

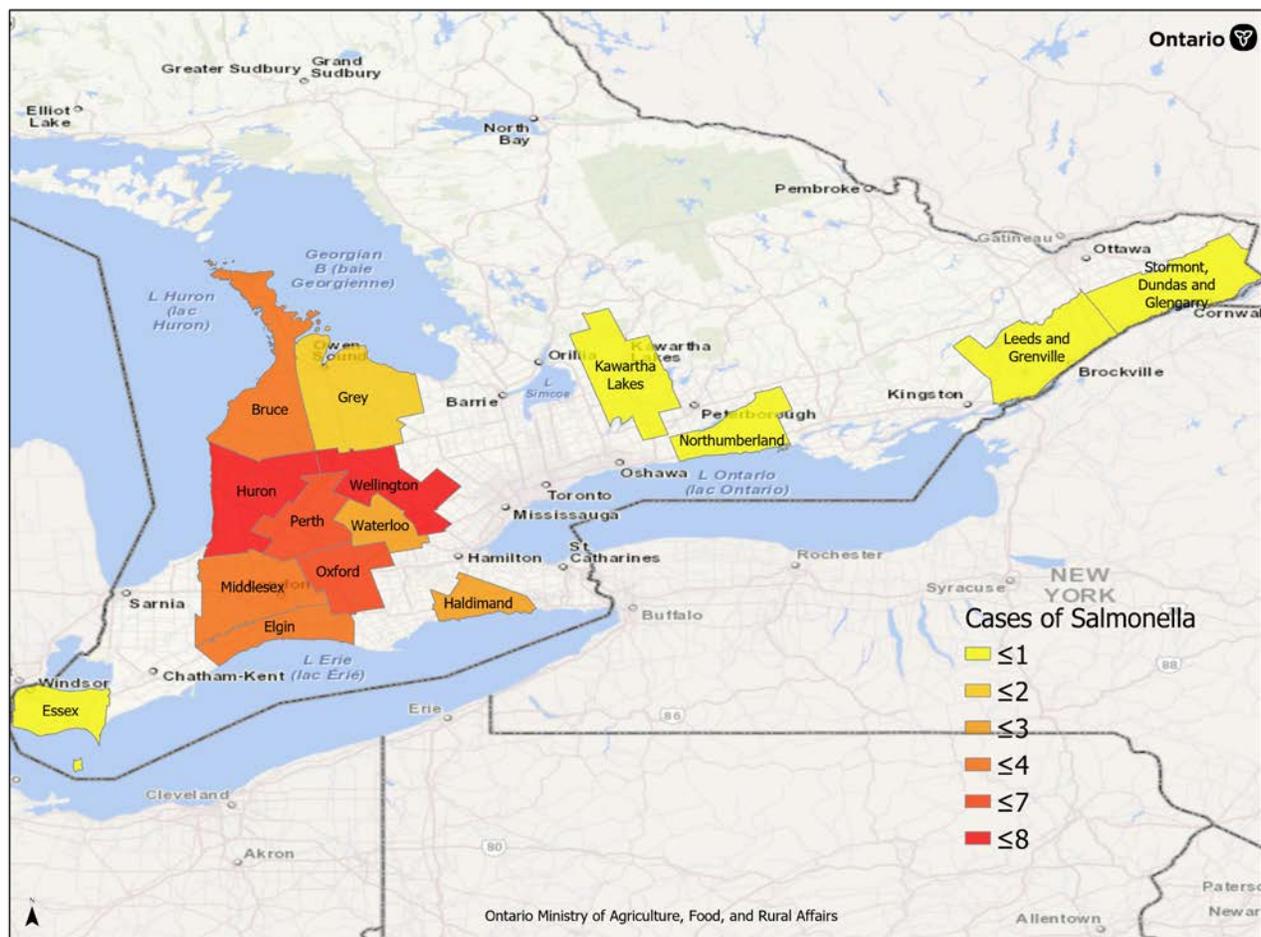


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Salmonella Dublin Update

Salmonella Dublin is an emerging disease priority for the OAHN Bovine network. Recently, the network conducted a summary analysis of *Salmonella* Dublin isolates detected in Ontario laboratory data. The total number of premises across counties in Ontario in which *Salmonella* Dublin has been isolated on bacterial culture between 2012 to October 2019 has been mapped. As of October 31, 2019, there is a total of 55 premises with a positive *Salmonella* Dublin culture result.



Cases of *Salmonella* Dublin isolated by bacterial culture samples from bovines submissions to the Animal Health Laboratory between 2012 and October 31, 2019



Surveillance: Q3 Data from the Animal Health Laboratory

Pathology Submissions - Between August 1 to October 31, 2019, there were 143 bovine pathology submissions to the Animal Health Laboratory. The following data highlights submissions in Q3.

<p>Calves < 2months of age</p>	<ul style="list-style-type: none"> The primary reason for submitting animals for pathology was gastrointestinal disease. Enteritis and abomasitis/rumenitis were the primary and secondary pathology diagnoses this quarter. The main diarrhea pathogens identified in enteritis cases were <i>Cryptosporidium</i>, <i>Rotavirus</i>, and <i>E.coli</i>.
<p>Calves > 2 months to 2 years of age</p>	<ul style="list-style-type: none"> Pneumonia and enteritis were the main pathology diagnoses this quarter There was one case of blackleg resulting in the death of 8 5-month old calves within 24 hours. The herd was unvaccinated. There was one case of malignant catarrhal fever (MCF) There was one case of polioencephalomalacia, a neurological condition typically associated with altered thiamine status or high sulfur intake
<p>Adult Cattle (>2 years)</p>	<ul style="list-style-type: none"> The main pathology diagnoses for mature cattle were pneumonia (n=8), traumatic lesions (n=4), neoplasia (n=3) and enteritis (n=3).
<p>Abortions</p>	<ul style="list-style-type: none"> There were 18 submissions for abortion work-ups this quarter, approximately half the number of the previous quarter After 4 consecutive quarters with increased <i>Ureaplasma</i> diagnoses, there were no <i>Ureaplasma</i> abortion diagnoses this quarter. From those abortions where a diagnosis was successfully made (n=10), the causes identified were bacterial abortion (n=8), <i>Neospora</i> (n=1), and leptospirosis (n=1)

91% of postmortem submissions from calves or cows had a definitive or presumptive diagnosis this quarter, emphasizing the value of postmortems in a disease investigation.



What are Immediately Notifiable Diseases?

The Animal Health Act in Ontario was established to keep animals and people healthy, thereby protecting the livelihood of farmers and the economic well-being of the agriculture industry. The act enables OMAFRA to get certain information in order to respond to animal health events in a timely manner to control diseases and other hazards. OMAFRA worked with agriculture stakeholders to develop the act and industry widely supported the act when it was introduced.

The act contains a list of diseases that must be reported to OMAFRA by veterinary laboratories and veterinarians. This allows OMAFRA to monitor disease in Ontario without placing an undue burden on livestock producers.

OMAFRA veterinarians assess reports of disease from veterinary laboratories and veterinarians to monitor health across the province. They may contact a producer's veterinarian to discuss a case in confidence. OMAFRA may respond to disease incidents in a variety of ways, including:

- recording and tracking positive tests
- working with laboratories, veterinarians or owners to conduct more testing
- working with veterinarians and owners to manage the situation
- issuing disease advisories to notify industry of a disease outbreak and creating factsheets to provide advice

In serious cases, the act allows OMAFRA to issue quarantines or other orders to help contain the spread of disease or to protect the food supply. In the cattle sector, the most common quarantine issued is for cases of cattle exposed to lead (e.g. old car batteries). However, these powers are rarely used and most situations can be managed by working privately with veterinarians and owners.

Ontario Bulk Tank SCC Report - Dairy Farmers of Ontario

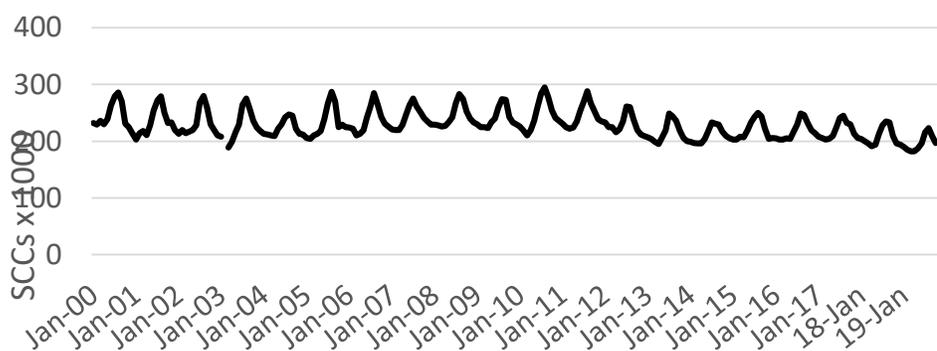


Figure 1: Ontario weighted average bulk tank somatic cell counts January 2000 to October 2019

- As of October 31, 2019 there are 3,410 licensed milk producers in Ontario
- The October Bulk Tank Somatic Cell Count (BTSCC) weighted average for Ontario was 197,000 cells/ml, down from 209,000 one year ago.
- The Ontario BTSCC has been below 200,000 in 9 of the last 12 months (November 2018 - October 2019).



OAHN Bovine Network Project: Dairy Veterinary Antimicrobial Sales Benchmarking 2018

The OAHN Bovine network’s 2018 project was focused on studying veterinary clinic antimicrobial sales data to better understand usage patterns in Ontario dairy farms. Understanding the levels and patterns of antibiotic use on-farm is a key aspect of stewardship. For this project, 2 veterinary clinics provided sales data from medically important injectable and intramammary antimicrobials (MIA) from 68 dairy farms over the 2018 calendar year. Data was converted to antimicrobial drug usage rates (AMDUR) - doses per 1000 cow-days. The resulting metrics were combined to calculate the AMDUR for a variety of classes of antimicrobials sold to the farm. Antimicrobials were classified based on Health Canada’s categorization scheme, whereby the level of importance of the drug to human medicine defined the category of importance. Drugs were also stratified by mode of administration. Further, Spearman rank correlations were calculated between AMDUR and select herd production (average milk per cow per day), inventory (herd size), and health parameters (linear scores).

DRUG	MEAN	Q1	MEDIAN	Q3	MEAN*	MEDIAN
CEPHALOSPORIN - 1 ST GENERATION	1.2	0.03	0.31	0.92	0.93	0.42
CEPHALOSPORIN - 3 RD GENERATION	2.91	0.95	1.93	4.13	2.97	1.94
PENICILLINS	1.59	0.39	0.86	2.29	2.29	1.81
PENICILLIN COMBO	2.16	0	1.27	3.25	1.63	1.3
TETRACYCLINES	0.51	0	0	0.96	0.68	0.36
TMS	0.98	0.27	0.67	1.49	0.58	0.16
LINCOSAMIDES	0.22	0	0	0	1.19	0.07
MACROLIDES	1.04	0	0	0.73	0.31	0
PHENICOLS	0.59	0	0.28	0.71	0.11	0
FLUOROQUINOLONE S	0.08	0	0	0	0	0
ALL BETA LACTAMS	7.82	3.75	7.44	11.49	6.19	5.57
OVERALL	11.2	5.3	9.3	15.5	19.51	9.35

*Referent results highlighted in yellow are from previous research: Saini V, McClure JT, Leger D, Dufour S, Sheldon AG, Scholl DT, et al. Antimicrobial use on Canadian dairy farms. J Dairy Sci. 2012/03/01. 2012;95(3):1209-21

Project take-aways:

- Results presented are derived from sales-level data only. There is no way of knowing the level of actual AMU on the farm.
- AMDUR in the current study are in line with previous Ontario-based research
- Lactating cow intramammary use remains much higher than that of dry cow use
- Use of critically important (category 1) antibiotics was high in participating herds, especially in lactating cow intramammary therapeutics
- There is a relatively wide variation in the rate of antimicrobial purchases that dairy farms make
- AMDUR is positively associated with linear score

See the full project report with results and infographics including how to benchmark your own practice’s data at <https://oahn.ca/resources/oahn-bovine-network-project-oahn-dairy-veterinary-antimicrobial-sales-benchmarking/>



Global Surveillance

Epizootic Hemorrhagic Disease

Four cattle in Eastern Washington were diagnosed with epizootic hemorrhagic disease (EHD) in September 2019 (<https://wastatedeptag.blogspot.com/2019/09/deadly-deer-disease-diagnosed-in-four.html>). Although EHD primarily affects deer, clinical cases have been reported in cattle and other ruminants. Mouth lesions in cattle EHD cases can resemble foot and mouth disease (FMD), therefore requiring thorough investigation. More information on the disease in deer and other ruminants can be found at

http://www.cfsph.iastate.edu/Factsheets/pdfs/epizootic_hemorrhagic_disease.pdf

Asian Longhorned Tick

An update provided by the United States Department of Agriculture (USDA) in September 2019 indicates that the Asian longhorned tick has been confirmed in 12 states - Arkansas, Connecticut, Delaware, Kentucky, Maryland, North Carolina, New Jersey, New York, Pennsylvania, Tennessee, Virginia, and West Virginia. The ticks have been found on pets, livestock, wildlife, and people. Central Ohio is the closest in proximity to Ontario at this time.

Key information reported in the USDA National *Haemaphysalis longicornis* Situation Report:

"*Haemaphysalis longicornis* (Asian longhorned tick) , an exotic East Asian tick, has never previously established a population in the United States. It is a known serious pest of livestock in the Australasian and Western Pacific Regions where it occurs. It is an aggressive biter and frequently builds intense infestations on domestic hosts causing great stress, reduced growth and production, and severe blood loss.

The tick can reproduce parthenogenetically (without a male); as such, a single fed female tick can create a population. It is also a known/suspected vector of several viral, bacterial, and protozoan agents of livestock and human diseases. This three-host tick can spread pathogens among a diverse host range, on which it feeds side-by-side with other tick species. The detections detailed here are the first reports of this tick out of quarantine in the United States."

See the complete report at:

https://www.aphis.usda.gov/animal_health/animal_diseases/tick/downloads/longhorned-tick-sitrep.pdf

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