

Biosecurity Concerns for Sheep and Goat Herds:

A Biosecurity Plan for Small Ruminant Farms

By Eugene C. White, DVM

The United States Centers for Disease Control and Prevention lists more than 40 zoonotic diseases as bioterrorism agents. Agricultural biosecurity refers to management practices designed to prevent the introduction of pathogens into a herd or the spread of pathogens within a herd that could harm the herd's health or compromise the quality of the products produced by the farm.

Implementing and maintaining a biosecurity plan is important as the introduction of new diseases into a herd can be expensive in terms of increased labor, decreased production, increased veterinary expenditures, and premature culling. The diseases for which a biosecurity plan is designed will vary from region to region and from farm to farm.

The following steps are initially recommended for establishing a biosecure farm:

- Write a biosecurity protocol taking into consideration the diseases of greatest concern, their mode of transmission, methods to diagnose the disease, and treatment options for those animals diagnosed as having a disease of concern.
- Limit visitors to your farm. Visitors should wear boots, disinfect them prior to entering the farm, and not have been on another farm for at least 48 hours. Boots and coveralls should be supplied by the farm to ensure compliance.
- Limit vehicle traffic onto the farm to those that are essential for farm business and provide an area outside the farm to disinfect tires.
- Control insect populations and the access of wildlife, rodent, bird, and domesticated animal populations to your farm.
- Ensure that feed is not contaminated by manure or urine.
- Do not reuse needles, and disinfect reusable equipment between animals.
- Culture the milk of all dairy animals to determine if contagious mastitis is present on the farm. Repeat cultures of all dairy animals annually. Examine your health records or perform serology to determine if hard udder has been identified on your farm.
- Examine your herd for diseases such as pink eye, external parasites, foot rot, sore mouth, respiratory disease, ringworm, diarrhea, external abscesses, mange, and the meningeal worm. Examine rams for the presence of epididymitis. If any of these diseases exist on your farm, design a control program and implement the program as soon as possible.
- Vaccinate your herd against rabies and the clostridial diseases of import in your area. Consider vaccination against other diseases such as sore mouth, foot rot, campylobacteriosis, chlamydiosis, and caseous lymphadenitis.
- Enroll in the Federal Scrapie Control Program.
- Deworm on a regular schedule and run fecal exams semi-annually to ensure adequacy of the parasite control program.
- Treat animals returning from exhibition as new additions.
- Examine your herd's health records and determine if any animals have been affected with signs of chronic weight loss, neurological disorders, abortions, or arthritis. If any of these conditions have been seen within your herd, screen the herd for diseases such as Johne's disease, CLA, OPP, CAE, scrapie, chlamydiosis, campylobacteriosis, toxoplasmosis, brucellosis, and mycoplasmosis.
- Test any animals with signs of weight loss, abortion, diarrhea, hard udder, arthritis, pneumonia or neurological symptoms for the appropriate diseases listed above.

- Test annually for Johne's disease and either CAE or OPP and cull all positive animals.
- Necropsy all animals that die on the farm as a means to diagnose diseases present on the farm.

The following steps are recommended before introducing new animals to a farm:

- Consider attaining genetic diversity by the use of embryos and frozen semen rather than live animal purchases. Frozen semen and embryos are less likely than live animals to transmit disease.
- Purchase livestock only from farms with strict biosecurity practices and a good history of disease control. Ask to see the farm's medical records and question sellers about the history of abortion, neurological disease, chronic wasting, mastitis, and diarrhea on their farms. If any of these diseases have been seen on their farm, purchase of animals from this farm should be done only after extensive diagnostic testing has been performed. If a farm is found to be infected with a disease of concern, no animals, including those that test negative for a disease of concern, should be purchased from that farm.
- Perform a thorough physical exam on animals before buying them, and reject those carrying disease.
- Test all newly introduced livestock for Johne's disease, internal parasites, and either OPP or CAE. Dairy animals should be cultured for contagious mastitis. Consider testing for caseous lymphadenitis.
- Quarantined purchased livestock for one month. During this time, the animals should be dewormed, have their feet trimmed, and monitored for the presence of disease. Perform a thorough physical exam on all animals at the end of the quarantine period to ensure that animals are free of clinical disease before being introduced to the remainder of the flock.
- Purchased livestock should be vaccinated according to the protocol established for the herd of origin, and vaccination of both the additions and the original herd should be optimized.

Conclusion:

While the term "biosecurity" is a relatively new one, good husbandry has always strived to prevent the introduction of disease into herds. The practice of biosecurity has become more important than ever as herds become larger, both people and animals travel greater distances, and people become more concerned about the welfare of farm animals and the safety of their food supply. By establishing and maintaining strict biosecurity, we can ensure that herds are healthier, farming is more profitable, and food is safer.

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