

# LARGE ANIMAL SCIENCE

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## BASIC ANIMAL SCIENCE

- Reproduction is vital for all species to survive.
  - Reproduction efficiency is necessary for farmers to be profitable
- Reproduction begins with the natural mating of a male and female

- Artificial insemination or AI
  - How semen can be introduced into the female reproductive tract
  - Primarily used with dairy cattle, turkeys, and pigs

- Sperm or Spermatozoa
  - From the male animal
- Eggs or Ova
  - From the female animal
- Fertilization
  - How an embryo is formed
- A fetus then develops after fertilization has taken place

- The fetus will develop inside the female until time for parturition
- Parturition is the process of giving birth to an animal
  - Exception is the chicken
    - The chick develops inside the egg until time to hatch

- What is a gestation period?
  - The length of time from conception to birth
    - Cow: 283 days
    - Mare: 336 days
    - Sow: 114 days
    - Ewe: 147 days
    - Goat: 150 days
    - Chicken: 22 days

## AFTER BIRTH

- It is important for a newborn to consume mother's milk after birth
  - What is the name of the first milk the newborn consumes?
    - Colostrum
- Colostrum contains minerals, antibodies, and vitamins
- After 1-2 days the colostrum turns into normal milk

- Without efficient reproduction we would not be able to thrive in our normal lives.
  - What do we receive from different animals in order to live the way we do?

## BEEF AND DAIRY CATTLE

- Cattle can be divided into two categories
  - Bos Taurus and Bos Indicus
- Bos indicus
  - Brahman influence
    - Humped neck, longer sheath, longer ears, excess dewlap
- Bos Taurus
  - Tropical cattle
    - Suited for hot and humid climates
    - Domestic or European cattle



## CATTLE WE UTILIZE DAILY

- The cattle we utilize daily are
  - Dairy
  - Beef
- Beef
  - Raised for their meat
    - Steaks, roast, hamburger, and other beef products
    - As well as by products like leather
- Dairy
  - Raised to produce milk

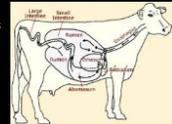


## DAIRY CATTLE

- How many pounds of milk does a dairy cow make per year?
  - 18,200 pounds per year
    - 2,181 gallons
    - 34,896 8oz glasses
- Wisconsin and California lead US in milk production
- Dairy cattle are milked for 305 days a year or about 10 months
- During the time she is at rest or not making milk she is known as a dry cow
  - Once the cow has her next calf, she will begin being milked again



- Cattle are ruminants
  - Meaning they have a 4 compartment stomach
    - Omasum
    - Abomasum
    - Reticulum
    - Rumen
- This allows cows to digest grasses and processed feeds
  - Corn, barley, cottonseed meal, beef pulp



- Calf
  - An animal under the age of 1 year
- Bull
  - A male of any age, which has not been castrated
- Steer
  - A castrated bull
- Heifer
  - A female that has not calved
- Cow
  - A female that has calved
- Calving
  - Refers to the process of a cow giving birth



- Weaning
  - Removal of calves from mother's milk
- Cattle are transported to a processing plant when they reach an average weight of 1,100 lbs to 1,200 lbs
  - They are then slaughtered to fabricate our favorite cuts of meats
- Byproducts
  - Is any product remaining after the animal carcass that has been processed and products of greater value have been removed

- Cattle produce edible and inedible by-products
  - Edible by-products
    - Referred to as variety meats
      - Include the heart, tongue, liver, and kidneys
  - Inedible by-products
    - Includes the hide
      - Used to manufacture leather products
  - Gelatin
    - Comes from horns, hooves, bones, and hides
      - Make gelatin desserts, ice cream, and marshmallows
  - Fats
    - Used to make cosmetics, soaps, lubricants, printing ink,
  - Hair
    - Used to make brushes and upholstery material for furniture



- Many pharmaceuticals and therapeutic agents used by humans
  - Derived by organs and tissue
- The values of the by-products greatly enhance our daily lives

## HORSES

- Have played a vital role in the development of America
- There are 215 breeds of horses worldwide today
- Horses are used for a variety of reasons today
  - Recreational, competitive, work



- Colt
  - An uncastrated male horse under the age of 4 years
- Stallion
  - An uncastrated male horse at least 4 years of age
- Gelding
  - A castrated male horse



- Filly
  - A female horse under the age of 4 years
- Mare
  - A female horse at least 4 years of age
- Foaling
  - When a mare gives birth to a foal
  - Foal
    - Is a colt, filly, gelding up to a year of age



## HORSE BYPRODUCTS

- Byproducts of horses are used for
  - Gelatins
  - Cosmetics
  - Clothing accessories
- Horse hair
  - Used to manufacture a variety of brushes

## SHEEP AND GOATS

- They provide many valuable products
  - Like wool, it's a valuable textile fiber
    - Used to manufacture clothes
- Processed to yield a variety of meat products
  - Provide milk

## SHEEP AND GOATS

- Wool comes from?
  - The undercoat of sheep and goats
- Wool fibers are used to
  - Manufacture sweaters, suits, and other clothing



## GOATS

- Some breeds of goats
  - Used to produce a variety of specialty fibers
    - Can you name a few?
      - Cashmere
      - Mohair
  - Cashmere comes from
    - Kashmir Goat
      - There is no "purebred" cashmere goat
      - All goats with the exception of Angora goats grow Cashmere
  - Mohair comes from
    - Angora Goat
      - Mohair is cut, cleaned, spun, and processed in scarves, hats, upholstery, sweaters, coat linings and other clothing



## GOATS

- Goats known for there meat production
  - Boer
  - Spanish
- Goats known for there milk production
  - Saanen
  - Nubian
- Goats milk
  - Is processed into specialty cheeses



## SHEEP

- A sheep that is younger than 1 year of age
  - Lamb
- Process of giving birth to a lamb
  - Lambing
- The uncastrated male parent
  - Ram
- Female sheep whether she has had a lamb or not
  - Ewe



## SHEEP

- Ram or goat that has been castrated
  - Wether

## GOAT

- A female goat
  - Doe
- A male goat
  - Buck
- A female or male goat under the age of 1 year
  - Kid
- A female or male goat between the age of 1-2 years
  - Yearling



## BYPRODUCTS

- Some byproducts we get from sheep and goats
  - Can you name any?
    - Variety meats
      - Lamb fats
        - Manufacture feeds, soaps, and lubricants
    - Sheep Skins
      - Processed into leather to make
        - Shoe linings, gloves, chamois skins
    - Processing of the sheep's wool produces Lanolin
      - Used in ointments, cosmetics, and leather dressings



## POULTRY

- Poultry includes many bird species
  - Chickens
  - Turkeys
  - Ducks
  - Geese
- Became an increasing consumed meat in the early 1990s
- Chickens are grown in mass production to be able to meet consumer demands
  - Most are sold in stores as:
    - Whole chickens or specific parts such as wings, breast, thighs, and legs




## POULTRY

- A female that lays eggs
  - Hen
- If a hen is bred by a rooster,
  - The fertilized egg will develop into a chick
  - Unfertilized eggs will develop an edible yolk and egg white
- A chicken of either sex, between the ages of 4 and 8 weeks
  - Broiler or Fryer
- A young, immature chicken that has not reached to onset of egg production and is no older than 1 year in age
  - Puller
- A male chicken that is at least 8 months of age
  - Rooster or Cock




## POULTRY

- Castrated male that is less than 8 months of age
  - Capon
- A male chicken that is at least 8 months of age
  - Rooster or Cock



## POULTRY

- Chickens provide many non edible by-products
  - What are some?
    - Feathers
      - Stuff mattresses, comforters, and pillows
      - Make brushes and animal feeds



