Other Illnesses and Diseases in Dairy Heifers

This Infosheet covers

- Common illnesses that can affect dairy heifers including: bovine viral diarrhoea, facial eczema, liver fluke, pneumonia, yersiniosis, and theileriosis.
- The signs that illnesses are present, and how to prevent them.

Key points

- There is no treatment for BVD, prevention is the only management option. Persistently infected animals (PI) are the most common source of infection and should be culled.
- Facial eczema is caused by the toxin from spores of Pithomyces chartarum. Liver damage can be occurring even when there are no visible signs of the disease.
- Youngstock are the most susceptible to liver flukes. Exclude heifers from risky areas, such as swamps.
- Pneumonia has many potential causes. Stress, e.g. from underfeeding, transporting or changing feeds, can leave heifers open to infection.
- Yersinia causes diarrhoea and anorexia. It is most commonly seen in yearling cattle during periods of bad weather, or in combination with other diseases, such as BVD.
- Theileriosis is caused by a blood parasite spread by ticks. Infection can be transmitted by even one tick. Cattle will gradually build up some immunity to the parasite.

A dairy heifer animal health plan is a vital management tool and should include vaccination, internal parasite control, trace element supplementation and a biosecurity programme. But farmers should also be aware of other common heifer illnesses as they reduce liveweight gains, increase the risk of death and may reduce fertility. An understanding of these illnesses helps in reducing their incidence in heifer mobs and identifying the cause of underperformance.

More information

- For more about heifer vaccination, see Heifer Infosheet: Vaccinating Heifers to Prevent Disease.
- For more about internal parasites, see Heifer Infosheets: Managing Roundworms in Youngstock and Managing Drench Resistance.
- For more about trace elements and their supplementation, see Heifer Infosheets: Trace Element Deficiencies in Heifers and Heifer Trace Element Supplementation Options.
Bovine viral diarrhoea (BVD)\(^1\,^2\)

BVD is a highly infectious viral disease which can spread via bodily fluids e.g. nasal discharges, uterine secretions (birth fluids, placenta), urine, milk, semen, faeces and saliva. BVD causes reduced growth rates, reproductive losses, an increase in general disease, and lowered milk production. There is no treatment for BVD, prevention is the only option.

Transiently infected animals (TI) are animals that get infected with BVD either as a foetus in the last trimester of pregnancy or from birth onwards. They are sick for a short period of time (signs below) but then recover and develop some immunity. When they are sick they can spread the virus to other animals.

Persistently infected animals (PI) are animals that get infected with BVD in the uterus in the first four months of pregnancy. This can result from the dam being a PI animal themselves, or from a TI when the infection occurs in the first four months of pregnancy. A persistently infected animal never recovers from the BVD infection and sheds the virus in huge quantities for their whole life. They are therefore the most common source of infection for other animals to become transiently infected.

Clinical signs

**Transiently infected calves and heifers that are not pregnant display**

- low weight gain or weight loss
- depression
- ill health due to increased disease susceptibility\(^1\)
- oral ulcers
- nasal discharge
- inappetence
- diarrhoea

**Transiently infected bulls display**

- reduced fertility\(^3\,^4\)
- weight loss, scouring, other diseases (such as worms and pneumonia) are more severe

**Transiently infected pregnant heifers display**

- embryonic death (appears as low conception rates and irregular cycle lengths)
- abortions
- congenital defects in calves

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\(^3\) Paton D, Goodey R, Brackman S, Wood L. Evaluation of the quality and virological status of semen from bulls acutely infected with BVDV. Veterinary Record 124, 63-4, 1989

Persistently infected animals (PI)

Note that many of these animals are difficult to detect and can only be identified by a blood test.

- unthrifty
- hairy
- stunted
- grow poorly

Prevention at grazing

- All cattle coming on farm should have a negative BVD blood test result and should be vaccinated for BVD.
- PI animals should not be allowed on farm and should be culled.
- Dairy farmers can monitor for BVD exposure through bulk milk testing which will show the virus or antibodies to the virus.
- Avoid mixing cattle from different farms.

We don’t want to introduce BVD on our farm so stock owners are required to vaccinate their heifers for BVD and we test all the trade cattle we buy before they come on farm. As an extra precaution, we always make sure we have a paddock between all the cattle mobs.

Contract grazier, 720 heifers, Oamaru, North Otago

More information


Facial eczema (FE)

FE is caused when cattle ingest spores from the fungus *Pithomyces chartarum* which contain the toxin sporidesmin. *P. chartarum* grows on dead and decaying pastures when the weather is warm and humid. FE is most commonly found in the North Island but clinical cases have also been identified in the Top of the South Island and in extreme conditions in Westland.

The toxin causes liver damage, and reduced growth rates or weight loss in all affected heifers (further signs listed below). Animal welfare issues are often associated with FE.

Often FE is not seen but liver damage is still occurring. There are likely to be ten animals with subclinical infections for every clinical case. It is unwise to assume FE is not present because there are no clinical signs.

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Brook P. Ecology of the fungus *Pithomyces chartarum* (Berk. & Curt.) MB Ellis in pasture in relation to facial eczema disease of sheep. New Zealand Journal of Agricultural Research 6, 147-228, 1963
Clinical signs

- agitation (kicking, restless, tail swishing, throwing head around)
- seeking shade
- skin swelling, peeling, appearing red (photosensitivity)

Prevention

Prevention is critical as there is no treatment for FE – it is only possible to minimise the impact of the clinical signs.

- On farm spore counts should determine when to begin and end FE preventative treatment, rather than relying on dates or local monitor farms. Spore counts can be carried out by your veterinary practice, or on farm if the appropriate equipment is available (i.e. microscope and spore counting slides).
- High doses of zinc protect the animals once the toxin is ingested, but will not protect the animals if they are not receiving enough. Weigh animals to determine the correct zinc dose. Accurate dosing is important for prevention.
- Fungicides kill the fungus not the spores, so when they are used they must be applied before spores are present or spore numbers rise above 30,000 spores/g pasture.

Your veterinarian can review your FE prevention programme to ensure it is effective.

FARMER VIEWPOINT

Facial eczema can reduce heifer growth rates, even without clinical signs. One season, even though the heifers looked fine, growth rates were very poor and it was a bad eczema year so sub-clinical eczema was all we could put it down to.

Dairy farmers, 265 cows, Inglewood, Taranaki

More information

- For more about FE, see https://www.dairynz.co.nz/animal/cow-health/facial-eczema/.
- For more about preventing FE and using zinc, see https://www.dairynz.co.nz/media/3312147/FE_steps_to_managing_using_zinc.

Liver fluke

The New Zealand liver fluke is the trematode Fasciola hepatica, a parasite of all grazing ruminants. All cattle can be affected but youngstock are the most susceptible. Typically, infection occurs in the spring and by late spring cattle can have considerable fluke burdens, but the effects may not appear until summer or autumn the following year.

The fluke has two hosts in its life-cycle, adult fluke in ruminants, and fluke larvae in freshwater snails which are most common in slow-moving or temporary water pools. Therefore, moist environments with a water source nearby are generally necessary for cattle to become infected with fluke.

Clinical signs

- lower than expected weight gain and poor feed conversion
- chronic wasting
- lower fertility/higher empty rates
- death
- weakness and/or anaemia

Prevention

Avoid grazing youngstock on areas where the host snail is likely to be present, such as swampy or marshy areas. Make sure animals have reticulated water to drink and fence off stagnant water sources. Routine treatment is recommended on farms where fluke infection is likely and difficult to prevent. Your veterinarian can help to develop a liver fluke management plan.

Pneumonia

Pneumonia is an inflammation and congestion in the lungs. It can have a wide variety of causes such as: viruses, bacteria, accidental inhalation of foreign material, abscesses, cancers, fungus and parasites. Other diseases have similar signs, e.g. allergic swelling, infection of the sinuses and collapsed trachea. Consequently, veterinary involvement is required for accurate diagnosis and appropriate treatment.

Clinical signs

- strained breathing and distress
- weight loss
- coughing
- discomfort (pain)
- nasal discharge
- intolerance to exercise (slow movement)
- reduced/no appetite
- fever (sometimes)

Increased risks

- After a stressful incident e.g. travel, handling, poor stockmanship, poor hygiene.
- Underweight when transported.
- Recently weaned off milk or significant feed changes.
- Animals raised in intensive conditions or with poor ventilation (indoors).
- Animals already in poor health (poorly fed or other illnesses).
Prevention

- Make sure animals are well-fed.
- Meet minimum heifer weights before transport.
- Limit transport distance.
- Do not significantly change feed type at the same time as transporting animals, or when the risk of other animal health problems is higher e.g. at calving, or during the facial eczema season.
- If the cause is infectious, isolate affected animals to prevent transfer.
- Avoid mixing animals from different mobs.
- Maintain hygiene when dealing with mobs, e.g. wear gloves, wash hands in between animals, wash boots, clean equipment.

**Farmer Viewpoint**

Every year we would have a few heifers that would break with pneumonia after arrival, but we eliminated that issue by requiring that heifers be a minimum of 100 kg when they arrive in early December.

Contract grazier, 380 heifers, Te Kuiti, King Country

**Yersiniosis (Yersinia)**

*Yersinia pseudotuberculosis* is a bacterium that causes sporadic cases of diarrhoea in young animals after weaning. Cases are often seen in winter and spring, and after stressful events, such as: inclement weather, transportation, calving, yarding, feed shortages, concurrent parasitism, and BVD. Infection occurs through oral exposure to infected faeces.

Clinical signs

- diarrhoea
- anorexia
- poor growth
- stunting
- wasting

Prevention

Prevention can only be achieved by minimising the impact of the predisposing factors on animals.
Theileriosis (Theileria)$^{7,8}$

*Theileria* are blood parasites spread by ticks and have been in New Zealand since at least 1984,$^9$ but until recently cases of theileriosis were isolated and intermittent. In 2012 a new strain was identified, which was associated with cattle illness and death. The disease is most common in the North Island and top of the South Island; however, cases have been reported in most other areas. Ticks transmit the infection by introducing the parasite when feeding. Only small numbers of ticks are required. A number of farmers have reported the disease in their cattle despite never seeing ticks on their farm. Infection is life-long, but a relapse of disease (clinical signs) is uncommon.

**Clinical signs**

- weakness, collapse, or reluctance to walk
- abortion
- anaemia/pale mucus membranes (most easily observed in the vulva)
- difficulty in breathing
- death

If theileriosis is suspected contact your veterinarian.

**More susceptible animals**

- Young calves.
- Animals under stress, e.g. relocating farms, calving, underfed, diet changes, ill-health.

**Prevention**

- Ticks are the vector of *Theileria* – controlling ticks may help to reduce spread. However, prevention can be difficult since many wild and domestic animals, such as pigs, possums, deer, goats, birds, rabbits, hares, cats and dogs can be tick carriers, as well as cattle.
- Livestock entering the farm in any risk area or during a risk season should be quarantined and treated for tick infestation. As infected animals will continue to carry the infection, treatment will only reduce the chances of transfer.

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• To limit the risk of theilerosis ask stock owners if animals on their farm have ever had theileriosis. If they are not sure, a sample group of the animals can be blood tested to give an indication of the herd status.
• Over time, cattle will gradually build up some immunity to Theileria.

More information
• For more about theileriosis and treatment, see the Theileria page on the DairyNZ website https://www.dairynz.co.nz/animal/cow-health/theileria/

Other diseases

Other illnesses that can affect heifers include:
• lameness
• pinkeye
• lice
• ringworm
• lumpy jaw
• woody (or wooden) tongue

For more information on the cause or prevention of these illnesses contact your veterinarian.