

Virginia's Agricultural Resources

Agriculture in Virginia

Agriculture is Virginia's largest industry and forms the basis for a number of related enterprises, including food and fiber production, processing, distribution, and marketing. About 20 out of every 100 jobs are held in agriculture. In Virginia, agriculture spans a wide spectrum of activities, from the traditional raising of field crops, vegetables, livestock, and nursery products, to the breeding of commercial horses, the bottling of premium wines, and the growing of fish, or aquaculture.

Agriculture has changed dramatically in the past 200 years. When the country was first settled, most people were farmers and grew their own food. But a fundamental change occurred when farm machines like tractors were invented. Farmers could then produce more crops in less time using fewer laborers and could grow more food than they could eat.

Agriculture is still changing. Biotechnology is leading us to improved plants and animals. As this technology advances, it will be possible to use plants and animals for specific purposes, such as the production of medicines, and improved genes will render crops that rely less upon chemicals and fertilizers. Like other caretakers of the land, farmers have a keen interest in maintaining healthy soil and water resources through careful stewardship.

As the map below indicates, a wide assortment of crops and livestock grows throughout the Commonwealth.

Natural Conditions Support Farming

Plants rely upon three ingredients to grow: the sun's energy, water, and nutrient-rich soil. But beyond this, crops have distinct needs. For instance, some need fine soil such as clay while others need coarse, sandy soil to grow. They also require varying amounts of rain and different temperatures to thrive.

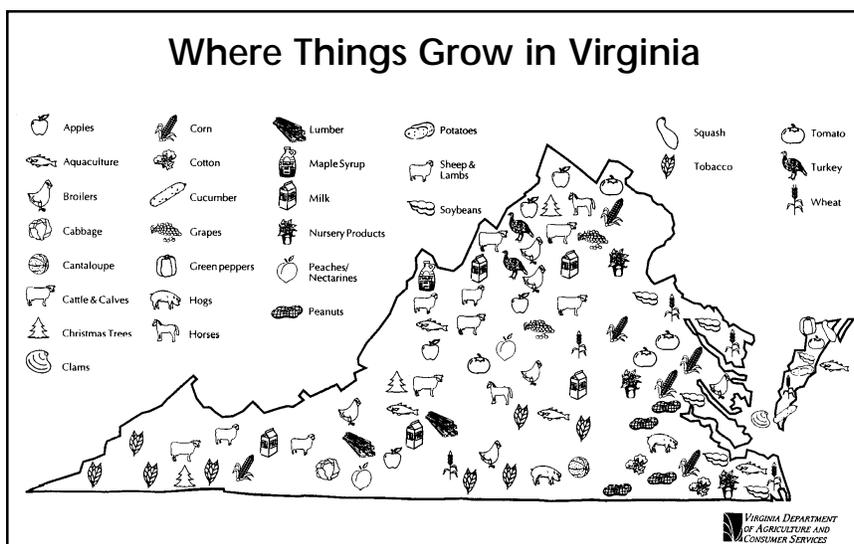
Virginia has a mild climate and receives about 40 inches of rain each year, making it an ideal growing location for many kinds of field crops. The Commonwealth is large and endowed with regions of unique natural resources — from the mountains of the west to the sandy soil of the east. Its four major geographic regions (moving from west to east) are the Allegheny Plateau, Ridge and Valley, Piedmont, and Tidewater.

Virginia's Geographic Regions

The Allegheny Plateau in the extreme western part of the state is mountainous. Much of this land is used for pasture, and many farmers raise beef cattle and sheep here. Cooler temperatures in the region of southwest Virginia promote the growing of burley tobacco, some livestock, and Christmas trees.

The Ridge and Valley region refers to Virginia's Blue Ridge Mountains and Shenandoah Valley. In the southern part of this region, the land is very hilly and rocky, similar to the Allegheny Plateau. Like the Allegheny Plateau, this land is used primarily for pasture. Many farmers raise beef cattle, horses, dairy cows, and sheep. Moving northerly, the land becomes flatter and conducive to other livestock and crops, such as apple and peach orchards.

The Shenandoah Valley is home to many important agricultural counties. One is Rockingham County, known as one of the top 100 counties in the United States for agricultural production. It is famous for its poultry output — turkeys, chickens, and eggs. In fact, Rockingham County is called the "Turkey Capital of the World." Dairy cattle are also important to this county in Virginia.



The Piedmont Region is known for its heavy, clay soils. In the southern reaches, Virginia's most famous crop, tobacco, is grown. Four different types of tobacco are raised across the Commonwealth: flue-cured, burley, dark-fired, and sun-cured.

The soils of the northern Piedmont, by contrast, are good for growing grass. Turfgrass and crops like winter wheat thrive. As the name implies, winter wheat is planted in the fall and lives through the winter at a height of a few inches. In the spring, it grows rapidly and, come summer, is harvested. The northern Piedmont is also home to dairy cows, horses, corn, and peach orchards.

Soils of the Tidewater Region are lighter and sandy in nature. These soils promote the growth of evergreens and pine forests, as well as cotton, corn, wheat, and soybean. Peanuts also grow well in the sandy soils of the Tidewater Region. The many peanut farms in Virginia are famous for producing large peanuts of excellent quality.

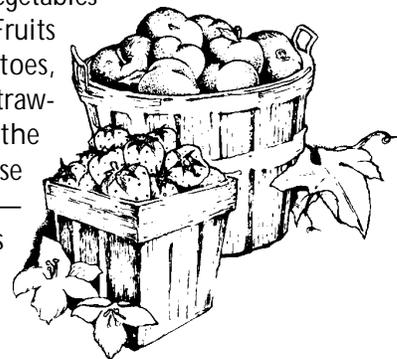
Virginia's Rank in U.S. Agriculture, 1998		
Rank	Item	% of U.S. Production
3	Burley Tobacco	3.35
4	Flue Cured Tobacco	9.30
4	Tomato, Fresh Market	3.45
5	Turkeys	6.72
5	Cucumbers, Fresh Market	6.39
6	Apples	2.60
6	Total Tobacco	6.58
6	Peanuts	5.36
7	Summer Potatoes	8.15
7	Snap Beans, Fresh Market	4.80
8	Bell Peppers, Fresh Market	.86
9	Commercial Broilers	3.66
10	Sweet Potatoes	.67
12	Barley	1.48
13	Cabbage, Fresh Market	1.59
14	Cotton	.75
16	Rye	2.24
17	Peaches, Freestone	.60
18	Chickens, Farms	1.58
19	Milk, Wholesale	1.19
21	Sheep & Lambs	1.05
22	Soybeans	.44
22	Winter Wheat	.67
24	Cattle & Calves	1.28
24	Eggs	1.11
24	Sweet Market Corn	.26
26	Hogs	.64
26	Corn for Grain	.32

Source: Virginia Agricultural Statistics.

Many years ago pigs in this area ate peanuts, which gave their meat a special flavor. They were called "Smithfield Hams" after the town of Smithfield. Today, however, the term "Smithfield Ham" refers to a ham that has undergone a special curing process using smoke.

Cradled by the Atlantic Ocean to its east and the Chesapeake Bay to its west (and part of the Tidewater Region) is Virginia's Eastern Shore. Here, not surprisingly, you'll find plenty of light, sandy soil. The soil warms up quickly in the spring, permitting the early planting of crops. Because of this "jump" on the growing season, a second crop can be raised after the first is harvested.

Farmers on the Eastern Shore raise over 60 kinds of vegetables and fruits. Potatoes, cucumbers, squash, and green beans are vegetables common to the area. Fruits raised include tomatoes, apples, peaches, and strawberries. Farmers on the Eastern Shore also raise corn and soybean — staples in many kinds of feed for both people and animals.

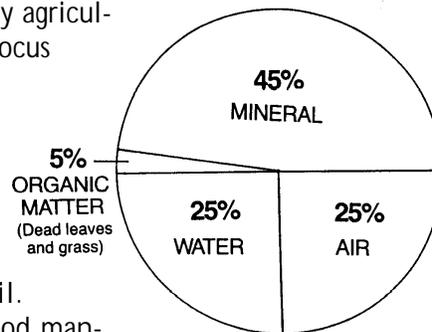


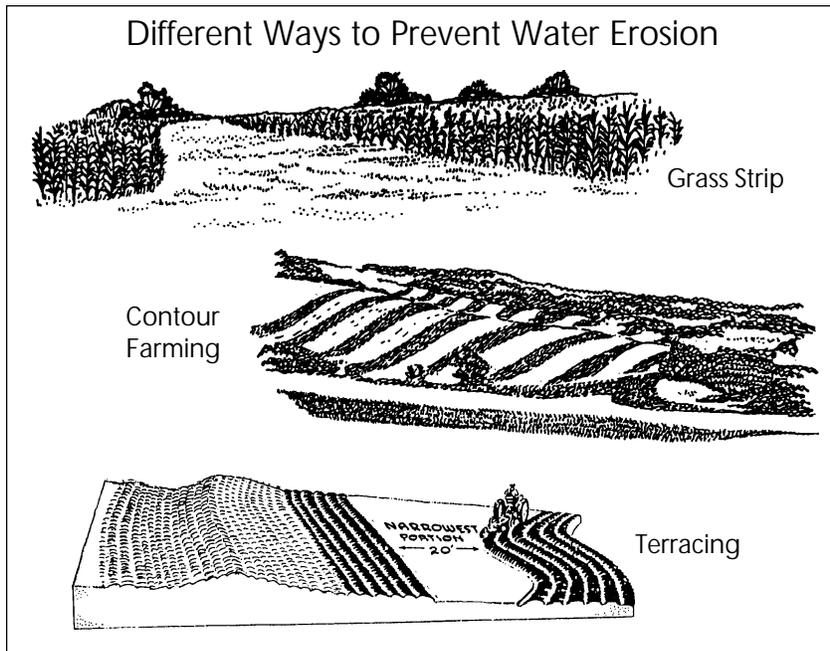
Soil Conservation is Key

Soil is a mixture of minerals, water, and air. It also contains organic matter, such as dead leaves and grass. It is generally a combination of clay, silt, and sand, with the majority of its nutrients in the top layer, ranging from six to ten inches deep. This top layer, or topsoil, also contains the most minerals and is the layer in which plant roots best take hold. (For more discussion, see the Soil Resources chapter.)

Topsoil is the only layer in which plants grow well and, for this reason, across the nation many agricultural programs focus on conserving America's topsoil. Nature may take more than 100 years to build an inch of topsoil.

Yet, without good management, an inch of topsoil can be lost in just a few days. The loss of soil is called erosion and is generally caused by water and wind.





time, in fact, it was used as currency. Tobacco has been raised for over 300 years and has brought more money to our state than any other crop.

Agriculture Today

Agriculture remains Virginia's largest industry. There are approximately 47,000 farms in Virginia, averaging 181 acres. (To qualify as a Virginia farm, \$1,000 of farm income must be produced.) Compared to other states, particularly those in the Midwest, Virginia has small farms. In some places in the eastern part of the state farm size is increasing, while in other areas it is on the decline.

In addition to traditional production methods, farmers are utilizing

Farmers can reduce water erosion by several means, including minimum tillage and planting grass strips—which act as sponges between fields. Contour farming and terracing are other methods that work with the natural contours of the land to reduce soil runoff.

Windbreaks can help prevent erosion caused during high winds. A windbreak uses several rows of trees to slow the wind's movement across a field. Growing and leaving a cover of crops instead of exposed, bare soil also helps prevent wind erosion. All of these methods are collectively referred to as "best management practices."

modern techniques, such as nutrient management and integrated pest management, to maximize production while minimizing their use of fertilizer and pesticides. Some farmers are using organic production methods in response to increased demand for organically grown food. The U.S. Department of Agriculture is working to determine a uniform definition for food that is organically grown. Regardless of the production method used—traditional, modern, or organic—each has costs and benefits.

Farming in Colonial Times

In colonial days, farm families grew corn, wheat, and tobacco and raised cattle and hogs. Native Americans, who were the country's agricultural experts, taught these first families appropriate methods of farming in the New World. One critical technique the colonial farmer learned from the Indians was the planting of crops in rows.

During colonial times, rich farmers were few and far between. Large landholders were known as planters, and they lived on plantations. Work on these plantations was performed by slaves. Planters grew vegetables and livestock for themselves and their laborers. They grew tobacco and cotton for export.

Cotton was important to the colonial economy in Virginia. Corn, beans, wheat, and peas were also grown. They were called "foodstuffs," or crops grown for food. However, in Virginia the single most important crop during colonial times was tobacco. At one

Virginia Farm Income

Commodities	Receipts in \$1,000's		1997 % of total sales
	1994	1997	
Total Commodities Sold	2,194,166	2,403,233	100.0
Tobacco	168,590	190,781	24.2
Soybeans	80,491	99,150	7.9
Corn (grain)	52,449	69,450	2.9
Wheat	43,719	53,562	2.2
Peanuts	80,075	48,497	2.0
Cotton (lint and seed)	25,700	50,439	2.1
All other field crops (hay, potatoes, barley, sweet potatoes, rye, other field crops)	55,715	69,059	
Vegetables	93,480	77,691	3.2
Fruits & Nuts	45,129	43,019	.6
Greenhouse & Nursery (floriculture nursery, greenhouse, Christmas tree)	139,387	163,925	6.8
Poultry & Eggs (broilers, eggs, turkey, chickens, misc.)	664,131	730,034	30.4
Meat Animals (hogs, cattle, calves, sheep, lambs)	370,104	428,231	17.8
Milk	272,272	258,160	10.7
Misc. Livestock (honey beeswax, wool, others)	102,924	150,585	6.3

Source: Virginia Agricultural Statistics.

Year	# of Farms	Farm Land (in 1000 acres)	Avg. Size (in acres)
1975	62,000	10,100	163
1980	58,000	9,800	169
1985	54,000	9,500	176
1990	46,000	8,900	193
1995	47,000	8,600	183
1997	47,000	8,500	181

Source: Virginia Agricultural Statistics.

The chart here indicates that both the number of farms and acres in farm land are on the decline. And in Virginia, as across the United States, farmers are growing older. According to the U.S. Census of Agriculture, in 1955 the average age of the American farmer was 49.6. Today it is 57. Each farmer in the U. S. produces enough food for about 130 people — distributed to roughly 100 here and 30 overseas.

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On the brink of the 21st century, tobacco continues as the state's chief crop. The poultry industry (broilers), however, provides the largest percentage of agricultural product to the state's economy. Corn, cotton, hay, peanuts, soybeans, wheat, and fruits such as apples, are also important, and are complemented by beef and pork production, dairy farming, and tree harvesting (silviculture).

Discussion Questions

1. How is agriculture different than it used to be?
2. How is agriculture changing today?
3. What does the word livestock mean?
4. What is the size of the average farm in Virginia?
5. How would Virginia's crops and livestock be different if we had different natural conditions?
6. Name Virginia's four geographic regions.

7. Identify two important crops and two important types of livestock for each region.
8. Why is it important to protect soil from erosion?
9. Name four ways to prevent soil erosion.
10. Is land use in your area changing? How? (e.g., number of farms, farm size, crops grown)
11. Are there farms in your area? (Check farmer's market directory for help.)

Additional Resources

Web Sites:

- u U.S. Department of Agriculture; www.usda.gov/history2/front.htm, and www.nass.usda.gov/va/
- u Virginia Farm Bureau; www.VAFB.com
- u Utah AITC; www.ext.usu.edu/aitc/
- u Virginia Tech (VPI&SU); www.ext.vt.edu/departments/cses/agroeco/agroeco.html

Other Resources:

- u The Virginia Foundation for Agriculture in the Classroom (AITC) provides free training and materials for teachers around the state. Teacher guides (K-4) are available to those attending in-service training sessions. Materials below can be ordered from AITC at (804) 784-1374, or e-mail: ahyda@VAFB.com.

Farm Facts Booklet: Outlines facts about today's agricultural production, food consumption, and international trade; great for bulletin boards. Published by the American Farm Bureau Federation; \$3.00 each, or \$1.25 each for 3+, plus s/h.

Farm Facts Transparencies: Overheads of four-color illustrations, booklet; \$15.

Farm Facts Lesson Plan Folder: (for grades 4-6 or 7-12) Units emphasize skills in language arts, math, social studies, research; student worksheets can be copied for classroom use and teacher answer sheets; \$4.50, or 3+ for \$4.00 each, plus s/h.

Fundamental Learnings Related to Agriculture

- R Crops and animals have distinct needs to grow and thrive.
- R Virginia has four geographic regions (for physiographic regions, see Minerals & Energy chapter).
- R Where crops and animals are grown depends upon local soil and climate conditions.
- R Technological advances have allowed farmers to better use our natural resources and become more and more productive.
- R Today's agriculture produces more yield per acre than ever before but requires the use of modern agricultural technologies, such as fertilizers, pesticides, and hybrid seeds.
- R Conservation practices encourage farmers to protect water and soil resources.

Changes in Virginia Farming

(Courtesy of the North Carolina Farm Bureau)



Purpose

To be able to compare and contrast colonial and modern farming.

Activities

1. Instruct students to research farming in colonial Virginia. Have each student make a list of changes that have occurred in Virginia farming, such as the switch from horse and plow to mechanized farming and changes in crops, fertilizer use, insect control, harvest techniques, and other management practices.
2. Using the information collected and charts provided, ask students to write paragraphs and graphically depict what they have learned.
3. Analyze with students how simple machines were the foundation of farm equipment.

Extension Activities

1. Instruct students to write cause and effect paragraphs, explaining the reasons for changes in farming. After checking the papers, make suggestions and have the students revise their paragraphs.
2. Have students create shoe box dioramas depicting colonial farming techniques.
3. Divide students into two groups. One group will represent farming in the 1700s. The other will represent farming in the present day. Have the groups write short skits to share facts about their time period with the class. The skits should include information about the types of equipment used, the kinds of crops grown, and the kinds of people laboring on farms.

Grade Level: 4

SOLs:

Science 4.2, 4.8

English 4.7, 4.8, 4.9

History 4.1, 4.2, 4.3

Materials:

p Background information

p Research materials on modern and colonial farming in Virginia

Objectives:

1. Identify the reasons for and effects of changes in Virginia agriculture.
2. Use pre-writing techniques to generate ideas for writing and create a draft with emphasis on content related to agriculture.

Vocabulary Words:

acre

best management practice

forestry

organic

textiles



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Usual Harvesting Dates

Crops	1998 Harvested Acres	Usual Harvesting Dates		
		Begin	Most Active	End
Field Crops (thous. acres)				
Barley	65	Sept. 10	Oct. 5 - Oct. 30	Nov. 25
Corn (grain)	325	Apr. 5	Apr. 20 - May 20	June 5
Cotton-upland (lint)	100	Apr. 10	Apr. 20 - May 10	May 20
Peanuts for nuts	74	Apr. 20	May 5 - May 20	May 25
Rye	5	Apr. 20	Aug. 25 - Nov. 20	Nov. 30
Soybeans	490	Apr. 30	May 20 - June 30	July 10
Flue Tobacco	41.00	Apr. 30	May 5 - May 20	May 30
Wheat (winter)	250	Sept. 25	Oct. 20 - Nov. 15	Nov. 30
Vegetables (actual acres)				
Snap Beans (summer)	5,200	June 1	June 10 - July 31	Sept. 30
Cabbage (summer)	1,300	June 1	July 15- Aug. 31	Sept. 15
Sweet Corn (summer)	2,100	June 25	July 1 - July 31	Sept. 15
Cucumbers (summer)	5,600	June 15	July 1 - July 31	Aug. 25
Tomatoes	3,300	June 25	July 1 - Aug. 1	Aug. 31

Source: Virginia Agricultural Statistics.



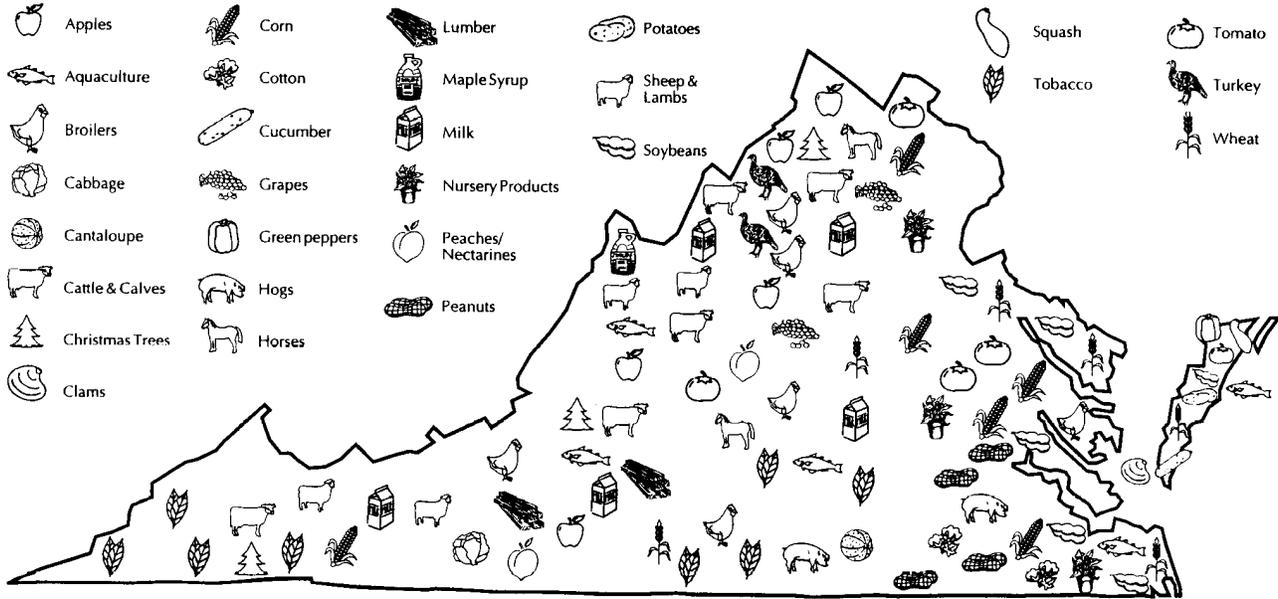
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Where Things Grow in Virginia



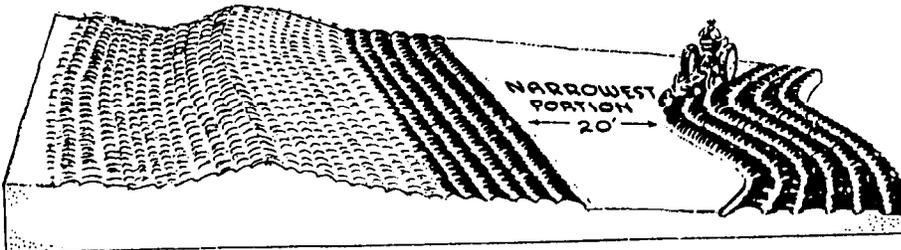
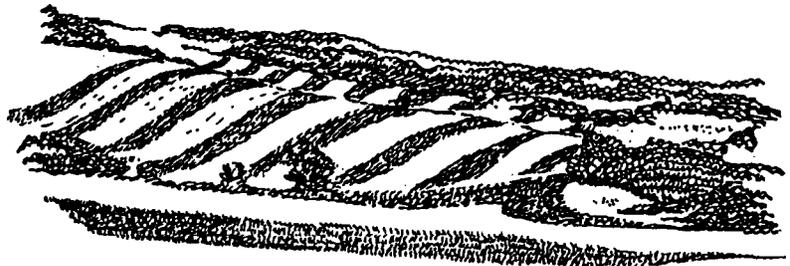
VIRGINIA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES

Different Ways to Prevent Water Erosion



Grass Strip

Contour Farming



Terracing