Sheep and Goat Production on Small Acreage

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TEXAS A&M AGRILIFE EXTENSION

Provided by Katahdin Hair Sheep International

Getting Started

- Is there a market for what you want to produce ?
  - Where is it and how will you participate?
- What animals do you "like"
- What are your resources
  - Financial (i.e. how many can you afford to feed ?)
  - Physical (i.e. what are my fences like? How many can my land support?)
  - Human (i.e. do you, or someone, know how to do this?)

Sheep and Goats: the 'good news'

- Often better suited to small acreage
- Easier to "handle" – (if trained right)
- Markets:
  - Direct sales from your property (live animals; milk)
  - Haul to auction market (Karnes City,Fredricksburg, San Angelo)
- Hair Sheep don't need Shearing
  - OSU breeds of livestock

    http://www.ansi.okstate.edu/breeds/

Sheep and Goats: the 'bad news'

- Fencing ?
- Predation
  - Guard animals
  - Herding / pen at night
- Internal Parasites
  - H. contortus
  - Coccidiosis
- Shearing ? Wool vs. Hair Sheep

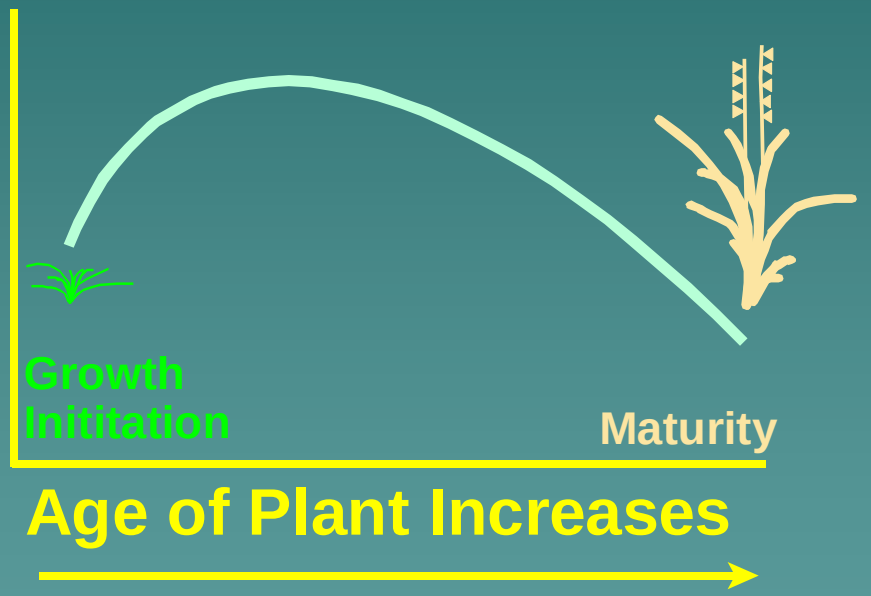
Dietary Preference

- Goats: weeds / browse 70%
- Sheep: 50:50 grass : weeds / Browse

FORAGE

- TWO THINGS
  1. QUALITY
  – green
  - Ratio of leaf:stem

  2. QUANTITY – green or brown



Irrigated (improved) Forages

- Water is EXPENSIVE
- Other inputs
  - Fertilizer, seed, etc.
- Harvest efficiency by livestock about 25 – 50%
  - Limit grazing ??
- Hay harvest ~ 75%

Native Range

- Limited management opportunities
- "Carrying Capacity" vs. "Stocking Rate"
  - C C in S TX 1 Ac per goat
- South TX browse is pretty high quality relative to other areas of TX

Granjenio / Spiny Hackberry

Guajillo

Guayacan

White Brush / Bee Brush

Palo Verde

Huisache

Mesquite

Grazing / Browsing Strategies

Rotational vs. Continuous

- Plants NEED REST

Strip Grazing

- Could be used ina limit grazed system too

Limit Grazing

- Allow limited access to high quality pastures
- Use those pastures as a "supplement"
- Examples:
  - Bermudagrass to: ryegrass, clover, high quality browse
  - Dry lot with hay: access to above

Native Range – over grazing

May be “Permanent” Damage

Overgrazing and Parasites

Feeding Livestock

- What can the pasture support ?
  - Stocking rate ("right now")
  - Carrying capacity (Long-term average)
  - These are NOT the same thing.
- Supplemental Feeding:
  - Providing specific nutrients that may be limiting in the diet (protein, minerals, vitamins)
- Replacement Feeding:
  - The process of replacing dietary dry matter due to high stock density / overgrazing
    - Hay, high energy feeds
  - Will change plant compositon over time.

Feeding Livestock: questions you should have ???

- WHAT NUTRIENTS ARE NEEDED?
- HOW MUCH SUPPLEMENT SHOULD I FEED?
- HOW OFTEN SHOULD I FEED?
- WHEN / SHOULD (?) FEEDING START AND STOP?

The Nutrients:

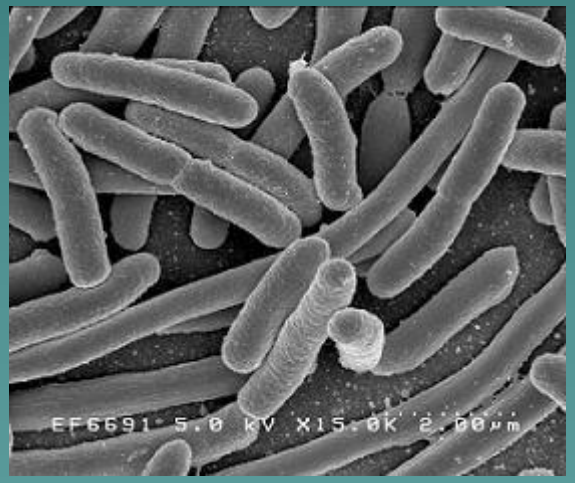
- Water 80-90% of a cell's weight
- Protein: "the building blocks of the body"
  - amino acids
- Energy: "the ability to do work"
  - Cellulose, starch, fats
- Vitamins:
  - catalyze chem reactions
  - Immune response
- Minerals:
  - catalyze chem reactions
  - Immune response
  - Structural, bone etc.

Energy:

- **Roughage** (forage or browse) is the main source of dietary energy

Guiding Principal of Ruminant Nutrition

- You are not feeding livestock
- You are feeding rumen microbes, they feed the animal



Protein “rules of thumb”

- 7 % CP Diet Required, Just for Rumen Function
  - 12% growing yearling
  - 14% lactating nanny
- Requirements Affected By:
  - Age, Production Status, Breed type

How do you know if nutrient requirements are being met ?

- Body Condition Scoring
  - 1-5 scale
  - sheep and goats, tactial (visual?)

Body Condition Scoring

Body Condition Score 1

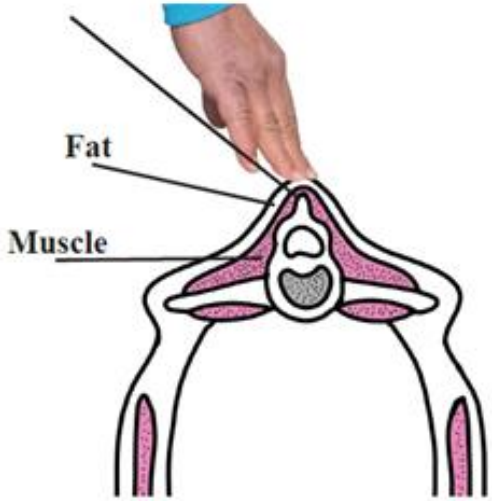
Body Condition Score 2

Body Condition Score 3

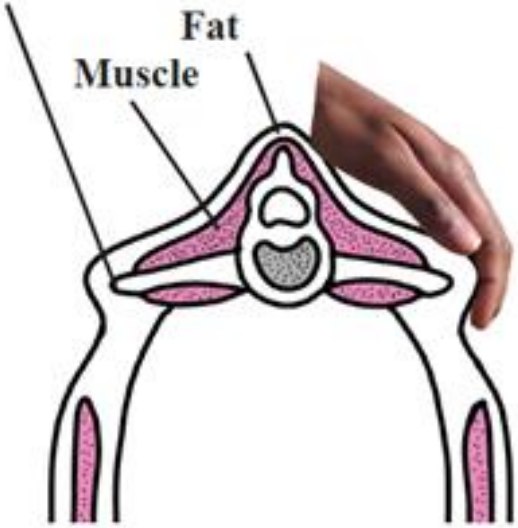
Body Condition Score 4

Lumbar region

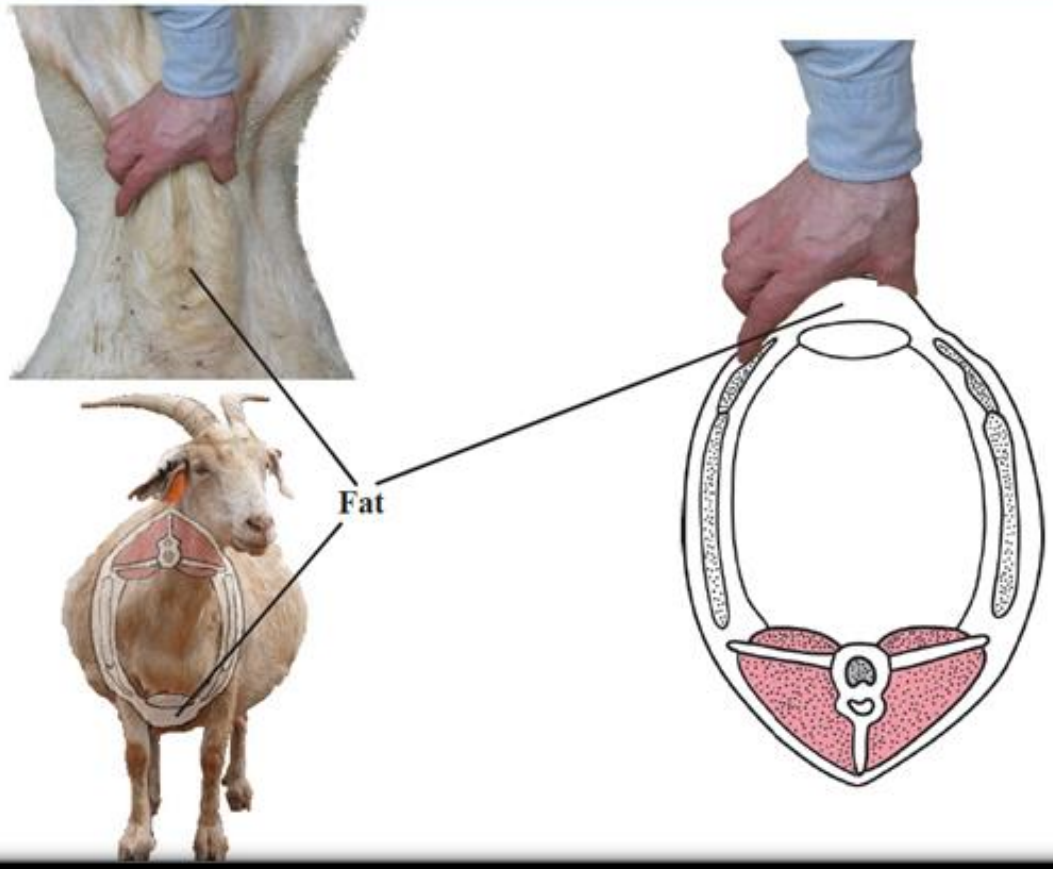
Spinous process



Transverse process



Sternum

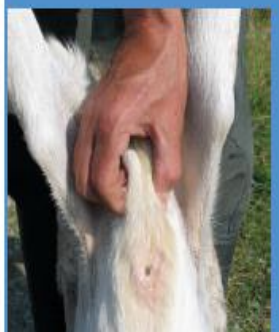


BCS 1

The spinous process of the lumbar vertebrae can be grasped easily between the thumb and forefinger; the spinous process is rough, prominent, and distinct giving a saw-tooth appearance. Very little muscle and no fat can be felt between the skin and bone. There is a deep depression in the transition from the spinous to transverse process.

The hand can easily grasp the transverse process of the lumbar vertebrae which is very prominent. Clearly half of the length of the transverse process is discernible.

Diagrams adapted from Edmonson, et. al, 1989. J. Dairy Science, 72:68-78. Used with permission from the American Dairy Science Association.



Sternal fat can be easily grasped between thumb and fingers and moved from side to side. The cartilage and joints joining ribs and sternum are easily felt.

Visual aspect of the goat: Slightly raw-boned, the backbone is still visible with a continuous ridge. Some ribs can be seen and there is a small amount of fat cover. Ribs are still felt. Intercostal spaces are smooth but can still be penetrated.

The spinous process of the lumbar vertebrae is evident and can still be grasped between the thumb and forefinger; however, a muscle mass can be felt between the skin and bone. There is an obvious depression in the transition from the spinous to transverse process.

The hand can grasp the transverse process but the outline of the transverse process is difficult to see. About one-third to one-half of the length of the transverse process is discernible.

Sternal fat is wider and thicker but can still be grasped and lifted by the thumb and forefinger. The fat layer can still be moved slightly from side to side. Joints are less evident.

BCS 2

Visual aspect of the goat: The backbone is not prominent. Ribs are barely discernible; an even layer of fat covers them. Intercostal spaces are felt using pressure.

The spinous process of the lumbar vertebrae cannot be easily grasped because the tissue layer covering the vertebrae is thick. When running a finger over the spinous process, a slight hollow is felt. There is a smooth slope in the transition from the spinous to transverse process.

The outline of the transverse process of the lumbar vertebrae is slightly discernible. Less than one-quarter of the length of the transverse process is discernible.

Sternal fat is wide and thick. It can still be grasped but has very little movement. Joints joining cartilage and ribs are barely felt.

BCS 3

BCS 4

Visual aspect of the goat: The backbone cannot be seen. Ribs are not seen. The side of the animal is sleek in appearance.

It is impossible to grasp the spinous process of the lumbar vertebrae, which is wrapped in a thick layer of muscle and fat. The spinous process forms a continuous line. There is a rounded transition from the spinous to transverse process.

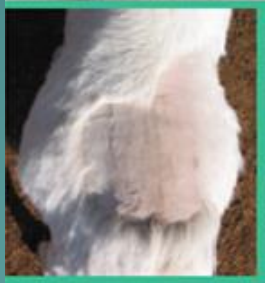
The outline of the transverse process of the lumbar vertebrae is no longer discernible. The transverse process forms a smooth, rounded edge, with no individual vertebrae discernible.

Sternal fat is difficult to grasp because of its width and depth. It cannot be moved from side to side.

Visual aspect of the goat: The backbone is buried in fat. Ribs are not visible. The rib cage is covered with excessive fat.

The thickness of the muscle and fat is so great that reference marks on the spinous process are lost. The spinous process forms a depression along the backbone and there is a bulging transition from the spinous to transverse process.

The thickness of the muscle and fat is so great that reference marks on the transverse process are also lost. It is impossible to grasp the transverse process.



The sternal fat now extends and covers the sternum, joining fat covering cartilage and ribs. It cannot be grasped.

BCS 5

How do you know if nutrient requirements are being met ?

- Examine fecal material

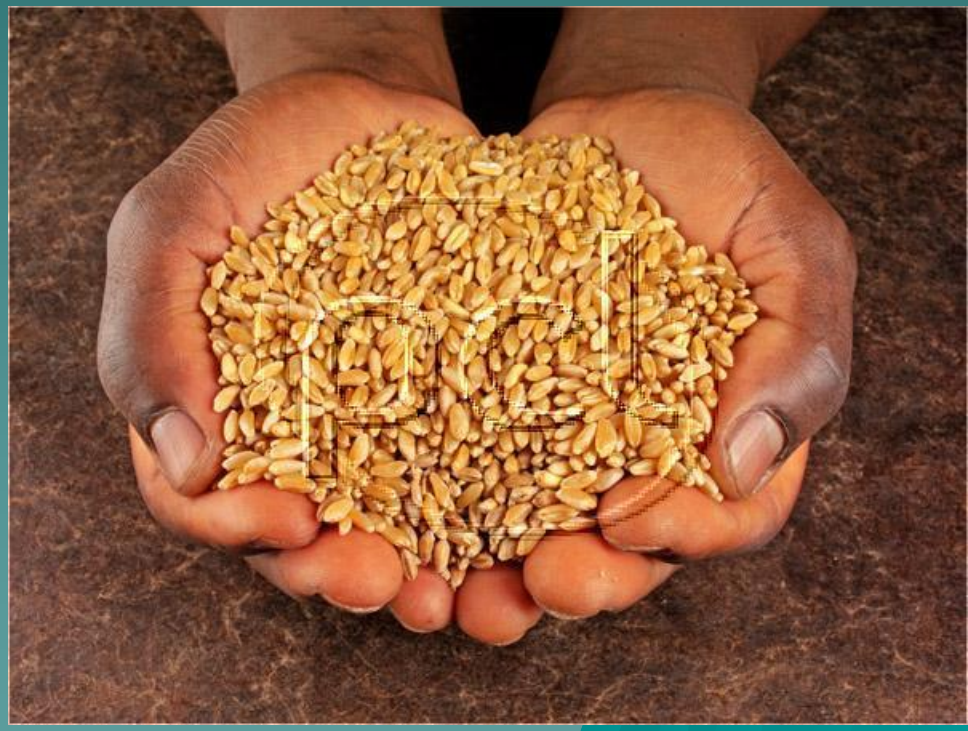
Read Feed Tags

- A Feed Tag Must Have:
  - %Crude protein, %Crude fat, % Crude fiber, NPN
  - Ether Extract Includes:
    - fats, oils, fat sol. vitamins, NPN
  - Crude Fiber Includes:
    - Cellulose, lignin, hemicellulose

What About Hay ?

Managing Acidosis

- Bloat or Acidosis
  - Watch for uncomfortable or bloated animals.
  - Don't change feeds too fast. Esp. Roughage to grain.
- Feed grain supplements in small amounts but more frequently (daily or twice daily)
- Introduce grain supplements gradually into the diet
- Example feed no more than 0.3 % of body wt of barley per feeding.
  - i.e. 100 lb nanny gets no more than 0.3 lb grain per feeding, i.e. no more than will fit in a ½ liter container.
- Feed a "complete" ration



Ketosis (Preg Toxemia)

- Symptoms
  - Severe energy deficiency
  - Affects does in late gestation
  - Affects does with multiple fetuses
  - Affects very thin or obese nannies
  - Lethargic progressing to downers
  - Animals' breath odor ("sweet")
  - Urine test withketone strips
  - teeth grinding, dull eyes, recumbency, blindness, star gazing, tremors, coma and death.
- Prevention
  - Gradually increase grain in supplement last 6 weeks of gestation
  - Exercise 2-3 hr. day
  - Depressed / Lethargic does -tube propelene glycol 3oz 2x/day or KetoPlus® 2-3 X/d
    - *PG may be toxic in repeated doses
    - * Discontinue if she goes off feed
- 80% mortality, once she's down

Coccidosis

- Confinement or semi-confinement
- Watch for bloody diarrhea, weight loss
- Keep goats out of feed troughs !!!
- Feed a coccidiostat

Reproduction

- Puberty as early as 3 months (separate). Usually about 6-7 months
- Tend to be seasonal breeders (fall). Anestrous in summer (usually)
- Estrous cycle 18-22 days,
- Estrus 12hrs- 2days. Subtle
- Pregnant for 5 months

BCS and Reproduction

- Target BCS is 4
- Flushing: strategy to increase dietary energy just prior to breeding season to increase chance of estrus / pregnancy
  - BCS 3 = Yes
  - BCS <2, probably won't work
  - BCS >3, waste of $
  - Manage grain / acidosis

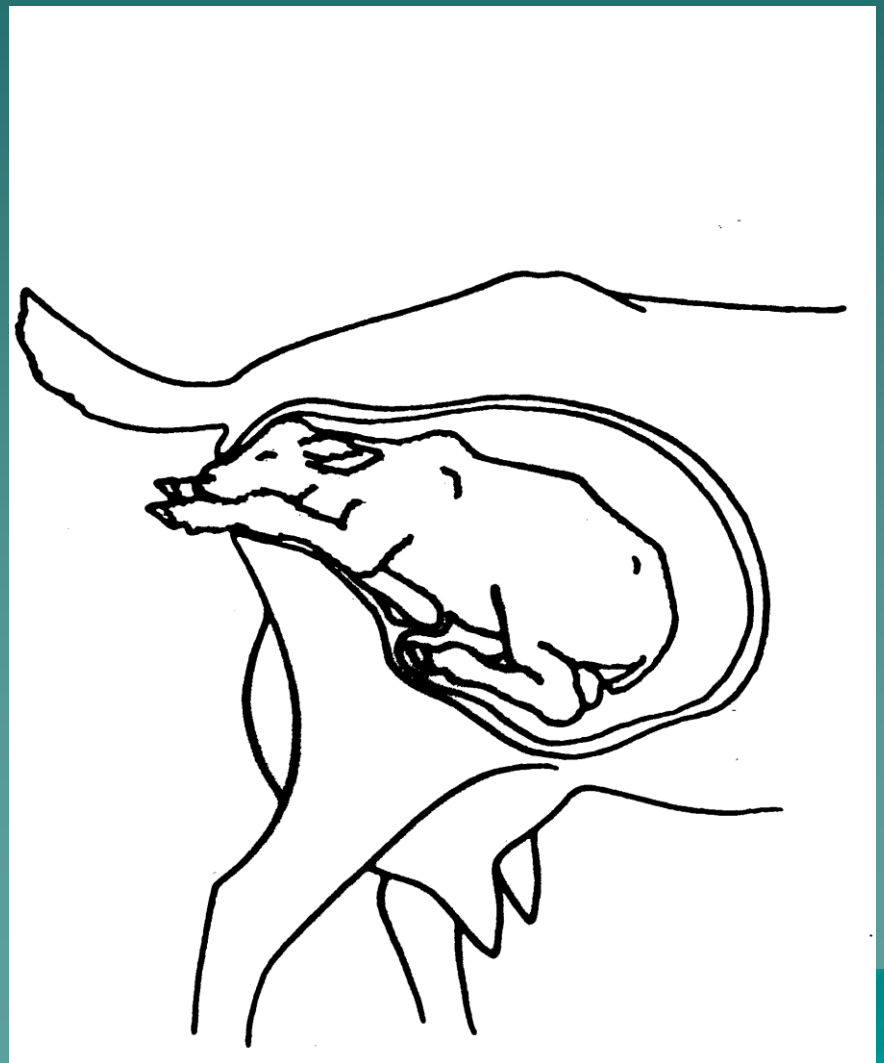
Lambing / Kidding

- Facilities
  - Have small sheds or "goat houses" for mothers and babies to get warm and nurse
- See doe's right side at 2-3 weeks, udder fills (mature nannies), mucus discharge
- Equipment
  - Bottles and colostrum
  - Stomach tube ?
  - Heat lamp
- Check for normal presentation
- Two feet pointed down. See Nose.
- Check for multiple kids. 30 minutes.

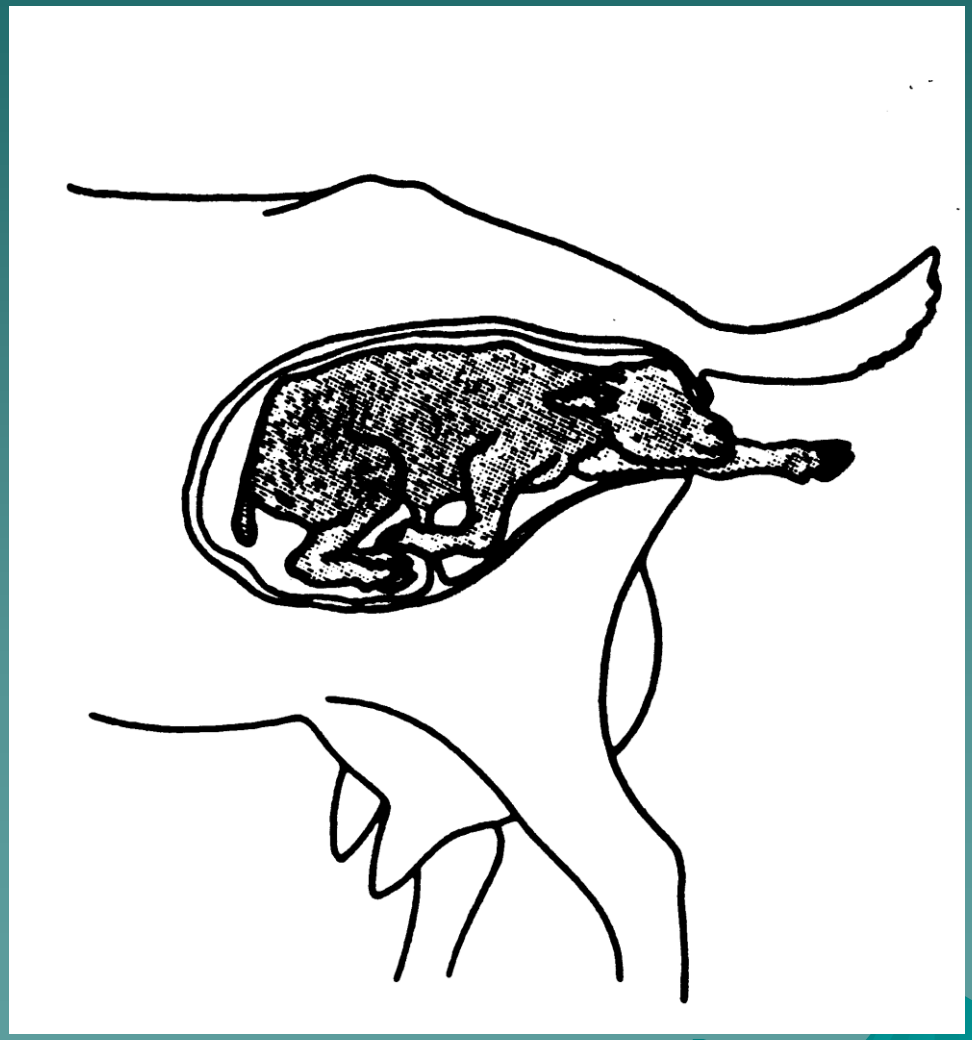
Assisting Birth

- Wait at 30 minutes with no sign of kids
- Wash hands. Feel for:
- Head back, leg back, breech. Reposition.
- Push when she's not

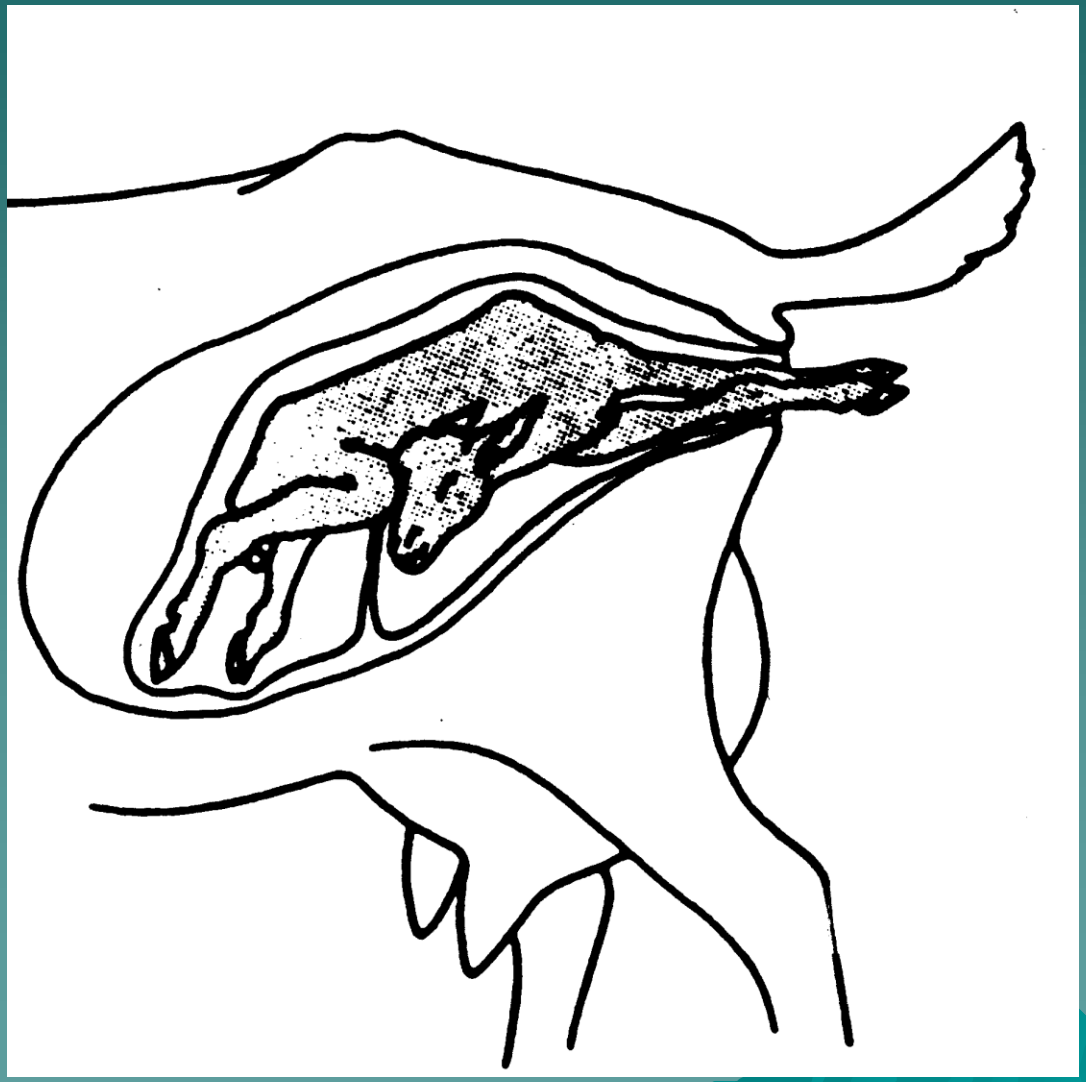
Presentation Normal:
2 feet (pads down) and a head

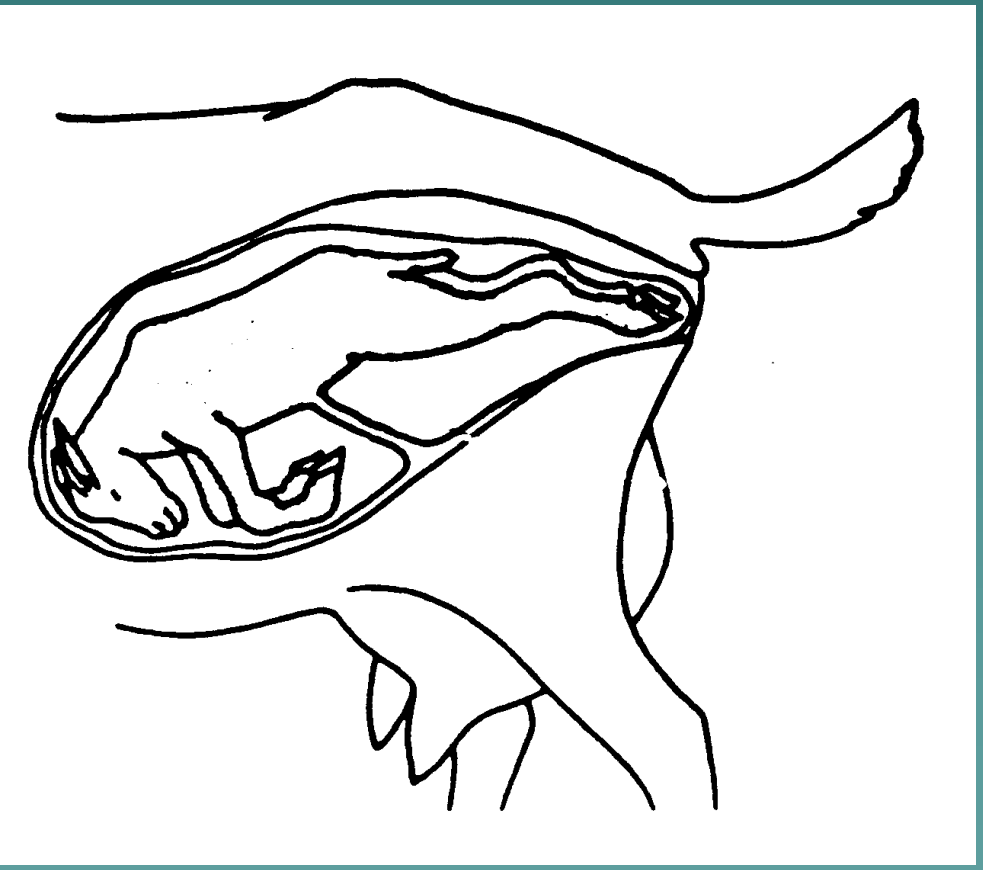


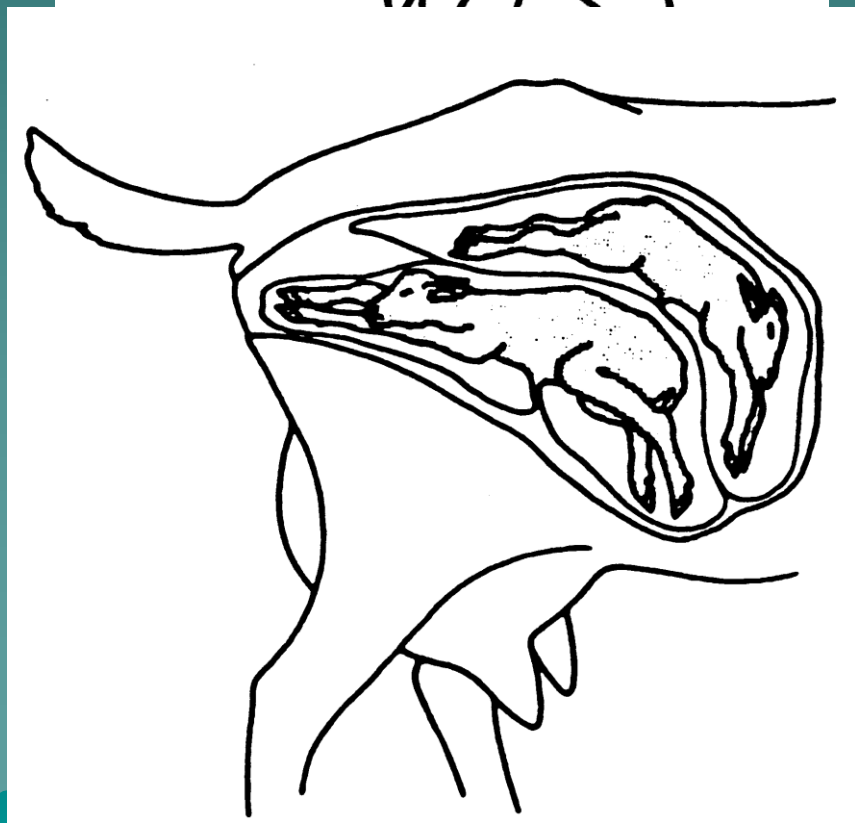
Leg Back



Head turned back







Post-Partum Care

- Don’t cut umbilical cord. Tear later if necessary.
- Make sure placenta comes off nose.
- Disinfect umbilical cord with iodine
- Check eye lashes
- Make sure kids nurse
- Retained placenta.
  - should shed by day 2. DON’T PULL OUT !!!!
  - PGF or veterinarian
  - No antibiotics

Questions ?

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