UNIT 6

UNDERSTANDING THE PROCESS FOR PRODUCING, BREEDING, AND MARKETING AGRICULTURE ANIMALS

THE ANIMAL AGRICULTURE PROCESS

- The process for producing and caring for animals varies greatly depending on the type of animals, location, facilities, and overall producer goals

THE ANIMAL AGRICULTURE PROCESS

- There has been an increase in consumer demand for locally grown and organically raised products
  - Consumers have increased their awareness of how agriculture products are raised and manufactured
  - The majority of livestock and poultry products are still produced and sold to commercial corporations who re-distribute them through various outlets such as grocery stores

THE ANIMAL AGRICULTURE PROCESS

- In general, producers must decide:
  - Goal of production and purpose of animals
  - The type of breeding system to use based on how they elect to produce the animals
  - How to market the animals

BEEF CATTLE PRODUCTION

Beef cattle producers may specialize in one type of cattle operation or combine various types

- Types of Beef Cattle Operations
  - Cow-Calf Producers
  - Seedstock
  - Cattle Feeders
    - Stocker Operations
    - Feedlot

BEEF CATTLE PRODUCTION – TYPES OF BEEF CATTLE OPERATIONS

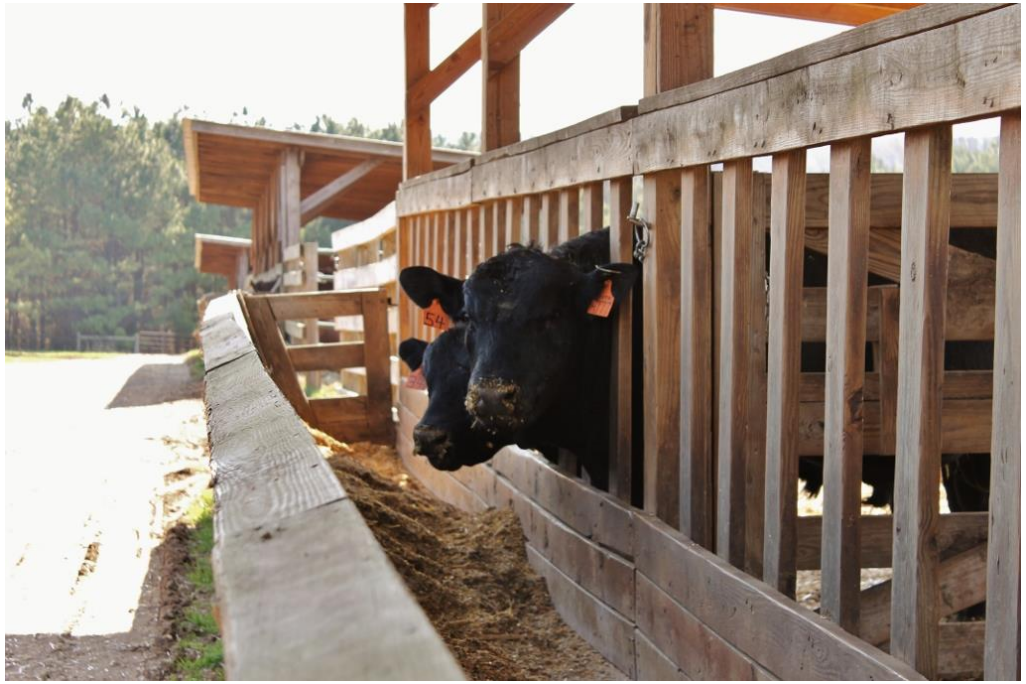
Cow-Calf Producers

- A herd of cows are bred each year to produce calves
- These calves are often sold sometime after weaning
- 6 months to 1 year old animals

BEEF CATTLE PRODUCTION – TYPES OF BEEF CATTLE OPERATIONS

Seedstock

- Also known as purebred breeders
- Keeps herds of purebred breeding animals and provide replacement bulls for cow-calf operations
- These operations focus more specifically on genetic improvements within a given breed



BEEF CATTLE PRODUCTION – TYPES OF BEEF CATTLE OPERATIONS

Cattle Feeders

- Stocker Operations
  - Purchase calves from a cow-calf producer and care for them for approximately 5 months
  - 12 months – 17 months of age

https://www.youtube.com/watch?v=MBPda42ARrI

BEEF CATTLE PRODUCTION – TYPES OF BEEF CATTLE OPERATIONS

Cattle Feeders

- Feedlot
  - Raises large numbers of animals in a more confined area
  - Animals are fed to a "finished" market weight and then sent to be processed between 18-22 months of age
  - Feedlots animals are purchased from stockers or cow-calf producers through one of the various types of livestock markets

BEEF CATTLE PRODUCTION – PROCESSING BEEF PRODUCTS

- Feedlots sell animals to packing plants (slaughter hourses)
- Most packing plants process animals into primal cuts and subprimal cuts
- These products are sold to retailers and foodservice companies
- Some packing plants sell subprimals to meat processors who create value added products such as pre-cooked items, sandwich meat, etc

BEEF CATTLE PRODUCTION

- The amount of time involved in producing beef cattle is significantly longer than swine and poultry
- Most beef cattle are grown independently, not on contracts

DAIRY CATTLE PRODUCTION

Dairy cattle production in the US continues to shift towards larger herds that allow producers to maximize production and profits

- Types of Dairy Cattle Operations
  - Intensive Dairy Production – animals are raised in a more confined setting such as an open lot or tie stall barn
  - Pasture Dairy Production – cattle are turned out on pasture continuously for portions of the day
  - Combination of both types

DAIRY CATTLE PRODUCTION

DAIRY CATTLE PRODUCTION

Production cycle of dairy cattle

- Mature cows are milked 2-3 times a day after they give birth and their lactation cycle begins
  - Calves are removed from the cow 1-2 days after being born
    - Male calves are typically used for veal or are raised to be slaughter steers
    - Heifers are either kept to become replacements or are used for meat
    - Replacement heifers are typically raised in feedlot or pasture settings until they are ready to be moved in with the dairy herd
    - Replacement heifers are bred around 15 months of age and begin producing milk 9 months later (2 years old)

DAIRY CATTLE PRODUCTION

Production cycle of dairy cattle

- During the lactation cycle, cows are re-bred
- Approximately 60 days before they give birth again, they are "dried off" which means they quit producing milk in preparation for their next calf to be born

DAIRY CATTLE PRODUCTION

Production cycle of dairy cattle

- The average production cycle of dairy cattle is 5-7 years
- Animals are then processed for their meat

DAIRY CATTLE PRODUCTION

Processing Dairy Products

- Milk is collected into large tanks at the farm and then transported to processing facilities

https://youtu.be/qYFA2-4Zzhk

DAIRY CATTLE PRODUCTION

Processing Dairy Products

- The fluid milk (cream and skim) is separated and then re-blended to make skim, 2%, whole milk, etc
  - Fluid milk is pasteurized and homogenized
    - Pasteurization – rapid heating and cooling of milk to remove harmful bacteria
    - Homogenization – dispersing fat droplets so the milk stays uniformly mixed

DAIRY CATTLE PRODUCTION

Processing Dairy Products

- The fluid milk (cream and skim) is separated and then re-blended to make skim, 2%, whole milk, etc
  - The excess fat removed from the fluid milk to make low fat milk such as skim and 2% is used to make products such as eggnog, butter, whipping cream, etc

DAIRY CATTLE PRODUCTION

Processing Dairy Products

- Other dairy products made from fat and butterfat at value added facilities include ice cream, yogurt, and cheese

SWINE PRODUCTION

Most swine are grown through vertical integration contracts

- Vertical Integration – two or more steps of production, marketing, and processing are linked together usually by contract between producers and feed manufacturers or between producers and processors or include all three

SWINE PRODUCTION

- Example of Vertical Integration – a corporation such as Smithfield Foods Inc. purchases feeder hogs from a producer and then raises the animals to a market weight in their company owned finishing house; then they transport animals to the slaughter house that is also owned by Smithfield Foods Inc.

https://www.youtube.com/watch?v=zhHREL8n9NE

Smithfield

SWINE PRODUCTION

Commercially produced swine are typically raised in confinement type houses

Types of Swine Operations:

- Sow
- Nursery
- Grow-Finish
- Farrow-to-Finish

SWINE PRODUCTION

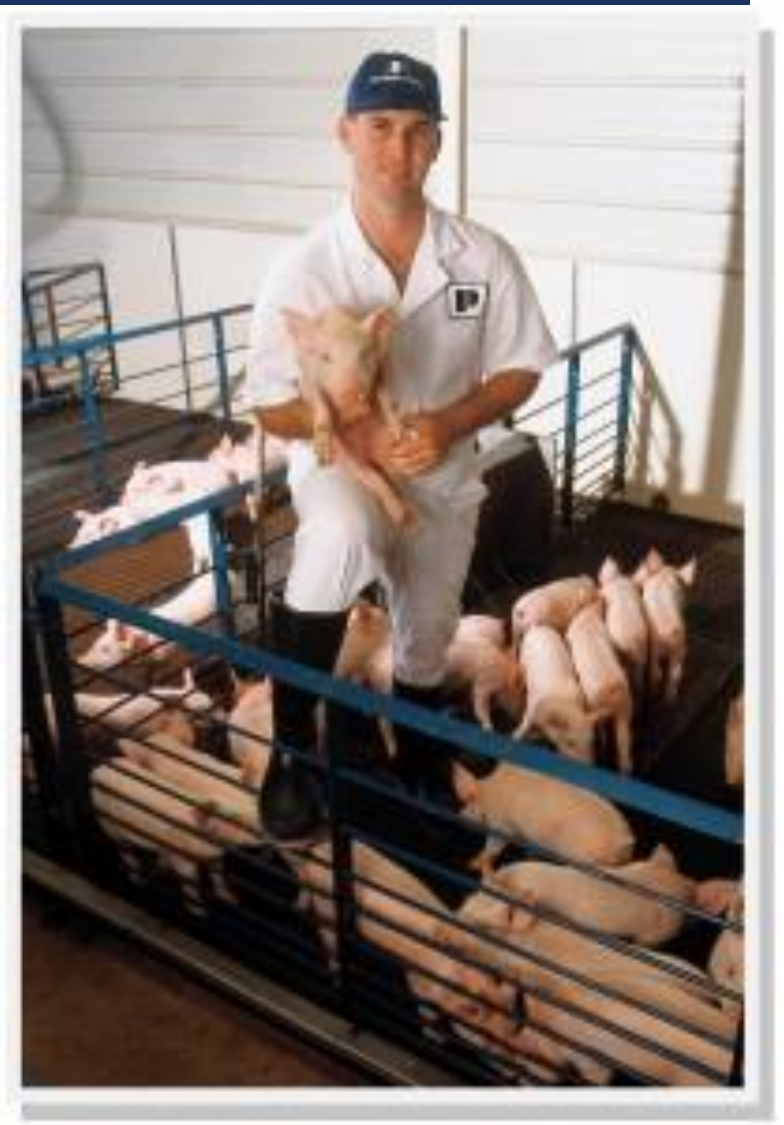
Types of Swine Operations:

- Sow
  - Maintains sows for breeding, gestation, and farrowing
  - Manages piglets until they are weaned at approximately 21 days

SWINE PRODUCTION

Types of Swine Operations:

- Nursery
  - Manages piglets after they are weaned until approximately 10 weeks or 50 lbs



SWINE PRODUCTION

Types of Swine Operations:

- Grow-Finish
  - Manages barrows and gilts until they are ready for market

SWINE PRODUCTION

Types of Swine Operations:

- Farrow-to-Finish
  - Manages a group of breeding sows and maintains piglets to market weight
  - Also known as complete sow and litter operation
  - Commercial operation will typically house animals in separate facilities to manage disease
  - Typical operation for a small scale producer raising hogs for local markets

https://www.youtube.com/watch?v=kCY06pWH3NM

SWINE PRODUCTION

Processing Pork Products

- Finishing operations send animals to processing facilities
  - Many cases involve the finishing operation and the slaughterhouse being vertically integrated

SWINE PRODUCTION

Processing Pork Products

- Pork is processed into primal cuts and subprimal cuts
  - These products are sold to retailers and foodservice companies

SWINE PRODUCTION

Processing Pork Products

- Some packing facilities sell subprimals to meat processors who create value added products such as ham, bacon, pre-cooked items, sandwich meat, etc

POULTRY PRODUCTION

Most poultry in the US is produced through vertical integration contracts with large commercial operations

POULTRY PRODUCTION

Types of Poultry Operations

- Egg production
- Broiler production
- Replacement pullet production

POULTRY PRODUCTION

https://www.youtube.com/watch?v=aYhEbjhhcAg

https://www.youtube.com/watch?v=JqIL_5IY_Co&t=20s

Types of Poultry Operations

- Egg production
  - Producing eggs for human consumption
  - Laying hens are typically confined to cages or a floor-pen system
  - Eggs are cleaned, graded and packed at the farm
  - The laying hens produce eggs for approximately 72 weeks and then they are sold for meat once their production cycle is complete
  - Over ½ of laying hens are raised through vertical integration contracts

POULTRY PRODUCTION

Types of Poultry Operations

- Broiler production
  - Poultry produced for meat consumption
  - Poultry are fed high quality feed to maximize growth
  - Hormones cannot be added according to USDA standards
  - A producer will raise several flocks of birds each year
  - Broilers are processed into cuts of meat and also value added products such as sandwich meat, pre-cooked products, etc
  - Approximately 99% of broilers are raised through vertical integration contracts

POULTRY PRODUCTION

Types of Poultry Operations

- Replacement pullet production
  - Raising chickens to replace either egg production or broiler production operations

BREEDING LIVESTOCK ANIMALS

- Various breeding systems exist due to the various types of livestock operations
- The size of the herd, amount of money available and goals of the producer are all factors that determine the type of system used
- Some farms use more than one type of mating system
- In general, cattle use all types of breeding systems while swine and poultry tend to utilize crossbreeding to develop industry owned hybrids

BREEDING LIVESTOCK ANIMALS

Types of Breeding Systems

- Straightbreeding
  - Purebred Breeding
  - Inbreeding
  - Grading Up
- Crossbreeding

BREEDING LIVESTOCK ANIMALS

Types of Breeding Systems

- Straightbreeding – mating animals of the same breed
  - Purebred Breeding – mating registered purebred male and female of the same breed
    - Animals are eligible for registry with a purebred association
    - Ex) angus X angus

BREEDING LIVESTOCK ANIMALS

Types of Breeding Systems

- Straightbreeding – mating animals of the same breed
  - Inbreeding – mating closely related animals; increases the genetic purity of the stock produced, but not used as often by the producer
    - Closebreeding – mating animals that are very closely related (example is son X mother)
    - Linebreeding – mating animals more distantly related than closebreeding (example is cousin X cousin)

BREEDING LIVESTOCK ANIMALS

Types of Breeding Systems

- Straightbreeding – mating animals of the same breed
  - Grading Up – mating purebred males (sires) to grade or unregistered or crossbred females (dams) to improve the herd

BREEDING LIVESTOCK ANIMALS

Types of Breeding Systems

- Crossbreeding – mating a male and female of different breeds which usually results in improved traits of the offspring which is referred to as hybrid vigor
  - example – Yorkshire boar X Yorkshire/Hampshire sow

BREEDING LIVESTOCK ANIMALS

Types of Breeding Systems

- Crossbreeding – mating a male and female of different breeds which usually results in improved traits of the offspring which is referred to as hybrid vigor
  - Terminal Sire – replacement females are bred to a sire and all offspring are sold
  - Rotational – uses two, three or four breeds to rotate between sires and females (requires more intensive management)

METHODS OF MARKETING ANIMALS

Terminal Markets – central markets on public stockyards where livestock are consigned to a commission firm to bargain with purchasers or buyers for a certain fee

METHODS OF MARKETING ANIMALS

Auction Markets – public bidding with the animals selling to the buyer who bids the highest

METHODS OF MARKETING ANIMALS

Direct Selling – farmer sells straight to buyer with no middle person or firm receiving commissions or fees

METHODS OF MARKETING ANIMALS

Electronic Marketing – auctioning online using computers

METHODS OF MARKETING ANIMALS

Futures Market and Hedging – legal document calling for delivery in the future, locking in a future delivery price

Vertical Integration Contracts – animals are produced as well as marketed as a part of the vertical integration enterprise