a Virtual Field Trip to a Peanut Farm!

Peanut Butter Nutrition

from USDA Foods Product Information Sheet for Child Nutrition Programs

NUTRITION FACTS

Serving Size: 1. 1 oz. package 1 MMA peanut butter

Amount Per Serving	
Calories	200
Total Fat	17g
Saturated Fat	4g
Trans Fat	0g
Cholesterol	0g
Sodium	150mg
Total Carbohydrate	9g
Dietary Fiber	2g
Sugars	5g
Protein	6g

Source: USDA Foods Vendor Labels

Let's Make Peanut Butter!

Traditional Peanut Butter Recipe[4]
makes about 1 ½ cups of peanut butter

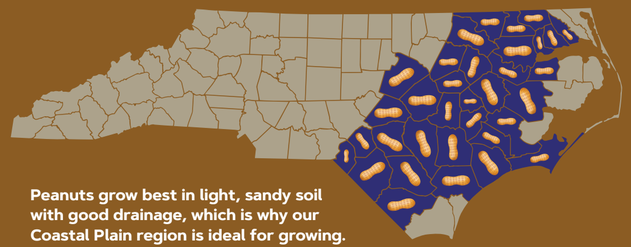
INGREDIENTS

2 cups raw, Shelled Peanuts • ½ teaspoon salt

1 tablespoon sugar or honey • 1 tablespoon peanut oil

1. The first step in making peanut butter is roasting the peanuts. Heat the oven to 350° and place the peanuts onto a baking sheet.
2. Bake the peanuts for around 10 minutes, or until they become a light golden brown.
3. Put the warm, roasted peanuts into a food processor or blender and pulse them until they are ground, about one minute. Scrape the sides and bottom of the bowl and pulse the processor again. Slowly, they will transform into a glossy, soft butter.
4. After three or four minutes of grinding the peanuts, add in the sugar (or honey), salt, and oil and continue to process for an additional one or two minutes until done.
5. The finished product should be rich, creamy peanut butter, which can be easily transferred to a storage container.

North Carolina Peanut Counties



Peanuts grow best in light, sandy soil with good drainage, which is why our Coastal Plain region is ideal for growing.

Peanut Pests

Wildlife also considers peanuts a tasty treat – black bears and white-tail deer love to feed on the plants and peanuts! Here is a spot where a black bear pulled up the peanuts and started eating. You can also see deer tracks in the sand.

Learn about Peanut Sustainability

What's your *favorite* peanut?[4]

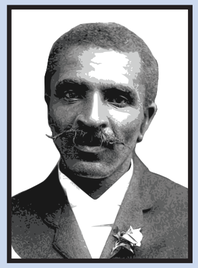
Runner — used primarily to make peanut butter. This type of peanut makes up about 80% of peanuts in the United States. This variety is grown mainly in Georgia, Alabama, Florida, Texas, and Oklahoma.

Valencia — contains three or more kernels per shell and are used mostly in-shell for roasting and boiling. Valencia has a sweet flavor and is used for all-natural peanut butter. These are mainly grown in New Mexico.

Spanish — rounder and smaller kernels used for snack nuts, peanut butter, and confections. Spanish peanuts are known for their red skins and nutty flavor profile. They have a slightly higher oil content, which adds to their flavor when roasted. These peanuts are almost exclusively grown out West, in Texas, Oklahoma, and New Mexico.

Virginia — used mainly as snack peanuts and in-shell peanut products. These have the largest kernels and account for most of the peanuts roasted and eaten as in-shells. When shelled, the larger kernels are sold salted or flavored. Virginia-type peanuts account for about 10% of total U.S. production. These are grown mainly in northeastern North Carolina, Virginia, South Carolina, and West Texas.

George Washington Carver[1]



George Washington Carver helped the agricultural community when boll weevils threatened the cotton crop. Carver researched and showed that peanuts could be planted as a rotation crop in the cotton fields. He found that growing peanuts would help the soil improve after a cotton crop. **Crop rotation** preserves and improves the soil because new crops can replenish minerals to the soil that were depleted by previous crops. In reverse, a different crop will sometimes return missing minerals to the soil as the plant dies and composts. Farmers like to rotate peanut crops every three or more years with different field crops, such as corn, soybeans, and cotton.

Carver conducted experiments with peanuts at the Tuskegee Institute. He found 300 uses of peanuts. He helped make peanuts one of America's most popular crops.

VOCABULARY

Agriculture: the science of cultivating soil, producing crops, and raising livestock; includes preparation and marketing of resulting products

Crop rotation: a method of breaking disease cycles and renewing the fertility of the soil by planting a succession of different crops on the same piece of land

Cure: forcing warm air to circulate through a trailer to pull moisture out of the peanuts

Digger: moving the peanuts upward from the digger blades until the vines are inverted.

Germinate: to start or cause to start growth; sprout

Global Positioning System (GPS): technology on farm machines that provide positioning, navigation and timing services for the machine

Legume: any of the family of plants that grow their seeds and fruit in pods. Beans and peas are legumes

Nitrogen-fixing plant: any of various processes to convert atmospheric nitrogen into compounds with other elements, either naturally as by bacteria, in leguminous plants or the soil, or chemically for industrial use, such as fertilizer

Peg: the budding ovary of a peanut flower. The peg enlarges and grows down and away from the plant, forming a small stem that extends to the soil. The peanut embryo is in the tip of the peg, which penetrates the soil. The embryo turns horizontal to the soil surface and begins to mature, taking the form of a pod, or peanut.

Pollinate: move or carry pollen to a plant, causing the seeds to be fertilized

Thresher: this is a machine that picks peanuts. Most people call this a peanut picker.

CAREER CORNER

Neal Bass and Sons

Beech Fork Farms

Tell me a bit about your job?

I'm Neal Bass, and I farm approximately 1,600 acres of land consisting of peanuts, cotton, corn, soybeans, watermelons, sweetpotatoes, wheat, and rye.

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

A typical day on the operation would be coming into work and delegating responsibilities to my employees. During planting season, we check the planter to make sure everything is set correctly for proper seed placement. During the growing season, we will scout the peanuts for diseases. Just before peanuts are ready for harvest, we begin checking each field to see which crop is the most mature. Once the decision is made to start harvesting we begin to plow up the peanuts. On day 3 or 4, we will begin to harvest the peanuts and transfer them to a drying trailer. Once the peanuts are in the trailer we will transport them to the drying shelter to begin the drying process.

How long has your family been in the peanut business?

My family has been farming peanuts for 75 years.

How big of a role does technology play in your farming operations?

We use a GPS (Global Positioning System) to plant and spray precisely. GPS helps me guide my tractors through fields. This allows for more precise harvesting and to minimize damage to the crop. I will watch the crops being planted and harvested without worrying about veering off course. I still have to turn the tractor into a row and make a turn at the end of the row.

How has education played a role in your current position?

My education has helped me in management skills as well as day-to-day challenges that a normal farmer faces. Some challenges might consist of financial planning, crop rotation, sales, etc.

West Small

Virginia Fork Co.

Tell me a bit about your job?

In dealing with peanuts, we have to get the trailers of peanuts inspected. We bring them in green, and dry them. When we get them to a certain moisture level, USDA grades them and gets a money value on them. After that, we either store them, or they are hauled off.

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

During peanut season, it's checking the moisture content on the trailers, then grading them and dumping them. We typically have earlier mornings/longer days during peanut season, depending on how many trailer loads of peanuts we have.

How long has your family been in the peanut business?

Since 1970.

How has education played a role in your current position?

As it deals with peanuts–keeping up with the changing varieties to plant, and what type of land gets the best yields.

Ashley W. Collins

Chief Executive Officer, North Carolina Peanut Growers Association

What is your job title, and what do you do?

Chief Executive Officer. I steward the dollars the peanut growers in North Carolina have contributed from the profits of their crop to be used to; promote that more people eat peanuts, research scientific strategies to grow higher-yielding/ disease resistant peanuts, and support or oppose legislation that impacts peanut producing practices.

How has education helped you in your current job?

My undergraduate and graduate degrees in Agriculture Education certainly help me in my ability to communicate and speak publicly about peanuts with people who understand farming as well as those who are less exposed to agriculture. However, much of the knowledge I use daily comes from experiences I have had throughout my career. Experiences such as negotiating, budgeting, goal setting, time management, and prioritization are all skills I use every day.

What are your favorite things to share with people about your job?

I love sharing with people how peanuts are grown and harvested. So many people do not realize a peanut develops underground and then is dug up and left to dry in a field before harvesting. I also enjoy helping people be more aware of the research being conducted to help prevent and curb peanut allergies and the advancements that have been made on that topic in just the last 20 years.

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* ***Chowan 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.*

This Ag Mag complements and connects to the following North Carolina Standard Course of Study:

Social Studies

1st grade *1.C&G.1.1, 1.C&G.1.4, 1.H.1.1*
2nd grade *2.H.1.2,*
3rd grade *3.G.1.2, 3.G.1.3, 3.H.1.2*
4th grade *4.E.1.2, 4.E.1.3, 4.G.1.1, 4.G.1.2*

Science

1st grade *1.L.1, 1.L.1.2*
2nd grade *2.E.1.1, 2.E.1.2, 2.E.1.4, 2.L.2.2*
3rd grade *3.L.2, 3.L.2.1, 3.L.2.2, 3.L.2.3*
4th grade *4.L.1.1, 4.L.2.1, 4.L.2.2*
5th grade *5.L.1, 5.L.2*
6th grade *6.L.1*
7th grade *7.L.1*
8th grade *L.2.1*

English/Language Arts

1st grade *RI.1.1, RI.1.2, RI.1.3, RI.1.5*
2nd grade *RL.2.1, RI.2.1, RI.2.2, RI.2.3, RI.2.4, RI.2.5*
3rd grade *RL.3.1, RL.3.4, RI.3.1. RI.3.2, RI.3.3, RI.3.4, RI.3.5*
4th grade *RL.4.1, RL.4.4, RI.4.1, RI.4.2, RI.4.3, RI.4.4, RI.4.5*
5th grade *RL.5.1, RL.5.4, RI.5.1, RI.5.2, RI.5.5*
6th grade *RL.6.1, RL.6.2, RL.6.4, RI.6.1, RI.6.2, RI.6.3*
7th grade *RL.7.1, RL.7.2, RL.7.4, RI.7.1, RI.7.2, RI.7.5*
8th grade *RL.8.4, RI.8.1, RI.8.2, RI.8.3, RI.8.5*

Health

3rd grade *3.PCH.1.2, 3.NPA.1.2*
4th grade *4.NPA.1.1, 4.NPA.1.2*
5th grade *5.NPA.1.1*

This issue of the North Carolina Ag Mag has been provided by:

REFERENCES

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