

REPORT OF THE COMMITTEE ON SHEEP AND GOATS

Chair: Dr. Cindy Wolf, St. Paul, MN

Vice Chair: Dr. Donald P. Knowles, Jr., Pullman, WA

Dr. Derek J. Belton, NZ; Dr. Deborah Brennan, MS; Dr. John R. Clifford, MD; Dr. Max E. Coats, Jr., TX; Dr. Thomas F. Conner, IN; Dr. Wayne E. Cunningham, CO; Dr. Linda A. Detwiler, NJ; Dr. Lisa A. Ferguson, MD; Dr. Anthony M. Gallina, PA; Dr. Chester A. Gipson, MD; Dr. R. David Glauer, OH; Dr. Joe Gloyd, DE; Dr. Robert Heckert, MD; Dr. David W. Hertha, AL; Mr. Joe N. Huff, CO; Dr. Cleon V. Kimberling, CO; Dr. Anthony P. Knight, CO; Dr. Howard D. Lehmkuhl, IA; Dr. Mary Jane Lis, CT; Dr. Jim Logan, WY; Dr. Linda L. Logan, TX; Mr. Gordon 'Cobbie' Magness, SD; Dr. David T. Marshall, NC; Dr. Michael R. Marshall, UT; Dr. Dwayne C. Oldham, WY; Dr. Charles Palmer, CA; Dr. Suelee Robbe-Austerman, IA; Mr. Paul Rodgers; Dr. Joe David Ross, TX; Dr. Joan D. Rowe, CA; Dr. Mo D. Salman, CO; Dr. John A. Schmitz, NE; Dr. William P. Shulaw, OH; Dr. Susan M. Stehman, NY; Dr. Diane L. Sutton, MD; Mr. Cleve Tedford, TN; Dr. David Thain, NV; Dr. Cheryl Tillman, OR; Dr. George O. Winegar, MI; Dr. Nora E. Wineland, CO; Mr. David Winters, TX.

The Committee met on November 7, 2005, from 12:30 p.m. to 5:00 p.m. in the Empire A room at the Hershey Lodge and Convention Center, Hershey PA.

Dr. Don Knowles, United States Department of Agriculture (USDA), Agriculture Research Services (ARS) and Washington State University (WSU) discussed using immunogenetics as a prediction tool for ovine progressive pneumonia virus (OPPV). The objective of this study is to identify a predictive tool for identifying which OPPV-infected sheep are going to develop clinical disease. Ovar-DRB1 is part of the major histocompatibility complex (MHC) class II of sheep and functions by presenting extracellularly-derived peptides to the immune system. As a first step in understanding MHC Class II function as it relates to disease progression in OPPV infected sheep, Ovar-DRB1 transcripts encoding the peptide-binding site or the first domain (beta1) of Ovar-DRB1 in 32 sheep (ewes and lambs) flock were identified and characterized by using reverse transcriptase-polymerase chain reaction, cloning, sequencing and phylogenetic analysis. Fourteen new Ovar-DRB1 beta1 cDNA sequences were identified. We are exploring if specifically expressed MHC Class II DRB1 alleles or DRB1 allomorphs can be used as an accurate prediction tool of high OPPV loads and disease progression. A preliminary study using ten OPPV-infected sheep was conducted. These OPPV-infected sheep were evaluated for their OPPV loads using real time Polymerase Chain Reactions (PCR); their MHC Class II DRB1 allomorphs also were determined. Preliminary results indicated one MHC II DRB1 allomorph (H) associates with high OPPV loads. Larger studies using 300 sheep are being conducted to determine if specific DRB1 allomorphs can predict OPPV loads.

Keith Aune, Montana Department of Fish, Wildlife and Parks presented a review of the interaction of bighorn and domestic sheep detailing pathogenic agents and diseases that historically affect the Bighorn sheep population in Montana. Studies have characterized these findings relative to the proximity of domestic sheep to the Bighorn sheep populations studied. Habitat quality is being studied as it affects Bighorn sheep stress-loads and influences the development of disease. Performing 'landscape genetics' (genome typing is performed from fecal samples) is under consideration as it has been done successfully in other wild ungulates. Information can potentially be utilized from the domestic sheep genome.

Dr. Hong Li, Washington State University, presented Information on cases of Malignant Catarrhal Fever (MCF) in bison populations that were in proximity to sheep feedlots. It is important for both industries to determine guidelines regarding the effective yet practical separation distances to limit infection. The amount of virus shed is dependent on the number of sheep present, their age and environmental factors such as the prevailing winds. Shedding occurs via nasal secretion and usually lasts less than 24 hours. Lambs aged between 6-9 months are 7.4 times more likely to shed compared to adult sheep. The OvHV2 genomic sequence has shown that the mechanism of pathogenicity is not related to gene deletion or rearrangement. The future plan is to develop nucleic acid-based diagnostic tests, to develop an in vitro propagation system, and to initiate studies to develop immunologic controls for MCF in clinically susceptible species.

Dr. Cleon Kimberling, Colorado State University reported on the role of electronic identification devices (EID) in OOP control. Efforts utilizing electronic identification for OPPV testing and disease control were described in detail. Accuracy and efficiency were compared to a visual-based system. Management and progress regarding control were detailed. During this coming year the pounds of lamb weaned per ewe exposed will be determined from both the seronegative and seropositive groups of ewes. These measurements of productivity will be used to examine the economic impact of the virus in this 4000 head, Western-based ewe flock.

Dr. Stanley D. Bruntz, USDA-APHIS-VS National Surveillance Unit, Fort Collins, Colorado, presented the following update on the National Animal Health Reporting System (NAHRS).

The NAHRS is a reporting system designed to collect data through state animal health officials on the occurrence of confirmed World Organization for Animal Health (OIE) reportable diseases in commercial livestock, poultry, and aquaculture species. NAHRS is part of the United States comprehensive, integrated National Animal Health Surveillance System and is a joint effort of the United States Animal Health Association (USAHA), American Association of Veterinary Laboratory Diagnosticians (AAVLD), and United States Department of Agriculture (USDA), Animal Plant Health Inspection Services (APHIS). The NAHRS Steering Committee is a subcommittee of the USAHA/AAVLD Animal Health Information Systems Committee. Through animal disease surveillance activities, state personnel report qualitative information (yes/no) monthly to NAHRS on the confirmed occurrence of each NAHRS-listed disease. The USDA- APHIS uses NAHRS data as one of several sources to complete U.S. OIE animal diseases status reports and to support trade negotiations. The NAHRS adds credibility and validity to reporting. The NAHRS is a voluntary program and currently 43 States participate (several states are preparing to participate). In May 2005, the OIE revised the OIE Reportable Disease List. The changes to the OIE Caprine/Ovine (C/O) disease list included the addition to the multiple species list of Crimean Congo fever, tularemia, and West Nile Fever and the deletion of Ovine Pulmonary Adenomatosis to reportable C/O diseases. The NAHRS Steering Committee has requested that the NAHRS Reporting List be revised to reflect the changes to the OIE C/O Reportable Disease list. It was also requested that a representative be named to represent C/O on the NAHRS Steering Committee.

Dr. Donal O'Toole, University of Wyoming and Dr. Steve Hennanger USDA-APHIS-VS-NVSL reported on testing for *B. ovis*.

During the past 6 months, diagnostic labs that were offering *B. ovis* Enzyme Linked Immunosorbent Assay (ELISA) testing have expressed grave concerns regarding the quality of the NVSL-supplied antigen. In response some laboratories have modified their test methodology. Two of these laboratories have stopped running this test due to lack of confidence in the test results. Many Western states require imported rams to have a negative *B. ovis* ELISA test within the past thirty days or originate from a *B. ovis* certified free flock. Therefore this problem needs immediate attention. Staff from NVSL updated the attendees as to the historical problems with the test protocol and antigen. RB51 antigen is nearly ready to be sent out to the laboratories as a better antigen to use. Antigen from REO 198 which is the OIE reference strain is under development by staff as perhaps the best antigen for the *B. ovis* ELSIA test. A conference call with interested laboratories and NVSL staff is planned to review immediate past procedures and antigen used as well as develop a short-term plan for the next several months.

A resolution on *Brucella ovis* testing issues was passed and forwarded to the Committee on Nominations and Resolutions.

The Committee reaffirmed their support of Dr. Cleon Kimberling as the sheep and goat representative for the NAHRS Steering committee. It was suggested that an alternate be named sometime in the future in the event that Dr. Kimberling can't participate in one of the scheduled meetings. The committee also supports updating the NAHRS Caprine/Ovine Reportable Disease List to correlate with OIE Reportable C/O List, which merely involves deleting Ovine Pulmonary Adenomatosis.

The National Animal Health Monitoring System 2001 Sheep Study determined that 36.4 percent of the nation's sheep operations had one or more animals test positive for Ovine Progressive Pneumonia. Producers aware of the effects of this disease would like to see a uniform program to validate Ovine Progressive Pneumonia flock status. Many are already paying for annual whole-flock testing, and several have expressed a willingness to pay a reasonable administrative fee for an Ovine Progressive Pneumonia control program. The Ovine Progressive Pneumonia Concerned Sheep Breeders Society, a group composed of producers, veterinarians, researchers, and breed associations, has been providing education and support nationwide for this disease since 1990, is interested in piloting an Ovine Progressive Pneumonia control program that, if successful, could be used to lay the groundwork for a national Ovine Progressive Pneumonia control program.

The Committee recommends that the Ovine Progressive Pneumonia Concerned Sheep Breeders Society develop a pilot project that would evaluate the interest and success of a voluntary, producer-paid, Ovine Progressive Pneumonia test and control program and that the United States Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), Veterinary Services (VS), Agricultural Research Services (ARS) and state animal health authorities support the piloting of this program. It is recommended that this program be initially limited in size but include diverse management systems.

The Committee also recommends that a working-group be formed and that this group set protocols for testing. They will also develop an appeal process for potentially erroneous results. Members volunteered to serve on this working group. The committee expects to have a one year report regarding this project at the next annual USAHA meeting.

The working group will work cooperatively to develop testing protocols and procedures.