General Goat Health

John Harper
Livestock & Natural Resource Advisor
Mendocino & Lake Counties
University of California Cooperative Extension

Adapted from presentation by Susan Schoenian, Sheep & Goat Specialist
University of Maryland Cooperative Extension, Western Maryland Research & Education Center
General Goat Health

- A Healthy goat

- Preventative health care
  - Biosecurity
  - Vaccination program
  - Parasite control
  - Good nutrition
  - Hoof care
  - Predator control

- Common health problems
  - Internal parasites
  - Digestive
  - Respiratory
  - Reproductive
  - Skin
  - Hoof-related
  - Wasting diseases
A healthy goat . . . vital signs

<table>
<thead>
<tr>
<th>Vital Sign</th>
<th>Range</th>
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<tbody>
<tr>
<td>Rectal temperature</td>
<td>102-104°F</td>
</tr>
<tr>
<td>Heart rate (beats)</td>
<td>60-90 per minute</td>
</tr>
<tr>
<td>Ruminations</td>
<td>1-2 per minute</td>
</tr>
<tr>
<td>Respiratory rate (breaths)</td>
<td>15-30 per minute</td>
</tr>
<tr>
<td>Packed cell volume (blood hematocrit)</td>
<td>22-28% avg. 28%</td>
</tr>
<tr>
<td>FAMACHA© score</td>
<td>≤ 3</td>
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</tbody>
</table>
Normal Behavior

- Head up
- Ears up
- Tail up
- Bright-eyed
- Healthy hair coat
- Good appetite
- Chew cud
- Curiosity
- Agile, normal gait
- Keep up with herd
Preventative Health Care

- Biosecurity
- Vaccination program
- Parasite control program
- Good nutrition and feeding management
- Predator management
- Hoof care
Good Biosecurity

- Start with healthy stock.
- Buy from reputable breeders.
- Isolate new animals for at least 30 days.
- Maintain a closed herd.
Biosecurity for Goat Ranches

- Don’t mix your goats with other goats (or sheep).
- Don’t loan goats.
- Don’t board goats.
- Don’t loan equipment.
- Limit access to your farm and animals.
- Control dog, cat, rodent, fly, and bird populations.

University of California
Agriculture and Natural Resources
Making a Difference for California
Vaccination Program for Goats

Clostridial diseases (CD-T)

- *Clostridium perfringens*
  - type C affects kids < 1 month
  - type D affects kids > 1 month
  - Most critical for farms which feed a lot of grain.
  - Vaccine not as effective in goats
- *Clostridium tetani* – tetanus
Vaccination Program for Goats

- **Does**
  - Vaccinate 1 to 2 months prior to kidding.
  - Two shots are necessary the first time an animal is vaccinated.

- **Kids**
  - Vaccinate at approximately 8 and 12 weeks of age
  - Vaccinate earlier if dams were not vaccinated
  - Use tetanus antitoxin at the time of castration or disbudding if dam was not vaccinated.

- **Bucks and wethers**
  - Vaccinate annually
Other Possible Vaccinations
**None of these vaccines are labeled for goats**

- 7 and 8-way Clostridial
- Caseous Lymphadenitis (CL)
- Vibrio and Chlamydia abortion
- Sore mouth
- Pneumonia
- Foot rot
- Rabies
- Autogenous
  Vaccine made from bacteria isolated on a specific farm
Deworming Program
Integrated Parasite Management (IPM)

- Do not overstock pastures and pens
- Don’t overgraze
- Rest pastures sufficiently
- Enable browsing
- Practice selective deworming, not prophylactic deworming
- Administer drugs properly
- Determine which drugs work on your farm
- Select goats which are more resistant to internal parasites
- Practice good sanitation
- Use coccidiostats
Good Nutrition and Feeding Management

- Feed balanced rations
- Feed according to production cycle and growth stage
- Separate animals according to their nutritional needs
- Supplement pasture and forage, when necessary and economical
- Provide free choice goat minerals
- Make feed changes gradual
- Adequate feeder space
- Good feeder design
Common Health Problems

- Internal parasites
- Digestive/Nutritional
- Respiratory complex
- Reproductive
- Hoof
- Skin
- Chronic
Internal Parasites (worms)

- Primary health problem affecting small ruminants
- It is normal for goats to have some parasites.
- Goal is to control, not eradicate parasites.
- Due to long-time overuse and misuse of anthelmintics, parasites have developed resistance to all of anthelmintics.
  - Resistance varies by drug, animal, and farm.
  - Safeguard, Ivermectin have most reported resistance.
Gastro-Intestinal Parasites

#1 health problem affecting small ruminants

- Round worms
  - Barber pole worm
  - *Ostertagia*
  - *Trichostrongyles*
- Lungworms
- Tapeworms
- Liver flukes
- Coccidia
The FAMACHA® System
for assessing anemia and barber pole worm infection in small ruminants

<table>
<thead>
<tr>
<th>Clinical Category</th>
<th>Color</th>
<th>PCV</th>
<th>Deworm?</th>
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<tbody>
<tr>
<td>1</td>
<td>Red</td>
<td>≥ 28</td>
<td>No</td>
</tr>
<tr>
<td>2</td>
<td>Red-Pink</td>
<td>23-27</td>
<td>No</td>
</tr>
<tr>
<td>3</td>
<td>Pink</td>
<td>18-22</td>
<td>?</td>
</tr>
<tr>
<td>4</td>
<td>Pink-White</td>
<td>13-17</td>
<td>Yes</td>
</tr>
<tr>
<td>5</td>
<td>White</td>
<td>≤ 12</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Digestive / Nutritional / Metabolic

- Scours (diarrhea)
  - Infectious
  - Non-infectious
- Enterotoxemia
- Urinary calculi
- Acidosis
- Bloat
- Polioencephalomalacia
- White muscle disease
- Floppy kid syndrome
- Pregnancy toxemia
- Milk fever
- Poisonous plants
Scours (Diarrhea)

- Infectious
  - Bacterial
  - Viral
  - Protozoa
- Non-infectious
  - Parasites
  - Nutritional
  - Stress
Nutritional Disorders

• **Enterotoxemia**
  – Caused by bacteria *clostridium perfringins*
  – Caused by sudden change in diet

• **Acidosis**
  – High levels of lactic acid in rumen
  – Sudden excess consumption of concentrates (grain)

• **White muscle disease**
  – Vitamin E and/or Selenium deficiency

• **Bloat**
  – Frothy pasture-related
  – Free gas feed lot related

• **Polio**
  – Thiamine deficiency
  – Usually grain-related.

• **Floppy kid syndrome**
  – Affects kids 3-10 days of age
  – Metabolic acidosis

• **Urinary calculi** (stones)
  – Imbalance of Ca:P

http://www.sheep101.info/201/diseasesa-z.html
Respiratory Complex

- Infectious
  - Bacterial pneumonia
- Non-infectious
  - Dust
  - Poor ventilation
  - Nasal bots
  - Lung worms
  - Stress
- Secondary
Hoof

• **Foot rot (in hoof)**
  - Infectious
  - Two bacteria
  - Contagious
  - Foul odor

• **Foot scald (between toes)**
  - Environmental
  - One bacteria
  - Not contagious
Skin

• External parasites
  – Mites
  – Ticks
  – Lice
  – Nose bots

• Sore mouth
Reproductive

- Dystocia
- Abortion
  - Infectious
    - Chlamydia
    - Vibro
    - Toxoplasmosis
  - Environmental
- Metabolic
  - Pregnancy toxemia
    inadequate energy consumption
  - Milk fever
    low blood Ca
- Mastitis
  - Chronic
  - Acute
Chronic or Wasting Diseases

- Caprine arthritic encephalitis (CAE)
- Caseous lymphadenitis (CL)
  - Caused by bacteria
  - Abscesses
- Johne’s disease
- Scrapie
  - Voluntary and mandatory scrapie programs
  - Prevalence not known in U.S. goats, but believed to be less than in sheep
  - No resistant genotypes have been identified for goats
General Goat Husbandry

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General Goat Care

• Pasture
• Fencing
• Housing
• Handling
• Breeding
• Kidding
• Feeding
• Management
Pasture

• Pasture or browse should be the primary source of nutrients for goats.

• The number of goats that can be grazed per acre depends upon many factors: time of year, rainfall, amount of supplementation, length of winter feeding period, and type and management of pasture.

• Rule of thumb is 1,000 lbs. of grazing animal per 1 to 2 acres.
Fencing

- Major expense in raising goats.
- Goats require good fences to keep them in and to keep predators out.
- Two types of fencing are usually recommended for perimeter fencing for goats.
  - Multi-strand, high-tensile, electric
  - Woven wire with electric offset wires
Housing

A dry, draft-free area for kidding

- Need for housing depends upon when kids are born and how comfortable the owner wants to be.
- Kidding in inclement weather requires good housing.
- Should have shelter when kidding on pasture.
- Grazing goats should have access to shade/shelter.
- Facilities are needed to store feed and equipment.
Handling

catching, sorting, treating, weighing, loading, hoof trimming, etc.

• Without an easy way to handle goats, important tasks often to not get done in a timely fashion
• For a small herd, animals can be handled in small pen
• Larger herds should have a set or working pens
Breeding and Reproduction

- Goats are seasonal in their breeding habits.
- Goats are most fertile in the fall.
- Seasonality varies by breed and goat.
- Estrus cycle lasts ~21 days.
- Pregnancy lasts about five months.
- Goats usually give birth to 2 to 3 kids.
- Litter size is affected by breed, age, season, and nutrition.
- Doe determines number of offspring; buck determines sex of offspring.
Kidding

• Most does kid on their own without the need for help.
• Most kids nurse on their own without the need for help.
• It’s best to leave doe and kids alone unless there is a problem.
• Check doe if no progress 1 hour after water bag breaks.
• After 30 minutes of trying to help with a difficult birth, seek qualified help.
• Make sure kids get adequate colostrum within 24 hours.
• Feed week kids via esophageal tube.
Feeding

• Pasture and browse should provide majority of nutrients to goats
• Supplement pasture as needed
  – Free choice minerals
  – Late pregnancy
  – Early lactation
  – To increase growth rates
  – Flush does in poor body condition
  – Poor quality pasture
  – Drought.
• Adequate feeder space
Management

- Predator control
- Castration
- Disbudding
- Hoof trimming
Predator Control

• Fencing
  – Woven wire with electric offset wires.
  – Multi-strand, high-tensile electric fence.

• Management

• Livestock guardians
  – Guardian dogs
  – Donkeys
  – Llamas

• Lethal control
Castration
Removing or inhibiting the function of the testes

• Decision to castrate is based on many factors.
  – Pets
  – Wethers for show
  – Management ease

• Methods
  – Surgical
  – Elastrator
  – Burdizο

• Age
  – Band 1 to 7 days
  – Less than 30 days.
Disbudding

Removal of the horn buds

Decision to disbudd is based on many factors
- Dairy goats
- Pets
- Show wethers
- Personal preference

Methods
- Disbudding iron
- Paste
- Surgical removal by vet

Age
- 1 to 2 weeks, when horn buds start to appear.
Hoof Trimming

- Need varies by farm, goat, environmental conditions, and personal preferences
- Method
  - Hoof trimmers
  - Knife
- Restraint
  - On a stand
  - Tied to a fence
  - Tipped
  - Tilt table
Questions?