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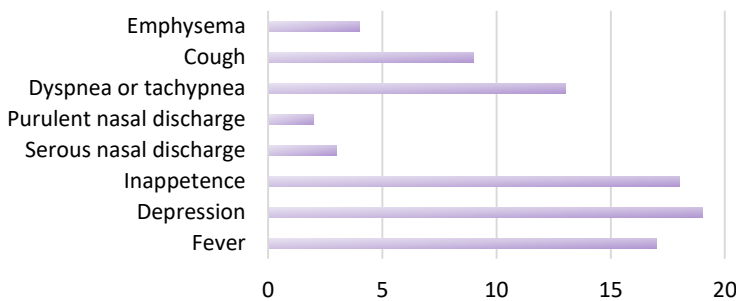
Clinical Impressions from Veterinarians

The bovine network heard from several practitioners experiencing respiratory disease outbreaks in lactating dairy herds this quarter. To explore the issue further, the network opened a clinical impressions survey to collect more information on the issue. Nineteen veterinarians that completed the survey reported treating at least one outbreak of respiratory disease in mature cows this winter. Respondents were from across counties in Southern, Eastern, and Northern Ontario.

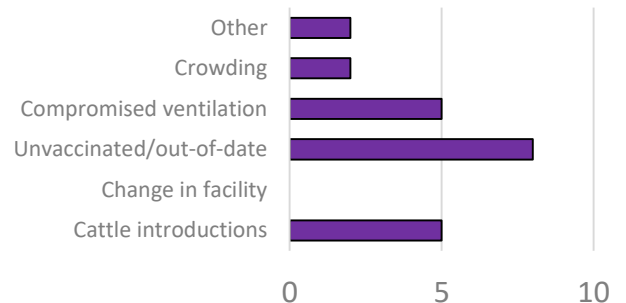
Average morbidity 23%
(range 5-60%)

Average mortality 4%
(range 0-20%)

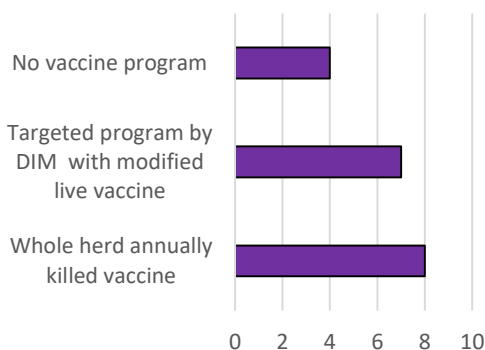
Clinical signs reported:



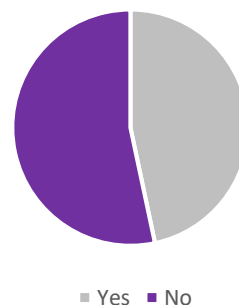
Risk factors identified by herd veterinarian:



Was type of vaccine program is used?

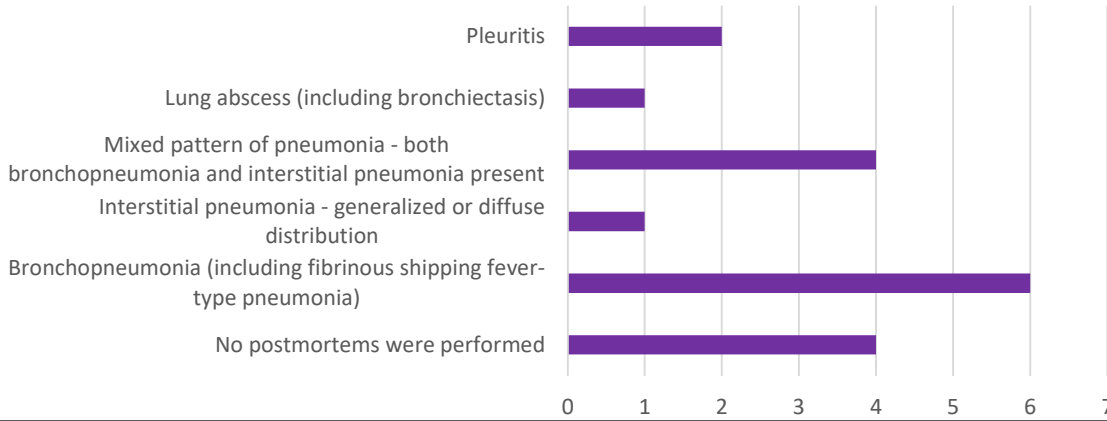


Was the herd up-to-date on a vaccine program?

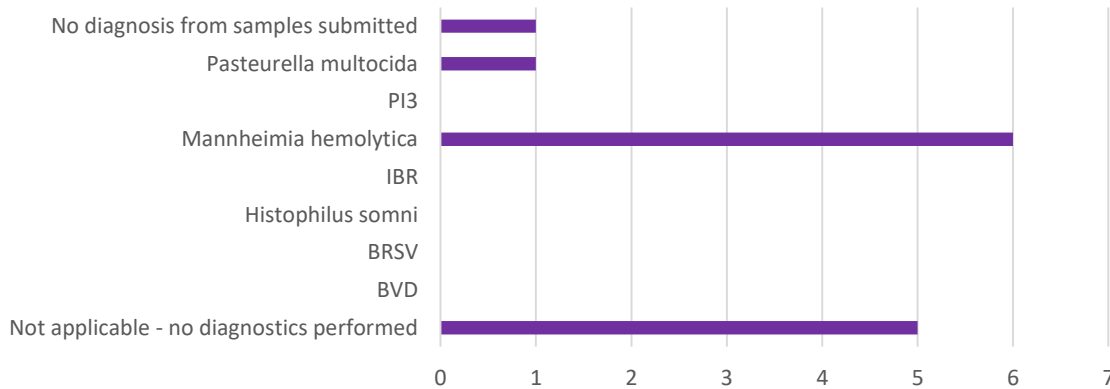




If postmortem(s) were performed, what was observed on postmortem examination?



If diagnostic samples were submitted (tissue, swabs, serology, etc), what BRD agents were diagnosed?



Barriers and difficulties identified by veterinarians:

Time of sampling to time of diagnosis

Producer reluctance to postmortem cattle

Reluctance to pay for testing if morbidity but no mortality

Poor production and condition in surviving cattle resulting in increased culling

Accurate diagnosis in live animals/ laborious diagnostic procedures



Surveillance: Q4 Data from the Animal Health Laboratory

Pathology Submissions - Between November 1, 2019 to January 31, 2020, there were 210 bovine pathology submissions to the Animal Health Laboratory. The following data highlights submissions in Q4.

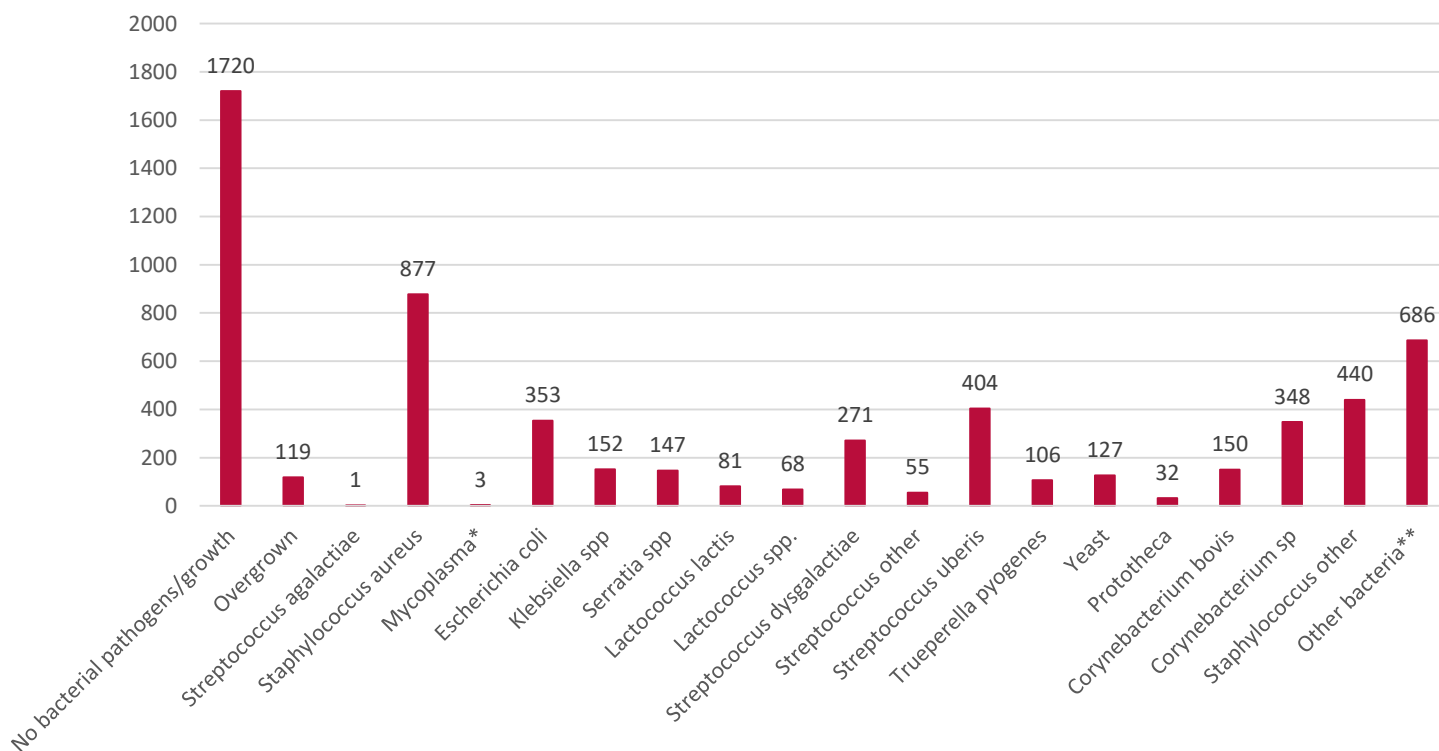
<p>Calves < 2months of age</p>	<ul style="list-style-type: none"> The primary reason for submitting animals for pathology was enteritis (n=24) and pneumonia (n=13). 5 submissions identified <i>Salmonella</i> Dublin from an estimated 5 premises. Affected calves ranged in age from 10 days to 3 months.
<p>Calves > 2 months to 2 years of age</p>	<ul style="list-style-type: none"> Pneumonia was the primary diagnosis from pathology submissions (n=24) The most frequently identified pneumonia etiologies were <i>Bovine Respiratory Syncytial Virus (BRSV)</i>, <i>Histophilus Somni</i>, and <i>Pasteurella multocida</i>
<p>Adult Cattle (>2 years)</p>	<ul style="list-style-type: none"> The main pathology diagnoses for mature cattle were pneumonia (n=13), neoplasia (n=5), traumatic lesions (n=4) and septicemia (n=3) Pneumonia etiologies included <i>Mannheimia haemolytica</i>, <i>Pasteurella multocida</i>, <i>Trueperella pyogenes</i> and BRSV.
<p>Abortions</p>	<ul style="list-style-type: none"> There were 24 abortion submissions, commodity where provided indicated 15 were dairy and 3 were beef. The causes identified were idiopathic (n=11), bacterial abortion (n=5), <i>Neospora</i> (n=3), idiopathic stillbirth (n=3), mycotic (n=1) and congenital anomaly (n=1). For the second quarter in a row, there were no <i>Ureaplasma</i> abortion diagnoses.



Summary of 2019 Mastitis Pathogens from Milk Culture Submitted to the Animal Health Laboratory

Dr. Murray Hazlett, Dr. Durda Slavic, Dr. Jim Fairles

In 2019, there were 5 208 individual milk samples sent to the AHL which yielded 6 144 results.



*Mycoplasma: 2 results by culture, 1 result by PCR

**Isolates included in the "Other bacteria" are listed below, names in bold are cumulatively responsible for >75% of the isolates
Acinetobacter spp, *Actinomyces spp.*, **Aerococcus spp**, *Aeromonas spp*, *Bacillus spp*, *Citrobacter spp.*, *Curtobacterium spp.*, *Enterobacter spp.*, **Enterococcus spp.**, *Gram negative bacillus*, *Gram negative bacterium*, *Gram positive bacillus*, *Gram positive coccobacillus*, *Gram positive coccus*, *Helcococcus spp.*, *Histophilus somni*, *Lactobacillus spp.*, *Lelliottia spp.*, *Leuconostoc lactis*, *Macrocooccus spp.*, *Micrococcus spp.*, *Moraxella spp.*, *Mycobacterium spp.*, *Neisseria spp.*, *Paenibacillus sp*, *Pantoea spp.*, *Pasteurella multocida*, *Providencia spp.*, **Pseudomonas spp.**, *Psychrobacter sp.*, *Raoultella spp.*, *Rothia spp.*, *Salmonella spp.*, *Stenotrophomonas sp.*, *S. equi subsp zoepidemicus*, *Vagococcus spp.*, *Weissella sp.*



Summary of Mastitis PCR Test Data for Ontario DHI Herds in 2019

Data Provided by Lactanet

Summary by Dr. David Kelton, University of Guelph

2019 Ontario Mastitis PCR Summary	Number of Samples	Percent of Samples	Group Avg SCC (x1000)
<i>Staphylococcus aureus</i> POS	1832	16.89%	1382
<i>S aureus</i> HIGH POS	87	4.75%	3362
<i>S aureus</i> MOD POS	737	40.23%	1680
<i>S aureus</i> LOW POS	1008	55.02%	995
<i>Streptococcus agalactiae</i> POS	1	0.01%	753
<i>Mycoplasma bovis</i> POS	20	0.18%	1822
<i>Prototheca</i> POS	204	1.88%	1337
NEG to all 4 pathogens	6955	64.14%	1226
Total	10844		1255

More than 10 000 samples were submitted for PCR testing at the Guelph Lactanet Laboratory during 2019. Most producers only test a subset of cows at any given DHI test. Producers generally use elevated SCC as a means to identify samples for testing. *Staphylococcus aureus* was the most frequent positive test. While 17% of samples were positive for *Staph. aureus*, only 5% were HIGH positive. As expected for *Staph. aureus* infected cows, somatic cell count (SCC) is correlated with PCR result. A note of caution for low positive *Staph. aureus* test results, especially if SCC is low. These cows might not be infected and it is important to corroborate a positive test with SCC and/or follow-up testing.

Only 1 of 10,844 samples tested positive for *Strep ag.* This in conjunction with the mastitis pathogen detection by culture at the Animal Health Laboratory in 2019 (1 positive in 5208 samples), is evidence of the near eradication of this pathogen.

Finally, notice that most of the samples that were negative on PCR testing still had a high SCC, suggesting that these udders may be infected with pathogens other than the 4 identified using the PCR system. This is a reminder that unlike culture, PCR only indicates whether a specific set of bacterial pathogens are present in the milk sample.

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