

Herd Health Program for Goats
Acknowledgements

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Herd Health for Goats

The goat industry has developed in prominence as an alternative food source in Florida and the United States. As with any other farm or food animal, herd health is a major factor for performance, health and cost efficiency. Animals that succumb to disease, parasites, or nutritional disorders will negate the well intentions of the producer resulting in loss of animals, replacement and treatment costs, and loss of present and future revenues. Unhealthy animals will also pose a risk to consumers due to increased risk of food borne diseases and antibiotic residues.

Herd health starts with a detailed plan designed to keep the herd healthy and free of disease and debilitating conditions. It is more economical and effective to prevent a disease than to eliminate it by treatment. Overall herd health is the cornerstone to an effective herd health plan. The goal of a preventive based program is to prevent the introduction of pathogens or hazards, and to prevent their spread. The best way to accomplish this is to ensure that the majority of the herd is protected so that disease organisms cannot get a foothold into the herd. Prevention is the key. Practice HERD HEALTH IMMUNITY.

Factors that contribute to herd health immunity include nutrition, environment, sanitation, active and passive immunity, and other stressors, including overexercising, and exposure to heat or cold. Active immunity is acquired by the animals 'immune system developing protection against specific disease after a subclinical challenge or exposure to a specific antigen or foreign organism. This challenge provides protection against future challenges. Active immunity is long in duration. Passive immunity is developed when an animal receives protection from its parent through colostrum, or by receiving immunoglobulins that offers immediate protection against a future challenge. Passive immunity is of short duration. Stressors reduce resistance to disease challenges and will result in increased risk for acquiring infections and other health conditions. The intent is to reduce or control the factors that will depress immunity and increase the opportunity for disease agents to infect and multiply in a susceptible animal.

Perhaps the greatest challenge to herd health for goat producers is parasites. Parasites can occur quite rapidly and cause great losses if not detected and treated in a timely manner. Parasitism results in poor productivity, unthriftiness, lowered resistance to disease, and ultimately loss of income from the affected stock. A good herd health program must include a plan to manage the common parasites that is a threat to goats. These include several types of nematodes or worms and coccidia. A good herd health program will address when to deworm, what to use, how, and for how long. Another consideration is the impact the medication has on the safety of the animal and the consumer. Parasites are more likely to pose a threat when environmental conditions favor their survival and multiplication. Conditions such as long periods of damp or wet grazing and feeding areas, will increase the risk of ingesting the infective stages of intestinal parasites. Overcrowding and overgrazing will also contribute to the increased

risk of intestinal parasitism. External parasites such as lice, mites, ticks and others can also pose problems. These parasites are nuisances and can transmit disease organisms. Control of external parasites must also be included in a herd health program.

A preventive strategy will include adhering to good stocking ratios, pasture rotation, environmental and sanitation controls, buying goats from approved sources, and adherence to good agricultural and quality assurance practices, including isolation of new or sick animals.

Intervention strategy consists of conducting routine fecal exams to determine status of parasites and using an effective deworming agent in a manner consistent with good quality assurance practices. Good quality assurance practices are listed at appendix A.

Following parasites, the most common health risk is an infection or disease that puts the entire herd or individual animals at risk. A disease may have a devastating impact or it may be self-limiting. It may have an acute onset or may become manifested over time. It may involve a single animal or affect the whole herd, including offsprings. The producer must be extremely observant for any abnormal changes and act deliberately to control a herd disease or infection. A list of the more common health problems that a goat producer must be aware of is listed in appendix B. Again the first consideration is to prevent a disease process from getting a foothold in the herd.

Prevention strategy includes a routine vaccination program for commonly occurring diseases with an approved vaccine. Reducing stressors that depress the immune system is also important such as reducing overcrowding, good sanitation, and good agricultural practices. On the farm biosecurity measures are extremely important. This include the control of traffic on the farm, buying animals and other products from approved sources, quarantine and isolation of new and sick animals and knowing when to vaccinate and for what conditions. Goats are typically annually vaccinated for Clostridium C and D, and tetanus. These vaccines will provide protection against the conditions known as enterotoxemia and tetanus. Soremouth or contagious exythma can also be used where this condition is a threat. Kids should be vaccinated at 4 to six weeks of age and all animals revaccinated annually.

Intervention for the control of disease or infectious processes include treating the herd or the animal with an effective antibiotic or antimicrobial agent. See Appendix C for typical medications used for treatment of medical conditions in goats. Again good quality assurance practices must be used to ensure that the treatment will be effective, efficient, and safe for the animals and consumers. Care should be taken to use proper injection sites, and routes of injection, use the right antibiotic for the condition, and use good sterile techniques. Since many of the medications that are used with goats are extralabeled, it is important to maintain a good veterinary client patient relationship. Resistance to our arsenal of medication is always a concern, and it becomes imperative that drugs and antibiotics be given judiciously and in accordance with the prescribed label. See appendix C for medications that is available for use in goats.

In a science based, (HACCP) strategy, the focus is on identifying the hazard, the risk of the hazard occurring and devising a plan that will prevent, control, or eliminate the hazard. A simplified on the farm HACCP approach can make the management of a herd health plan more precise and manageable. Hazards should be identified, and a long-term plan devised to control the hazards. The plan should consist of the measures that will be taken at strategic points where intervention can occur. These points, known as critical control points can help to organize, execute, and maintain the plan. The development of a monitoring program, with intervention strategies, and record keeping will greatly enhance an overall herd management strategy. Although this program is intended to focus on food safety, the elements of it will work for a general herd health management program. The main focus is to have a plan and to execute your plan. Record keeping is always a challenge, but is an essential part of any herd health program. Without adequate records the producer cannot evaluate, manage or make key informed decisions about the program. Listed at appendix D are typical records that can be modified and maintained in a HACCP and herd health management program.

Herd health in goats is developed around the same principles and practices as any other livestock program. The hazards, conditions, environmental and physiological factors all contribute to herd health. The successful producer will develop a herd health plan and maintain it throughout its operation. A carefully thought out program, based on the best available science has proven to be more cost effective and safe.

A herd health program can be incorporated into a typical breeding program. The systematic scheduling and adhering to activities will provide protection for both adults and kids and assist in a cost effective and healthy goat enterprise. See Appendix E for breeding management calendar.

For additional information, please contact the Florida A&M University extension veterinarian, at (850) 599-3546

Appendix A

Quality Assurance Measures Checklist

- Assure proper site selection
- Ensure proper facility design
- Ensure adequate ventilation
- Ensure adequate isolation and quarantine facilities
- Practice segregation of functions on the farm
- Practice good biosecurity
 - Know your animals
 - Know what diseases they are susceptible and what is present
 - Minimize exposure
 - Maximize immunity by vaccinations good feeding, and supplementations,
 - Deworming
 - Minimize off farm risks
 - Minimize contact from suspect animals
 - Purchase from known or approved source
 - Avoid Comingling
 - Transport animals in sanitized carriers
 - Minimize contact with manure, blood, milk and other animal tissue
- Practice good production and manage practices
 - Have sound reproduction practices
 - Vaccinate and deworm on schedule bases
 - Purchase new and replacement stock from approved source
 - Separate animals by age/sex, and species
 - Maintain routine work/flow pattern
 - Always practice good Sanitation Control
 - Keep premises clean, organized and free of insect and rodent harborages
 - Maintain good bedding and change regularly
 - Dispose of waste in a sanitary manner
 - Keep Records
 - Take and have samples run periodically

Quality Assurance Checklist

Are animals handled to minimize bruising?

During inclement weather, is extra care taken to ensure that injection sites are free of manure and dirt

Are chemical disinfectants avoided when using modified live virus products

Is the needle size used never larger than necessary to adequately perform the injection?

Are all injections made in front of the scapula (shoulder)?

Are label directions consulted for maximum volume per injection site?

Is the method of administration—intravenous (IV), intramuscular (IM), or subcutaneous (SubQ)—based on label directions

Are procedures and products periodically reviewed and monitored by a veterinarian

Are records being maintained?

Appendix B

Typical Threats to Goat Herd Health

Caseous Lymphadenitis

Contagious Ecthema (Sore Mouth)

Pregnancy Toxemia

Enterotoxemia

Ringworm

Contagious Foot Rot

Intestinal Parasitism

 Various helminthes

 Coccidia

External Parasites

 Lice

 Mange

 Ear Mites

Appendix C

Medications available for use in Goats

Amoxicillin	Amoxi-inject	5mg/lb	sq	qd	25 days
Benzathine Pen G	Pen BP-48	20,000 IU/lb	sq	q 48 hrs	30 days
Procaine Penicillin G	Crysticillin	10,000-20,000 IU/lb	sq	qd	14-20 days
Ampicillin	Polyflex	5 mg/lb	sq	qd	10 days
Ceftiofur	Naxcel	0.5-1 mg/lb	IM	qd	0 days
Erythromycin	Erythro-200	1mg/lb	sq	qd	3 days
Florfenicol	Nuflor	9mg/lb	IM	q 48 hrs	28 days
Neomycin*	Biosol	5mg/lb	PO	bid	30 days
Oxytetracycline	LA-200	9 mg/lb	sq	sq	28 days
Sulfadimethoxine	Albon	25 mg/lb	PO	qd	7 days
Tylosin	Tylan-200	10 mg/lb	IM	qd	30 days

Neomycin is approved for used in goats

The other medications are extra label

All medications should be administered after the establishment of a veterinary patient client relationship

Sq stands for subcutaneous

IM stands for intermuscular

PO stands for per os/by mouth

qd stands for give four times per day

bid stands for twice a day

Typical Deworming Agents used in goats

	Brand Name	Dosage	Route	Withdrawal Time
Ivermectin drench	Ivomec Drench	0.3 mg/kg (0.14mg/lb)	PO	11 days
Ivermectin Injectable	Ivomec 1%	0.3 mg/kg (0.14mg/lb)	SC	56 days
Eprinomectin	Eprinex	0.5 mg/kg (0.23mg/lb)	PO	0 days
Doramectin	Dectomax	0.3 mg/kg (0.14mg/lb)	SC	56 days
Moxidectin	Cydectin, Quest	0.5 mg/kg (0.23mg/lb)	PO	0 days
Albendazole	Valbazen	10 mg/kg (4.5 mg/lb)	PO	27 days
Fenbendazole	Panacur/Safeguard	10 mg/kg (4.5 mg/lb)	PO	14 days
Oxfendazole	Synanthic	10 mg/kg (4.5 mg/lb)	PO	14 days
Levamisole	Levasole	8 mg/kg (3.6 mg/lb)	PO	10 days
Morantel Tartrate	Rumatel	10 mg/kg (4.5 mg/lb)	PO	30 days

Panacur/Safeguard and Rumatel are approved for use in goats

Monensin	Rumensin	15-20 gms/ton of feed	0
Lasalocid	Bovatec	20- 30 gm/ton of feed	
Decoquinatate	Deccox	0.5 lb/ton of feed	0
Amprolium	Corid	25-50mg/kgBW in feed or water	

Appendix E

Breeding Calendar for optimum herd health management

<u>Season</u>	<u>Preventive Activities</u>
July and August	<p>Check goats for lice Check and deworm spring kids Vaccinate all goats for enterotoxemia and tetanus (clostridium C&D plus Tetanus)</p> <p>Begin supplemental feeding of does to be bred. Flush with extra feed such as corn. Feed about one-half pound per head per day. If breeding animals are on poor pasture, feed one-half pound of range cubes per head per day</p> <p>Insure adequate number and quality of breeding bucks Turn teaser bucks in with does or place breeding buck in close proximity if synchronized breeding is desired</p>
September and October	<p>Remove teaser buck Begin Breeding Keep breeding records Check goats for parasites, deworm and delouse as needed Check and trim feet</p>
November and December	<p>Remove bucks from bred does Select rested pastures for kidding Insure adequate shelter facilities on kidding pastures Monitor nutrition and health status of herd.</p>

January and

February

Boost feed levels to does due to kid, 4-6 weeks prior to kidding date
prior to kidding date
Deworm and vaccinate does 2 to 3 weeks before kidding (clostridium C&D plus tetanus).
Turn does out to kidding pastures to familiarize them with the pastures.
Continue to monitor nutritional and health status of does. Does should be gaining in weight prior to kidding and lactation.
Castrate buck kids from previous year
Keep accurate records when kidding begins
Dip navel with iodine
Record birth weight
Ensure kids get colostrum early (starting within 1st thirty minutes if possible)
Increase supplementation to mothers and observe conditions closely.

March and

Vaccinate kids at 4 weeks of age for Enterotoxemia and tetanus (clostridium C&D plus tetanus).
Place ear tags in goats at 4 to 6 weeks of age
Continue supplemental feeding of does for 4 weeks after kidding
When kids are following does, deworm goats and turn out from kidding pastures to larger grazing areas
Introduce solid high protein feed (16%) to solids as early as possible. Kids will show interest in solid feed at about 3 weeks.

April

May and
June

Wean kids and move does to new pasture
Plan to cull does for poor health or poor reproductive performance
Select or identify best females determined by number of offspring produced at birth, growth rate of kids, and conformation.

Weigh kids at weaning and retain fastest growing bucks for breeding. Preferably, select bucks with the best meat conformation, bucks, born as twins and bucks with horns.

Select largest and fastest growing females as replacement.
Routinely observe for scours, leg injuries, etc.
Prepare does for rebreeding-flushing, introduce teaser or breeding buck in close proximity.