

# Goat Health

## Diseases and Injection Methods

Roy Beckford – Agriculture Agent, Lee County Extension

# Introduction

- Humans domesticated goats as early as 10,000 years ago
- From this primitive type, our modern, high-producing breeds were developed
- Today's Angora produces 10 kg of mohair each year
- The Boer (South African meat-goat) grows quickly to 220 pounds
- Modern dairy goat breeds produce over 1000 kg of milk in 10 months

# Social Disposition



- Goats are inquisitive
- Goats are highly social
- Goats accept the need to live together
- Goats will accept people as part of the herd
- Goats are willing to follow their human 'head goat'

# About Meat Goats



- In January 2005 there were 1.9 million heads of meat goats in the U.S.
- The demand for goat-meat is increasing
- Meat from goat is called chevon
- Chevon is low in fat and cholesterol

# About Dairy Goats

- In January 2005, dairy goats totaled 283,500 heads in the U.S.
- Goat's milk forms a curd that people find easier to digest
- People allergic to cow's milk can digest goat's milk without a problem



# Fundamentals of Disease Prevention

- Housing
- Exercise
- Feeding
- Watering
- Worming
- Vaccination

# The Healthy Goat Statistics

- Body Temperature: 102.5-104 degrees F
- Pulse/Heart Rate: 60-80 beats per minute
- Respiration Rate: 15-30 breaths per minute
- Puberty: 4-12 months
- Length of Heat: 12-36 hours
- Gestation: 145 -155 days



# Vaccines and Prophylactics

## Syringes and needles



# Vaccines and Prophylactics

- C&D  
Perfringens  
toxoid
- Tetanus toxoid
- CL vaccine  
(abscesses)
- Coccidiostats



**CD-T toxoid** provides three-way protection against Enterotoxemia caused by *Clostridium perfringens* types C and D.

**Tetanus** (lockjaw) is caused by *Clostridium tetani*.

**Seven and 8-way combination** vaccines for additional clostridial diseases such as blackleg and malignant edema are available, but generally not necessary for small ruminants.

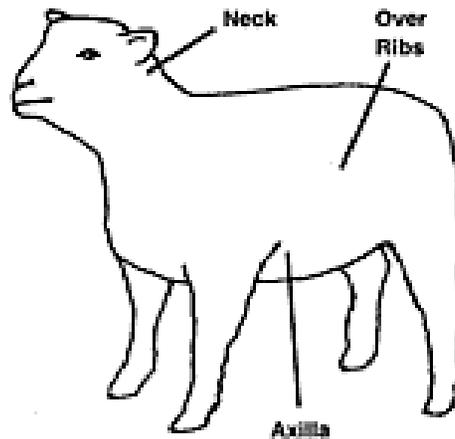
# Administering Vaccines and Injections

Methods include:

- Subcutaneous (Sub-Q)
- Intramuscular (IM)
- Intravenous (IV)

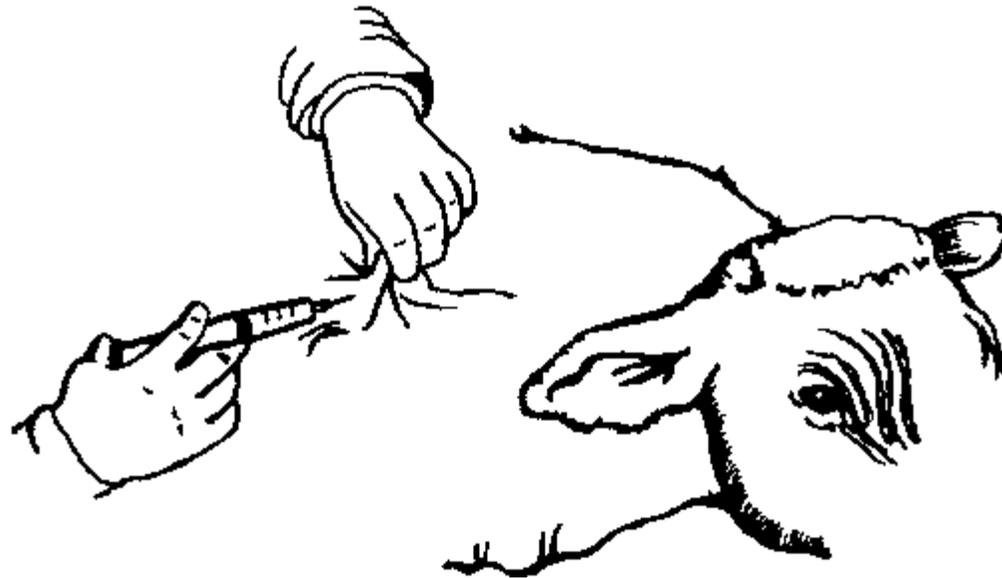
# Administering Vaccines and Injections

- Subcutaneous



Use a sharp  $\frac{1}{2}$ - to  $\frac{3}{4}$ -inch length and 16- or 18-gauge diameter needle.

# Sub-Q; Technique



# Administering Vaccines and Injections

- Intramuscular

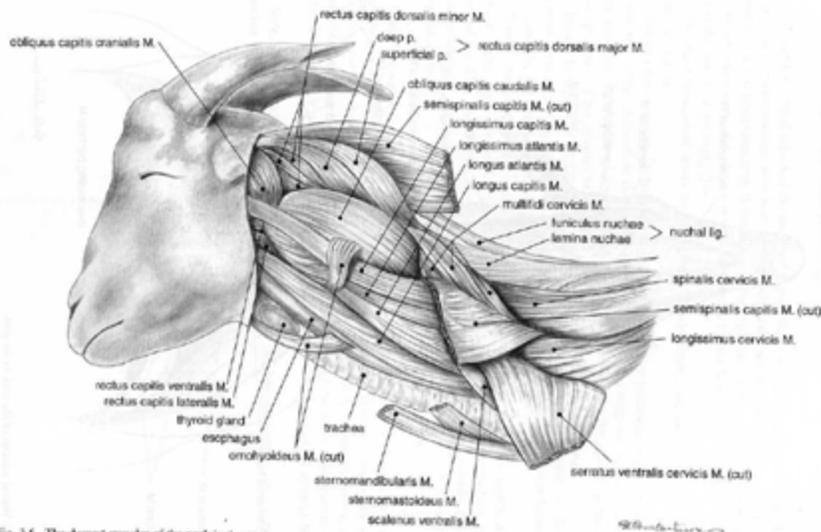


Fig. 3.6. The deepest muscles of the neck in the goat.

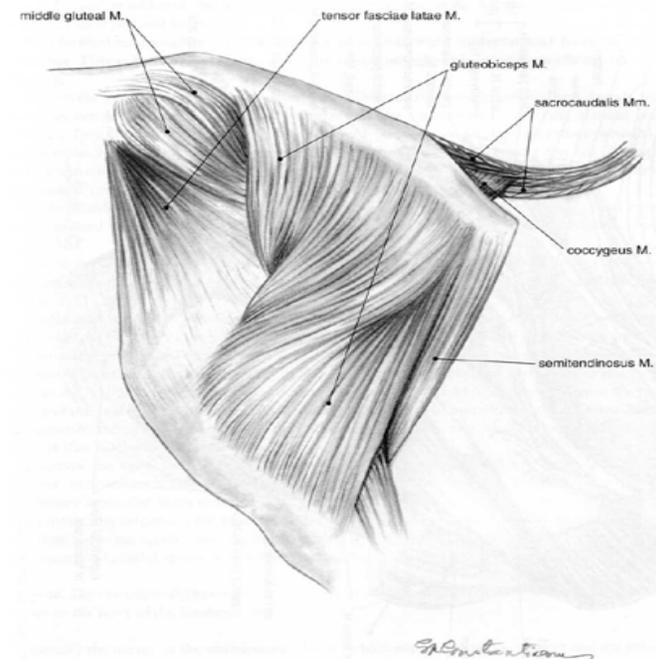
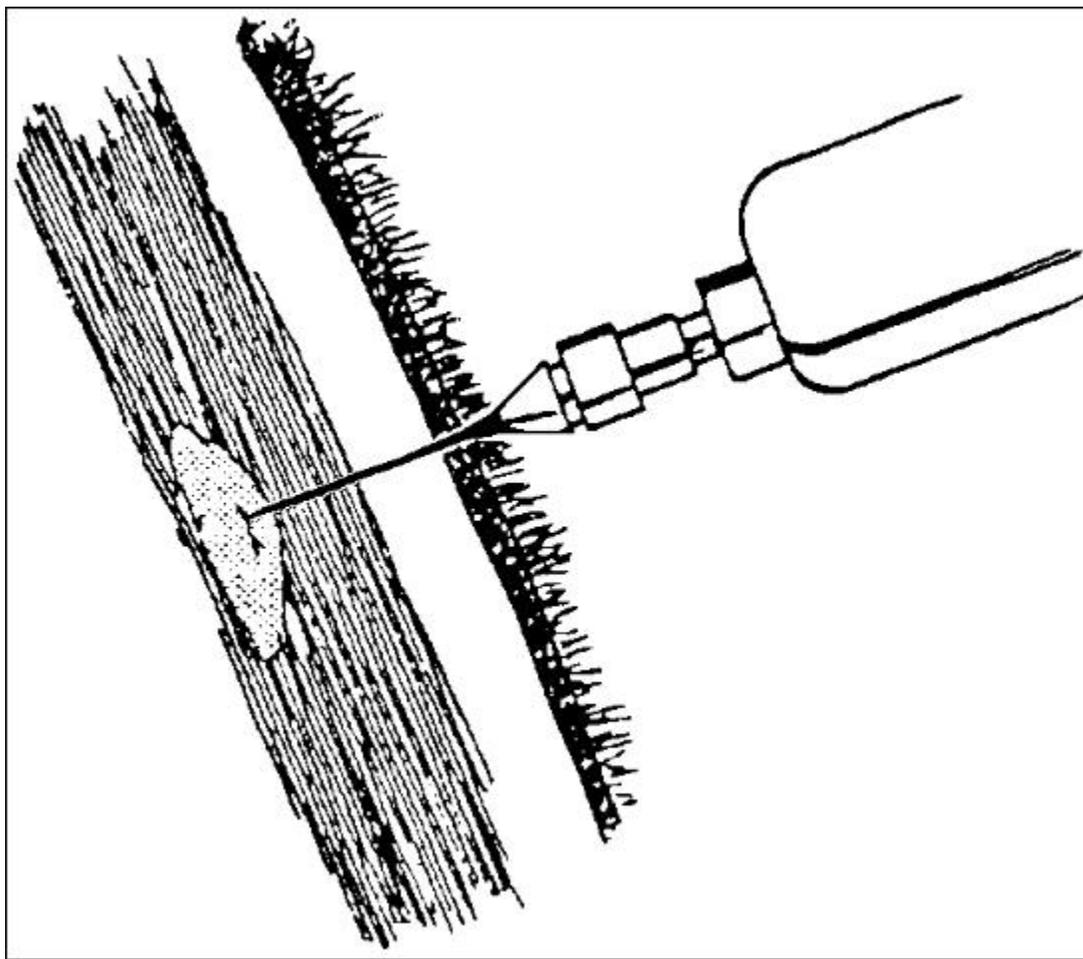


Fig. 6.8. The superficial muscles of the left pelvic wall, tail, and thigh in the goat.

# IM; Technique



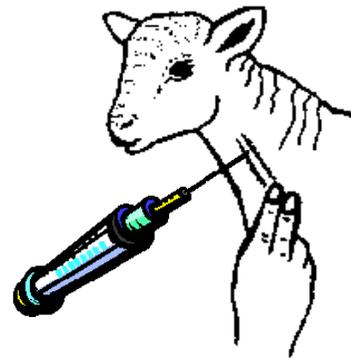
# Administering Vaccines and Injections

- Intravenous



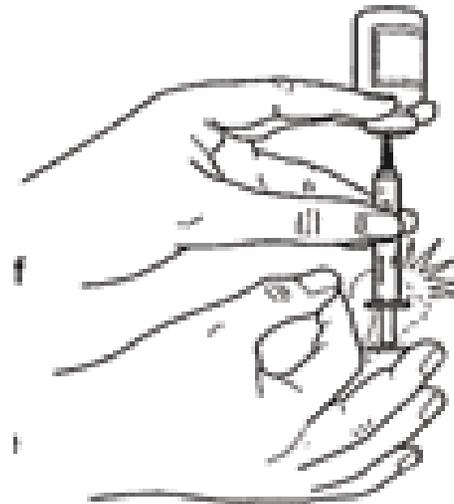
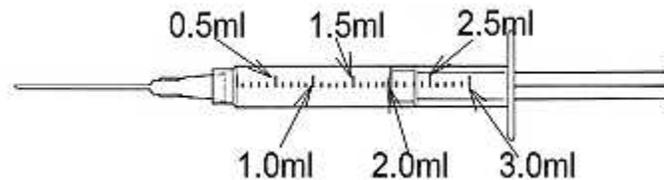
# IV; Technique

- In order to make the vein show, block it at the base of the neck.
- Blocking the vein will make the blood build up inside it and it will stand out like a cord or rope under the skin.
- Put the needle into the vein. Check that the needle is in the vein by pulling the plunger of the syringe, back a little when blood should show in the barrel.
- Remove your hand from the bottom of the neck and slowly inject the drug.



# How to fill a syringe

Draw the plunger back to the amount you want to inject. This air will be injected into the medication vial. It makes removing the medicine easier and it reduces the risk that you will create a vacuum in the vial.



# Anaphylactic Shock

## Cause:

- Administering drugs and vaccines can result in severe allergic reaction that occurs rapidly and causes a life threatening response

## Symptoms:

- Persistent bleating
- Trembling
- Difficult breathing
- Hives
- Collapse
- Seizures
- Death

# Anaphylactic Shock

## What really happens:

Rapid constriction of the [airway](#), often within minutes of onset.

Brain and organ damage occurs rapidly without oxygen.

Requires advanced medical care immediately

## Treatment:

- Epinephrine (adrenaline) keeps the airways open

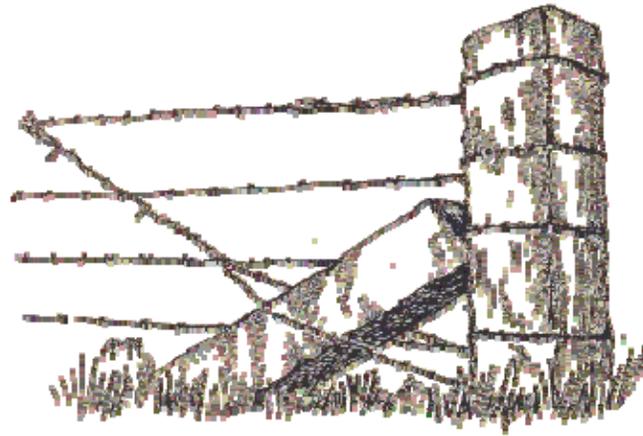
# Trauma



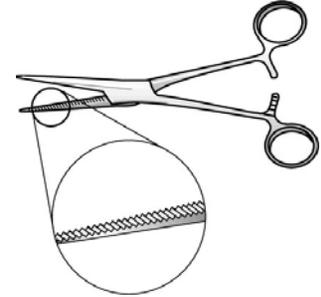
# Cuts, Scrapes and Punctures

## Causes:

- Barbed wire
- Loose wire
- Exposed nails
- Sharp horns



# Cuts, Scrapes and Punctures



## Treatment

### *Small Wounds:*

- Clean the area with iodine or hydrogen peroxide solution. Apply topical antibiotic.

### *Punctures:*

- Use a syringe to flush wound. Make sure that Tetanus vaccines are current.

### *Large wounds:*

- Apply bandages, gauze or heavy padding to stop bleeding. Use a hemostat to pinch off any exposed and gushing capillary or venule. Arrange a vet visit.

# Infectious and Contagious Diseases

- Infectious diseases are the invasion of a host animal generally by microorganisms.
- Microbes that cause illness are also known as *pathogens*.
- Most common pathogens are bacteria and viruses, some kinds of fungi, and protozoa.
- An infectious disease is termed **contagious** if it is easily transmitted from one animal to another.
- A contagious disease is termed a **zoonotic** if it is easily transmitted from animal to man.

# Bacterial Diseases



# Tetanus (Lockjaw)

- **Cause:** Bacterium – *Clostridium tetani*
- **Route of entry:** Through a wound
- **Early Symptoms:** Stiffness, Head high, toe dragging
- **Advanced Symptoms:** Severe muscular stiffness, flatulence and bloat, squinting and grinning, locked jaws
- **Prevention:** Vaccination, Prompt wound treatment
- **Treatment:** Tetanus anti-toxin, muscle relaxants

# Enterotoxemia

- **Cause:** Bacterium – *Clostridium perfringens*  
(Types C or D)
- **Route of entry:** Through the gut
- **Symptoms:** Sudden death of a kid, in older animals, high temp. with severe abdominal pain, shredding of the gut wall in feces, bloody feces, coma and death
- **Prevention:** Vaccination (CI C&D toxoid), good feeding practices
- **Treatment:** Anti-toxin, oral tetracycline (5-10 mg/lb)

# Caseous Lymphadenitis

- **Cause:** Bacterium – *Corynebacterium pseudotuberculosis*
- **Route of entry:** Through skin, nasal passages
- **Symptoms:** Abscesses with thick yellow-green pus with no odor, usually in lymph nodes.
- **Prevention:** Quarantine of new animals, isolation of abscessed animals (**Zoonotic disease**)
- **Treatment:** Difficult treatment; seek medical advice, culling

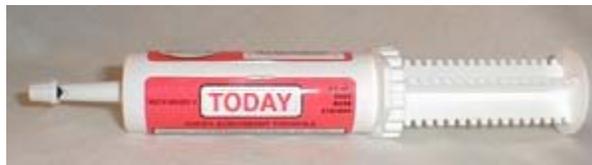
# Listeriosis

- **Cause:** Bacterium – *Listeria monocytogenes*
- **Route of entry:** Carried by wildlife and birds, soil and feed contamination, aborted fetuses
- **Symptoms:** Fever, Salivation, nasal discharge, head tilt, circling, one-sided facial paralysis; single ear, eyelid or lip paralysis
- **Prevention:** Avoid spoiled or rat infested feeds, introduce silage slowly (*Zoonotic*)
- **Treatment:** High doses of antibiotics (Terramycin)

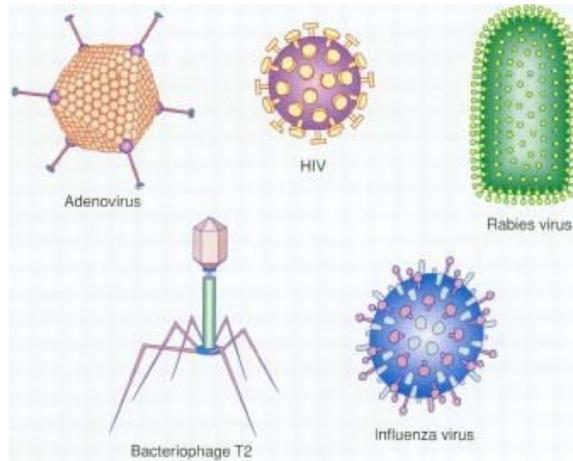
# Mastitis

- **Cause:** Bacterium –(Various causing inflammation) *Staphylococcus aureus*
- **Route of entry:** Teats
- **Symptoms:** Misery, hot and sensitive udder, eyes narrowed to slits
- **Prevention:** Clean milking methods, strip milking, careful selection of animals
- **Treatment:** Strip milking, antibiotic infusions, parenteral antibiotics

# Mastitis



# Viral Diseases



# Caprine Arthritis-encephalitis (CAE)

- **Cause:** Virus
- **Route of entry:** Via Colostrum in the first few feedings after birth. Blood (e.g., contaminated instruments, open wounds)
- **Symptoms:** Swollen joints, difficulty in walking, staggering in kids, head tilt.
- **Prevention:** Heating Colostrum to 135 degrees F for one hour. CAE testing.
- **Treatment:** No vaccine or treatment

# CAE



# Foot and Mouth Disease

- **Cause:** Virus
- **Route of entry:** Contact
- **Symptoms:** Blisters or vesicles on lips, tongue, teats, or the coronary band of the hoof, lameness, inability to eat, salivation
- **Prevention:** Federal or State responsibility, importation rules
- **Treatment:** Culling sick and contact animals (*Zoonotic*)

# Foot and Mouth Disease



# Contagious Pustular Dermatitis – Sore Mouth (ORF)

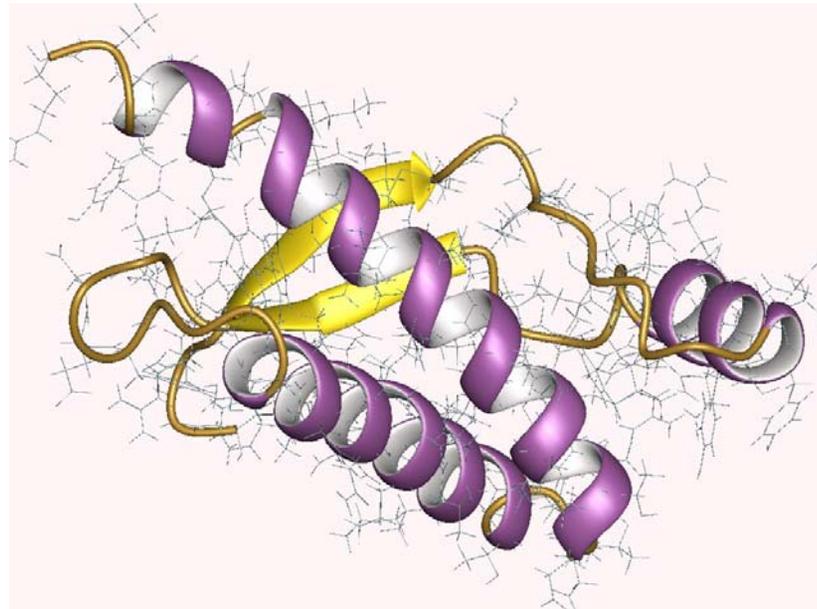
- **Cause:** Pox Virus
- **Route of entry:** Contact with scabs and sores, contaminated equipment
- **Symptoms:** small bumps and blisters on skin of lips, nostrils, eyelids, ears, teats. Swollen lymph nodes.
- **Prevention:** Vaccination ?????????? (*Zoonotic*)
- **Treatment:** Disease lasts for about three weeks. Topical antibiotic treatment of sores

# Sore Mouth



# Diseases of *Uncertain* Origin

## Protein Molecules as disease Agents



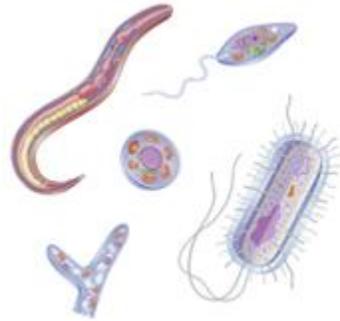
# Scrapie

The sheep and goat version of a transmissible spongiform encephalopathy (TSE) or Mad Cow disease

- **Cause:** A Prion (Protein molecule)
- **Route of entry:** through the placenta or contact with the placental fluids.
- **Early Symptoms:** Rare that infected goats below 12 months of age display any signs. Hypersensitivity to touch, nervousness and fear of sudden noises (such as clapping of hands).
- **Advanced Symptoms:** Intense itching, poor locomotion, scratching on the back result in nibbling and nose licking.
- **Prevention:** Purchase from reputable farms.
- **Treatment:** None (Zoonotic disease???????)

[www.aphis.usda.gov/vs/nahps/scrapie/](http://www.aphis.usda.gov/vs/nahps/scrapie/).

# Protozoal Diseases



# Coccidiosis

- **Cause:** Protozoa - *Eimeria species*
- **Route of entry:** Feed and water
- **Symptoms:** Off food, diarrhea, black blood in diarrhea, rapid weight loss, dehydration, may show straining in attempts to pass feces, dehydration and fever
- **Prevention:** Exclude chickens and birds, clean water and feed, Isolation of sick animals, Coccidiostats (Decoquinate)
- **Treatment:** Sulfa drugs, Coccidocides - Amprolium

# Coccidiosis



# Toxoplasmosis

- **Cause:** Protozoa – *Toxoplasma gondii*
- **Route of entry:** Through Contaminated feed and water (Cats are the carriers)
- **Symptoms:** Abortions, weak kids, stillbirths, birth defects, and mummification of fetuses
- **Prevention:** Cover feed bins to prevent cats from using them as litter boxes (*Zoonotic*)
- **Treatment:** None

# Toxoplasmosis (ocular)



# Metabolic Diseases

# Bloat

- **Cause:** Build-up of gas in the rumen
- **Symptoms:** Extremely Swollen left side, discomfort, drooling.
- **Prevention:** Management and husbandry methods, culling of persistent bloaters
- **Treatment:** Choke relief, tubing, agents that break up gas bubbles

# Bloat



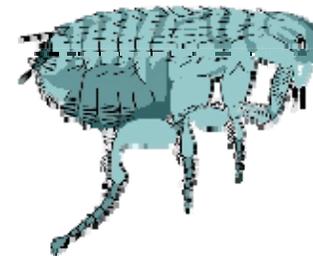
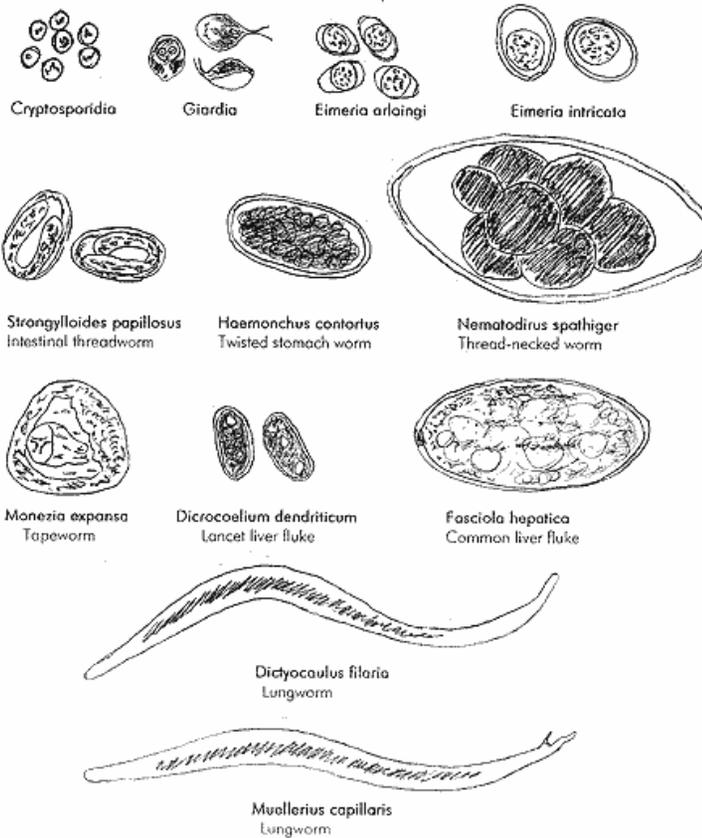
# Ketosis

## (Pregnancy Toxemia)

- **Cause:** Late pregnancy reduction in feed or nutrients
- **Symptoms:** Voluntary isolation, poor appetite, bumping into objects, swelling of extremities, nose held skyward, press up against walls, muscle twitching, circling
- **Prevention:** Prevent does from getting fat in early pregnancy, increase grain energy during last 6 weeks of pregnancy
- **Treatment:** 20-60 cc propylene glycol, 2-3 times per day; glucose, corticosteroids

# Internal and External Parasites

Size Comparison of Parasite Eggs and Larvae Found in Goat Feces  
Michele Konnersman, DVM



# Internal Parasites

- Lungworms
- Roundworms
- Whipworms
- Tapeworms

Normal Jaw line



Bottle jaw



Normal (Color)

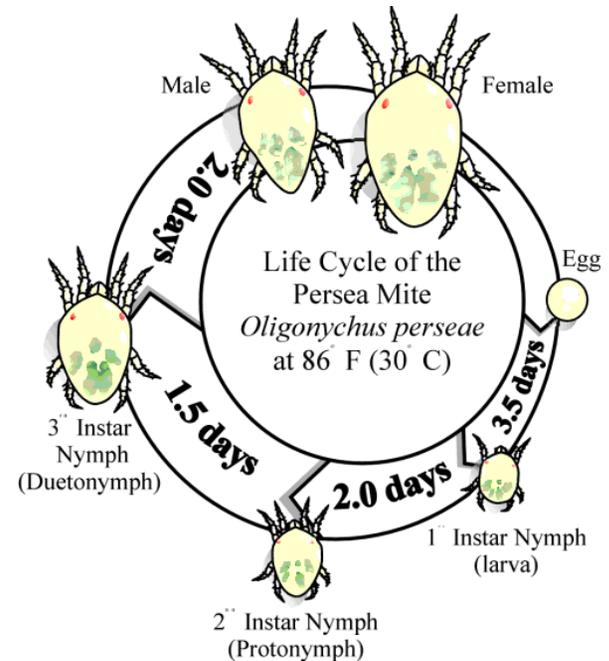
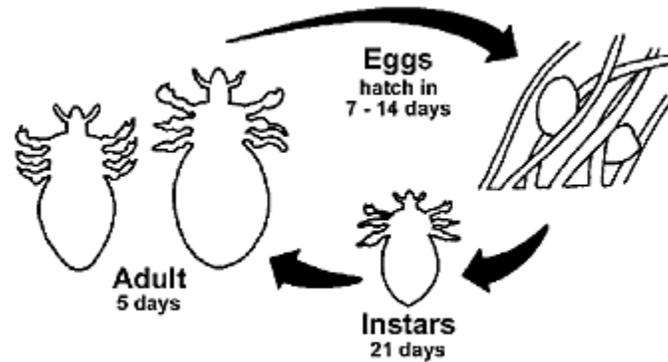


Anemia (Pale)



# External Parasites

- Lice
- Ticks
- Mange mites
- Flies



# Wormers

<u>Active Ingredient</u>	<u>Trade name</u>
Ivermectin	Ivomec
<b>Benzimidazoles:</b>	
Albendazole	Valbazen
	Panacur
	Synanthic
	Safe-guard
<b>Imidothiazole:</b>	
Levamisole	Tramisole
	Levasol

# Your Vet Kit

- Hypodermic needles and syringes
- Antibacterial spray
- Antifungal spray
- Betadine, iodine or hydrogen peroxide
- Hemostat and scissors
- Propylene glycol
- Probiotic
- Epinephrine
- Medical tape
- Penicillin, LA Tetracyclines, vaccines
- Rubber gloves
- Alcohol
- Stomach tube
- Veterinary Thermometer
- Dewormers

Thank You!!!

