

# Agricultural/Food Science Technician

## Snapshot

**Career Cluster(s):** Agriculture, Food & Natural Resources; Science, Technology, Engineering & Mathematics

**Interests:** Agriculture; animals; food

**Earnings (Yearly Average):** \$41,230

**Employment & Outlook:** As Fast As Average Growth Expected

## OVERVIEW

### Sphere of Work

Agricultural and food science technicians assist agricultural and food scientists, including animal scientists, by performing duties such as measuring and analyzing the quality of food and agricultural products. Tasks include agricultural labor, recordkeeping duties, laboratory testing, and office work, depending on the field in which the technician works.

### Work Environment

Agricultural and food science technicians primarily work in offices and laboratories, but may also work in greenhouses, processing plants, and on farms or ranches. In non-office settings, they may be required to be physically active for long periods.



Food science technician (D-Keine via iStock)

### **Occupation Interest**

Agricultural and food science technicians usually have a passion for both science and nature. They want to ensure that crops and livestock remain vibrant and healthy, for the benefit of the environment and for human quality of life.

### **A Day in the Life—Duties and Responsibilities**

Agricultural and food science technicians often specialize by subject area, which includes animal health, farm machinery, fertilizers, agricultural chemicals, or processing technology. Duties can vary considerably by specialization.

Agricultural science technicians typically study ways to increase the productivity of crops and animals. These workers may keep detailed records, collect samples for analyses, ensure that samples meet proper safety and quality standards, and test crops and animals for disease or to confirm the results of scientific experiments.

Food science technicians who work in manufacturing investigate new production or processing techniques. They also ensure that products will be fit for distribution or are produced as efficiently as expected. Many food science technicians spend time inspecting food-stuffs, chemicals, and additives to determine whether they are safe and have the proper combination of ingredients.

### **Profile**

**Interests:** Things, Animals, Data

**Working Conditions:** Both Inside and Outside

**Physical Strength:** Moderate Work

**Education Needs:** Associate Degree, Bachelor's Degree

**Licensure/Certification:** Not Required

**Opportunities for Experience:** Internship

**Interest Score:** RIC

### **Duties and Responsibilities**

#### **Agricultural Science Technician**

- Following protocols to collect, prepare, analyze, and safely store crop or animal samples
- Operating farm equipment and maintaining agricultural production areas to conform to scientific testing parameters
- Examining animal and crop specimens to determine the presence of diseases or other problems
- Measuring ingredients used in animal feed and other inputs
- Preparing and operating laboratory testing equipment
- Compiling and analyzing test results
- Preparing charts, presentations, and reports describing test results

#### **Food Science Technician**

- Collecting and preparing samples in accordance with established procedures
- Testing food, food additives, and food containers to ensure that they comply with established safety standards
- Helping food scientists with food research, development, and quality control
- Analyzing chemical properties of food to determine ingredients and formulas
- Compiling and analyzing test results
- Preparing charts, presentations, and reports describing test results
- Preparing and maintaining quantities of chemicals needed to perform laboratory tests
- Maintaining a safe, sterile laboratory environment

## WORK ENVIRONMENT

### Immediate Physical Environment

Technicians work in a variety of settings, including laboratories, processing plants, farms and ranches, greenhouses, and offices. Technicians who work in processing plants and agricultural settings may face noise from processing and farming machinery, extreme temperatures, and odors from chemicals or animals. They may need to lift and carry objects and be physically active for long periods.

Agricultural and food science technicians typically work full time and have standard work schedules. Technicians may need to travel, including internationally.

### Human Environment

Technicians must be able to work both independently and with colleagues, in lab and field settings. They must also be prepared to present research findings to superiors and other scientists.

### Technological Environment

Agricultural and food science technicians use a range of laboratory equipment to conduct their research, as well as computer software to input and track data. They must be comfortable transporting and setting up equipment in the field, as well as creating presentations with results, including graphs and charts.

## EDUCATION, TRAINING, AND ADVANCEMENT

### High School/Secondary

Students interested in a career as an agricultural or food science technician should take as many high school science and math classes as possible. A solid background in applied chemistry, biology, physics, math, and statistics is important. Knowledge of how to use spreadsheets and databases also may be necessary.

Some agricultural and food science technicians successfully enter the occupation with a high school diploma or equivalent, but they typically need related work experience and on-the-job training that may last a year or more.

Workers who enter the occupation with only a high school diploma or equivalent often must have experience in a related occupation during which they develop

their knowledge of agriculture or manufacturing processes. These related occupations include food and tobacco processing workers and agricultural workers.

### **Suggested High School Subjects**

- Algebra
- Biology
- Botany
- Chemistry
- Civics
- Computer Science
- Earth or Environmental Science
- English
- History
- Physics
- Statistics
- Trigonometry

### **Related Career Pathways/Majors**

*Agriculture, Food & Natural Resources  
Career Cluster*

- Animal Systems Pathway
- Environmental Service Systems Pathway
- Food Products & Processing Systems Pathway
- Natural Resources Systems Pathway
- Plant Systems Pathway

*Science, Technology, Engineering & Mathematics Career Cluster*

- Science & Mathematics Pathway

### **Postsecondary**

Agricultural and food science technicians typically need an associate degree in biology, chemistry, crop or animal science, or a related field from an accredited college or university. Some agricultural and food science technician positions require a bachelor's degree.

Students may take courses in biology, chemistry, plant or animal science, and agricultural engineering as part of their programs. Programs include technical instruction and hands-on experience. Many schools offer internships,

## ***Skills and Abilities***

### **Analytical Skills**

- Conducting a variety of observations and on-site measurements, all of which require precision, accuracy, and math skills
- Using computer modeling to prepare analyses

### **Communication Skills**

- Understanding and giving clear instructions, keep detailed records, and, occasionally, write reports

### **Critical-thinking Skills**

- Reaching conclusions through sound reasoning and judgment
- Determining how to improve food quality and testing products for a variety of safety standards

### **Interpersonal Skills**

- Working well with others
- Supervising agricultural and food processing workers and receiving instruction from scientists or specialists

### **Physical Stamina**

- Standing for long periods, lifting objects, and generally performing physical labor in manufacturing or agricultural settings

cooperative-education, and other programs designed to provide practical experience and enhance employment prospects.

### **Related College Majors**

- Agricultural Engineering
- Biology
- Chemistry
- Plant/Animal Science

### **Additional Requirements**

Agricultural and food science technicians typically undergo on-the-job training. Various federal government regulations outline the types of training needed for technicians, which varies by work environment and specific job requirements. Training may cover topics such as production techniques, personal hygiene, and sanitation procedures.

## **EARNINGS AND ADVANCEMENT**

Earnings of agricultural and food science technicians depend on the type of employer, the type of job, and the education and experience of the employee. The median annual wage for technicians was \$41,230 in 2019. The lowest 10 percent earned less than \$28,030, and the highest 10 percent earned more than \$64,180.

Agricultural and food science technicians may receive paid vacations, holidays, and sick days; life and health insurance; and retirement benefits. These are usually paid by the employer.

## **EMPLOYMENT AND OUTLOOK**

Agricultural and food science technicians held about 24,200 jobs nationally in 2019. Thirty-two percent were employed in food manufacturing. The remainder were employed in professional, scientific, and technical services; post-secondary institutions; agriculture and forestry; and crop production.

Employment is expected to grow as fast as average for all occupations through the year 2029, with a projected increase of 4 percent. Demand will continue for agricultural research into areas such as the effects of population growth, increased demand for water resources, harm from pests and pathogens, changes in

# Farmer/Rancher/ Agricultural Manager

## Snapshot

**Career Cluster(s):** Agriculture, Food & Natural Resources; Business, Management & Administration

**Interests:** Agriculture; business practices; being outside; working independently

**Earnings (Yearly Average):** \$71,160

**Employment & Outlook:** Decline Expected

## OVERVIEW

### Sphere of Work

Farmers, ranchers, and other agricultural managers grow food for personal consumption and for wholesale and retail consumers. Farmers and farm managers oversee agricultural production and financial operations at farms, nurseries, ranches, and greenhouses. Farmers, ranchers, and other agricultural managers grow crops, livestock, poultry, and aquatic animals. Although specific tasks vary by type of agricultural work, all farmers and farm managers are responsible for ensuring the care of crops and animals from conception to market. Farmers often perform the hands-on labor of planting, cultivating, operating farm machinery, harvesting, and mar-



A farmer collects eggs (sasapanchenko via iStock)

keting and selling crops and animals. Farm managers hire, train, and supervise farm staff to complete these tasks.

### Work Environment

Farmers, ranchers, and other agricultural managers work in farms, nurseries, ranches, and greenhouses that they own or lease. Farmers and farm managers do not have set work hours and instead must work until tasks are complete. Crop farm work is seasonal. During non-growing seasons, crop farmers and farm managers focus on repairing farm machinery, planning next year's crops, and marketing and selling efforts. Animal farmers and farm managers work steadily throughout the year to care for their livestock, poultry, and aquatic animals.

### Occupation Interest

Individuals attracted to the farming profession tend to be physically strong and detail-oriented people. Successful farmers and farm managers exhibit stamina, resilience, organizational abilities, integrity and ethics, independence, and effective time management. Business acumen and familiarity with computer technology is advantageous. Farmers and farm managers should enjoy physical labor and have a strong background in agriculture and business.

### Duties and Responsibilities

- Supervise all steps of crop production or ranging, including planting, fertilizing, harvesting, and herding
- Make decisions about crops or livestock by evaluating factors such as market conditions, disease, soil conditions, and the availability of federal programs
- Choose and buy supplies, such as seed, fertilizer, and farm machinery
- Maintain farming equipment
- Maintain farm facilities, such as water pipes, fences, and animal shelters
- Serve as the sales agent for crops, livestock, and dairy products
- Record financial, tax, production, and employee information

### Profile

**Interests:** Data, People, Things, Animals

**Working Conditions:** Both Inside and Outside

**Physical Strength:** Medium Work, Heavy Work

**Education Needs:** On-The-Job Training, High School Diploma with Technical Education, Junior/Technical/Community College, Apprenticeship, Bachelor's Degree

**Licensure/Certification:** Usually Not Required

**Opportunities for Experience:** Internship, Apprenticeship, Volunteer Work, Part Time Work

**Interest Score:** ERC

### A Day in the Life—Duties and Responsibilities

Farmers and farm managers perform different daily occupational duties and responsibilities depending on their specialization and work environment. They may specialize in the production of crops, beef, poultry, pork, dairy, or aquaculture.



On crop farms, farmers and farm managers oversee activities related to the planting, tending, and harvesting of crops. These tasks may include preparing soil and managing its nutrient levels, using natural or chemical methods to eliminate pests, irrigating and draining fields, weather forecasting, and storing fuels and chemicals. Crop farmers and farm managers promote and sell crops to distributors and food-processing companies, retail customers in farmers markets or farm stands, or shareholders in a community-supported agriculture (CSA) program.

Animal farmers and farm managers oversee meat production operations. They raise beef cattle, chickens, turkeys, ducks, game birds, goats, or pigs. Animal farmers and farm managers must ensure proper breeding and birthing and feeding, housing, transportation, and slaughtering. Those who work with beef cattle and pigs medicate and vaccinate the animals as needed. On poultry farms, they also manage the hatchery, establish egg or meat-bird production effort, adjust the lighting in poultry buildings to promote molting or egg laying, and match stock size to seasonal demand. All animal farmers and farm managers are responsible for promoting and selling meat products.

Dairy farmers and farm managers direct tasks related to the production, collection, and sale of milk. They must ensure the proper care for milk cows. These farmers and farm managers oversee the establishment of a feed storage system for corn silage, alfalfa, hay, cottonseed, and soybeans. They also supervise the construction and maintenance of a milking parlor, a milking and milk storage system, and a manure management system. Dairy farmers and farm managers promote, transport, and sell dairy products.

Aquaculture farmers and farm managers oversee aquaculture production tasks. They or their staff stock ponds or floating nets with eggs, shellfish, or juvenile fish, feed fish stock, and protect fish stock from predators and contamination. Like their meat and dairy counterparts, these farmers and farm managers are responsible for the promotion and sale of their products.

## ***Skills and Abilities***

### **Analytical Skills**

- Monitoring and assessing the quality of land or livestock

### **Critical-thinking Skills**

- Determining how to improve harvest and livestock while reacting to conditions that may affect short- or long-term plans

### **Initiative**

- Being self-motivated in order to maximize crop or livestock production

### **Interpersonal Skills**

- Supervising laborers and other workers

### **Mechanical Skills**

- Operating complex machinery and occasionally performing routine maintenance

### **Physical Stamina**

- Physically strenuous, repetitive tasks, such as bending, stooping, and lifting



In addition, all farmers and farm managers are responsible for purchasing supplies, maintaining farm machinery, ensuring the cleanliness of farm facilities, and educating themselves about government regulations and business trends affecting their industry.

## OCCUPATION SPECIALTIES

### **Farm General Manager**

Farm General Managers operate farms for corporations, cooperatives, or other owners.

### **Fish Farmer**

Fish Farmers spawn and raise fish for commercial purposes.

### **Fur Farmer**

Fur Farmers feed and raise mink, fox, chinchilla, rabbits, and other fur-bearing animals for sale on the fur market.

### **Horse Trainer**

Horse Trainers train horses for riding or harness.

### **Livestock Rancher**

Livestock Ranchers breed and raise livestock such as beef cattle, dairy cattle, goats, horses, sheep, and swine to sell meat, dairy products, wool and hair.

### **Nursery Manager**

Nursery Managers supervise plant nurseries that produce plants for sale to wholesale or retail customers.

### **Organic Farmer/Farm Manager**

Organic Farmers/Farm Managers grow crops, control pests, and maintain soil health without the use, or the limited use, of synthetic fertilizers and pesticides.

### **Poultry Farmer**

Poultry Farmers raise chickens, turkeys, or other fowl for meat or egg production.

### **Shellfish Grower**

Shellfish Growers cultivate and harvest beds of shellfish, such as clams and oysters.

**Tree-Fruit-and-Nut Crop Farmer**

Tree-Fruit-and-Nut Crop Farmers plant and cultivate fruit producing trees.

**Vegetable Farmer**

Vegetable Farmers plan and plant vegetables according to weather, type of soil, and size and location of the farm.

## WORK ENVIRONMENT

**Immediate Physical Environment**

Farmers and farm managers work in farms, nurseries, ranches, and greenhouses. Farming tends to be very physical and requires extensive hard labor, walking, lifting, and bending. Farmers and farm managers are at high risk for back strain, pesticide exposure, and machine accidents.

**Human Environment**

Farms, nurseries, ranches, and greenhouses tend to be remotely located and isolated. However, farmers and farm managers interact with farm workers, families, customers, landholders, bankers, veterinarians, and government inspectors. The amount of human interaction often depends on the scale and business model of the farm operation. Farm managers typically report to a farmer or corporation.

**Technological Environment**

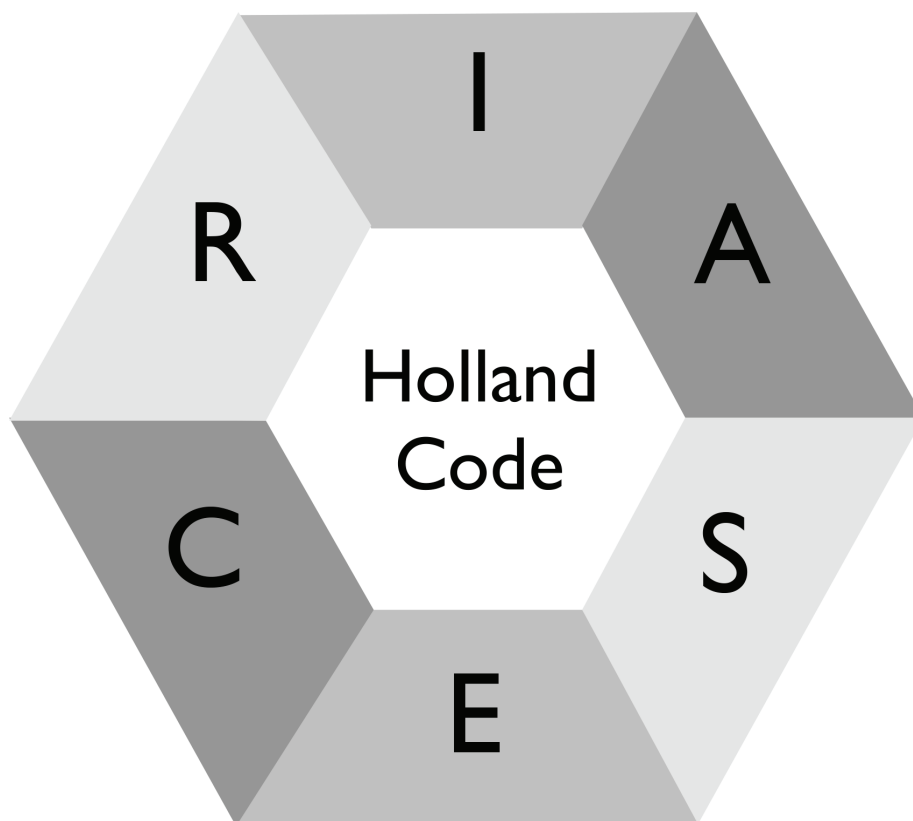
In the course of their work, farmers and farm managers use farm machinery and equipment such as animal feeders, hay balers, mowers, trucks, irrigation systems, tractors, chain saws, and milking machines. In addition, farmers and farm managers use computers, Internet communication tools, accounting and farm management software, and spreadsheets to assist them with the business tasks of farming.

## EDUCATION, TRAINING, AND ADVANCEMENT

**High School/Secondary**

High school-level study of mathematics, agricultural science, biology, chemistry, and business can provide a strong foundation for work as a farmer or college-level study in the field. High school students interested in this career path may benefit from internships, apprenticeships, or part-time work with local farms

# What Are Your Career Interests?



This is based on Dr. John Holland's theory that people and work environments can be loosely classified into six different groups. Each of the letters above corresponds to one of the six groups described in the following pages.

Different people's personalities may find different environments more to their liking. While you may have some interests in and similarities to several of the six groups, you may be attracted primarily to two or three of the areas. These two or three letters are your "Holland Code." For example, with a code of "RES" you would most resemble the Realistic type, somewhat less resemble the Enterprising type, and resemble the Social type even less. The types that are not in your code are the types

you resemble least of all.

Most people, and most jobs, are best represented by some combination of two or three of the Holland interest areas. In addition, most people are most satisfied if there is some degree of fit between their personality and their work environment.

The rest of the pages in this booklet further explain each type and provide some examples of career possibilities, areas of study at MU, and co-curricular activities for each code. To take a more in-depth look at your Holland Code, take a self-assessment such as the SDS, Discover, or a card sort at the MU Career Center with a Career Specialist.

## Realistic (*Doers*)

People who have athletic ability, prefer to work with objects, machines, tools, plants or animals, or to be outdoors.

<b>Are you?</b>	independent	<b>Can you?</b>	<b>Like to?</b>
practical	ambitious	fix electrical things	tinker with machines/vehicles
straightforward/frank	systematic	solve electrical problems	work outdoors
mechanically inclined		pitch a tent	be physically active
stable		play a sport	use your hands
concrete		read a blueprint	build things
reserved		plant a garden	tend/train animals
self-controlled		operate tools and machine	work on electronic equipment

### Career Possibilities (Holland Code):

Air Traffic Controller (SER)	Dental Technician (REI)	Laboratory Technician (RIE)	Property Manager (ESR)
Archaeologist (IRE)	Farm Manager (ESR)	Landscape Architect (AIR)	Recreation Manager (SER)
Athletic Trainer (SRE)	Fish and Game Warden (RES)	Mechanical Engineer (RIS)	Service Manager (ERS)
Cartographer (IRE)	Floral Designer (RAE)	Optician (REI)	Software Technician (RCI)
Commercial Airline Pilot (RIE)	Forester (RIS)	Petroleum Geologist (RIE)	Ultrasound Technologist (RSI)
Commercial Drafter (IRE)	Geodetic Surveyor (IRE)	Police Officer (SER)	Vocational Rehabilitation Consultant (ESR)
Corrections Officer (SER)	Industrial Arts Teacher (IER)	Practical Nurse (SER)	

## Investigative (*Thinkers*)

People who like to observe, learn, investigate, analyze, evaluate, or solve problems.

<b>Are you?</b>	intellectually self-confident	<b>Can you?</b>	<b>Like to?</b>
inquisitive	Independent	think abstractly	explore a variety of ideas
analytical	logical	solve math problems	work independently
scientific	complex	understand scientific theories	perform lab experiments
observant/precise	Curious	do complex calculations	deal with abstractions
scholarly		use a microscope or computer	do research
cautious		interpret formulas	be challenged

### Career Possibilities (Holland Code):

Actuary (ISE)	Chemical Engineer (IRE)	Geologist (IRE)	Physician, General Practice (ISE)
Agronomist (IRS)	Chemist (IRE)	Horticulturist (IRS)	Psychologist (IES)
Anesthesiologist (IRS)	Computer Systems Analyst (IER)	Mathematician (IER)	Research Analyst (IRC)
Anthropologist (IRE)	Dentist (ISR)	Medical Technologist (ISA)	Statistician (IRE)
Archaeologist (IRE)	Ecologist (IRE)	Meteorologist (IRS)	Surgeon (IRA)
Biochemist (IRS)	Economist (IAS)	Nurse Practitioner (ISA)	Technical Writer (IRS)
Biologist (ISR)	Electrical Engineer (IRE)	Pharmacist (IES)	Veterinarian (IRS)

## LIST OF ORGANIZATIONS AND RESOURCES

### **Academy of Prosocial Learning (APL)**

860.262.1807  
info@prosocialacademy.org  
www.prosocialacademy.org

### **AgExplorer**

800.323.9084  
education\_info@discovered.com  
agexplorer.com

### **AgNIC Swine Resources**

Iowa State University Library  
701 Morrill Road  
Ames, IA 50011-2102  
515.294.3642  
instr.iastate.libguides.com/agnic

### **Agricultural Network Information Collaborative (AgNIC)**

Necia Parker-Gibson (AgNIC chair)  
365 N. McIlroy Avenue  
Fayetteville, AR 72701-1201  
neciap@uark.edu  
agnic.org

### **Alternative Farming Systems Information Center (AFSIC)**

National Agricultural Library  
10301 Baltimore Avenue, Room 132  
Beltsville, MD 20705  
301.504.6559  
www.nal.usda.gov/afsic

### **American Animal Hospital Association (AAHA)**

12575 W. Bayaud Avenue  
Lakewood, CO 80228  
800.252.2242  
aaha@aaha.org  
www.aaha.org

### **American Association for Laboratory Animal Science (AALAS)**

9190 Crestwyn Hills Drive  
Memphis, TN 38125  
901.754.8620  
info@aalas.org  
www.aalas.org  
Offers testing and certification for animal technicians:  
www.aalas.org/certification/technician-certification

### **American Association of Veterinary State Boards (AAVSB)**

380 W. 22nd Street, Suite 101  
Kansas City, MO 64108  
877.698.8482  
www.aavsb.org

### **American Association of Zoo Keepers (AAZK)**

8476 E. Speedway Boulevard, Suite 204  
Tucson, Arizona 85710-1728  
520.298.9688  
visitor@aazk.org  
aazk.org

### **American Chemical Society (ACS)**

1155 Sixteenth Street NW  
Washington, DC 20036  
614.447.3776  
service@acs.org  
www.acs.org  
Division of Biological Chemistry:  
www.divbiolchem.org

### **American Dairy Science Association (ADSA)**

1800 S. Oak Street, Suite 100  
Champaign, IL 61820-6974  
217.356.5146  
adsa@adsa.org  
www.adsa.org

### **American Farm Bureau Federation**

600 Maryland Avenue, SW, Suite 1000  
Washington, DC 20024  
202.406.3600  
webmaster@fb.org  
www.fb.org

### **American Fisheries Society (ASF)**

425 Barlow Place, Suite 110  
Bethesda, MD 20814-2144  
301.897.8616  
main@fisheries.org  
www.fisheries.org

### **American Geosciences Institute (AGI)**

4220 King Street  
Alexandria, VA 22302-1502  
703.379.2480  
agi@americangeosciences.org  
www.americangeosciences.org

## INDEX

### A

- Academy of Prosocial Learning (APL), 24  
Accreditation Council for Occupational Therapy Education (ACOTE), 186  
Accredited Farm Manager (AFM), 131  
Administrative Support Pathway, 160  
advanced robotics, 96  
AgExplorer, 15  
AgNIC Swine Resources, 56  
agribusiness, 50  
Agribusiness Systems Pathway, 130  
agricultural and food science technicians, 1, 2, 3, 4, 5  
agricultural animal breeding, 54  
agricultural business, 49, 130  
agricultural education, 21, 22, 65, 130, 143, 152  
agricultural engineer, 6, 132  
agricultural engineering, 4, 5  
agricultural equipment operators, 9, 10, 13, 14  
agricultural manager, 9, 10, 11, 12, 14, 15, 24, 68, 103, 125, 126, 154  
agricultural mechanization, 13, 53, 130  
Agricultural Network Information Collaborative (AgNIC), 56  
agricultural production, 2, 53, 125  
Agricultural Research Service, 235  
agricultural science technicians, 2, 6  
agricultural scientist, 55, 145  
agricultural supplies, 22, 66, 130  
agricultural workers, 4, 9, 10, 12, 13, 14  
agricultural/food science technician, 1, 15, 56, 132  
agricultural/food scientist, 6, 91, 100, 109, 132  
agriculture/agricultural sciences, 54  
agronomy, 49, 130  
AI, 74  
all-terrain vehicles (ATVs), 140  
Alternative Farming Systems Information Center (AFSIC), 133  
Alzheimer's disease, 86, 99  
American Animal Hospital Association (AAHA), 247  
American Association for Laboratory Animal Science (AALAS), 23, 24, 245, 247, 255  
American Association of Veterinary State Boards (AAVSB), 247, 255  
American Association of Zoo Keepers (AAZK), 275, 280  
American Board of Veterinary Toxicology, 239  
American Chemical Society (ACS), 92, 100  
American College of Animal Sciences (ACAS), 55  
American Dairy Science Association (ADSA), 56  
American Farm Bureau Federation (FB), 15  
American Fisheries Society (AFS), 155  
American Geosciences Institute (AGI), 122  
American Holistic Veterinary Medical Association (AHVMA), 234  
American Humane Association, 25, 43, 68  
American Institute of Architects (AIA), 80  
American Institute of Architecture Students (AIAS), 80  
American Institute of Biological Sciences (AIBS), 92, 100  
American Occupational Therapy Association (AOTA), 188  
American Physiological Society (APS), 275  
American Registry of Professional Animal Scientists (ARPAS), 6, 54  
American Society for Biochemistry and Molecular Biology (ASBMB), 92, 100  
American Society for Cell Biology (ASCB), 101  
American Society for Microbiology (ASM), 101, 276  
American Society for the Prevention of Cruelty to Animals (ASPCA), 25, 44  
American Society of Agronomy (ASA), 6, 15, 133  
American Society of Animal Science (ASAS), 7, 57  
American Society of Architectural Illustrators (ASAI), 80  
American Society of Farm Managers and Rural Appraisers (ASFMRA), 15  
American Society of Ichthyologists and Herpetologists (ASIH), 276  
American Society of Mammologists (ASM), 276  
American Society of Media Photographers (ASMP), 202  
American Society of Photographers (ASP), 202  
American Veterinary Medical Association (AVMA), 232, 234, 247, 253, 256  
American Veterinary Medical Foundation (AVMF), 234  
American Zoo and Aquarium Association (AZA), 276  
anesthesia, 249, 250, 251, 253, 257, 258, 259, 279  
animal anatomist, 56  
Animal Assisted Intervention International (AAII), 189  
Animal Behavior Institute, 187, 189  
animal behaviorist, 56  
animal breeders, 9, 10, 11, 13, 14, 51  
animal care technicians, 37  
animal caretakers, 17, 18, 19, 20, 21, 22, 23, 24  
animal control, 28, 37, 38, 40, 42  
animal control officers, 37, 39, 41, 43, 46  
animal control training program, 41, 42  
animal control workers, 37, 38, 39, 40, 43  
animal dentistry, 228  
animal ecology, 265  
animal euthanasia, 41  
animal farmers, 126, 127  
animal foster caretakers, 23, 66  
animal health, 2, 54, 85, 91, 95, 229, 237, 279  
animal health technology, 245, 253  
animal hospitals, 17, 19, 24, 242, 250  
animal husbandry, 52, 70, 227, 245, 278  
animal keepers, 17, 19  
animal laboratories, 17-18  
animal laboratory caretakers, 22  
animal migration, 147