



Ontario Animal Health Network (OAHN) Small Ruminant Expert Network Quarterly Producer Report – Winter 2016

Winter 2016

Report #11

Highlights

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- Targeted Selective Therapy with Flukiver™

Contact Us

Web:
www.oahn.ca

Email:
oahn@uoguelph.ca

Twitter:
@OntAnHealthNet

Facebook:
Ontario Animal Health Network

Q4 Surveillance Summary

Clinical Impressions Survey

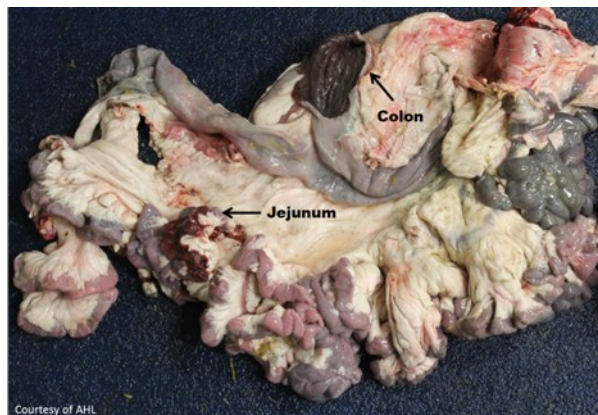
In lambs and kids, practitioners surveyed indicated that the top clinical issues for the quarter dealt with **pneumonia, coccidiosis, neonatal diarrhea, stillbirths and neonates born weak**. The main clinical findings for adult sheep and goats were **caseous lymphadenitis, lameness, pneumonia and hemonchosis**.

Clostridial Disease Outbreaks in Dairy Goats

Cases of enterocolitis (inflammation of both the small intestine and colon) in adult does caused by *Clostridium perfringens* type D have increased over the past several years. These cases tend to present differently from the classical enterotoxemia sudden death syndrome (pulpy kidney disease) in sheep caused by the same bacterium. Adult does develop recurring bouts of diarrhea (usually 2-4 days duration), are dull and may have decreased appetite and milk production. More severely affected animals are dehydrated, may develop bloody diarrhea, and exhibit abdominal pain and depression. Death may follow.

At postmortem examination, does are typically in good body condition, dehydrated, and may or may not have external evidence of diarrhea. Lesions in the intestinal tract range from subtle to severe inflammation with hemorrhage of the small intestines and colon (Figure 1).

A recent feed change is commonly reported in dairy goat farms experiencing an outbreak of clostridial enterocolitis. Rumen bacteria do not have time to adjust to the new ration, causing a large amount of carbohydrates to pass through to the intestines. This allows the bacteria to multiply quickly. *Clostridium perfringens* type D produces a toxin, which in large quantities results in disease. Changes in feeding practices and sudden changes in weather have also been associated with disease.



“A recent feed change is commonly reported in goat dairy farms experiencing an outbreak...”

Small ruminants, especially goats, are very susceptible to enterotoxemia. It is strongly recommended that **all goats and sheep be vaccinated against clostridial diseases as part of any basic herd/flock health program.**

However, antibody levels tend to drop quickly in goats post-vaccination, which means they need to be vaccinated more frequently than sheep or cattle.



OAHN Small Ruminant Network Team:

Southern ON
Dr. Rex Crawford

Northern ON
Dr. Connie Dancho

Eastern ON
Dr. John Hancock

OVC
Dr. Paula Menzies

AHL
Dr. Maria Spinato

OMAFRA
Dr. Jocelyn Jansen
Dr. Tim Pasma
Dr. Alexandra Reid

OAHN Coordinator
Dr. Melanie Barham

KEYS TO PREVENTING CLOSTRIDIAL INFECTION IN GOATS:

- Develop a vaccination program to ensure that kids and mature goats are properly vaccinated.
 - ✓ vaccinate kids at 12 and 16 weeks of age (primary series)
NOTE: the timing of the primary series may change depending on the vaccination status of the does and management practices in the herd. Discuss the situation with your herd veterinarian in order to maximize immunity.
 - ✓ vaccinate does every 3 to 4 months (don't forget the bucks)
- Dietary management is also key.
 - ✓ review feeding frequency, access to fiber, and avoid sudden feed changes and overeating

Iodine Deficiency Goiter in Small Ruminants

During the last quarter of 2016 (and continuing into the first quarter of 2017), kids and lambs have been diagnosed with iodine deficiency goiter on-farm, at the Animal Health Laboratory and at provincial abattoirs. Sheep and goats (especially Boer goats, Dorset sheep) are susceptible to iodine deficiency particularly since the Great Lakes region is considered an iodine deficient region. Iodine deficiency is the most common non-infectious cause of abortion in small ruminants in Ontario. Kids and lambs may also be stillborn or are very weak and die shortly after birth. Affected newborns have swelling in the neck below the jawline (due to enlargement of the thyroid glands) and are frequently hairless/woolless.

Iodine deficiency is caused primarily by an iodine deficiency in the diet versus the ingestion of goitrogens (e.g. turnips or other Brassica feeds) that interfere with iodine uptake. High levels of nitrates in the forage may also increase dietary needs. However, the most common reasons are the use of non-iodized salt (perhaps because producers are confusing iodine with copper) or iodized salt that is not fed free choice, accessible or kept palatable.

“Iodine deficiency is the most common non-infectious cause of abortion in small ruminants in Ontario.”

KEYS TO ON-FARM CONTROL: Iodine deficiency goiter is treated and/or prevented by providing iodine to the animal. It has been suggested that iodized salt dissolved in water or painting a tincture of iodine on the woolless/hairless skin once per week is sufficient to treat a current iodine deficiency problem. Iodine deficiency goiter is best prevented by supplying iodine in the diet, especially to the pregnant ewe/doe.

The Use of the *Coxiella burnetii* Vaccine in Herds and Flocks

Coxiella burnetii is a common infection in Ontario sheep¹ and goats², is an important cause of abortion³, and it is commonly shed, not only in abortive tissues but also in vaginal fluids in a normal lambing or kidding event. *C. burnetii* is very hardy and resistant to heat and drying conditions. The bacteria can survive for long periods of time in the environment and may be spread by wind and dust. It is the cause of an important zoonotic disease in people called Q-fever. People are most commonly exposed when they breathe in air contaminated with the *C. burnetii* organism from animals aborting or birthing—but also from dried contaminated materials that become air-borne when cleaning the barn or spreading manure. Use of antibiotics in pregnant animals may slow abortion rates but will have no effect on shedding of the bacteria and so, do not protect animals or people from infection, nor against environmental contamination. At this time, the only method to reduce shedding and prevent abortion is through the proper use of the vaccine Coxevac® (Ceva Animal Health). Coxevac® is a killed vaccine. The vaccine is manufactured in Europe, in a highly contained environment.

Sheep and goats should be vaccinated with a primary series: 2 doses given subcutaneously (under the skin) at 6 weeks and 3 weeks prior to breeding and then an annual booster prior to breeding. Research supports that if a flock/herd is well vaccinated for at least 3 years, shedding of *C. burnetii* is greatly reduced. This means that the risk of zoonotic infection is significantly lowered.

Coxevac® is licensed in the European Union but not in Canada. It can only be obtained in Canada using a valid Biological Import Permit. A veterinarian wishing to prescribe the use of this vaccine in their client's

flock/herd where there is evidence of *C. burnetii* infection, must write a letter to the CFIA requesting its use. While vaccination with Coxevac® is the only method that will reduce shedding on a farm, supply of the vaccine in Canada is limited.

¹Meadows S et al. 2015. *Coxiella burnetii* seropositivity and associated risk factors in sheep in Ontario, Canada. *Prev Vet Med.* 122:129-134.

²Meadows S et al. 2015. *Coxiella burnetii* seropositivity and associated risk factors in goats in Ontario, Canada. *Prev Vet Med.* 121:199-205.

³Hazlett MJ et al. 2013. A prospective study of sheep and goat abortion using real-time polymerase chain reaction and cut point estimation shows *Coxiella burnetii* and *Chlamydophila abortus* infection concurrently with other major pathogens. *J Vet Diagn Invest* 25:359-368.

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Targeted Selective Treatment with Flukiver™ to Control Hemonchus in Sheep Flocks

Dr. Trisha Westers

Hemonchus contortus, also known as the Barber Pole Worm, is a parasite that consumes blood, causing anemia, bottlejaw, and weight loss. Animals may drop dead on pasture with severe infections. In Canada, outbreaks

of hemonchosis occur in ewes around lambing time, as well as in lambs grazing pasture during the summer months. With the recent release of closantel (Flukiver™, Elanco Animal Health) in Canada, sheep producers and veterinarians now have an effective tool for the treatment of

Hemonchus parasites. To delay the onset of resistance to this dewormer for as long as possible, however, Flukiver™ must be used in conjunction with management practices such as targeted selective treatment.

Targeted selective treatment (TST) of ewes at lambing involves treating only a portion of the flock with a dewormer, with the goal of reducing clinical signs related to *Hemonchus* in flocks while still maintaining a source of susceptible parasites on pasture (i.e. parasites not exposed to the dewormer), thus allowing the drug to remain effective. The goal of TST is not to eliminate all *Hemonchus* parasites, but to reduce the flock's overall parasite load by identifying and treating animals with the highest parasite burdens.

KEY POINT:
The goal of Targeted Selective Treatment is NOT to kill ALL the parasites, but to reduce the flock's overall parasite load.

“To delay the onset of resistance to this dewormer for as long as possible, Flukiver™ must be used in conjunction with management practices such as targeted selective treatment.”

Recent Ontario research shows that the FAMACHA[®] score remains the best field indicator of high fecal egg counts. The FAMACHA[®] system assigns a value from 1 to 5 based on the colour of the mucous membrane of the eye (1=dark pink and 5=white). The higher the score, the whiter the mucous membrane, the more anemic the animal. Animals with FAMACHA[®] scores ≥ 3 should be treated to minimize the chance of excluding animals with high *Hemonchus* burdens. FAMACHA scoring, together with fecal egg counts on selected animals, can be economical and useful in determining who to treat.

¹ Westers T, Jones-Bitton A, Menzies P, VanLeeuwen J, Poljak Z, Peregrine AS. 2016. Identification of effective treatment criteria for use in targeted selective treatment programs to control haemonchosis in periparturient ewes in Ontario, Canada. Preventive Veterinary Medicine. 134, 49-57.

