

# Sheep HEALTH REPORT

A National Institute for Animal Agriculture Publication

Summer 2003

## NAHMS Study Provides Insight Into Biosecurity of U.S. Sheep Operations

Biosecurity is becoming more important to livestock producers as devastating disease outbreaks have affected livestock populations around the world. Study results released in April 2003 by the USDA's Center for Animal Health Monitoring (CAHM) in Fort Collins, Colo., provide a baseline describing various producer participation rates in several biosecurity practices across the United States.

Biosecurity refers to preventing the introduction of new organisms to an operation as well as controlling organisms already present on the operation.

"Good biosecurity leads to

reduced illness. This is true when concerned about decreasing disease spread both on an operation

*"We hope the results of the study will provide the stimulus needed for action in the area of increasing biosecurity on operations, and increasing educational efforts by the industry leaders and veterinarians in this area."*

DR. KATHERINE MARSHALL  
USDA SHEEP SPECIALIST

(between animals) and between operations (preventing the introduction of disease)," said Katherine L. Marshall, Veterinary Medical Officer and Sheep Specialist at CAHM.

The USDA's National Animal Health Monitoring System (NAHMS) collected data on sheep health and management practices from a stratified random sample of sheep production sites in 22 states as part of the Sheep 2001 study.

These states represented 87.4 percent of the January 1, 2001, U.S. sheep inventory and 72.3 percent of U.S. sheep producers.

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tions, and increasing educational efforts by the industry leaders and veterinarians in this area," Marshall said. "Producers were very cooperative. We were encouraged by their participation, and we want to acknowledge their hard work during the study."

Marshall highlighted a few of the major findings of the research.

"The survey results indicated that overall, 84.3 percent of operations allowed visitors access to sheep raising areas, and only 22.6 percent of those had any biosecurity requirements for visitors. This statistic provides us with a snapshot of where producers can strengthen biosecurity efforts," she said. "Very few operations (those with 20 or more ewes) used antibiotics in either feed (19.6 percent) or water (4.0 percent) for disease treatment in 2000. This is good news especially in light of increasing public concerns about antibiotic usage in animals."

Timing had an effect on the research as well, Marshall said.

"Our NAHMS Sheep 2001 study was conducted at the same time the FMD outbreak in England was making news in the United States. It takes time to implement biosecurity measures and probably, if these questions were to be asked now, there would be a higher percentage of operations practicing biosecurity."

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## Presentation on Use of Genetics to Control Scrapie Now Available

A PowerPoint presentation that explains how and when producers can use genetics to control scrapie is now available and was introduced at the American Veterinary Medical Association's Annual Convention in July.

The title of the presentation is 'Genotyping - A New Tool for Producers'.

"This presentation has been designed for direct use by producers or by veterinarians, professors, extension agents, youth program

leaders and others who may be addressing producer groups," explains Dr. Cindy Wolf, a small ruminant specialist at the University of Minnesota and Chair of the National Institute for Animal Agriculture's (NIAA) Sheep Health Committee.

"We've prepared this in a way that provides the presenter/viewer with as much flexibility as possible," said Wolf. "The first section covers the basics of the disease, the next section covers the genetics of scrapie, and the final part discusses how genetics is used as a part of the National Accelerated Scrapie Eradication Program.

"If, for example, the audience/reader is familiar with the basic information about the disease, it is easy to skip over these slides and move directly to the information on genetics," said Wolf.

The presentation has an extensive notes section, a glossary and an



appendix that were developed to assist the presenter with their presentation.

The presentation is available for viewing or downloading at [www.animalagriculture.org/scrapie](http://www.animalagriculture.org/scrapie), or as a compact disc (CD) through NIAA.

The program was prepared by the National Scrapie Education Initiative, a joint effort by USDA's Animal and Plant Health Inspection Service and the National Institute for Animal Agriculture. An additional resource, a pamphlet entitled, 'The ABCs of Genetic Based Flock Clean-up and Monitoring Plans' is also available at the website or copies can be obtained at no charge by calling NIAA at 270-782-9798.



### Sheep Health Report

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## NSIIC Accepting Grant Applications

The National Sheep Industry Improvement Center (NSIIC) has announced the availability of approximately \$300,000 in competitive grants through the Sheep and Goat Industry Grant Initiative.

The primary objective of the grants will be to fund a number of diverse projects that will benefit the U.S. sheep or goat industries through product or business development, producer information or education, marketing and promotion for sheep or goats or their products, genetic retention or animal health at the regional, national or international level.

Linda Campbell, NSIIC Chair, said that this will be the third round in the grant program's efforts to offer direct, low interest

loans for infrastructure capital to the sheep and goat industries. "I am pleased that we have this grant program that will further meet the sheep and goat industries needs through small targeted grants," said Campbell. "I hope that there are sheep and goat industry projects where these grant funds can help to leverage other private funds or other NSIIC programs to capitalize much needed industry projects."

Completed proposals and other required materials must be received no later than Nov. 17, 2003, with proposed projects to be completed by Sept. 30, 2005. For additional information, contact NSIIC at 202-690-0632 or via email at [info@nsiic.org](mailto:info@nsiic.org).

# NAHMS Study Provides Insight Into Biosecurity of U.S. Sheep Operations (continued from page 1)

The results of the study mean different things to different people, Marshall said.

"Various results of the study will take on different levels of significance depending on whether one is: 1) a producer looking at the results of genotyping their sheep or having their animals tested for ovine progressive pneumonia

(OPP) using the newly developed cELISA test, 2) a leader of an industry association looking at quality assurance practices or

the seroprevalence of ovine Johnes and the dearth of available sensitive tests, or 3) a researcher interested in the control of scrapie and finding how few producers (5.9 percent of operations that purchased ewes, and 6.7 percent of operations that purchased rams) reported purchasing breeding sheep, in 2000, from a flock participating in the National Scrapie Flock Certification Program."

Producers have several options to enhance biosecurity on their operations, depending on the goals of each individual operation.

"Since most producers do eventually purchase new animals for their flock, to reduce the risk of disease, sheep producers should purchase new additions from known disease free flocks (when possible), focus on operations with good management practices such as flock certification (in the case of scrapie) and hygienic lambing management," she said. "At the very least, producers should ask about the health

history of the flock prior to purchasing new additions."

According to Marshall, good biosecurity, at its most basic level, can be effective and reasonable.

"There are several ways a producer can implement good biosecurity: requiring visitors to either change or disinfect their shoes prior to entering the operation or

don't enter; requiring commercial sheep trucks to be cleaned prior to loading sheep; and learning the flock history for a ewe one

is interested in acquiring."

Additional measures that will take time and resources but can insure further effectiveness of livestock biosecurity measures: separating sheep by age groups prior to shearing, and shearing from youngest to oldest to decrease the risk of spreading *caseous lymphadenitis* within a flock may be time well spent, she said, as well as using separate pens when isolating new sheep from resident animals for a minimum quarantine period, or specific food storage areas when storing feed in areas that will not contact drainage from sheep areas and manure piles.

"The results of the study give great information to the industry, as well as related entities, regarding health and disease issues on a regional and national basis, and will act as the basis for future studies," according to Paul Rodgers, deputy director of policy for the American Sheep Industry Association (ASI).

ASI, in cooperation with

## A Biosecurity "To-Do" List for Sheep Operations:

1. Isolate incoming animals prior to commingling them with the flock.
2. Vaccinate and deworm animals prior to commingling them with the flock.
3. Restrict access to sheep raising areas.
4. Implement policies to limit pathogens from outsiders such as footbaths, boot covers, and disinfect transportation units.
5. Don't use the same equipment for handling both feed and manure.
6. Control rodent populations.
7. Keep cats out of stored hay and grain.
8. Remove carcasses and placental/fetal tissues to avoid attracting carnivores to the flock and to prevent the spread of scrapie and other diseases.
9. Shear younger animals first and work toward the oldest.
10. Coordinate health and biosecurity measures with a veterinarian.

Colorado State University, has developed a well-planned, comprehensive program to address good biosecurity and quality assurance practices on sheep operations. The manual is available on the ASI website at [www.sheepusa.org](http://www.sheepusa.org).

For a full summary of the study findings, visit the CAHM web site at <http://www.aphis.usda.gov/vs/ceah/cahm/index.htm> or call (970) 494-7000.

Melissa Schneider



# National System for Animal ID Closer to Reality

A national animal identification plan is being developed to help protect American animal agriculture. State animal health officials, livestock industry groups and the federal government are working together to finalize the plan. They hope to have Phase One of the plan, Premises ID, in place by July 2004. This phase would require that standardized premises identification numbers be established for all production operations, markets, assembly points, exhibitions and processing plants.

Once the Premises ID systems are in place, the plan will proceed to Phase Two, which calls for individual identification for cattle in commerce. Other food animal and livestock species would require all animals that enter commerce to be identified through individual or group/lot identification.

Phase Two would be in place by the beginning of 2006. The goal is to develop a national standardized program that has the capability to identify all premises and ani-

*"Maintaining the health of the U.S. animal herd is the most urgent issue for the industry and is the most significant focus of the draft plan."*

mals that had direct contact with a foreign animal disease within 48 hours of its discovery. This goal may require that certain data be housed in a central database.

States, industry and the USDA have been working in partnership on the plan through the National Animal Identification

Development Team. The team, which includes a steering committee and five working groups, has produced a draft plan with the working name of the U.S. Animal Identification Plan (USAIP). It carries the tagline "Protecting American Animal Agriculture."



"The development of a national identification plan has been worked on for several years, but the recent BSE experience in Canada has reinforced the need for the U.S. to introduce a national plan as soon as practicably possible," said Neil Hammerschmidt, Chief Operating Officer of the Wisconsin Livestock Identification Consortium and co-chair of the development team's steering committee.

"A national plan which IDs all food animals and livestock will allow the U.S. to identify any animals exposed to disease and will facilitate stopping the spread of that disease," said Glenn Slack, president and CEO of the National Institute for Animal Agriculture (NIAA). "This will help protect American animal agriculture from the devastating effects that might occur in the event of a case of BSE, foot and mouth disease or other deleterious diseases ever being dis-

covered in the U.S."

The draft plan draws on existing voluntary and compulsory animal identification programs currently in place in the U.S. and coordinates these into a truly national program for the first time. Details are still to be finalized, but the development team expects to complete its work within the next 60 days. It is expected that the plan will then be open to review and comment by industry stakeholders.

"Maintaining the health of the U.S. animal herd is the most urgent issue for the industry and is the focus of the draft plan," said Hammerschmidt. "The benefits of a national animal health identification system include enhanced disease control and eradication capabilities, rapid containment of foreign animal disease outbreaks and enhanced ability to respond to threats to biosecurity."

"A national system would also provide benefits to industry in terms of market access and consumer demands," said Slack.

*"...livestock and animal products from the U.S. are highly marketable worldwide. Assuring animal traceability through animal identification adds value to the product."*

"Source and process verification are gaining consumer momentum, providing producers with an added value opportunity. Also, livestock and animal products from the U.S. are highly marketable worldwide. Assuring animal traceability through animal identification adds

value to the product."

"Furthermore, as more retailers and consumers demand source-verified systems, the ability of producers to sell their products to

*"Other countries have already developed systems that are being used as technical barriers to trade. These systems are rapidly becoming the world standard. The U.S. needs to be consistent with the animal tracking systems of its international trading partners to avoid the loss of international markets."*

these markets might depend on the ability to trace animals to the farm of origin," said Slack. "Other countries have already developed systems that are being used as technical barriers to trade. These systems are rapidly becoming the world standard. The U.S. needs to be consistent with the animal tracking systems of its international trading partners to avoid the loss of international markets."

"As recently as 1995, nearly nine million calves were identified with orange brucellosis vaccination ear tags," said Hammerschmidt.

"That number represented slightly less than one fourth of all the newborn calves or about 45 percent of all female calves (only females are vaccinated). Today, fewer than four million calves are vaccinated (10 percent of total calves, 20 percent of females). The U.S. is very close to declaring itself free from brucellosis. The level of vaccination will continue to decrease, if not cease entirely. The identification of calves to the farm of origin will be minimal in two to three years."

"Without identification, our livestock industries would be vulnerable to any disease situation that required rapid tracking of animal movement," said Hammerschmidt.

The draft plan follows 18 months of intensive work by states, industry and USDA. In early 2002, NIAA's Animal Identification and Information System Committee organized an NIAA task force comprised of approximately 100 representatives of more than 30 stakeholder groups. After months of work, the task force produced the National Identification Work Plan (NIWP). That plan was presented at the NIAA ID/INFO EXPO in Chicago in July 2002. The final draft of the

NIWP was then presented to the U.S. Animal Health Association (USAHA) at its annual meeting in October 2002.

The USAHA accepted the plan with a resolution calling for USDA, APHIS, VS, to establish a National Animal Identification Team composed of state, industry and federal partners to further develop a national plan, using the NIWP as a guide." With this charge, APHIS, VS identified key industry leaders to serve as the team's Steering Committee. These steering committee members then selected members of five working groups, including

*"Without identification, our livestock industries would be vulnerable to any disease situation that required rapid tracking of animal movement."*

Communication, Transition, Standards, Governance and Information Technology.

The draft plan will be presented in October to the USAHA Committee on Livestock Identification. The plan can be viewed on the Internet at [www.usaip.info](http://www.usaip.info).

## Small Ruminant Practitioners Install New President

*Dr. David McCrystle Named Small Ruminant Practitioner of the Year*

The American Association of Small Ruminant Practitioners (AASRP) held its 2003 Annual Membership Meeting, July 21, during the American Veterinary Medical Association's (AVMA) Annual Convention in Denver, Colo. with outgoing president, Dr. Richard Stobaeus, Brunswick, Ga., opening the session.

Dr. Paul Jones, Woodburn, Ore., was installed as the association's president for a two-year

term. Dr. Jones, who has led a visioning process during the past two years as vice president, indicated his desire to implement a number of changes recommended in the board's visioning report during his tenure.

The 2003 election results were announced during the meeting. Dr. Joan Bowen, Wellington, Colo., was elected vice president (president-elect). Dr. Mike Rings, Columbus, Ohio, was elected to

the board as Director, Region 1, and Dr. Joe Snyder, Myrtle Point, Ore., was re-elected to the board as Director, Region 4.

During the meeting, Dr. David McCrystle, Healdsburg, Calif., who has served on the AASRP Board of Directors since 1993 and has served as the association's executive director, was presented the George McConnell Memorial Award, which recognizes the Small Ruminant Practitioner of the Year.

## Voluntary Scrapie Program Introduced in Great Britain

### *Surveillance Data From 50,000 Slaughtered Sheep Reported*

Animal health officials in Great Britain have announced a plan to help sheep producers whose flocks have been affected by scrapie take action to prevent the disease from re-entering their flocks.

Producers who have had scrapie cases confirmed on their farms since July 1998 will be invited to join a Voluntary Scrapie Flocks Scheme, as part of the National Scrapie Plan for Great Britain.

The program will provide free scrapie genotype testing of all sheep on eligible farms. Producers will be able to participate in a breeding program designed to

increase levels of genetic resistance to scrapie in their flock through the selective use of resistant breeding rams, and by avoiding the use of breeding ewes with more scrapie susceptible genotypes.

Scrapie susceptible animals identified on these farms will be culled and replaced with more resistant stock. The government will provide compensation for culls and assistance with the purchase of resistant replacement rams through the program.

Sheep producers in Great Britain will have 12 months in which to join the program.

The results of a surveillance

program initiated in Great Britain between January 2002 and March 2003 were published recently. More than 50,000 older sheep slaughtered in abattoirs were tested for scrapie and genotyped during the program.

The results show that the level of scrapie remains at around the level of previous estimates — 0.33 percent of the British sheep population. Earlier results, based on fewer sheep and less advanced diagnostic methods, gave an estimated prevalence of 0.22 percent, but officials believe this is not evidence for an increase in the prevalence of infected animals.

## USDA: Certain Ruminant Products from Canada Will Be Accepted

After a thorough scientific analysis, Agriculture Secretary Ann M. Veneman has announced the U.S. Department of Agriculture is accepting applications for import permits for certain ruminant derived products from Canada.

"Our experts have thoroughly reviewed the scientific evidence and determined that the risk to public health is extremely low," said Veneman.

The announcement comes after a close review of the international standards set by the International Office of Epizootics (OIE) — the standard-setting organization for animal health for 164 member nations; an exhaustive epidemiological investigation into the case by Canada, during which no other animals were found to be infected; and additional risk mitigation meas-

ures put in place by Canada in response to a review of their investigation by an independent expert panel.

"USDA's decision was made on the basis of a review of the comprehensive BSE investigation in Canada, is consistent with the most current science and the fact that the BSE agent has never been found in beef muscle meat," said National Cattlemen's Beef Association CEO Terry Stokes. "NCBA believes that USDA has taken the appropriate steps to reopen beef trade with Canada and has done so in a careful and science-based manner."

The list of products the U.S. is prepared to accept include:

- Boneless sheep or goat meat from animals under 12 months of age;
- Boneless bovine meat from

cattle under 30 months of age;

- Boneless veal (meat) from calves that were 36 weeks of age or younger at slaughter;
- Fresh or frozen bovine liver;
- Vaccines for veterinary medicine for non-ruminant use; and
- Pet products and feed ingredients that contain processed animal protein and tallow of non-ruminant sources when produced in facilities with dedicated manufacturing lines.

USDA will no longer prohibit the importation of hunter-harvested wild ruminant products intended for personal use.

On May 20, Secretary Veneman temporarily halted imports of live ruminants and most ruminant products from Canada after a cow in Alberta was found to have bovine spongiform encephalopathy (BSE).

# Conference Focuses on Study and Management of TSE Diseases in Animal Populations

Approximately 180 individuals from 23 countries gathered in Fort Collins, Colo., on Sept. 10-11, for an international conference entitled "TSE in Animal Populations — Fact or Fiction."

According to Dr. Mo Salman, Professor of Veterinary Epidemiology, Animal Population Health Institute, at Colorado State University, experts from around the world presented perspectives on the diagnosis, transmission and epidemiology of transmissible spongiform encephalopathies, or TSE diseases, as well as regulations and issues of public perception.

The purpose of the conference was to establish a line of communication between scientists, policy makers, regulators, and the public on topics related to TSEs in animal populations. The conference focused on the similarities and differences of scrapie with bovine spongiform encephalopathy (BSE) and chronic wasting disease (CWD).

Four topics were addressed during the conference: pathogenesis, diagnosis and epidemiology, research and management and regulations. As a result, the meeting identified several needs that the industry should address in order to better understand TSEs.

"There is an overlap in the pathogenicity between scrapie, BSE and CWD," Salman said. "Advances in understanding and control will be most promising if they share a commonality across all TSEs."

Salman's summary of the meeting also stated that reliable screening and diagnostic tests for BSE and CWD are needed.

"When a surveillance program is developed it should be targeted

at the correct 'high risk' population," he said. "A true surveillance plan is structured to meet the goals of the plan rather than ran-

*"There is an overlap in the pathogenicity between scrapie, BSE and CWD. Advances in understanding and control will be most promising if they share a commonality across all TSEs."*

DR. MO SALMAN, PROFESSOR  
COLORADO STATE UNIVERSITY

dom samples from the population. In order to conduct a targeted surveillance program, there must be some knowledge of risk. Current surveillance programs are limited to the varied sampling protocols used by individual countries, states or provinces. Currently, it is difficult to determine disease freedom from BSE or CWD. Status is only known when a positive case is found. Increasing the sample size does not ensure a representative sample for BSE/CWD."

Meeting participants also identified a need to expand the knowledge about TSEs in a natural setting.

"The United Kingdom is the basis for BSE epidemiology and ecology which has been supported by the success of intervention strategies," Salman said. "Colorado and Wyoming wildlife observations are the basis for CWD. Captive cervid herds have not provided additional information due to intervention strategies. The potential for cross species has been investigated and tissue location and infectivity has been identified. There is still a need to conduct

studies to observe the natural exposure of animals to these agents and there are a number of questions that have not been answered."

Finally, risk management was identified as an essential component in dealing with these diseases.

"Particular emphasis should be on transparent communication to build public confidence," Salman said. "Policy makers could learn from early BSE experiences in handling other TSE diseases. Public perception and public health issues dominate the priority of dealing with such diseases.

Therefore, there is a need to assess the validity of approaches in terms of practicality and their economical values. Trust and transparency are essential components for a successful effort to handle these diseases. Standardization of protocols for sampling and surveillance systems requires a team effort and thorough planning. There is a need for further research with an open-minded attitude."

The conference was sponsored by the Canadian Food Safety Inspection Agency, U.S. Department of Agriculture (APHIS), the International Office of Animal Health (OIE), and International Forum for TSE and Food Safety (TAFS). The Animal Population Health Institute (APHI) at the Colorado State University College of Veterinary Medicine and Biomedical Sciences hosted the event.

A detailed report with synopses from each presenter along with slide presentations will be available soon at <http://www.cvmb.colostate.edu/aphi/TSEMain.htm>.

Melissa Schneider

## Mexico Reopens Border to U.S. Slaughter Ewes

Animal health officials in Mexico have reopened the Mexican port of Del Rio to slaughter ewes coming from the United States.

According to Paul Rodgers, deputy director of policy for the American Sheep Industry Association, problems with exporting sheep across the border to Mexico have persisted since May, when

Mexican officials began discussing possible changes to scrapie regulations for slaughter sheep entering the country.

Deliberations between USDA and Mexican officials resulted in a resolution for slaughter ewes and wethers.

A prohibition on rams entering Mexico from the U.S. remains as

deliberations between animal health officials from the two countries continues.

"This is a critical time for the border to be re-opened since many producers are moving their flocks off summer range this month," said Rodgers.

## Italy Struggling With Bluetongue in Sheep

Italian animal health officials are reporting the country has lost nearly 500,000 sheep due to an extensive bluetongue epidemic that has weathered three seasons.

Since August 2000, Italy has been managing the largest bluetongue epidemic ever reported in the Mediterranean area, causing severe losses due to both animal

mortality and restrictions on animal movement.

Over the last few years, bluetongue has been found in sheep in the European Union countries of the Mediterranean basin — Greece, Italy, Spain and France — and in the Balkans. The situation is said to be causing serious concern among central and northern European coun-

tries, which are free of the disease.

The international office on animal health, OIE, and the Italian Ministry of Health are organizing an international symposium on bluetongue, to take place Oct. 26-29 in Taormina, Sicily. More information is available on the Internet at [www.izs.it](http://www.izs.it).

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