

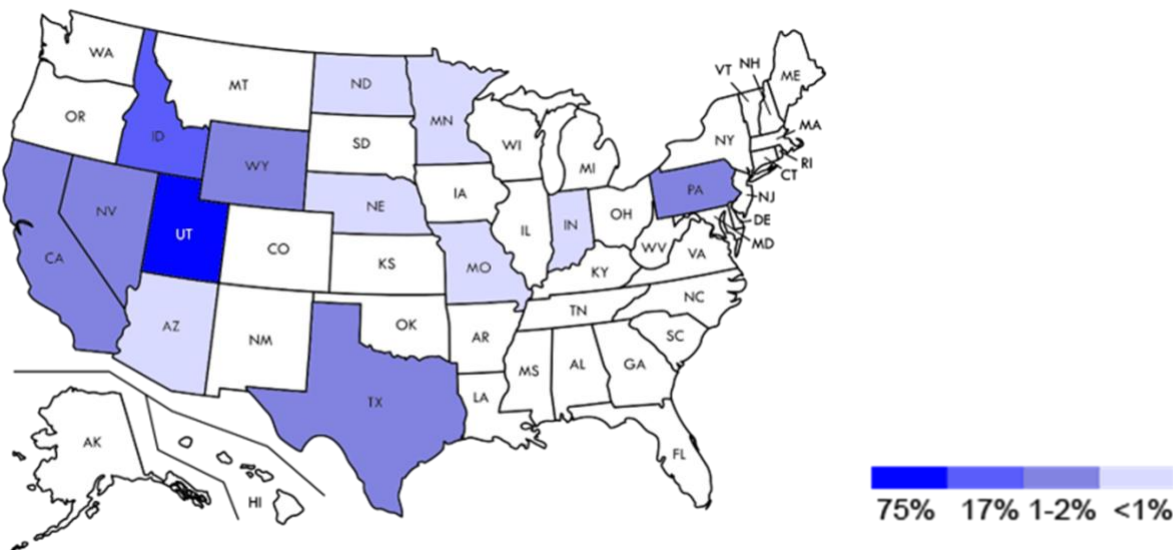
DAIRY VETERINARY NEWSLETTER

January 2022

Necropsy Diagnoses of Dairy Cattle Causes of Death in Utah and the Intermountain West

Last year we completed a retrospective review of causes of death in dairy cattle submitted to the Utah Veterinary Diagnostic Laboratory (UVDL) over an 11 year period. For most of the data summarization and analysis, I was helped by then veterinary student and now veterinarian, Dr. Savannah Gucwa. In addition to summarizing causes of death for cases where the cause was not clear to the producers or veterinarians submitting the carcasses, our goal was to help prioritize preventive and management practices. This issue covers causes of death in dairy cattle up to 1 year old:

There were 857 dairy cattle (of all ages) necropsied from 2008 through 2019 at the UVDL. Cattle were from dairy farms in Utah (76%), Idaho (16%) or other states, mainly surrounding western states (8%); see the map below:



Main cause of death was established based on reported clinical signs (if there was any history provided), pathology, and results of ancillary tests. The diagnostic tests included bacteriology, histology, molecular diagnostics, immunohistochemistry, and others as indicated. Dairy breeds were: Holstein 90%, Jersey 9%, other (Brown Swiss, Milking Shorthorn, Ayrshire) 1%.

Fetal causes of death identified at necropsy

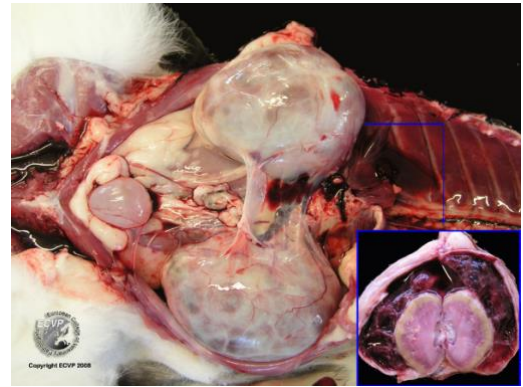
Fetuses (n = 97) had mean gestational age of 196 d (range was 60 d to full term). 92 (11% of all dairy deaths) were abortions, 4 fetuses were discovered dead within the uterus of cows that died, and 1 full term fetus died from dystocia that was not apparent to the farm personnel before necropsy.

Primary causes of abortion:

- Bacterial 20 (22%), *E. coli* 5, *Campylobacter fetus* 2, observed microscopically, but tissues too necrotic to identify bacteria 10
- Protozoal 14 (15%), all *Neospora caninum*
- Congenital 5 (5%), single cases of: mandibular brachygnathism (probable other abnormalities also), hydronephrosis, anasarca and ventricular dilation, bilateral renal pseudocyst, tracheal hypoplasia
- Idiopathic 45 (49%)



Mandibular brachygnathism



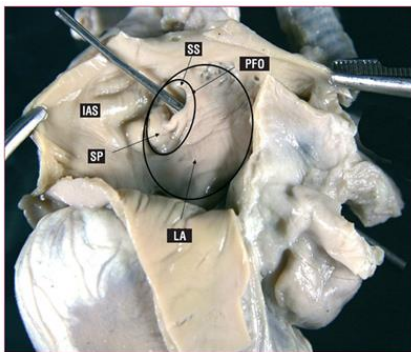
Bilateral renal pseudocyst (dilated kidneys)

1 to 5 day old calf causes of death identified at necropsy

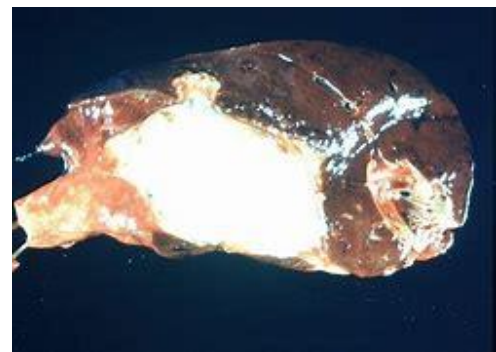
1 to 5 d old calves (n = 36, 4% of all dairy deaths) had mean age of 2 d.

Primary causes of 1 to 5 d old calf death:

- Enteritis 10 (28%), *E. coli* 5, *Cryptosporidium* spp. 4, rotavirus 1
- Dystocia 7 (19%) (unknown to the submitters until necropsy evidence of dystocia trauma)
- Congenital 5 (14%), single cases of: patent foramen ovale, ventricular septal defect, anasarca, spiral colon hypoplasia, atresia jejuni
- Navel ill 4 (11%)
- Pneumonia 2 (6%), both *Mannheimia haemolytica* with *Trueperella pyogenes*



Patent foramen ovale



Navel ill dissection with abscess

6 to 60 day old calf causes of death identified at necropsy

6 d to 2 mo old calves (n = 340, 40% of all dairy deaths) had mean age of 17 d.

Primary causes of 6 d to 2 mo old calf death:

- Enteritis/colitis 165 (49%), *Cryptosporidium* spp. 80, coronavirus 39, rotavirus 22, *Salmonella* spp. 17, BVD 17, *E. coli* 12 (some were combined primary infectious causes of death)
- Pneumonia 51 (15%), *E. coli* 9, *Pasteurella multocida* 8, *Mannheimia haemolytica* 5, *Mycoplasma bovis* 4, BRSV 3

- Navel ill 20 (6%)
- Abomasitis 20 (6%), *Sarcina* spp. 10, *Clostridium* spp. 6
- Peritonitis 10 (3%), abomasal or intestinal perforation 8, *Sarcina* spp. 2



Enteritis



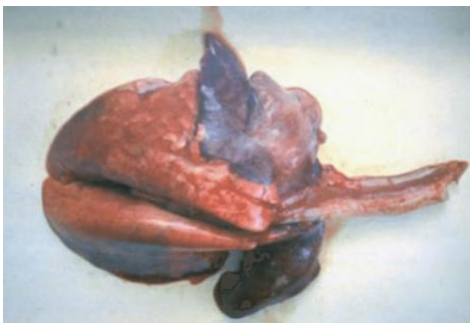
Abomasitis

2 to 5 month old calf causes of death identified at necropsy

2 to 5 mo old calves (n = 117, 14% of all dairy deaths) had mean age of 101 d.

Primary causes of 2 to 5 mo old calf death:

- Pneumonia 59 (50%), *Pasteurella multocida* 13, *Mannheimia haemolytica* 13, *Salmonella* spp. (aspiration of GI contents) 10, *Trueperella pyogenes* 8, *Klebsiella pneumoniae* 3, *Histophilus somni* 2
- Enteritis/colitis 21 (18%), *Salmonella* spp. 6, coccidia 5, *Cryptosporidium* spp. 3, BVD 1, *E. coli* 1
- Bloat 3 (3%)
- Polioencephalomalacia 3 (3%)
- LDA 1 (1%)



Pneumonia



Polioencephalomalacia opisthotonos

6 month to 1 year old dairy animal causes of death identified at necropsy

6 mo to 1 yr old animals (n = 39, 5% of all dairy deaths) had mean age of 293 d.

Primary causes of 6 mo to 1 yr old animal death:

- Pneumonia 16 (41%), *Pasteurella multocida* 5, *Trueperella pyogenes* 4, *Mannheimia haemolytica* 2
- Enteritis/colitis 7 (18%), coccidia 6, BVD 1 (also persistently infected with BVD, lived to 11 mos)
- Toxicity 3 (8%), Japanese yew 2, onion hemoglobinuria 1

Japanese yew



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In a future issue, we will continue with the causes of dairy cattle death identified at necropsy in animals up to 9 years old.

Save the Dates - UVMA Summer CE Conference June 9 - 11, 2022

The Utah Veterinary Medical Association is planning once again to host a continuing education conference for small animal, mixed animal, food animal, avian and equine veterinarians and veterinary technicians. Following the unfortunate cancellation of the December 2021 conference, the same excellent lineup of speakers and topics is again planned for this meeting. It will be in Park City, Utah from Thursday June 9 through Saturday June 11, 2022. Details regarding registration, housing and the program will be available soon according to the UVMA.

If you know of other CE events or conferences of interest to dairy veterinarians, please let me know and I will publicize them.

Please let us know your comments and suggestions for future topics. I can be reached at (435) 760-3731 (Cell), or David.Wilson@usu.edu.

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