

What bovine practitioners need to know about traceability and scrapie

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Abstract

Veterinarians serving clients with small ruminants or working with small ruminants at fairs, shows, auctions or other activities must be familiar with identification requirements for sheep and goats. Scrapie program identification and records serve as the sheep and goat requirements for Animal Disease Traceability. Many online resources are available through USDA-APHIS to familiarize veterinarians with National Scrapie Eradication Program (NSEP) program requirements and clinical recognition of scrapie cases. Regulatory veterinarians, designated scrapie epidemiologists, and official testing laboratories conduct many elements of the NSEP, but private practitioners play a key role in assisting owners and community members in complying with NSEP animal identification and recordkeeping standards, completing certificates of veterinary inspection for animal movement, and recognizing clinical scrapie suspects in the field. Engagement by all veterinary practitioners, whether or not sheep and goats are a significant part of their practice, is needed to succeed in the eradication of scrapie from the United States.

Key words: sheep, goats, small ruminants, scrapie

Résumé

Tous les vétérinaires servant des clients avec des petits ruminants ou travaillant avec des petits ruminants dans des salons, des spectacles, des encans ou d'autres activités doivent être familiers avec les besoins d'identification des moutons et des chèvres. L'identification et les dossiers dans les programmes sur la tremblante sont à la base des exigences de traçabilité des maladies animales pour les moutons et les chèvres. Plusieurs ressources en ligne, disponibles par l'intermédiaire de l'USDA APHIS, peuvent familiariser les vétérinaires avec les exigences des programmes d'éradication de la tremblante et l'identification clinique des cas de tremblante. Des vétérinaires de réglementation, des épidémiologistes de la tremblante attitrés et des laboratoires officiels d'analyse s'occupent de plusieurs éléments du programme national d'éradication de la

tremblante. Néanmoins, les vétérinaires du secteur privé jouent un rôle clé en aidant les propriétaires et les membres de la communauté à suivre les directives du programme d'éradication, en ce qui concerne l'identification et la tenue des dossiers selon les normes, à compléter les certificats d'inspection vétérinaire pour le mouvement des animaux et à identifier les cas suspects de tremblante sur le terrain. L'engagement de tous les vétérinaires praticiens, même si les moutons et les chèvres ne font pas partie intégrale de leur pratique, est nécessaire pour l'éradication complète de la tremblante aux États-Unis.

Introduction

The National Scrapie Eradication Program (NSEP) standards for identification, recordkeeping, and movement serve as the current sheep and goat standards for the recently enacted Animal Disease Traceability. Veterinarians working regularly with sheep and goats have been helping clients meet NSEP requirements since the beginning of the current scrapie eradication program in 2001. Increasingly, bovine veterinarians encounter sheep and goats in their practices, either those animals owned by practice clients or through their activities examining livestock at fairs, mentoring youth project activities or through community outreach. Familiarity with program standards, methods of identification, and recordkeeping requirements can help producers meet the mandatory requirements for the NSEP. Further, encouraging owners to apply permanent identification and keep records before leaving the herd or flock can help owners attain a higher level of herd management for health, genetics, and economic management in the herd. The NSEP standards apply to all uses of sheep and goats, including those kept as pets, so the practitioner may be the sole source of information about NSEP, and must be trained to recognize signs of scrapie and direct animals for diagnostic testing if scrapie is suspected. Sheep and goat identification, recordkeeping to support complete traceback, slaughter and diagnostic surveillance, and traceback to farm of origin are the key elements the effort to eradicate scrapie from sheep and goats in the United States.

Animal Disease Traceability

All veterinarians serving clients with small ruminants or working with small ruminants at fairs, shows, auctions or other activities must be familiar with identification requirements for sheep and goats. In 2013, the US Department of Agriculture (USDA) published a final rule establishing general regulations for improving the traceability of US livestock moving interstate (ADT, CFR part 86). These rules, which have been in effect since March 2013, apply to all livestock, including all sheep and goats. For sheep and goats, the NSEP rules for animal identification, which have been in effect since 2001, were adopted for animal disease traceability. Animal Disease Traceability rule, as contained in the existing NSEP, includes the requirement that sheep and goats moving interstate are required to be officially identified and be accompanied by an interstate certificate of veterinary inspection (ICVI). Veterinarians are required to keep ICVI records for 5 years. As part of the ICVI process, many states require entry permits along with ICVI for interstate movement. More information on traceability is available at the USDA-APHIS web site: http://www.aphis.usda.gov/wps/portal/aphis/home/?1dmy&urile=wcm%3Apath%3A/aphis_content_library/sa_our_focus/sa_animal_health/sa_traceability.

Individual Animal Identification and Mandatory Regulatory Issues

Unique individual animal identification is needed so that permanent, accurate records can be maintained to monitor reproductive and health status. Management decisions regarding breeding, disease control grouping, treatment, production, and culling should be based on accurate lifelong records on each animal. Accurate record-keeping will allow development and use of action lists, performance evaluation, and changes in herd status over time. Identification methods and record systems that meet NSEP standards can easily be incorporated into management systems for sheep and goats. The practitioner can help owners adapt regulatory identification and records to improve herd management.

Breeding animals for intra- and interstate movement must be identified in accordance with NSEP guidelines, including premises and individual animal identification. States may have requirements which exceed federal standards, so it is imperative that practitioners check with their own state and destination states for sheep and goats moving interstate. Wethers under 18 months of age, low risk, and commercial sheep and goats (see program definitions at the USDA-APHIS scrapie information website) may be exempted from individual identification requirements, while animals used for ex-

hibition usually require individual identification. Note that petting zoos and nontraditional displays at fairs may be overlooked by fair management or exhibitors may lack experience to understand requirements; practitioners can be valuable in assisting with compliance in these settings. Acceptable identification (federal) for show animals is described at www.animalagriculture.org/scrapie/gotosho.pdf.

Ear tags, electronic identification or tattoos conforming to program standards (see www.animalagriculture.org site for complete information on scrapie programs) are needed for either the NSEP or Scrapie Flock Certification Program; states may have additional regulations. Producers can order official tags at no cost through the NSEP. If owners wish to choose other styles or colors for management purposes, official scrapie program ear tags can be purchased through approved vendors in conjunction with NSEP. Official scrapie program tags can be recognized by the US shield and “Unlawful to Remove” appearing on a tamper-resistant tag, which has a combination of flock identification number and unique animal identification number. Alternatively, serial tags are available for auction yards and other parties who may be applying identification to animals in commerce.

Buyers, sellers, truckers, agents, or other handlers of sheep and goats in commerce must keep records. If individual identification is required, records must contain animal numbers, breed or cross, name, address, city, state, county, and telephone number of the owner of the flock of origin, and if different, the person from whom the sheep were purchased. Traceability requirements for NSEP require that records on breeding animals leaving the herd be maintained for 5 years.

In addition to carrying out mandatory elements of NSEP, practitioners can assist in “value added” marketing for purebred breeding sheep flock owners by providing third party chain of custody for scrapie genotyping samples. Scrapie susceptibility genotype testing is a common tool used in genetic selection for many breeds of sheep; currently no such tool exists for selection for genetic resistance to scrapie in goats.

Missing Identification and Other Practice Situations

Unique official USDA identification is mandatory before animals move in commerce. However, practitioners should be vigilant to be sure that identification (ear tag, tattoo) has been applied to the animal before inspection for ICVI, and before any sampling related to movement or change of ownership. For example, it is not uncommon to be presented with rams for *Brucella ovis* testing or dairy goat kids for interstate movement inspection before official scrapie tags or registration

tattoos have been applied. Insist that identification be applied during the examination or delay the procedure until the animals have been identified. Note also that registration tattoos, or RFID as an alternative to NSEP program tags, are only allowed for registries which are approved under the NSEP (see USDA-APHIS scrapie website). Further, animals must already be registered or applied for (their identification record received by the registry) for the registry tattoo or RFID to be an official identification. Electronic implants (RFID) must be ISO compliant; those applied after March 15, 2014 must be “840” series. The base of the right ear or the underside of the tail are allowable sites for RFID in sheep and goats, but they must be declared at slaughter.

Tattoos and RFID as alternative forms of identification are valid only if the animal is already registered and the animal is accompanied by its registration papers or a copy thereof. If dairy goat kids are presented for CVI inspection prior to registration, owners can complete an online registration with the American Dairy Goat Association and receive a registration number and registry-certified copy of the application electronically, allowing the practitioner to complete the CVI during that farm visit.

If an owner buys a sheep or goat without official identification, it is the seller’s responsibility to apply official identification before change of ownership. Buyers should insist on proper identification prior to taking possession. If no tags have been applied, a buyer should apply scrapie tags and document source flock, date, other identification.

Tags can be lost during shearing, caught in field wire fencing and other misadventures, torn, lost or broken. If a tag is lost, a new tag should be applied and cross-referenced with the original number (if known).

Official scrapie program tags come as a set, with male and female tag elements. Producers may unknowingly apply unofficial identification by combining 1 side of an official scrapie program tag with a hand written management or registration tag, such that another tag could be created with the same number.

Scrapie

Scrapie is a progressive, fatal prion-associated neurologic disease of sheep and goats. Scrapie should be included as a differential diagnosis for any sheep or goat showing progressive signs of weight loss, neurologic signs or pruritis. Classic signs in sheep with advancing signs include a “bunny hopping” gait when moving quickly, and a “nipple” or “biting” reflex when scratched in the lumbar area. Behavioral changes, rubbing, weakness, and ataxia are common signs in scrapie cases. Instructional materials and links to videos illustrating

clinical cases are available at the USDA-APHIS scrapie website or linked through www.eradicatescrapie.org. Signs vary widely, so any sheep or goat with progressive debilitation, gait abnormality, ataxia, as well as down animals without specific definitive diagnosis, should be considered scrapie suspects and be tested for scrapie upon euthanasia or death. Similarly, early detection of scrapie in cull animals may be picked up in slaughter surveillance, but practitioners should be alert to send euthanize and submit poor doing culls for scrapie testing where other diagnoses have not been made.

Classical scrapie is transmissible between animals, most efficiently through placental materials and lochia to genetically susceptible animals, including offspring, other ewes and does giving birth in the same lambing/kidding cohort, and lambs and kids born in the same cohort. Disinfection of the environment is difficult, and the environment remains contaminated for extended periods. Uniform Methods and Rules for the NSEP provides information on environmental contamination, and steps taken by regulatory authorities once a diagnosis of scrapie is made.

Non-classical (Nor98) scrapie is found sporadically in older animals, and is not considered transmissible by the same means as classical scrapie; no further action is taken in flocks where non-classical scrapie is found.

Although scrapie is not prevalent in sheep and goats, all sheep and goats, regardless of use, are subject to the NSEP rules, and surveillance for and prevention of introduction of scrapie into all sheep flocks and goat herds is critical for achieving scrapie eradication. Herd replacement ewe and doe sources should provide official identification and traceback information, and buyers should research the potential risk associated with commingling of sheep and goats with lambing ewes or kidding does. The herd-health plan should include necropsy of all animals with chronic wasting and/or progressive neurologic signs. Backyard sheep flocks and goats must comply with NSEP identification standards. Registered goats accompanied by their registration certificate and transferred to the current owner may utilize registration electronic identification or tattoos. Unregistered animals and all animals moving through points of concentration (public market) require scrapie program ear tags. In this presentation, a review of the signs of scrapie and methods for diagnosis will be presented. Practitioner awareness is key to recognizing the disease, as cases occur infrequently in the flock/herd, but in small flocks/herds, animals tend to be retained in the herd to advance ages. This means that if scrapie exists in a flock, most animal remain in the flock long enough to develop clinical signs, and many owners will seek veterinary advice for sheep/goats with weight loss or neurologic signs.

National Scrapie Eradication Program vs Scrapie Flock Certification Programs

The National Scrapie Eradication Program is a mandatory program including elements of animal identification, recordkeeping, traceback to farm of origin, slaughter surveillance, surveillance by necropsy of suspected clinical animals carried out by producers, regulatory veterinarians, private practitioners, and all “handlers” of animals in commerce.

All sheep and goat owners are required to meet NSEP standards. In addition, flock/herd owners may choose to participate in the Scrapie Flock Certification Program, either in the Export Monitored category with full regulatory oversight leading toward scrapie-free certification, or the Select Monitored category with less rigorous program standards that demonstrate scrapie surveillance, but does not lead to scrapie-free certification. Recent changes in the Scrapie Flock Certification Program include elimination of the Complete Monitored program, which included a certification element. Scrapie-free certification is now available only through the Export Monitored program, where flocks/herds advance to Export Certified status after a minimum of 7 years. Export certified flocks have met a minimum animal testing requirement, maintain complete inventories and account for all animals, acquire females only from flocks at or above their scrapie flock status, complete annual flock inspections by regulatory veterinarians, and submit animals for diagnostic testing as required under the program standards.

The Selective Monitored program does not advance to scrapie-free certification, but provides a means for flocks to demonstrate ongoing surveillance for scrapie in their flocks/herds, which should give some confidence to breeding stock buyers and goat/sheep product consumers. This program is based on owner-maintained records, identification, and diagnostic submissions. Advances in genetic selection for scrapie resistance in certain sheep breeds have reduced the need for scrapie-free flock certification in Suffolk flocks and other breeds where resistant genotypes have been selected.

Full information on the program standards and reports of flock status can be found at the USDA-APHIS website under scrapie program information.

Conclusion

The Animal Disease Traceability framework utilizes the National Scrapie Eradication Program standards for identification. Bovine practitioners working with sheep and goat flocks need to be familiar with scrapie program rules and guidelines, whether these animals are being maintained as large scale commercial units, registered breeding stock involved in shows and sales, as family/youth projects or as individual pets. Further, all food animal practitioners and companion animal practitioners are valuable to the NSEP by helping owners meet identification and movement requirements of the program, to detect scrapie suspect animals, and to direct their laboratory submission for scrapie diagnosis.