

## **REPORT OF THE COMMITTEE ON SHEEP AND GOATS**

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The Committee met on October 22, 2013 at the Town and Country, San Diego, California, from 1:00 to 4:30 p.m. There were 9 members and 12 guests present. The meeting proceeded with the following presentations and reports.

### **Overview of Schmallenburg Virus: Lessons from a European Outbreak**

Dr. Rob Cordery-Cotter, DVM, Dept. of Animal Science, University of Wyoming

Dr. Cordery-Cotter presented on the history of Schmallenburg Virus (SBV) incursion into Europe and the United Kingdom (UK), with excellent photos and case histories of clinical signs and symptoms. A complete power point of this presentation is available on the Committee web page, at [www.usaha.org](http://www.usaha.org).

### **Regulatory Updates for Sheep and Goat Importations**

Dr. Joyce Bowling-Heyward, Director, Animal Imports and Exports, USDA-APHIS

Discussion initiated with discussion of bovine spongiform encephalopathy (BSE), Scrapie and other Transmissible spongiform encephalopathies (TSEs) in Ruminants, and impact on regulations concerning these. Schmallenburg Virus and potential for incursion was discussed, and need for surveillance and vigilance. A complete copy of this presentation is included at the end of this report.

### **Amyloidosis in the Uterus of Goats**

Dr. Christina Sigurdson, Associate Professor, University of California-San Diego

Dr. Sigurdson reported on cases of ten goats of three breeds in two counties of Northern California with unusual accumulation of Amyloid in the cotyledons of the uterus. Clinical signs of this condition are abortion in mid-to-late term pregnancy and a clear uterine discharge, failure to kid beyond due date with agalactia and clinical diagnosis of fetal death, and live kids and mummified fetuses, often occurring repeatedly over multiple years. Cause of this unusual site of Amyloid accumulation is unknown. Necropsy as a means of diagnosis of cause of abortion was discussed. A complete copy of this presentation is included at the end of this report.

### **A Sheep Genetic Test Based on Zinc Finger Genes for Control of Ovine Progressive Pneumonia Virus Replication and Other Discoveries**

Stephen N. White, USDA-ARS Animal Disease Research Unit, Dept. Veterinary Microbiology and Pathology, Washington State University (WSU)

Summary: Ovine progressive pneumonia virus (OPPV) is a small ruminant lentivirus present in one fourth of U.S. sheep. It can cause interstitial pneumonia, cachexia, mastitis, and arthritis in sheep. There is no preventive vaccine and no cure, but host genetics has been known to play a role in both susceptibility to and control of OPPV. Variants in the TMEM154 gene have been consistently associated with odds of infection, but no genetic test has been validated for control of OPPV post-infection. A recent genome-wide association study found strong association between a zinc finger gene region and control of OPPV, as measured by proviral concentration. We examined additional markers in this same region and identified a small insertion-deletion variant near the ZNF389 gene that was associated with OPPV proviral concentration in multiple flocks containing over 1,300 OPPV-positive sheep. Specifically, the insertion homozygotes at this locus had approximately half the OPPV proviral concentration compared to other

genotypes. This association was observed in every individual flock with at least 35 insertion homozygote, OPPV-positive sheep. This included a severely affected crossbred flock with very high prevalence (over 90% of sheep at least two years of age) and very high proviral concentrations (4-5 fold higher than any other flock tested). This validates the insertion-deletion variant for OPPV proviral concentration, which is related to severity of disease. Especially since OPPV is an RNA virus with a much higher mutation rate than the sheep host, combining multiple genetic tests that operate by separate mechanisms may be helpful in providing multiple hurdles for the virus to overcome. Future work will examine additional potential phenotypic associations with production and other disease traits.

A second project addressed the open question of highly selected genetic regions in domestic sheep. The sheep HapMap project identified approximately 30 such regions, including those containing horned/polled and coat color-related genes, but the majority of responsible genes have not been identified. Michael Gonzalez recently found strong associations with both red blood cell traits and lifetime weight of lamb weaned for one of these highly selected regions. Further, he identified a divergent artiodactyl repeat containing a MYADM-like gene that may explain these results. Additional characterization of this divergent repeat is ongoing.

### **Coxiella infected goat farms**

Tahnee Szymanski, DVM, National Association of State Public Health Officials

Dr. Szymanski presented a case overview of Coxiella infected goat farms, and then presented the position paper produced by the Q Fever Committee. The paper is available at [http://www.nasphv.org/Documents/Q\\_Fever\\_2013.pdf](http://www.nasphv.org/Documents/Q_Fever_2013.pdf) The paper includes excellent resources for Coxiella diagnosis and control. A complete copy of the presentation is included at the end of this report.

### **Committee Business: Three resolutions from past years were reviewed and adopted with further requests:**

2012 RESOLUTION NUMBER: 29 APPROVED

SOURCE: COMMITTEE ON SHEEP AND GOATS

SUBJECT MATTER: MINOR USE ANIMAL DRUG PROGRAM

Moved, seconded and passed that Committee on Sheep and Goats 2012 Resolution #29 SUBJECT MATTER: MINOR USE ANIMAL DRUG PROGRAM (MUAD) remains of strong interest to the Committee. Committee recommends that this resolution is still important and ask that the Government Relations Committee take this resolution forward. It was further noted that the MUMS program which is referenced in the interim response relates only to projects with protocol concurrence, and that the MUAD Program is critical in providing information essential to food safety and animal care and welfare of sheep, goats and other minor species.

2011 RESOLUTION NUMBER: 34 and 32 Combined APPROVED

SOURCE: COMMITTEE ON PUBLIC HEALTH AND RABIES

COMMITTEE ON SHEEP AND GOATS

SUBJECT MATTER: Q-FEVER (COXIELLA BURNETTI) VACCINE FOR SHEEP AND GOATS AND FOR HUMANS IN THE UNITED STATES

Moved, seconded and passed that Committee on Sheep and Goats 2011 Resolution #34 and 32 Combined SUBJECT MATTER: Q-FEVER (COXIELLA BURNETTI) VACCINE FOR SHEEP AND GOATS AND FOR HUMANS IN THE UNITED STATES remains of strong interest to the Committee. Committee recommends that this resolution is still important and be carried forward. Interim response provided some promise of progress; final response with updates would be appreciated.

2011 RESOLUTION NUMBER: 28 APPROVED AS AMENDED

SOURCE: COMMITTEE ON SCRAPIE

SUBJECT MATTER: SEPARATE SHEEP AND GOAT COMMODITY HEALTH LINE ITEM

Moved, seconded and passed that Committee on Scrapie 2011 Resolution #28 SUBJECT MATTER: SEPARATE SHEEP AND GOAT COMMODITY HEALTH LINE ITEM is still important to the Committee on Sheep and Goats. Committee recommends that this resolution is still important and ask that the Government Relations Committee take this resolution forward.

A new resolution was adopted to address dairy health requirements; State or Regional Brucellosis and Tuberculosis Classification for Sheep and Goats.