

## Health - Theileria – With Reference to Beef Animals

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There have been an increasing number of cases of Theileria in Northland since 2012 and over the past 18 months we have seen a large number of cases in South Auckland, North Waikato and the Hauraki plains. Theileria has also affected herds in central Waikato, King Country and the Bay of Plenty.

*Theileria orientalis*, is a parasite which lives in the red blood cells of cattle. A strain new to New Zealand (*Ikeda* strain) seems to be responsible for the outbreak we are currently experiencing.

The problem affects both dairy and beef cattle. In dairy animals, clinical disease seems to be mainly in adult animals around the time of calving. In beef herds, disease has been seen in large number of calves, the reason for the differences are not clearly understood and why beef calves are more severely affected than their dairy counterparts is unclear.

Theileria is not spread by direct animal to animal contact. The parasite is spread between cattle in the saliva of ticks (similar to mosquitos spreading malaria in humans). To become infected a cow must be bitten by a tick which has previously bitten a cow which is carrying the disease. Theileria cannot affect any other animal species or humans.

Once the animal is bitten it takes about 6- 8 weeks for the parasite to build up to significant levels in the blood. At this stage the body reacts by trying to destroy the parasite. Because the parasite is living inside the red blood cells, the body attacks its own infected red blood cells to destroy the parasite. Unfortunately this can lead to a huge loss in red blood cells which are responsible for carrying the oxygen around the body, this is known as anaemia.

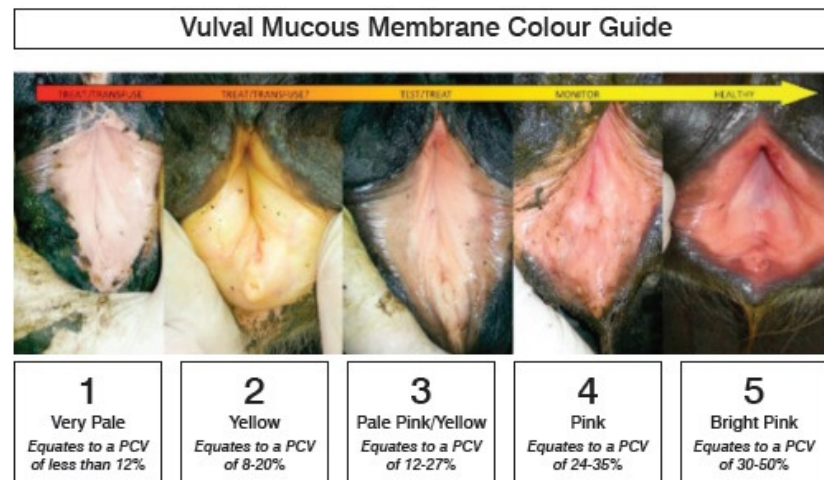


The signs seen in diseased animals tend to reflect the reduced amount of oxygen the body can deliver to the muscles and organs.

These include:

- Depression, lethargy and weakness
- Calves lagging behind the mob
- Inappetance (calves off the suck)
- Shortness of breath (Dyspnoea)
- Abortion/ Stillbirths
- Pale or yellow (jaundice) mucous membranes e.g. the gums, the membranes inside the vulva and conjunctiva (the white around the eye)
- Poor milk production
- Deaths

If you see any of the above signs, or would like more information about Theileria, please contact your Veterinarian.



Cattle can be infected with *Theileria* without showing any signs of disease.

Having had clinical cases is a sure sign that *Theileria* is present on your property; however if you haven't seen a clinical case in your herd there is still a possibility you may have *Theileria*.

The only way you can be sure is to blood test some of your animals. Taking samples having the lab perform a specific test called a PCR will determine whether your animals have been exposed to the Ikeda strain. It is important to test specifically for the Ikeda strain as other *Theileria* species are present in New Zealand and don't seem to cause significant disease, so a nonspecific test may lead you to believe your herd has been exposed when it hasn't.

Over time cattle will gradually build up a level of natural immunity to *Theileria*.

The biggest risk is where an animal that has had no exposure to *Theileria* becomes exposed. For example, animals that have not been exposed to *Theileria* entering a herd where *Theileria* is prevalent, or where a herd is moved into a region where the disease is present and large number of ticks are present.

Animal movements pose the biggest biosecurity risk to your herd in terms of the spread of most cattle diseases. It would be pertinent to implement a quarantine program with your vet if you regularly move stock or buy/lease in stock. This will allow you to put procedures in place to reduce the risk associated with introduction of new animal diseases. They will also be able to talk through other strategies to help reduce the severity of disease if your stock should come into contact with *Theileria*, some of which are listed below.

#### Management strategies

- Identification of at risk groups
  - low body condition score
  - naive animals
- Strategic use of tick control
- Use of a small number of calves as a sentinel group. this group should have everything done to it before the main group, so if anything untoward should happen you can take steps to reduce the problems in the main group
- Good quality feed
- Good colostrum intake in calves.
- Handling of the animals to reduce stress
  - Minimal yarding
  - Try to avoid trucking 2-3 weeks prior to calving
  - Keep in separate sick cow mob
- Maintain a good trace mineral status
- Identify area of the farm that may be high risk for ticks, these could be earmarked for preserved crops.

Much has been made of the importance of tick control to prevent the spread of Theileria. It is probably important to mention at this stage that all New Zealand farms in areas where ticks are present will get this disease eventually.

Aggressive year round treatment of cattle to protect against ticks is costly, risks the development of resistance, and ultimately isn't justifiable; however minimising the risk of Theileria infection at the time of year while animals are still under some stress, is warranted (i.e. calves pre-weaning).

Tick pour-on can also be used to reduce tick challenge to cattle. There are two ways of achieving this.

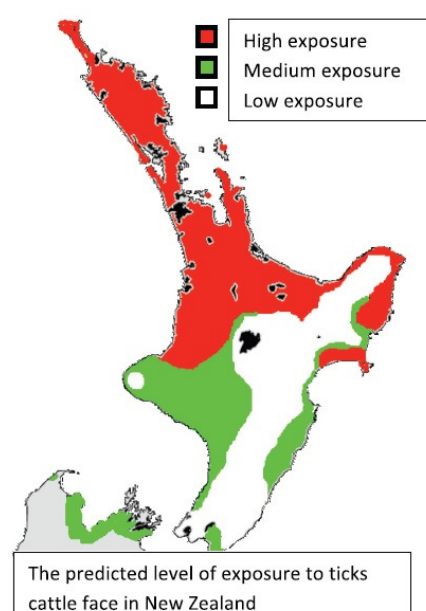
- Treating in early spring this will help remove over wintered ticks from the pasture.
- Treatment in late Feb to reduce the number of ticks that will over winter.

We recommend Bayticol® as the gold standard tick control product;

- Rain fast within two hours after application
- Controls all life stages of ticks
- Nil withhold period for meat or milk
- Protects for 3-6 weeks

Python® Ear Tags (*only an aid to control ticks*)

- Two tags, one in each ear
- Aids in control for at least 6 weeks
- Nil milk and meat withhold



You should talk to your regular vet to discuss what plan of action will be best for your farm system before purchasing or using any tick control.

Franklin Vets have developed over the past year a number of helpful tools for farmers who are concerned about Theileria. We were the first in New Zealand to import Buparvoquone under special license specifically for the treatment of this disease. We aim to work with farmers to reduce the impact the disease could have on your livelihood.

It is fair to say there are still an awful lot of unanswered questions about this disease. The industry is working together to reduce its effects on the beef and dairy sectors and MPI continue to invest resources in research to better understand the disease. For this reason publications can become quickly outdated, if you have any concerns your first port of call should be to contact a vet or refer to the MPI website for the most up to date information.

