

Course Information

Course: Animal Systems

Unit: 1. NATURE AND SCOPE OF ANIMAL AGRICULTURE IN OUR SOCIETY AND ECONOMY

Assignment: 2. History of Animal Agriculture

History of Animal Agriculture

Can you imagine having to hunt your own bison or wild cattle rather than pulling through the drive-thru at a fast-food place for a burger? Or having to move house every time the seasons or environmental conditions changed? Before the development of civilizations, early humans were nomadic, following great herds of animals and hunting them to feed their tribes. While the women gathered fruits, foliage, and wood for the fire, the men hunted any animal they could find with spears, traps, or nets. Each animal sacrificed was used to the fullest potential, from snout to tail. The meat was used for food, fat for cooking, hide for shelter, and bones for carving into tools. Animals were revered and honored during ceremonies, and early humans always expressed their thanks for the kill. Contrast this with today, when everything from meat and leather to by-products are used in the mass production of marshmallows, chewing gum, gelatin, and endless other food products on a global scale. The United States is the leader in breeding and selecting traits to produce quality, high-yield, high-nutrition products.



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An unidentified Hadzabe bushman with bow and arrow during hunting on February 18, 2013, in Tanzania.

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food products on a global scale. The United States is the leader in breeding and selecting traits to produce quality, high-yield, high-nutrition products.

Objectives

- Examine how early humans survived through foraging and scavenging.
- Explain the historical development of animal systems and husbandry practices around the world.
- Compare the efficiencies and scale of the first, primitive methods of agriculture and animal production with the ones in use today.
- Construct a timeline of the evolution of animal-husbandry practices over the ages.
- Explore careers involving animals.

Vocabulary

animal by-products	whole animals or parts of animals not fit for human consumption but that can be used to make non-food products such as soap or be used as an ingredient in animal food
animal science	the study of domesticated farm animals and livestock
livestock	domesticated animals such as cows, sheep, and pigs raised in a farm setting for meat, clothing, and labor

[Vocab Arcade](#)

Question #1 Matching

Show Answer

Answer Key [Show](#)

The correct answers are Option 1 defines animal husbandry, the breeding, and raising of livestock. Option 2 defines animal science, the study of domesticated animals. Option 3 defines animal by-products, the parts of animals used for non-food products.

Match the definition to the correct term.

- | | |
|--|--------------------|
| 1. The upbringing of animals for food and other products | animal by-products |
| 2. The study of domesticated animals | animal husbandry |
| 3. Parts of an animal used to make inedible goods | animal science |

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The Symbiotic Relationship of Animals and Society

Animals have always been an essential part of society because they give humans and other animals many things besides food. They provide clothing, bedding, household goods, and carpets in the form of wool, hair, leather, and fur. While it isn't as true today in the developed world, in many parts of the world they still use horsehair and hides to build teepees and manufacture plaster. Likewise, they also use bones, bladders, horns, catgut, and hides for tools. Animals provide labor for draft work, packing, and transportation; today, as much as 99 percent of the power used in farming comes from animals, which may pull machinery that cultivates the fields. Likewise, 20 percent of the world's people rely on animals for transportation.



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Animals

Animals have always been an essential part of human society. Animals provide food, shelter, clothing, tools, and many other items that people need not just to live comfortably, but to survive. They also provide transportation, farm labor such as plowing or cultivating, and even companionship. The special role animals play in our



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Certain types of animals, such as rats and mice, are used in laboratory research to find ways to cure and prevent diseases, improve surgical methods, and test everything from drugs to neurological function in Alzheimer's disease. Animal products and *animal by-products* are also used in the production of drugs, soap, gelatin, perfume, makeup, and animal food. Last but not least, animals provide companionship; aid in police and security work; act as service animals, such as seeing-eye dogs; and are used in hobbies, such as horseback riding, horse racing, fishing, and hunting. Some dogs can even sniff out cancer or recognize when their owner is in a diabetic crisis and call for help. We owe it to them to take good care of them through good animal-husbandry practices.

In this lesson, we're interested mostly in the care and breeding of *livestock* for food. People used to be much more connected to the food they eat than they are today. If you wanted to eat vegetables, you had to grow them in your garden. In the same way, if you wanted to eat meat, you had to either hunt an animal or raise and kill one yourself. For milk, you had to milk your cow. Today, many people have never grown a single vegetable, and few kill the animals they eat. In fact, many people don't know where their food comes from; it might come from a farm down the road, but more likely it comes from halfway around the country or even the world. Because of this disconnection, people often aren't sure of the quality of their food or what is in it, which can lead to food-borne illness or consumption of types of food or additives that we would not otherwise eat.

Question #2 Matching

Show Answer

Answer Key Show

Option 1 describes the role of dogs as service animals, such as seeing-eye dogs and aids in safety through police and military work. Option 2 describes the role of rats as used in medical research to find cures for diseases and to test medical procedures. Option 3 describes the role of horses as used for farm work and once critical for transportation.

Match the animal to its current or past role in benefit to humans.

- | | |
|---------------------------------|--------|
| 1. Service and safety | horses |
| 2. Medical research and testing | rats |
| 3. Farming and transportation | dogs |

Question #3 Multiple Choice

Show Answer

Answer Key Show

The correct answer is necessary. Because animals provide vital resources to humans, they represent a necessary relationship.

Which word best describes animals' relationship to humans?

- accessory
- dangerous
- traditional
- necessary

Question #4 MultipleChoice

Show Answer

Answer Key [Show](#)

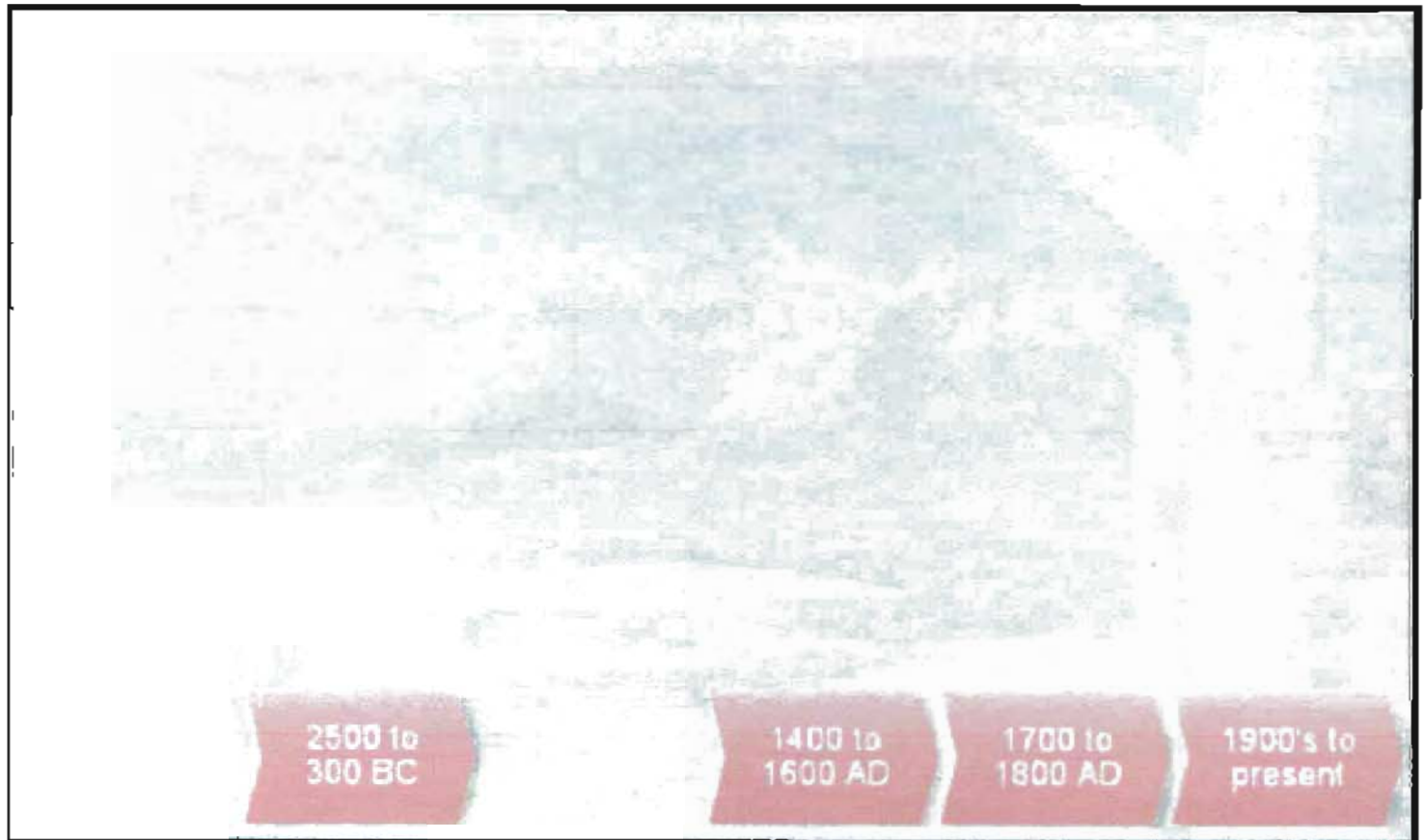
The correct answer is People are less aware of the origin and quality of their food today than in the past. Since many people no longer hunt or grow their own food, there is a disconnect between people and the food they consume.

Which statement best contrasts the human perspective on food today compared to the perspective in the past?

- People are less concerned with the nutritional value of foods today than they were in the past.
- People are less aware of the origin and quality of their food today than in the past.
- People are less restrictive about what types of animals can be used for food today than they were in the past.
- People are less concerned about the use of additives to produce robust livestock today than they were in the past.

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The History of Animal Agriculture



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But 12,000 years ago, when agricultural practices first took root, probably in the Fertile Crescent of the Middle East, people knew exactly where their food came from because they grew or raised it themselves. Over time, practices such as crop irrigation (watering), crop rotation to improve soil quality, and the use of fertilizers and pesticides spread across China, New Guinea, and regions of Africa and Central and South America. At the same time, farmers began raising their own livestock and specializing in one or several types of animals for sale or trade. This allowed the farmers to have a steady supply of meat, milk, fibers for clothing, labor, and often companionship.

Because social animals that eat a variety of foods are easier to domesticate than solitary animals with a limited diet, the first domesticated food-production animals were sheep, followed by cows, pigs, goats, chickens, and turkeys. Horses and cattle provided milk, meat, and means of transportation and labor in the fields. Domestication doesn't necessarily mean only that the animals are "tame," or amenable to humans. Instead, it means that they are kept for a reason, bred under human control, they depend on humans for food and shelter, and they have developed traits not found in their wild counterparts due to selective breeding. In other words, they are no longer adapted to survival in the wild and would not survive or thrive if released back into natural conditions.

Some famous explorers are responsible for the spread of many types of animals. We know that Columbus introduced livestock to the West Indies in 1493, while Cortez introduced cows and sheep to Mexico in 1519. Horses and dogs first surfaced in Florida in 1539 after a visit from De Soto.

The first meat packer in the United States was William Pynchon, who exported salt pork (white bacon) from his farm in Massachusetts in 1641. More than a hundred years later, an Englishman named Robert Bakewell started selectively breeding animals for certain traits, creating different types. A hundred years after that, during the U.S. Civil War of 1861 to 1865, live animals and meat began to be transported due to the creation of the railroad system and refrigerated boxcars. This development meant that meat did not need to be consumed where the animals were born and raised. With the advent of refrigeration and transportation, the demand for beef increased, while the demand for pork, which had been the most popular meat because it was easy to preserve and store, decreased.

During this time, the U.S. Land Grant Act provided public land for public universities to teach agriculture. In 1872, the Hatch Act created experimental stations for testing new agricultural methods. In 1914, the Smith-Lever Act created cooperative extension services that educate the public about agriculture, including growing food.

Innovations in Agricultural and Animal Science



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Question #5 MultipleChoice

[Show Answer](#)

[Answer Key Show](#)

The correct answer is Sheep were communal animals with a varied diet. These traits made sheep easy to domesticate, which supports the conclusion that these animals were a good choice for the first domesticated livestock.

Which statement supports the following conclusion?

Sheep were the best choice for the first domesticated livestock.

Sheep descended from a wild species in Europe and Asia.

Sheep were communal animals with a varied diet.

Sheep wool was the most widely used animal stock.

Sheep were often used as mythological and religious symbols.

Question #6 MultipleChoice

[Show Answer](#)

[Answer Key Show](#)

The correct answer is Unlike wild animals, domesticated animals are dependent on humans for survival. They are no longer adapted to survive outside captivity.

Which statement accurately contrasts a domesticated animal with a wild animal?

Unlike wild animals, domesticated animals are dependent on humans for survival.

Unlike wild animals, domesticated animals are completely tame.

Unlike wild animals, domesticated animals are immune to many diseases.

Unlike wild animals, domesticated animals are often hunted for sport.
Question #7 Multiple Choice

Show Answer

Answer Key Show

The correct answer is Cortez introduced cows and sheep to Mexico. This provides a direct link between the explorer Cortez and the introduction of cows and sheep in North America.

Which fact supports the following conclusion?

Explorers are responsible for introducing livestock to North America.

Cortez introduced cows and sheep to Mexico.

During Columbus's second voyage, he brought cattle to South America.

De Soto brought his excellent cooking skills to Florida.

Columbus introduced maize and potatoes to the European economy.

Question #8 Multiple Choice

Show Answer

Answer Key Show

The correct answer is The railroad allowed meat to be transported. This meant that livestock no longer had to be used where it was raised but could be sent to other locations.

In what way did the railroad impact the livestock industry?

The railroad expanded the land holdings of ranchers.

The railroad encouraged westward expansion.

The railroad created a job market apart from ranching.

The railroad allowed meat to be transported.

Question #9 Fill In Blank

Show Answer

Answer Key Show

The correct answer is the U.S. Land Grant Act. This legislation gave public land to public universities for the purpose of agricultural education.

The legislation that gave American universities the ability to teach agriculture was the U.S. Land Grant Act.

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Changes in Farming

In the past century, innovations in agriculture and *animal science* have increased yields of crops and milk and have helped grow bigger and higher-quality animals. For example, the Haber-Bosch method for synthesizing the chemical ammonium nitrate increased crop yields exponentially. Other innovations, such as other types of fertilizer, pesticides, herbicides, selective breeding methods, artificial insemination, more nutritious feed, and mechanization of manual methods of milking and slaughter have transformed farming and boosted productivity. However, not all of these innovations are always considered positive for people, animals, or the environment. Contamination of the environment resulting from conventional

farming methods, the use of antibiotics and growth hormones in livestock, overcrowded conditions, food-borne illnesses resulting from improper storage or processing of food, and animal cruelty have all been subjects of criticism. As a reaction, there has been a surge of interest in agricultural methods such as organic and free-range methods that do not harm the environment, people, or the animals themselves. Many people have also returned to growing their own vegetables and fruits and are raising livestock, such as chickens, in their backyards.

The scale of farming has also changed dramatically. While a single farmer working a plot of land and raising a few animals was once the norm, large-scale factory farming has increased dramatically. These types of farms may have thousands of acres of land or livestock and hundreds of employees. While factory farms can have efficiencies that small farms can't compete with, in a quest to mass-produce and make money they can also have crowded conditions that are not healthy for the animals. These types of farms have received a lot of criticism from both the industry and the public. Family farms are still around, of course, but they are far less common than they used to be.

Question #10 FillInBlank

Show Answer

Answer Key [Show](#)

The correct answer is agribusiness management. These positions are managerial and typically require college or advanced degrees.

As a reaction to some of the new innovations, there has been a surge of interest in agricultural methods such as ^{a0} and free-range methods that do not harm the environment, people, or the animals themselves.

Question #11 Paragraph

Answer Key [Show](#)

Answers will vary, but "Pros" should include some of these innovations: increased crop and milk yield and higher-quality animals, some types of fertilizer, pesticides, herbicides, selective breeding methods, artificial insemination, more nutritious feed, and mechanization of manual methods of milking and slaughter which have transformed farming and boosted productivity. "Cons" should include some of these criticisms: Contamination of the environment resulting from conventional farming methods, the use of antibiotics and growth hormones in livestock, overcrowded conditions, food-borne illnesses resulting from improper storage or processing of food, and animal cruelty.

Farming has changed dramatically in recent years. Make a chart contrasting some of the positive innovations in farming with the criticisms.

Positive

Negative

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Careers Involving Animals

With burgeoning innovation and an increase in the scale of farms has come an explosion of the different types of careers involving animals. No longer confined to just farming, the field has diversified to include the new areas of agribusiness management, agricultural resources communications, agriscience, and fisheries and wildlife. In this lesson, we'll look at these four areas as examples of the diversity in this field.

Agribusiness management entails the management functions of organizations in the food system. Some job titles falling under agribusiness management include farm owner/manager, commodity trader, and agricultural-production specialist. Companies who hire people for these types of positions include food companies, animal nutrition manufacturers, and pharmaceutical companies. All of these jobs require at least a bachelor's degree, although advanced degrees are not uncommon. Commodity traders, who buy and sell product and security futures on the exchange, may also need a license, registration, or both, in addition to meeting continuing-education requirements. The median pay for these jobs is roughly \$71,000 a year.

In the agricultural and natural-resources communications field, common job titles are journalist, marketing manager, advertising manager, and sales representative. Pharmaceutical companies, professional associations, the U.S. Department of Agriculture, and farm bureaus often hire for these positions. For example, journalists need to have a four-year degree in journalism or a related field, although some have master's degrees. Median pay for journalists is about \$36,000 a year.

People trained in the field of agriscience typically work in agricultural and natural-resources industries as agriscience educators, extension agents, or farmers. They may work for heavy-equipment manufacturers, crop-production service agencies, or food manufacturers. For example, an extension agent requires at least a bachelor's degree and involves significant travel. The salary for an extension agent depends on educational level, ranging from \$44,000 to \$69,000.

Fisheries and wildlife encompass environmental management, wildlife conservation, and wildlife management. Job titles include water quality specialist, habitat specialist, and fish-hatchery manager, and involve government agencies such as the U.S. Forest Service, the U.S. Fish and Wildlife Service, surface water quality divisions, and the U.S. Bureau of Land Management. For example, a fish-hatchery manager can be hired on experience alone, but a bachelor's degree in an area such as fisheries science will open doors as the field expands in the coming years. The median salary for these jobs is about \$48,000 a year.

Many jobs involving animals obviously require working directly with the animals or fish and working independently, often outdoors in all types of weather. But this isn't the case with many jobs in this field. Commodity traders, for one, work inside and never actually encounter an animal; in fact, they may wear a suit and tie to work! When you consider careers, be sure to think about the working conditions you would most enjoy and what kind of lifestyle you want to have. For example, some careers require frequent travel, which someone who likes to travel would love, while someone who has young children may not. Some jobs require weekend and evening hours, while others are nine-to-five. Likewise, think about whether you could get by on \$36,000 a year or whether you'd be much more comfortable with a salary of \$70,000 or

more.

But these jobs are only a few of the many available to people interested in working with animal production, husbandry, or management. Further research into these and related positions will reveal nearly 200 more animal-related careers.

Question #12 FillInBlank

Show Answer

Answer Key [Show](#)

The correct answer is agribusiness management. These positions are managerial and typically require college or advanced degrees.

The management of organizations in the food system is known as **agribusiness** management.

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Let's Review!

In this lesson you have learned that:

- animals have always been an essential part of society because they provide humans with food, materials, labor, and transportation;
- agricultural practices and technology continue to improve and become more sophisticated in order to increase yield and quality;
- about 22 million people in the United States work in agriculture and related fields; and
- agribusiness management entails the management functions of organizations in the food system, with career paths including farm owner/manager, commodity trader, and agricultural-production specialist.

Reflection

Think about one or two other jobs that interest you and meet your lifestyle and salary requirements in this field. Research and write a paragraph or two describing the job duties, work conditions, median salary, job outlook, qualifications, and licensing requirements. A good place to start is [the U.S. Bureau of Labor Statistics Occupational Outlook Handbook](#), an online resource that lists detailed descriptions of most jobs in the United States.



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Spelling Bee

Flash Cards

Click to begin
the Spelling Bee

Flash Cards

Vocabulary

Welcome to Flash Cards: Vocabulary! Click on the stack of cards in the draw pile to select a card. Your card will appear center-screen. Try to remember the definition for the word. Then click on the big card to flip to its definition.

If you know the word and its definition, put the card in the discard pile by clicking on the "Discard" arrow. If you need more practice on the word, return it to the draw pile by clicking on the "Return" arrow so you can try again. Click "Shuffle" to mix the cards in the draw pile, and select "Reset" to put all the cards back into the draw pile. Now

you can review one more time!

[Print Flash Cards](#)

