

REPORT OF THE COMMITTEE ON SCRAPIE

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The Committee met on November 16, 2010 at the Hilton Minneapolis Hotel in Minneapolis, Minn., from 12:30 to 2:45 pm. At least 11 members and 18 guests were present.

Presentations and Reports:

Diane Sutton, United States Department of Agriculture, Animal and Plant Health Inspection Service, Veterinary Services (USDA-APHIS-VS) gave the following update of the scrapie eradication and certification program:

In Fiscal Year 2010 the Scrapie Eradication Program focused on: (1) cleaning up infected and source flocks utilizing a genetic based approach; (2) tracing and testing exposed animals and animals in exposed flocks; (3) expansion of regulatory slaughter surveillance (RSSS) to new collection sites; (4) producer education, (5) Identification (ID) compliance; (6) revising the National Scrapie Surveillance Plan, (7) development of a new policy for handling Nor98-like cases in the U.S., and (8) development of a proposed rule to revise 9 Code of Federal Regulations (CFR) parts 54 and 79.

Scrapie Eradication Program Results:

- A decrease of 37 percent newly infected and source flocks was reported in FY 2010 compared to FY 2009. When multiple sheep from the same flock are excluded, the percentage of classical scrapie-positive black-faced sheep sampled at slaughter dropped from 0.15 percent in FY 2009 to 0.086 percent in FY 2010—a decrease of 44 percent. This value has decreased 90 percent since slaughter surveillance was initiated in FY 2003.
- The National Surveillance Unit (NSU) estimated the prevalence of classical scrapie in the cull sheep population in FY 2010 to be 0.03 percent based on test results available as of September 30, 2010. This is an 85 percent decrease from the estimate conducted in 2002-2003 of 0.20 percent, and a 40 percent decrease from FY 2009. At the current rate of progress, we expect the prevalence to be at or near zero for FY 2017.

Scrapie Flock Certification Program (SFCP):

- As of September 30, 2010, there were 1,642 flocks participating in the SFCP. Of these flocks, 985 were complete monitored flocks, 599 were certified, and 51 were export monitored, 2 were export certified and 5 were selective monitored flocks.
- APHIS is revising the SFCP standards to incorporate recent changes and to make the standards easier to understand.

Infected and Source Flocks:

- As of September 30, 2010, there were 13 scrapie infected and source flocks with open statuses.
- In FY 2010, twelve new infected flocks and twelve new source flocks were reported; 26 flocks completed a clean-up plan and were released.

Positive Scrapie Cases:

- As of September 30, 2010, 72 cases of classical scrapie and 5 cases of Nor98-like scrapie were confirmed by the National Veterinary Services Laboratories (NVSL); 53 were field cases and 24 were RSSS cases collected between October 1, 2009 and September 30, 2010 and confirmed by November 8, 2010. Of the five Nor98-like scrapie cases, four were RSSS cases that originated from flocks in Ohio, Pennsylvania, Oregon, and Idaho and one was a field case from Maine. This brings the total number of Nor98-like cases detected in the United States to 11. Field cases are positive animals tested as part of a disease investigation including potentially exposed, exposed, and suspect animals or tested as part of on farm surveillance.
- Twenty one cases of scrapie in goats have been confirmed by NVSL since implementation of the regulatory changes in FY 2002. The last infected goat herd was identified in FY 2008.

Nor98-like Scrapie Policy Changed in FY 2010:

- In response to comments from the United States and other countries, the OIE (World Organization for Animal Health) determined in May 2009 that Nor98-like scrapie and classical scrapie are distinct and that the presence of Nor98-like scrapie does not pose a threat to trade.
- USDA-APHIS-VS implemented a pilot project in October 2009 and will propose changes to the CFR to approach Nor98-like scrapie differently than classical scrapie. VS will no longer depopulate or permanently restrict Nor98-like scrapie-exposed sheep or goats. We will continue monitoring affected flocks as part of the pilot project to further understand the epidemiology of the disease.

Slaughter Surveillance:

- The number of animals sampled through slaughter surveillance increased from 42,057 in FY 2009 to 45,589 in FY 2010; an increase of 8.4 percent.

Scrapie Surveillance Plan Revised for FY 2011:

- In FY 2010, the VS scrapie staff worked with NSU to revise the National Scrapie Surveillance Plan. The major points of this plan include:
 - States with RSSS collection sites will continue to sample all targeted sheep and goats. Targeted sheep and goats are described in VS Memo 557.11, which will be updated for FY 2011.
 - In FY 2011, States will have State-of-origin sampling minimums for sheep.
 - The annual State-of-origin sampling minimum for sheep will be 20 percent of the number required to detect a scrapie prevalence of 0.1 percent with 95 percent confidence or 1 percent of the breeding flock in the State, whichever is less. The objective is to sample sufficient sheep in a 5-year period to detect a scrapie prevalence of 0.1 percent with 95 percent confidence or 5 percent of the breeding flock in the State, whichever is less. These sampling minimums were distributed to the VS Area Offices in October 2010.
 - If this minimum number was not collected in FY 2010 through RSSS, the State will be expected to find other sampling sources to meet the minimum. The FY 2010 RSSS State-of-origin collection numbers will be available by November 30, 2010. Approximately 32 States will meet the FY 2011 sampling minimum in FY 2010.
 - Sampling of nonclinical goats will begin in FY 2011 for nonclinical 2-, 3-, 4- and 5-year old goats originating from Illinois, Indiana, Michigan, and Ohio (as with white and mottled-face sheep, no goats with missing, splayed, broken, or moderately or severely worn incisors will be sampled). These States were selected because they have intrastate goat ID rules and a history of higher scrapie prevalence in sheep or have had recent goat cases.
- VS plans to begin sampling goats in all States once the proposed rule revising 9 CFR parts 54 and 79 is finalized.
- After States have met their sheep and goat sampling minimums for 5 years, or have accumulated the required number over a longer time period and have not detected a case of classical scrapie, they may be designated as a lower-risk State with lower annual sampling minimums.
- These are minimums. Plans are to continue to collect samples from the maximum number of targeted animals given the available budget.

FY 2011 Priorities for the National Scrapie Eradication Program:

- VS priorities for scrapie are to focus on improving the effectiveness and cost efficiency of surveillance and to increase sheep and goat ID compliance. This will be accomplished in part by publishing a proposed rule that would address gaps in identification and require States to meet reasonable surveillance targets to remain consistent States. States must meet these targets for VS to demonstrate geographically appropriate surveillance to meet the criteria for freedom and have confidence that all of the cases have been found. The rule would propose to:
 - Give the APHIS Administrator authority to relieve requirements for sheep and goats exposed to scrapie types, such as Nor98-like, that do not pose a significant risk of transmission
 - Increase flexibility in how investigations can be conducted and allow the epidemiology in a specific flock to be given more consideration in determining flock and animal status
 - Add a genetic-based approach to regulation
 - Make goat ID requirements similar to those for sheep in preparation for ongoing slaughter surveillance in goats; no changes will be made in the consistent State requirements regarding identification of goats in intrastate commerce
 - Tighten the definition of slaughter channels
 - Expand the individual ID requirement to all sexually intact animals unless moving as a group/lot (allows mixed-source groups moving in slaughter channels under 18 months)
 - Limit the use of tattoos and implants to animals not moving through concentration points and not in slaughter channels

- Reduce recordkeeping requirements by making them similar to the current uniform methods and rules compliance guidance
- APHIS is also revising its scrapie import regulations to bring them more in line with the OIE scrapie chapter. This will ensure that we meet OIE criteria for free status and prevent the reintroduction of scrapie after free status is achieved.

Chuck Gaiser, USDA-APHIS-VS, presented the following epidemiological report summarizing FY2010 scrapie cases in the United States:

- 293 Flock Investigations were initiated in FY 2010: (Source AHSM)
 - None – from on farm surveillance
 - 25 – from trace back of positive animal from slaughter
 - 5 – from suspect animal reported or observed
 - 263 – from flocks that received high risk animals
 - Values do not include investigations conducted at markets, feedlots, slaughter plants and dealers = 84 additional investigations.
- Of 25 trace back investigations from slaughter:
 - 3 – traced back to or through markets or slaughter plants. Closed for reasons premise sold (1), not flock of origin (2).
 - Of the remaining 22 investigations 11 resulted in discovering a new source flock and 7 resulted in finding new infected flocks.
 - 1 – investigation is ongoing.
- Of 5 investigations of suspect or clinical animals:
 - 4 – were found to be negative on necropsy.
 - 1 – suspect’s condition improved and was not tested.
- Of 263 Flock investigations of flocks that received high risk animals:
 - 4 – traced to correct flock and at least one animal tested positive = infected flock.
 - 53 – traces designated as low risk. All exposed animals either genetically resistant or less susceptible, or tested negative at necropsy.
 - 24 – traces had females that lambed in the flock but not available for test (Missing ewe investigation). Others in the flock tested negative on rectal biopsy or necropsy.
 - 2 – traces animals traced to correct flock and negative on necropsy.
 - 100 – traced to correct flock, no longer there, but no lambing occurred.
 - 2 – traced to sold-out flock.
 - 18 – traces listed as other outcome that didn’t result in an infected flock.
 - 19 – traces were untraceable.
 - 41 – trace groups are ongoing.
- Classical Scrapie Confirmed cases:
 - 52 –Positive field cases found as a result if testing scrapie exposed and suspect animals removed from infected, source and exposed flocks (source is database of field cases maintained by NVSL and submitted on a VS Form 10-4).
 - 20 – Positive cases from slaughter (source is VSLS databases).

Classical Scrapie Confirmed cases by breed/face color and genotype:

Breed	Breed Number	Genotype	
		AA/RR/QQ	Other
Black Face	28	26	1-VV/RR/QQ 1-AV/RR/QQ
Suffolk	15	13	2-AV/RR/QQ
Hampshire	6	6	
Southdown	5	5	
Mottled Face	9	6	
White Face	5	5	
Other	4	4	
Total	72	68	4

- Age distribution of 52 classical scrapie confirmed positive field cases:
 - 5 – One year of age
 - 9 – Two years of age

- 13 – Three years of age
- 13 – Four years of age
- 10 – Five years of age
- 2 – Six plus years of age
- Average age is 43 months.
- Prion distribution of 52 classical scrapie confirmed positive field cases:
 - 5 – Obex only
 - 21 – lymph node only
 - 26 – Obex and lymph node
- Age distribution of 20 classical scrapie confirmed positive cases from RSSS/Slaughter surveillance:
 - 1 – One year old
 - 1 – Two year old
 - 2 – Three year old
 - 8 – Four year old
 - 8 – Five plus years old
 - Average 4 years.
- Prion distribution of 20 classical scrapie confirmed positive cases from RSSS/Slaughter surveillance:
 - 1 – Obex only
 - 2 – Lymph node only
 - 17 – Obex and Lymph node

Katherine O'Rourke, USDA, Agriculture Research Service (ARS), updated the Committee on various ARS scrapie research projects. Four sheep that were experimentally infected with Nor98-like scrapie in January 2008 via the intracerebral route produced placentas in 2009 and 2010; all samples were negative for the abnormal form of the prion protein (PrP^{Sc}). This study will continue with the sheep being monitored for their natural lifespan. Preliminary evaluation of the rectal biopsy in goats showed this test to be unreliable in diagnosing scrapie in this species. Ongoing research will focus on alternative sample collection techniques in an attempt to improve sensitivity of this diagnostic tool for goats. Goat scrapie is being investigated in terms of incubation time and genetics, as well as transmission through the placenta and milk. These studies are long term and will continue.

Committee Business:

The committee discussed the future of the Scrapie Flock Certification Program. Several committee members questioned the value of the program and indicated that the benefit of the program did not justify the resources required to administer it. One member felt it was valuable for those species or breeds for which genetic selection for resistance to scrapie was not an option. Dr. Sutton pointed out that Export Certified portion of the program is necessary in order for producers to export to certain countries.

Committee members discussed the advisability of combining the Committee on Scrapie with the National Scrapie Oversight Board or with the Committee on Sheep and Goats. The Committee voted to request that the Committee on Scrapie be moved to Tuesday morning next year, immediately following the National Scrapie Oversight Board.

One resolution was introduced, discussed, and passed. The resolution requested that USDA Food Safety Inspection Service work with USDA-APHIS-VS and industry to identify and approve appropriate sites for radio frequency identification implants for goats and sheep.