

## Scrapie Program

Since 1952, the United States Department of Agriculture (USDA) has worked to control scrapie, which entered the United States in 1947 from sheep imported from England. Additional information on scrapie can be found at <http://www.aphis.usda.gov/vs/scrapie>. Today, USDA uses two approaches to control scrapie, flock certification and restriction on the interstate movement of high-risk and affected animals. The Scrapie Flock Certification Program (SFCP) has been in place since October 1992. The latest addition to the overall scrapie program is an initiative to accelerate the eradication of scrapie from the United States. Through this initiative, the Animal and Plant Health Inspection Service's (APHIS) Veterinary Services (VS) program has received \$10 million in emergency funding to conduct the following activities in fiscal year (FY) 2000 and FY 2001: sheep and goat identification; slaughter surveillance; a scrapie live animal test validation project; scrapie control pilot projects; data collection; and increased and improved diagnostic capacity.

### Scrapie Summary - Fiscal Year 2000

As of October 2, 2000, there were 6 scrapie source flocks and 44 scrapie-infected flocks. The number of scrapie cases confirmed by USDA's National Veterinary Services Laboratories (NVSL) was 57.

### Scrapie Flock Certification Program

As of October 2, 2000, 617 flocks were enrolled in the Voluntary Scrapie Flock Certification Program (VSFCP). Of these, 50 flocks are certified as being free of scrapie, 558 are completely monitored, and 8 are selectively monitored.

### National Scrapie Oversight Committee (NSOC)

The NSOC has added three additional VSFCP-enrolled sheep producers to the committee, Richard Hamilton, Steven Cloud, and Barbara Burrows. The NSOC has also added two goat producers to the committee to represent the interests of meat and dairy goat producers. Tom Boyer, International Boer Goat Association, and Dr. Joan Rowe, American Dairy Goat Association, have been selected.

Individuals on the committee participate in conference calls and meetings to provide information to APHIS on issues that affect the VSFCP, particularly

changes to the standards. Committee members are expected to participate in conference calls on an as-needed basis, usually 4 to 5 times a year. Members are also expected to advocate for the program. The term is for one year but may be renewed.

### Accelerated Scrapie Eradication Initiative Proposed Rule Provides Framework for Scrapie Eradication

The proposed rule, Scrapie in Sheep and Goats: Interstate Movement Restriction and Indemnity Program, which was published in the Federal Register on November 30, 1999, resulted in 171 comments. In preparation for finalizing the interstate movement rule, APHIS published a proposed list of consistent States on August 15, 2000. All 50 States were listed as consistent States. In order to be listed as consistent States, the States had to agree to meet the minimum standards set by APHIS for scrapie control. The rules can be found at <http://www.aphis.usda.gov/ppd/rad/webrepor.html>.

**Sheep Identification**—Sheep and goat identification allows APHIS to trace scrapie-infected and scrapie-exposed animals. APHIS will inform producers, marketers, dealers, and slaughter establishments about any new identification methods required by the final rule. Ongoing information and any necessary enforcement activities will follow.

The proposed rule allows for the use of either premise-based identification in limited circumstances, premise-based individual animal identification, or individual animal identification. This means that, if the rule is finalized, either standard USDA metal eartags or, in the case of animals moving directly to slaughter, backtags could be used by accredited veterinarians, markets, dealers, or producers as long as the tag numbers have been assigned by a State or APHIS representative and recorded in the scrapie database. Owners of registered animals may also use registration tattoos. Alternatively, producers could elect to either apply an assigned premise-based identification tattoo number or purchase eartags or backtags that are imprinted with an assigned premise identification number that either contains, or is used in association with, a unique production number. APHIS would approve tag companies to make eartags and backtags for this purpose. The cost of the premise eartags is expected to range from 6 cents for metal tags to \$1 for tamper-resistant flap tags. Tags already approved for use in the VSFCP may be used for this purpose.

**Slaughter Surveillance**—Initially, the purpose of slaughter surveillance will be to determine the prevalence of scrapie in the United States based on immunohistochemistry on the brainstem. Once the prevalence work is completed, slaughter surveillance will be used to identify infected flocks. Slaughter surveillance will be initiated on a limited basis in 2001 to test the procedures for sample collection and handling, and to ensure a smooth start. Full implementation of the procedures will begin as soon as the sheep are adequately identified. Work will then continue for 12 months and will include sampling of 11,300 sheep. The sheep will be traced to their State of origin so that the prevalence of scrapie can be calculated on a regional basis. No individual animal results will be provided to the area offices or to owners, and no regulatory action will be taken unless the owner requests the results for his or her sheep.

APHIS' Centers for Epidemiology and Animal Health (CEAH) has developed a preliminary sampling plan. Twenty-five plants in 14 States have been included in the plan. This accounts for 122,755 head or 58 percent of the published number of mature sheep slaughtered in the United States. Funding is expected in FY 2001 and 2002 to maintain slaughter surveillance at the level of 1,000 samples per month through FY 2002.

After the initial prevalence determination is completed, only scrapie-positive animals will be traced. The slaughter surveillance is expected to yield between 50 and 300 infected animals per year; this would necessitate subsequent traces, epidemiologic investigations, flock testing, and flock cleanup planning.

**Scrapie Test Validation Project**—The primary purpose of the Scrapie Test Validation Project is to determine the reliability and best regulatory and diagnostic uses of the third eyelid test. APHIS also intends to assess the role of genetics and the validity of the capillary immunoelectrophoresis (CIE) test.

APHIS and USDA's Agricultural Research Service (ARS) began the Scrapie Test Validation Project in May 2000. Sheep in scrapie-affected flocks whose owners volunteer to participate in the project will be tested by third eyelid and genotype methods. Owners of source flocks, infected flocks, trace flocks, and high-risk sheep will be contacted and asked to participate as space is available at the lab for testing. APHIS will purchase all test-positive animals. High-risk animals acquired by flocks not designated infected, source, or trace will be tested and purchased whenever possible.

Sheep for which the third eyelid test is positive will be shipped to an ARS or APHIS holding facility. A matched test-negative control group will be maintained at a separate facility, for a total of at least 600 sheep. All remaining high-risk sheep that have been

tested will be purchased, euthanized, and necropsied by State or Federal personnel or an accredited veterinarian.

**Scrapie Control Pilot Projects**—In States that sign Scrapie Control Pilot Project agreements, APHIS will offer an option to purchase only test-positive sheep from those owners who are interested in participating in scrapie control pilot projects for flock cleanup and who have flocks that are suitable based on the epidemiology of the flock and the availability of required records.

The final rule, Scrapie Pilot Projects, which allows APHIS to conduct pilot projects to evaluate flock cleanup plans based on testing was published June 27, 2000, in the Federal Register.

To qualify for a pilot project, a flock must be in a State that has signed an agreement with APHIS to conduct a scrapie control pilot project. As of November 2000, only Idaho and Kentucky had signed such an agreement, but three States have provided draft pilot project agreements and several others have expressed interest in conducting pilot projects.

To qualify, a pilot project must advance knowledge about scrapie control and must provide adequate safeguards to prevent the spread of scrapie that are at least as effective as those that are currently required for flock clean up plans. These must include: the restriction of all high-risk animals to the premises except for movement to slaughter; necropsy and testing of all animals that die, particularly high-risk animals, if they are over 14 months of age; third eyelid testing of all animals over 14 months of age or when they reach 14 months of age with a retest 18 months after the last known exposure to scrapie; removal of all test-positive animals; and restrictions on the movements of other animals out of the flock except to slaughter unless testing or other methods have been used to ensure that they are at low risk for spreading scrapie. The pilot may include genotyping as a selection criteria.

**Data Collection**—The Scrapie National Generic Database (GDB) is operational and is being used to generate the web page. An individual animal information form has been developed and is being tested. This form will facilitate tracing and tracking of test-positive sheep as well as exposed animals. It is now possible to list up to three breeds and to list flock identification numbers on the web page.

**Increased and Improved Diagnostic Capacity**—NVSL has leased additional space to accommodate the increased testing. To handle the formic acid treatment of third eyelid tissues, the laboratory is upgrading the ventilation system; the need to replace the inadequate system delayed the start of

third eyelid testing. Two hoods are now functioning at a safe level and are being used to test samples from ARS. NVSL and ARS will be running third eyelid slides in parallel using the protocol that was provided to NVSL by ARS in October. This work should be the final step needed to gather data for approval of the test.

APHIS will enter into contracts for immunohistochemistry on brain, third eyelid, and genotype testing at approved laboratories. APHIS has contracted with two laboratories to test slaughter samples.

## Conclusion

The effectiveness of the Scrapie Eradication Program will depend largely on the thought, effort, and care given to program implementation by everyone involved and will need the continued support of the industry. APHIS looks forward to working with industry, individual producers, accredited veterinarians, and approved laboratories to make these projects a success.

## Contact Information

If you have any questions or concerns, please contact your local Veterinary Services area office or Diane Sutton, the national scrapie program coordinator, or her program assistant, Lisa Jackson, at 301-734-6954. Dr. Sutton can also be reached via e-mail at [Diane.L.Sutton@USDA.GOV](mailto:Diane.L.Sutton@USDA.GOV) and Ms. Jackson can be reached at [Lisa.L.Jackson@USDA.GOV](mailto:Lisa.L.Jackson@USDA.GOV).

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