BIOSECURITY REVIEW GOAT DAIRY

Presented to

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Biosecurity Begins At The Front Gate

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What Is Biosecurity?

- An effort to minimize the movement of pathogens between sick and healthy animals
- External and internal (on farm) movement
- Easy to define, more difficult to implement

Four Phases

- Involves four sequential phases
  - Mitigation - prevention measures that lessen danger by securing premises against infectious diseases.
  - Preparedness - planning, training for, and implementing mitigation practices; analyze weaknesses/strengths of facilities to determine most effective way of protecting.
  - Response - handling disease efficiently/effectively
  - Recovery – after disease controlled, recycle info to mitigation

Disease Threats

- Foreign, emerging or endemic
  - Foreign animal disease - not currently found in the US
  - Emerging/endemic diseases - new to US or new form of old diseases that are becoming more prevalent (related to commerce, mutation, changes in environmental conditions)
  - May also be zoonotic
- Infectious - caused by pathogens such as bacteria, protozoa, viruses, fungi, rickettsiae
- Non-infectious - caused by toxins or body related

Disease Transmission

- Epidemiology studies disease transmission; transmission is direct or indirect
- Direct transmission - susceptible animal is exposed to respiratory air droplets; saliva; nasal, ocular or genital mucus; fetal fluids; feces or urine; milk; skin; or blood of an infected, contagious animal. Disease may also transmitted directly through reproductive behavior and in utero.
- Indirect transmission – susceptible animals come in contact with infected inanimate objects, environmental fomites, and animate vectors. Needles, balling guns, dehorners, trucks, trailers, tires, shovels and wheelbarrows can spread disease indirectly, as can contaminated soil, food and water, and other objects. People can carry pathogens between animals and operations on their clothing, shoes and hands. Arthropods such as ticks, flies, mosquitoes and fleas can transmit pathogens from an infected animal to a susceptible animal.
- Vector transmission - biological or mechanical. Biological vectors needed for life cycle of pathogen (when the disease agent develops inside arthropod). Mechanical vector only carries pathogen. Arthropods, animals, and people can be mechanical vectors.

Transmission Routes – what are we protecting against?

- With direct and indirect transmission are 5 primary routes for pathogen entry - aerosol inhalation, skin contact, oral, reproductive systems, blood.
- Examples:
  - Oral when animals ingest contaminated soil, food or water, or lick or chew on contaminated objects. Milk of infected does can transmit disease to kids (CAE).
  - Reduction of environmental contaminants involves routine disposal of manure (Johne's, parasites), disinfection of feed and water troughs, and removal of objects that animals might chew or lick.
  - Pathogens also can enter the body through breaks in the skin (tetanus).
  - Reproductive - infect the genital organs of adults and the fetuses and placentas of pregnant does.
  - Blood route - bitten by an infected vector such as an arthropod, injury by a contaminated needle, dehorner, balling gun.

Immunity

- Ability to resist particular disease; antibodies
- Natural - exists without exposure to a disease agent (defenses include skin, cells that attack disease-causing organisms)
- Active - through vaccination or body battled an infection. Vaccine stimulates production of antibodies without causing disease. Boosters needed to maintain active immunity.
- Passive - when antibodies are passed from one animal to another; colostrum

Vaccines

- Are effective in preventing certain diseases, but not 100% effective.
- Failures – expired, improper storage (refrigerator, avoid direct sunlight)
- Give right vaccine to the right species, proper dosage, in recommended site using recommended technique.
- Use a clean needle for each animal to prevent disease transmission in a herd. Sharps disposal.
- Give boosters when a label requires it.

Biosecurity Practices – the meat

- Not all practices are feasible or necessary for every operation.
- Producers must assess their risks when deciding which practices to adopt.
- Our focus: CAE, CL, Johne's, Parasite Control

Subject of Review

- 18 milkers currently (goal is 30-32); Nubians, Saanen, LaMancha, Nigerian Dwarf, Alpine, some meat goats

- Visited on April 24, 2014

Current Good Practices

- Perform own fecals, deworm PRN per FAMACHA; fenbendazole and ivermectin; cydectin
- SCC testing; Mastitis CMT testing; teat dipping; Trace Inhibitor Testing
- Monthly and quarterly reports and testing as Grade A; plant and farm license
- Feed and water off ground; Water by buckets to monitor intake; Hot/cold water in segregated birthing area
- Maintain records on breeders of when bred/due, administering CD/T, Bo-Se, FAMACHA, Ca++, “Magic”
- Weaning at 8 weeks; pre-kid vaccinations; vaccination protocols for kids (CD/T and Bo-Se by 2d day); May yearly vaccines for others
- Disbud and castrations performed by veterinarian
- Perform routine “clinics” with a physical exam, hoof trim, etc. – goal is every 30 days
- Other animals kept separate from goats (chickens, dog)
- Meat herd – view 1-2x daily; hand pump water
- CAE colostrum control, tape teats
- No known case of CL, Johne’s test negative, routine CAE testing
- Coccidiostat in feed (Deccox) plus AmChlor for bucks/wethers; milkers do not get medicated feed
- No significant kid diseases (scours, pneumonia, floppy); rare lameness, mastitis, pinkeye
- Carcass disposal and composting (away from stock)

Focus of Attention

- Basic Husbandry
- Isolating sick animals and avoid the comingling of groups
- Quarantine and test of new animals
- Controlling traffic into and within the farm, including vehicles and personnel who may contact livestock at another facility
- Sanitation of equipment, especially that used for feeding, watering, milking, foot trims – where more than one animal may come into contact with the equipment
- Preventive herd health plan
- List of infectious diseases that can affect herd
- Vaccination protocols (vax when needed, but not unless needed)
- Treatment protocols in case of disease (type/amt of antibiotic, anti-inflammatories, etc)
- Internal and external parasite control
- Surveillance of animals
- Routine blood samples to test for trace mineral deficiencies
- Investigate disease outbreak or an increased number of abortions or other health problems
- Records and protocols
- Animal Identification

Basic Husbandry – Very Good

- Food and hay stored in separate areas from animals; diet appropriate; rodent control; fed off ground
- General housing is appropriate and adequate for animals, cleaned regularly (weekly).

- ***Recommended****:* Keep kidding stalls in barn reserved for kidding, keep meat and dairy goats separate facilities
- Keep sick animals in a separate area; do not use milking area for sick animal treatment (or develop cleaning protocol to address potential problems)
- WEIGHT CONTROL – Body condition scoring when do monthly checkups; dystocia, metritis, RFM, toxemia
- Review parasite control practices (dewormer use, refugia)

Isolating sick/Comingling

- Senior bucks and junior bucks separate – excellent; transition to each level; pens across road from does and kids
- Does and kids in one group with barn access/loafing areas
- Some segregation of very young/kidding stalls noted in barn
- Infrequent disease may make separate hospital pen impractical, but as production grows may need
- One junior buck – chest abscess, cough; CAE female (euth/necropsy), buckling poor doer (euth/necropsy); mastitis case

Quarantine and Test of New Animals

- Excellent quarantine area, clear separation from other animals, regular cleaning; 30’x30’ pen; dedicated equipment
- Fed and handled after all others
- Testing (CAE, fecal, deworm, CD/T) and release after 2 weeks to 30 days, depending on source
- Sources of goats known (7); all current kid goats born on farm

Controlling Traffic Into/Within Farm

- Clear signage and policies, restricted visiting
- Vendors aware of policies
- Foot baths; booties
- No travel off farm (but UF Hospital)
- ***Recommended:*** consider foot baths or complete shoe/boot change when leave one area (farm store where have traffic) to goat areas; simple bleach solution often inexpensive and effective
- Establish locked gate at back entry near meat goats

Sanitation of Equipment

- Very clean water, feed, hay areas.
- Water changed (and cleaned) regularly
- Milking stands and area clean and orderly
- Monthly and quarterly inspections, state certified Grade A dairy and production

- ***Recommended:*** Have area for medical treatments other than milking stand area to avoid possible contamination

Preventive Herd Health Plan

- List of infectious diseases that can affect herd
  - CAE, CL, Johne's, resistant parasites, other
- Vaccination protocols – review with herd veterinarian (to include Bo-Se, BoviSera, and other)
- Treatment protocols in event of disease (type/amt of antibiotic, anti-inflammatories, etc.) – develop with herd veterinarian
- Expand records and clinic/treatments to all of herd, including meat goats

Preventive Herd Health Plan

- Internal and external parasite control
  - Already perform own fecals, FAMACHA scoring
  - Develop seasonal protocols for parasite control
- Surveillance of animals – first defense, done well
- Consider routine blood samples to test for trace mineral deficiencies as confirming nutrition plan
- Investigate any disease or increased number of abortions or other health problems; necropsy
  - Mastitis, pinkeye, foot problems, dystocia, RFM

Written documents / Records

- **Protocols** – Currently have Animal Safety, Staff Cleanliness, Milking Procedure, Tobacco Products. Planned: Employee Dress code, Animal Illness and Death, Milk Processing and Bottling, and more
- ***Recommended:*** Continue developing and submit for review, develop treatment protocols with veterinarian

- **Records** in general allow producer and herd veterinarian to monitor animal health and assess whether plan is working (small ops can use pen and paper, larger ones need a computer system).
- Records protect producer by documenting use of drugs, feed additives, pesticides (and withdrawal times). Identify trends. When computerized, allows easy backup, preservation and retrieval of historical data.
- ***Recommended:*** computerize records system

Health Records

- UF
  - Sammy, 11/6/12 fever, hematoma after jug blood draw
  - Shadow, 4/7/13 FAMACHA 3, 12/27/13, 1/9/14, 3/14/14, 3/24/14, 4/17/14 – pneumonia related visits
  - Coco, 1/25/13 died following vaginal bleed, necropsy – endometritis, abomasal perforation & ulcer
  - Loxley, 4/9/14 dystocia, complications, preg tox; died
  - Ariel, 11/19/12 hydrometra, 7/8/13 anestrus, 1/9/14 hydrometra – obese BCS 8/9
  - Bella, 2/22/14 dystocia
  - Flair, 4/7/13 mastitis w/prior Hx of same
  - Josie, 2/2/14 metritis, RFM
  - Loala, 8/6/12 gangrenous mastitis, R

  - Trends identification, BCS associations; farm records missing and may shed light on disease and help prevention

Animal Identification

- Currently, every animal has a name and is tracked by name

- ***Recommended:*** add a number identification system; collar with a numbered tag may be sufficient
- Aids in having others perform tasks that are unfamiliar with animals' names
- Easier as milking numbers grow

Meat Goats

- Monitor housing and lots to ensure proper sanitation and prevent contamination.
- Keep feed, water and equipment clean.
- Remove sick animals from pens and house them separately.
- Prevent stress, bruising and/or injury during animal handling.
- Control mud, manure and parasites.
- Establish/maintain preventative health plan specific for meat goat herd
- Maintain records; computerize.
- PARASITE CONTROL – keep segregated from dairy herd.

General Biosecurity Considerations For Any Farm

- Consult a veterinarian when implementing vaccination and other herd or flock health management strategies.
- Limit the number of people who enter the premises, and know all people who come and go, including consultants, salesmen, deliverymen, maintenance workers and veterinarians.
- If foreign visitors are expected, require that they have been in the United States for at least 5 days and have had no animal contact.
- Keep gates locked at all times.
- Maintain good perimeter fences.
- Inventory ranch vehicles and equipment regularly.
- Lock all vehicles left outside.
- Use a disinfectant, such as bleach, to kill viruses and bacteria. A mixture of 1/2 cup bleach to 1 gallon of water is sufficient. A pump-up sprayer is ideal for applying disinfectant in most situations.
- Sweep out trailers to remove loose dirt, hay and grain, cobwebs, trash or debris.
- Remove mud and manure by scraping or scrubbing both the interior and exterior of the trailer, truck and equipment.
- Soak and wash vehicles and equipment using water and detergent or disinfectant. Use a brush or pressure washer if necessary.
- When washing the outside of vehicles and trailers, start at the top and front and work from top to bottom and front to back.
- When washing the inside of vehicles and trailers, start with the ceiling and work down the wall to the floor. Begin at the front of the trailer and work toward the back.
- Control pests such as rodents, arthropods and birds, and limit their access to feedstuffs.
- Train employees to report sick animals, suspicious activity or people, and unusual events.

General Biosecurity Considerations For Any Farm

- Know your neighbors and set up a crime watch program.
- Do not advertise when you will be away from your premises.
- Request that local law enforcement agencies randomly drive by your premises and look for unusual behavior.
- Create an emergency contact list of resource people in the community.
- Make sure critical information is readily accessible to any first responders who might be called to the scene. Include maps of the premises, types and locations of chemicals, and an inventory of animals.
- Identify animals clearly.
- Vaccinate animals regularly to increase protective immunity.
- Isolate new animals from the rest of the herd or flock for at least 2 weeks. During this time watch closely for symptoms of illness or abnormal behavior.
- Look for unusual signs in the herd, such as odd behavior; sudden and unexplained deaths; large number of sick animals; unusual ticks or maggots; blisters around an animal's nose; teats, mouth or hooves; difficulty rising and walking; drop in milk production, or a large number of dead insects, rodents or wildlife. Contact a veterinarian immediately if any of these occur.
- Do not let feces and urine contaminate feed and water sources.
- Do not feed on the ground. Use hay troughs, hay racks, feed troughs or feed bunks.

General Biosecurity Considerations For Any Farm

- Develop a carcass disposal plan.
- Disinfect reusable equipment, including tattooers, and hoof tools, between animals.
- Use only Food and Drug Administration-approved medicated feed additives in rations and in accordance with the approved label.
- Ensure that all additives are withdrawn at the proper time to avoid violations.
- Strictly follow all government-mandated guidelines for product selection.
- Comply with label directions for all treatment regimens unless otherwise prescribed by a veterinarian.
- Employ extra-label drug use only when prescribed by a veterinarian with a veterinarian client-patient relationship.
- Do not give injections in locations other than the neck region.
- Use needles of appropriate size and gauge.
- Use products with low recommended dosage and administer at proper spacing intervals in the neck, a minimum of 3 inches separating injection sites.
- Administer intramuscular products with no more than 5 cc per intramuscular site.
- Record information for all animals treated individually.
- Record information for all animals that are group processed or mass medicated as a group or lot.
- Provide appropriate nutritional and feedstuffs management.
- Prevent stress, bruising and/or injury during animal handling.

Follow Up

- Questions??