

QUALITY ASSURANCE FOR MEAT: GOATS



BASICS

OVERVIEW

- Quality assurance for meat goats is based upon the goal of production of high-quality, wholesome, and safe products.
- From a worldwide perspective, the most common use of goats is for meat production.
- To meet quality demands, preharvest quality assurance and product safety programs have been developed by the major animal production industries. Examples in the United States include the National Dairy FARM Program: Farmers Assuring Responsible Management™ (<http://www.nationaldairyfarm.com>), the Beef Quality Assurance Program (<http://www.bqa.org>), and the Sheep Safety and Quality Assurance Program from the American Sheep Industry Association.

GEOGRAPHIC DISTRIBUTION

Worldwide, depending on production management

PROGRAM DEVELOPMENT

- An excellent on-line training and certification program for meat goat producers was introduced in 2006 by Langston University (Oklahoma, USA) and that program has a chapter on Meat Goat Quality Assurance (<http://www2.luresext.edu/training/qa.html>).
- The program presented here includes material common to several of the quality assurance programs used by various animal industries.

QUALITY ASSURANCE PROGRAM FOR MEAT GOATS

A wide variety of factors influence product quality in meat goats. Some of these factors include the genetics of herd animals with respect to productivity and meat quality, feeding and nutritional considerations, drug use and vaccination programs, avoiding defects in meat and hides, disease control programs, microbial and chemical contamination, and facility and environmental factors. A compilation of factors to consider in developing a Quality Assurance Program for Meat Goats is presented hereafter.

I. PROPER HUSBANDRY AND CARE

A complete discussion of proper goat husbandry and care is beyond the scope of this chapter; however, some of the factors in proper husbandry include:

Feeds and Feeding

- Choose and use quality feeds. Feed properly to meet requirements and to maximize meat quality.
- Comply with government regulations that ban feeding of ruminant-derived protein supplements to other ruminants.

- Store feed in a manner to prevent chemical and microbial contamination and to prevent access by rodents and other animals.
- Employ a quality control program for feeds and storage of feeds.
- Prevent contamination by correct harvesting, mixing, storage, and feeding practices. Assure that uses of medicated feeds or medicated feed additives comply with all relevant federal guidelines (such as, in the USA, the new FDA Veterinary Feed Directive).
- Assure feeds are residue- and toxin-free. Keep records of any pesticide, herbicide, and insecticide use that may cause residues. Particularly for pesticide use, these records should include product name, animals treated, administration date, use, and withdrawal time.
- Withdraw medicated feed additives at the appropriate time to prevent residues.

Sanitation

- Benefits of sanitation include lower levels of disease via prevention of disease transmission, reduction of drug use, and thus reduction of the probability of bacterial contamination of meat.
- Sanitation consists of cleaning followed by disinfection.
- Cleaning focuses on removal of manure and gross contamination.
- Disinfection is the use of chemical agents to destroy pathogens on equipment or facilities.
- Use disinfectants (commercial products, bleach, etc.) and observe label directions for contact time and rinsing.
- Avoid contamination of feed and water. Keep feed, water, and handling equipment clean.
- Maintain the environment to keep conditions dry and clean.

Facilities

- Ensure proper design, repair and use of handling facilities, including chutes and pens.
- Keep buildings, pens, and equipment as clean and dry as possible and in good condition to avoid injury to animals.
- Ensure that ventilation is adequate.
- Maintain animal density at acceptable levels.

Handling and Transportation

- Consider goat behavior in handling and transportation.
- Construct and maintain facilities to assure proper care and handling of animals.
- Optimize environmental conditions to avoid any damage to animals.
- Transport animals properly and ensure no crowding.
- Avoid stress or injury during animal handling.

II. APPROPRIATE USE OF RECORDS

- Records serve several purposes, including those related to management and production as well as those related to quality assurance efforts.
- An essential component of any records system is unique and permanent individual identification of each animal.
- Various types of ear tags, electronic identification, and other methods of identification may be used. Follow regulations on use of Scrapie tags.
- Some important aspects of records use include:
 - ✓ Use of records to verify drug withdrawals on all treated animals

- ✓ Records of all treatments given to individual animals should include: animal identity, drug used (serial/lot number, dose, route, and duration) and when the withdrawal time has ended.
- ✓ For animals treated as a group, keep all of the aforementioned information on a group basis.
- ✓ Keep all records as long as required by government regulations.
- ✓ Records should be available for inspection for follow-up or quality assurance reasons.

III. APPROPRIATE WORKING RELATIONSHIP WITH A VETERINARIAN

- One of the most important aspects of quality assurance for meat goats is for the producer to have an appropriate working relationship with a veterinarian who is familiar with the herd (valid client-veterinary-patient relationship)
- Input from the herd veterinarian is essential in developing an effective herd health program that is specific for each herd. The established herd health program will encompass the acceptable and unacceptable extralabel use of drugs (ELUD). This is a large part of goat herd management being as few drugs are labeled for the caprine species.

IV. HERD HEALTH MANAGEMENT PROGRAM FOCUSED ON PREVENTION

- A herd health management program focused on prevention is a cornerstone of quality assurance efforts. Herd health programs reduce the occurrence of disease and the need for treatment by preventing disease. Examples include development of vaccination protocols, pasture management for parasite control, and screening for diseases such as CAE.
- The veterinarian should educate farm management and personnel on the following:
 - a. The reasons for the preventative health program and diseases targeted.
 - b. Appropriate efforts to prevent introduction and/or dissemination of diseases (see Biosecurity below)
 - c. Participation in government disease eradication efforts (i.e., USDA scrapie program).
 - d. Record keeping of animal health and prevention efforts, as well as drug administration techniques and withholding times.
 - e. Proper drug and vaccine storage, use, and administration. This includes reading labels, observing all precautions, checking expiration dates and discarding expired drugs. Drugs and biologicals must be handled in a manner to maintain potency (e.g., live virus vaccines, drugs affected by sunlight).
 - f. Proper drug disposal
 - g. Proper use of drugs by label and extralabel routes and education on which drugs are prohibited in food-producing species.

V. BIOSECURITY

- Biosecurity is defined as efforts that reduce the possibility of entrance or dissemination of infectious disease.
- Restrict admission of visitors with animals or who may introduce contaminants.
- Ensure that visitors and veterinarians, consultants, and other professionals scrub and disinfect footwear before access to animal or feed areas
- Be sure that vehicles used to transport animals are not a source of disease introduction and/or spread.
- Protect feed from contamination by rodents, birds, and manure.

- Isolate all new animals coming to the farm and those that have been off the farm (30 days is often recommended).
- Evaluate all animals for indications of disease or sickness and perform necropsy on all deaths when a cause of death is not readily known.
- Properly dispose of dead animals, so that disease spread does not occur.



MISCELLANEOUS

SEE ALSO

- Biosecurity: Goats (www.fiveminutevet.com/ruminant)
- Goat Nutrition (www.fiveminutevet.com/ruminant)
- Goat Milk Quality (www.fiveminutevet.com/ruminant)
- Quality Assurance Programs for Beef and Dairy (www.fiveminutevet.com/ruminant)
- Cleaning and Disinfection (www.fiveminutevet.com/ruminant)
- Animal Welfare (www.fiveminutevet.com/ruminant)

ABBREVIATIONS

- CAE = Caprine arthritis and encephalitis virus
- ELUD = Extra-label use of drugs
- FDA = Food and Drug Administration
- USDA = United States Department of Agriculture

Suggested Reading

- Anderson, K.L., Brownie, C., Luginbuhl, J.M., Mobley, M. 2004. Drug Use Survey and Evaluation of Quality Assurance Training for Meat Goat Producers. *Intern J Appl Res Vet Med* 2(4):261-268.
- Fajt, V.R. 2011. Drug Laws and Regulations for Sheep and Goats. *Vet Clin North Am Food Anim Pract* 27(1):1-21.
- Hoffman, T.W., Roeber, D.L., Belk, K.E., LeValley, S.B., Scanga, J.A., Sofos, J.N., Smith, G.C. 2009. Producing Consumer Products from Sheep: The Sheep Safety and Quality Assurance Program. American Sheep Industry Association, Englewood, CO, 56 pp.
- Merkel, R.C., Gipson, T.A. 2011. Change in behavior of goat producers after on-line training in herd health practices. *Sm Rum Res* 98:31-34.
- National Dairy FARM Program: Farmer Assuring Responsible Management™. <http://www.nationaldairyfarm.com/> Accessed 6/16/16.
- Webb, A.I., Baynes, R.E., Craigmill, A.L., Riviere, J.E., Haskell, S.R.R. 2004. Drugs approved for small ruminants. *J Am Vet Med Assoc* 224 (4):520–523.

Author Kevin L. Anderson

Consulting Editor Kaitlyn A. Lutz