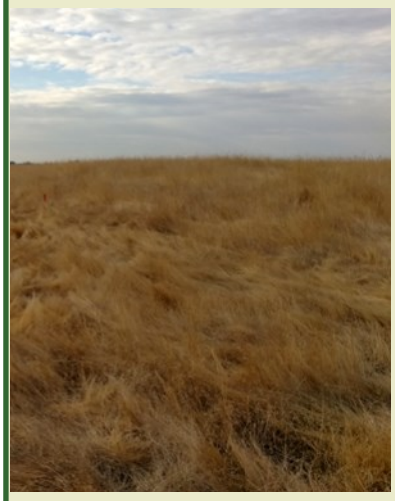
RANGE BULLETIN

Livestock & Natural Resources Newsletter

In this issue:



Editor
Rebecca Ozeran

Phone
559-241-6564 or
530-447-0801 ex.1329

Email
rkozeran@ucanr.edu

Want more Livestock and Range information?

Find us on Facebook! Search for **@UCCEFresnoMaderaLivestock** or visit the page directly at **https://www.facebook.com/UCCEFresnoMaderaLivestock/** for regular updates on upcoming events, recent news, and research information.

Stockmanship & Stewardship - FREE Virtual Event

November 1, 2022 from 9:00am - 5:00pm CDT
(7:00 AM - 3:00 PM Pacific)

Topics in this unique event include: grazing management in dry climates, addressing labor questions, low-stress cattle handling, marketing, nutrition, and international trade.
See all the details and register here:
www.stockmanshipandstewardship.org/events/ss-virtual-event

Request to participate: anonymous, international survey

Dr. Yasushi Kiyokawa is a researcher at the University of Tokyo and is interested in differences between rat issues and management in the US and Japan. Dr. Kiyokawa asked for help in distributing a new survey to livestock producers in the US, specifically those with **poultry, swine and cattle**. The survey is completely anonymous.

If you are interested in participating, the survey is here: https://bit.ly/survey_rodents

Neospora in Beef Cattle

By Dr. Gabriele Maier, UCD Beef Cattle extension veterinarian (August 2022)

What is Neospora?

Neospora caninum is a single celled, parasitic protozoal organism, and the most commonly diagnosed cause of bovine abortions in many regions of the world. Although it may be more common in dairy cattle, beef herds are not immune to it. In the US, studies found a median seroprevalence of 13% in beef cattle estimated to cause an annual loss of US $111 million. Cows and other ruminants are intermediate hosts, while dogs and other canids are definitive hosts, in which Neospora undergoes sexual replication.

Dogs, coyotes, or gray wolves typically get infected through consumption of aborted fetuses or infected meat. They will pass the infective form of Neospora called oocysts in the feces. When oocysts are accidentally ingested by intermediate hosts such as cattle, they sporulate in the gut and release so-called tachyzoites, which make their way out of the gut and into muscle as well as through the placenta to the developing fetus. The outcome is an aborted fetus, a mummy, a stillborn calf, or rarely a calf born with neurologic deficits such as abnormal gait or birth defects. However, transmission can also occur from infected cow to her fetus where a normal calf is born. Birds, including chickens, sparrows, and crows have also been identified as intermediate hosts and may contribute to the dissemination of Neospora when eaten by canids, but more research is needed to confirm. People do not seem to become infected with Neospora.

Can cows transmit Neospora between each other?

A cow can only infect her own fetus with Neospora, there is no cow-to-cow transmission even when a cow aborts from Neospora.

What do you see in affected cattle?

Aborting cattle show no other signs of disease and abortions can happen at any time during pregnancy starting at 3 months but are most common during mid-gestation, between 4 - 7 months of pregnancy. There may be abortion storms where many cows abort at the same time or there may just be an uptick in abortions above the background level that typically occurs during a season. Infection in early pregnancy may lead to more severe consequences than infection during the last trimester of pregnancy.

Is there a vaccine or treatment?

No commercial vaccines are available, neither are any drug treatments. The only option to deal with Neospora is through management and preventive measures.

This article continues ▶

Neospora continued

How do you know you are dealing with Neospora abortions?
It is always good to call the diagnostic lab and ask what tissues they would like to have submitted for a particular case. In general, for abortions, placenta, fetus, and blood from the dam are all important. For Neospora in particular, the most common sites to find it in the fetus are in the brain, heart, or liver. If you don't have a placenta or a fetus, which is often the case, it might still be helpful to submit blood from cows that have aborted and those that have not aborted to support a diagnosis of Neospora abortion. A positive test means that the cow was exposed to Neospora in the past, will stay infected for life, and is more likely but not guaranteed to abort because of it. Infected cows may also test negative on a blood test early in the infection but will likely test positive later on. Serial blood tests several months apart can help detect those cases.

It is not known what triggers the recrudescence of Neospora once a cow is infected. Recrudescence means, she got infected sometime in the past, and Neospora formed tissue cysts in muscle that stay mostly undetected by the immune system, but later on, Neospora causes an abortion. Stress, disease, pregnancy, or other immune-suppressing events may be involved, but the science is still lacking to clearly define the cause of recrudescence.

Should you test herd additions?
If you are concerned about Neospora in your herd, it is good to ask about abortion history in the seller herd. To be on the safe side, an ELISA screening test will help to eliminate those that test positive and who might be at higher risk of Neospora abortion in the future.

How do you manage Neospora once you know it's in the herd?
Testing and culling may be one option, depending on the percent positive in the herd. However, that may not be feasible if there are a lot of cows that test positive. Another option is not to keep replacement heifers from positive cows or test them before making that decision, so the problem does not propagate. Testing calves before they drink colostrum would be ideal, so there is no confounding with maternal antibodies. Since there is very little chance of positive cows transmitting Neospora other than to their own calves, keeping those cows does not elevate the risk of Neospora infections or abortions in other cows. Positive cows are more likely, however, to abort or have a calf that is infected in utero.

What about cows with high genetic merit that test positive?
Embryo transfer is a way to protect a calf from a dam with high genetic merit and that has tested positive. Make sure the embryo recipient tests negative. In this manner, you can still take advantage of a cow's genetics without running the risk of a Neospora abortion.

What about dogs and coyotes?
There is no good test for dogs and they are only infected for brief periods of time. It is therefore not recommended to get rid of dogs on the ranch if there is a problem with Neospora. Keeping dogs from defecating anywhere near feed is an important control measure though. In addition, promptly cleaning up any parts of the placenta or aborted fetuses so dogs don't have access to them is important as well. Protecting feed sources from coyotes, and having a rodent control program, so coyotes aren't attracted to feed sources that may be infested with rodents, can also lower the risk.

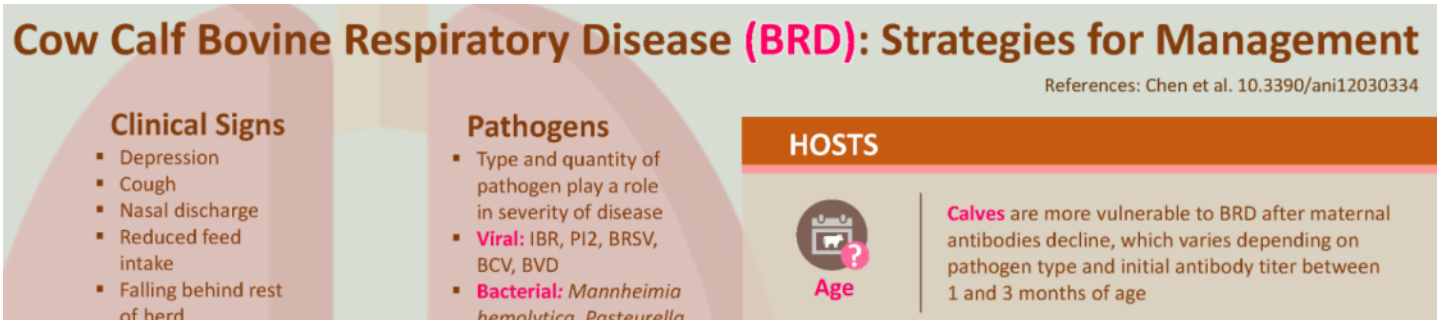
If you have questions about Neospora or other diseases affecting beef cattle, contact Dr. Maier via
Email: gumaier@ucdavis.edu or Phone: 530-754-0886

New Info Sheets available

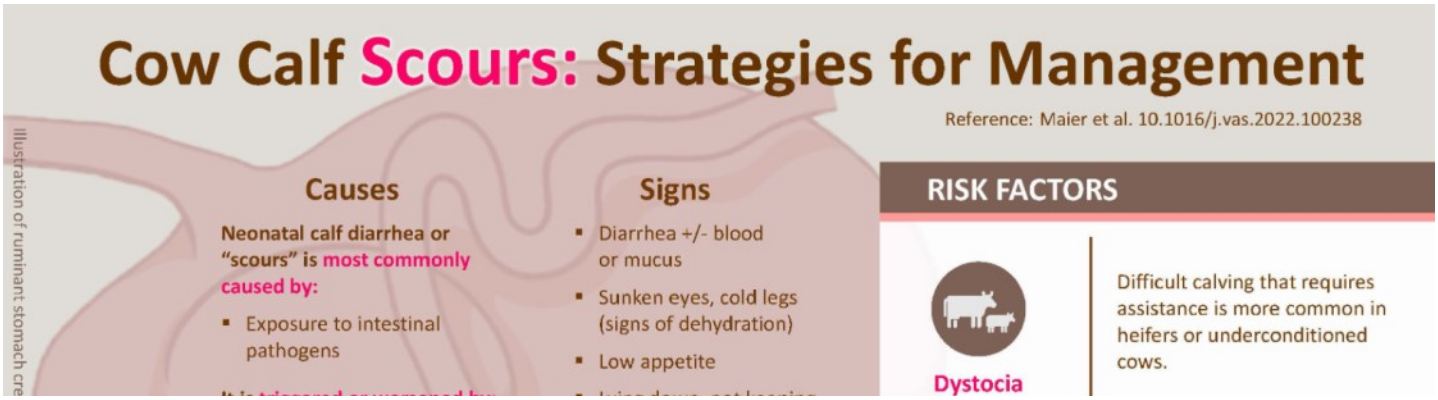
Dr. Gaby Maier (UC Davis Beef Cattle Veterinarian) recently released three excellent info sheets on managing beef cattle health.
You can download them for free using the links below!

Bovine Pinkeye: click here to download full info sheet. *Preview:*

Bovine Respiratory Disease (BRD): click here to download full info sheet. *Preview:*



Scours: click here to download full info sheet. *Preview:*



Killer Oak Trees

Editor's note: although not all oaks are producing acorns this fall, there are many trees with acorns this year. Acorns can be a risk to livestock especially during droughts.
This article is a reprint of a UCD Vet View publication, January 2008.

By Dr. John Maas

Oak trees respond to extremely dry conditions by producing prodigious amounts of acorns. This is a natural response of the oak trees to drought. The problem with acorns is that they can be toxic to cattle.

Do all oak trees contain toxic materials?

There are more than 50 common species of oak trees in California and all contain some levels of the chemicals that can cause problems in cattle. The buds, young leaves, and fresh acorns have the highest level of toxins. There is considerable variation in the concentration of toxins in the plant tissues, dependent on 1) the species of oak trees, 2) the season of the year, and 3) the climate of the year in question. The chemical toxins, known as tannins and phenols, are naturally contained in the plant material.

How do the toxins affect cattle?

The oak toxins (tannins and phenols) attack the proteins they contact. Thus the gastrointestinal tract, including the mouth, esophagus, rumen, and intestines, is damaged by direct contact with oak toxins. This results in ulcers, bleeding, and perforation in some cases. So, if the cattle live long enough, bloody or dark diarrhea is seen. Also, in the rumen, some of the tannins are converted to other chemicals, like gallic acid and pyrogallols, that are absorbed into the blood stream and travel to the kidneys where they cause severe damage. Younger cattle (less than 400 pounds) are usually more severely affected than older cattle.

What do affected cattle look like?

Symptoms usually appear shortly after cattle eat 50% or more of their diet as oak (leaves, buds, acorns). Some animals may simply be found dead. A day or two after eating oak leaves or buds, bloody or dark diarrhea may be noticed. As kidney failure progresses, fluid may accumulate around the anus or vulva. Throughout the course of clinical disease, the cattle appear weak and listless, and have no appetite.

What are the most important risk factors that can lead to oak toxicity?

The presence of large numbers of acorns when forage is scarce is one of the main risks. Wind, hail, or snowstorms can cause large numbers of acorns or limbs with leaves and buds to drop so that cattle can gain easy access to these potentially toxic materials. California outbreaks have been worse in the late winter and early spring when oak buds and small leaves are present in large numbers and a wet snowstorm occurs. The wet snow breaks branches and limbs which fall to the ground. The snow also covers the available grass and this leaves the cattle very hungry. This leads to consumption of these very toxic buds and young leaves because it is the only feed available. Likewise, in a drought year with a large acorn crop and very little grass forage available, the consumption of acorns has been very high in some herds.

This article continues ►

Oaks continued

What is acorn calf-syndrome?

Acorn calf syndrome is completely different from the problems seen due to oak toxicity from ingestion of acorns, leaves, and/or buds. Acorn calves are congenitally malformed calves. The syndrome is associated with poor feed conditions during the second trimester of pregnancy, about the 3rd through the 7th month of pregnancy. The exact cause is not known but seems to occur more often following falls with large numbers of acorns. These calves have very short legs, abnormal hooves, and misshapen heads (either short noses or long narrow heads). The acorn calves look like dwarfs in most instances. Occasionally, more than 10% of the calves in a herd can be acorn calves.

How do you treat cattle with oak toxicity?

Successful treatment of affected animals usually requires fluid therapy, antibiotics, and supportive care. Your veterinarian should be consulted and a treatment protocol set up to increase the odds of success and to provide the most relief for the cattle. The antibiotics help prevent secondary pneumonia and abscessation of the bowel. Fluid therapy will be necessary for many cattle to survive and must be planned with your veterinarian. Ready access to water and good quality grass hay will be very important parts of providing adequate nursing care.

How can oak toxicity be prevented?

Oak toxicity can be prevented by supplementing the cattle with hay or other supplemental feed when forage conditions are poor and acorns are abundant. Likewise, when late snowstorms cover the grass and knock down oak limbs with large amounts of buds and young leaves, be sure to start hay supplementation immediately. DO NOT wait until cattle get sick or die, If cattle are in conditions where toxicity is a longer term possibility, the use of calcium hydroxide in a supplement can prevent sickness. The addition of 10% calcium hydroxide (hydrated lime) to a supplement will still be palatable to cattle. Then if the cattle will consume about two pounds of this supplement per day, it will prevent many cases of oak toxicity. This supplemental calcium hydroxide has to be consumed before exposure to be effective.

If you have concerns about illness in your herd, contact your veterinarian.
You can contact the CAHFS lab for diagnostic tests:

https://cahfs.vetmed.ucdavis.edu/ • Davis lab phone: (530) 752-8700 • Tulare lab phone: (559) 688-7543