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UW College of Agriculture tackling brucellosis problem

Participants in the international brucellosis workshop hosted by the University of Wyoming will argue for additional federal and state funding for research into vaccine development, how to best deliver vaccines, and improved diagnostic techniques, according to the dean of the University of Wyoming's College of Agriculture.

"The meeting produced a national-local partnership to build a science roadmap if you will," said Dean Frank Galey.

"Out of the conference came the question: 'What do we need to do to tackle the issues of vaccine development, delivery methods, and how to better diagnose the disease?' Our hope is we can put together a compelling argument to try and attract funding for additional research," said Galey, who chairs the Wyoming Brucellosis Coordination Team.

Galey was a member of the steering committee that hosted the Aug. 16-18 workshop sponsored by UW's Ruckelshaus Institute of Environment and Natural Resources.

Professor Ken Mills and Assistant Professor Gerry Andrews of the College of Agriculture's Department of Veterinary Sciences were among the researchers invited to participate.

Approximately 50 other researchers from the United States, Canada, New Zealand, and Russia participated. In addition, there were about 150 people in the audience.

They explored brucellosis vaccines and diagnostics for Greater Yellowstone Area (GYA) bison and elk. Brucellosis is a bacterial disease that can cause abortions and related reproductive problems in many mammal species including bison, elk, and cattle. *Brucella abortus*, the bacterium that causes brucellosis, can also lead to a potentially serious disease in humans termed undulant fever.

Andrews and a team of UW researchers are attempting to find a new vaccine that could successfully control the disease.

Relatedly, the UW Department of Veterinary Sciences has applied for a \$311,000 federal grant to:

- Develop better methods to identify infected elk that represent the highest risk to cattle and other elk,
- Develop better diagnostic and research tools to identify strains of brucellosis circulating among elk,
- Improve data about elk brucellosis incidence, correlation of seroprevalence (the frequency of individuals in a population that have a particular element in their blood serum) with infection, and impacts of habitat improvement on dispersal of elk over winter.

“Our goal is to generate information and techniques to help bring the national brucellosis eradication program to a successful conclusion by focusing on endemic infection in elk in the GYA,” stated the researchers in their grant application.

Principle faculty members involved in the project are Andrews, Mills, Associate Professor Todd Cornish of the veterinary sciences department, and Assistant Professor Larry Goodridge of UW Department of Animal Science.

“This is a very important study, and lots of people will be watching,” said Donal O’Toole, head of the veterinary sciences department and director of the Wyoming State Veterinary Laboratory.

“This is the biggest thing this department has ever bitten off. Four graduate students are assigned to the project,” added O’Toole, who is confident the department will receive the grant in October.

The grad students include Heather Sanchez of Albin, Laura Linn of Wilson, Amanda Fluegel of Dakota, Ill., and Mandy Kauffman of Traverse City, Mich.

The College of Agriculture researchers will be working with Jared Rogerson, a Wyoming Game and Fish Department brucellosis feedground habitat biologist, stationed in Pinedale.

In another UW brucellosis-related project, Associate Professor Don Montgomery in the Department of Veterinary Sciences is researching the effectiveness of the vaccine RB51 on cows. The vaccine is now administered to calves to help prevent the disease, and Montgomery and Steve Olsen of the U.S. Department of Agriculture’s Agriculture Research Service in Ames, Iowa, are studying whether it will work in adult cattle.

“They want to know if you vaccinate adult cows with RB51, does it have any adverse affects on the cows or their fetuses,” O’Toole said. “If they do abort, was the vaccine responsible? More importantly, does it give those cattle an advantage to ward off *Brucella abortus* infection?”

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