Foot Lameness in Beef Cattle Associated with Ergot Toxicity, 2023

Overview:

In early 2023 the beef network became aware of cases of severe foot lameness in western feeder cattle, and breeding cows.

Case 1: hoof wall separation in pen of weaned beef bulls:

History and clinical signs

Affected bulls were on pasture with heifers and their dams pre-weaning, spread across multiple fields, including both irrigated pasture and tame dryland. The pairs were transported home two weeks prior to weaning; weaned, and put out on same pastures, and ultimately shipped to feedlot 17th November. The first lame bull was noted 19th Nov., diagnosed as footrot and treated as such. Re-pulled 24th Nov. and treated as arthritis. Still no improvement and owner noticed hoof abnormality.

This was examined at clinic on tilt table, revealing separation of hoof wall, but not purulent. The separated hoof was removed, with underlying tissue cool and not painful to touch. Animal was bandaged.

Other bulls in pen later presented mostly with bleeding at heels, with the owner euthanizing two severely lame animals.

Nine of 30 animals were eventually trimmed: Common lesion in observed cases: separation of sole near heel, sort of like sole ulcer. Some animals also displayed ear necrosis. Eight bulls show persistent lameness.

Laboratory submissions:

Submitted whole hind limbs of affected case as well as tissues from other organs and liver mineral panel which were NSF. Some similarities to toe tip necrosis and ergot poisoning were noted, but samples submitted did not quite fit either.

Treatment: loose horn was removed; those animals with more severe lesions received wraps including TTC powder (mild lesions sprayed with TTC).

Current differential diagnoses or potential contributing factors considered: ergot exposure/ micronutrient deficiency/hoof trauma

Case 2: Weaned feeder steers:

Two groups of weaned calves were assembled and placed in a feedlot last fall to be backgrounded. First group of ~ 110 included couple of other mature cows, with calves currently ~ 625 pd. Second group of about 80 head is currently ~ 525 pd. Problems started, mostly in the second smaller group, when they were mixed with the other one after first 30 days in the feedlot.

Lameness occurred mainly in smaller group and was treated with Resflor™ with no response after 2 treatments. Lesions seemed to be in the feet with little to no swelling and in one to multiple feet. Coronary bands seemed to eventually "blow out". Pathologic examination of four feet submitted to PDS showed a range of lesions, with vasculitis of the coronary band being a common feature, and one showing separation of the hoof wall at the heel bulbs.

These calves have had a range of other health problems including diarrhea and pneumonia, and additional diagnoses including potential BVD involvement are still being pursued.

Case 3: Breeding cows

History:

A few animals observed lame in mid to late November, no intervention yet. Multiple animals lame and skinny mid December, contacted the clinic and a feed workup initiated.

History breeding cows continued:

Multiple animals very lame or down after Christmas. Owner contacted the clinic again on January 3rd reporting 2 animals down and ~ 30 additional animals lame. Still no treatment to date.

Examination: revealed multiple sloughed distal claws.

Diagnostics: one down cow was submitted, another the owner wished to give more time.

Feed toxins not performed in mid December as the lab convinced not to, but have been initiated as of January 3rd.

CFIA contacted given the number of lame animals, one animal mouthed has mild erosions in her mouth consistent with straw and hay consumption. No vesicles seen.

Postmortem on down cow#1:

Dry necrosis of the distal hind limbs and ear tips as well as well demarcated areas of necrosis within the deep muscle of both proximal hind limbs.

Evidence of secondary bacterial infection, especially of the right hind limb.

Small ulcers were observed in the oral cavity and linear ulcers within the esophagus.

Cow was in poor nutritional condition with early serous atrophy of fat around the heart and within the bone marrow.

Pathologic Diagnosis: The primary finding in this animal is coagulative necrosis (dry gangrene) of the distal extremities including the hind limbs and ear tips. Evidence of ischemic damage was also observed in the abductor muscles of both hips/hind limbs.

The most likely cause in this case is a combination of ergot toxicity and cold environmental exposure. There was evidence of secondary infection of the exposed joints and likely systemic spread of bacteria.

Frozen tissues from this case and the two other animals from this cohort are being submitted to CFIA for viral vesicular disease testing. -> all negative.

Tentative diagnosis in these cases is chronic ergot toxicity, possibly exacerbated by additional factors such as extreme cold weather causing vasocontstriction to the foot, although ergot toxin has not been demonstrated present in feed of any of the affected herds at levels which would be associated with disease.

Feed sampling to prove that a toxin is involved, when conducted after evidence of disease is present, can be challenging for several reasons:

- the feed which actually contained potentially toxic or disease-producing symptoms may be gone.
- the toxin may not be dispersed throughout the feed in toxic levels and so could be missed depending on the sampling scheme.

It's important to consult with your veterinarian and feed testing lab for instructions on when and how to sample feed to check for toxins..

Outbreak investigation supports are available in most provinces:

BC: Animal Health Center offers diagnostic support although does not currently have dedicated financial support to cover cost of outbreak investigation of non-regulated disease.

AB: The UCVM offers the Veterinary Outbreak Investigation Service, which provides professional and diagnostic support.

Contact: Dr. Lindsay Rogers
<lindsay.rogers@ucalgary.ca>

SK: The WCVM offers the Disease Investigation Unit, which provides professional and diagnostic support.

Contact: Dr. John Campbell

<john.campbell@usask.ca >

MB: the Ministry of Agriculture provides support focuses on reportable, emerging or zoonotic diseases.
Contact:
Dr. Deeanne Wikinson
<deanne.wilkinson@gov.mb.ca>

When contacted, the Western Canadian Certified Hoof Trimmers' Association kindly did an e-blast to their membership inquiring whether any had encountered similar lesions. The membership responded with interest but no experience with any similar cases, and we are grateful for their support.

If anyone encounters additional similar foot lameness cases WeCAHN is very interested in hearing any information you are able to share: we.cahn@pds.usask.ca