Anaplasmosis

Anaplasmosis is a tick-borne disease caused by the intracellular microorganism Anaplasma marginale. This pathogen infects red blood cells of cattle and is transmitted in blood from animal to animal by ticks, biting flies, and contaminated needles or surgical instruments. Transmission can also occur across the placenta from the dam to fetus. The disease mainly affects older cattle due to the requirement of a mature immune system. Calves less than one year of age usually show no clinical symptoms of disease. Outbreaks generally occur in late summer and early fall. Anaplasmosis causes important economic loss, primarily due to the high morbidity and mortality in susceptible cattle herds. The losses are measured through several factors including low weight gain, reduction in milk production, abortion, the cost of treatment and death.

Anaplasma marginale has an incubation period (prepatent period) that depends on the number of organisms ingested and ranges from 15-36 days (although it may be as long as 100 days). Once transmission occurs and red blood cells become infected, the organism rapidly replicates and infects more red blood cells. The infected animal shows little or no sign of illness during this rapid replication period. At some point, the infected animal’s immune system begins to respond to the invading organism. The infected red blood cells are subsequently marked for destruction by special immune cells in the bone marrow. From a carrier animal will usually not have a high enough titer - centration of the parasite to make staining a good identification technique. Instead, the persistent carrier state can be detected in blood using nucleic acid-based detection methods at a diagnostic laboratory. For animals showing clinical signs, the veterinarian will often run a packed cell volume (PCV) test on a blood sample to determine the percentage of red blood cells. This test will further define the severity of disease.

Figure 1: Giemsa-stained blood shows Anaplasma margaritae (arrow). Photo provided by Oklahoma State University Center for Veterinary Health Sciences.

Treatment of Disease

It is important to consider the amount of stress that is placed on an animal with anaplasmosis. The health of cattle with the disease can suddenly decline because of their reduced ability for sufficient oxygenation. For this reason, stressors such as handling, transport and exposure to harsh weather should be kept to a minimum. Prolonged handling or rough handling of an animal while attempting to treat may result in cardiovascular collapse and death. Highvalued animals may be treated by a veterinarian with a blood transfusion to help decrease this risk.

With that in mind, the following protocols have been used to treat cattle with clinical signs.

Administration of a tetracycline drug in the early stages of anaplasmosis usually ensures survival. A commonly used treatment consists of an intramuscular (IM) injection of long-acting oxytetracycline (200 mg/ml) at a dose of 20 mg/kg every seven days for two treatments. Another treatment consists of a subcutaneous injection of oxytetracycline (100 mg/ml) at 11 mg/kg daily for five consecutive days. Due to the large volume of solution, each injection may have to be administered at two different injection sites to avoid muscle damage. The use of injectable antibiotics to treat anaplasmosis must be under the supervision of a veterinarian to be compliant with federal law as it is considered extra-label use. Furthermore, a veterinarian-client-patient relationship (VCPR) must be established between the producer and veterinarian before a veterinarian can give medical advice. The legal definition of a VCPR is written in the Arkansas Veterinary Practice Act and can be viewed at www.arkvetboard.com.

Many producers and veterinarians choose to treat anaplasmosis with chlortetracycline (CTC) in medicated feed to avoid handling sick and fragile cattle. The general control dose is 0.5 to 2.0 mg of CTC per pound of weight (BW) daily during vector season. The use of antibiotics in feed now requires veterinary oversight due to recent changes to the Food and Drug Administration (FDA) Veterinary Feed Directive. Antibiotics in medicated feed can only be administered as indicated by the FDA label. There is absolutely no allowance of extra-label use, even by a veterinarian. The continuous administration of antibiotics in medicated feed to healthy animals is also prohibited by the FDA.

Elimination of the Carrier State

Treating cattle to eliminate the carrier state should only be conducted once the vector season has ended and only after cattle have been tested as proven carriers. The most popular method is the administration of a long-acting oxytetracycline (200 mg/ml) at a dose of 20 mg/kg every three days for four treatments. Again, this treatment requires a valid extra-label and will require a valid VCPR from a veterinarian.

Prevention of Disease

Anaplasmosis causes important morbidity and mortality in all livestock diseases. Prevention of anaplasmosis is undoubtedly the best way to approach the disease. An effective vaccine currently available to producers through veterinarians and is slated to be available for commercial use. Two doses of the vaccine (four weeks apart) are administered prior to vector season.

After that, the vaccine is given annually at least two weeks prior to vector season to ensure immunity. The vaccine keeps Anaplasma in a suppressed state that will not cause clinical disease and has been deemed safe to give to pregnant animals. However, the vaccinated cattle will still serve as a source of infection. In herds where anaplasmosis has been a problem, it is not practical to test all the animals in the herd and vaccinate only those with a negative test as vaccination of anaplasmosis-infected cattle is unnecessary.

Insect control with pesticides is always important to limit the number of vectors. For more information on vector control, follow the advice of a veterinarian for the best choice of pesticide and monitor cattle regularly for their insect and tick burden to determine if the chosen pestcide is effective. Pesticide management by regularly dragging the pasture to break up manure can also limit some insect vectors. In areas where biting flies such as stable flies are highly resistant to pesticides, bio logical control with fly predators can also be employed.

An effective and important is to be mindful of contaminated needles or instruments. When performing herd work, change needles often (at least every 10 animals) and keep castration knives, dehorners and tattoo instruments in disinfectant between uses.

For more information on anaplasmosis and other diseases affecting cattle, contact your local county Extension office.

Written by Heidi Ward, DVM, PhD Assistant Professor and Veterinarian Jeremy Powell, DVM, PhD Professor, University of Arkansas Division of Agriculture Research and Extension

Northeast Youth Livestock Show

When: September 7-9, 2019
Where: Brown County Fair Grounds, De Pere, WI
Madison, Wis. – Wisconsin’s farms and agricultural businesses generate $104.8 billion in economic activity and 437,700 jobs, based on data for 2017, according to a new study from the University of Wisconsin-Madison. This is an increase from a 2012 study that found agriculture generated $80.3 billion in economic activity and 413,500 jobs in the state.

“The status of agriculture in Wisconsin has received significant attention in 2019 and has raised concerns about the health of the agricultural industry and its role in the Wisconsin economy,” says Steven Deller, Division of Extension community development economist and professor in the Department of Agricultural and Applied Economics at UW–Madison. “Despite currently weak commodity prices, particularly within dairy, agriculture remains an important part of the Wisconsin economy.”

Deller’s study is conducted every five years going back to the 1990s. For the purposes of the current study, agriculture is composed of two parts: on-farm production and food processing. Deller found that the bulk of the growth in the contribution of agriculture to the Wisconsin economy between 2012 and 2017 is growth in the food processing sector.

“These two parts of agriculture can be thought of as two sides to the same coin and as one does better the other does better,” says Deller. “The continued weak net farm income may put the food processing industry at risk. There is a clear balancing act between ensuring a healthy farm economy while continuing to promote growth in food processing.”

The results of this analysis are very interesting, that while on-farm activity was not a major contributor to the increase in the economic impact, as a whole, the economic contribution of agriculture increased,” says Heidi Johnson, Extension Interim Agriculture Institute Director. “But this doesn’t soften the financial blow that many farms in Wisconsin are taking under continued depressed commodity prices”

Karl Martin, Extension Dean and Director says, “Information from this study also allows UW–Madison Extension to explore opportunities to provide relevant resources to individuals and communities through our educational programming. Extension is committed to finding practical, research-based solutions that support the agricultural economy in Wisconsin.”

Here’s how agriculture’s $104.8 billion economic impact breaks down:

• “All agriculture,” combined on-farm and food processing, contributes $104.8 billion to industrial revenues (16.4% of the state total), 433,700 jobs (11.8%), $22.5 billion to labor income (11.3%), and $37.6 billion to total income (11.6%).
• On-farm activity contributes $22.0 billion to industrial sales or revenue (3.5% of the state total), 154,000 jobs (4.1%), $5.8 billion to labor income (2.9%), and $9.8 billion to total income (3.0%).
• Food processing activity contributes $82.7 billion to industrial sales (13.5% of the state total), 282,000 jobs (7.6%), $22.5 billion to labor income (8.4%), and $37.6 billion to total income (8.6%).
• Dairy, combining both on-farm and dairy processing, contributes $45.6 billion to industrial revenues (7.1% of the state total), 157,100 jobs (4.2%), $9.0 billion to labor income (4.5%) and $15.1 billion to total income (4.7%).
• Dairy processing accounts for roughly two-thirds of this contribution.

The economic activity supported by agriculture results in state and local government tax revenues of $2.9 billion, which is roughly 7.4% of “own source revenues.”

The bulk of the growth in the contribution of agriculture to the Wisconsin economy between 2012 and 2017 is growth in the food processing sector.

Foreign exports of agricultural products (on-farm and processing) accounts for $4.9 billion in industry revenue (0.8% of Wisconsin total), 21,539 jobs (0.6%), about $1.1 billion in labor income (0.5%) and $1.8 billion in total income (0.6%). Additionally, the economic activity generated by agricultural foreign exports creates $129.7 million in state and local tax revenues.

The full report, titled “Contribution of Agriculture to the Wisconsin Economy: Updated for 2017,” is online and can be found at go.wisc.edu/16947n

Support for this work was provided in part by the Dairy Farmers of Wisconsin; the University of Wisconsin-Madison Division of Extension’s Center for Community and Economic Development through its Economic Development Administration University Center, and the Office of the Dean, University of Wisconsin–Madison Division of Extension.

Agriculture generates $104.8 billion and 437,700 jobs in Wisconsin, UW study says

Visit our website for more information: https://fyi.extension.wisc.edu/kewauneeg/

Farm Management Update for Ag Professionals
Friday, September 13, 2019
Liberty Hall, Kimberly, WI

• 9:00 am Registration, milk, coffee, juice, and rolls
• 9:30 am “Just the Facts - What the New USDA Ag Census Is Telling Us” - Liz Binversie, Brown County Extension Agriculture Educator
• 10:15 am “Opportunities with Dairy Beef” - Aerica Bjurstrom, Kewaunee County Extension Agent
• 11:00 am “Dairy Market Outlook” – Mark Stephenson, Extension Dairy Market Specialist, UW-Madison Center for Dairy Profitability
• 11:45 pm “Crop Update” - Area Extension Educators / Agents
• 12:00 pm Lunch
• 1:00 pm “Dairy Revenue Protection (RP) Insurance & Premium Calculation” – Katie Burgess, Commodity Risk Analyst, Blimling & Associates
• 1:45 pm “WI Dairy Task Force 2.0 Panel Discussion” – Stephanie Plaster, Washington/Ozaukee County Extension Agriculture Agent
• 2:30 pm Adjourn

Registration: $40 per person.
Registration Deadline: Sept 6, 2019

Harvest of Hope Fund

What does a Wisconsin farm family do when they experience a financial crisis due to low commodity prices … escalating costs of fuel, fertilizer and other inputs … shifting global markets … a medical emergency … drought, flooding or other climatic conditions … or some combination of these factors? Many families have turned to the Harvest of Hope Fund. More than 1,650 gifts totaling over $1,070,000 have been granted to Wisconsin farm families since the fund was created in January 1986.

If you are a Wisconsin farm family needing financial help to meet emergency needs, please fill out and send the “Application Form” and “Financial Planning Statement” (both forms are needed to make a funding decision). Feel free to contact us for additional information at (608) 836-4633.

The Kewaunee and Door County UW-Extension Offices are offering an opportunity to have standing corn intended for corn silage tested for moisture.

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