

# Dairy News

## CALF REARER OF THE YEAR

**First of all, we would like to thank everybody who nominated or entered this year's awards. We have had a noticeable increase in popularity from last year, which is great!**

Calf rearing is an extremely important part of dairy farming and that until recently, has not been fully appreciated.

Research is clearly demonstrating that better calves = better dairy cows = more milk in the vat!

Not that productivity is the sole reason calf rearers do the wonders they do, they do it to achieve healthy, vibrant calves, by putting in an enormous amount of work and effort.

It was a tough task to separate out the finalists! All of them had impeccable hygiene, superb failure of passive transfer results, fantastic looking calves and next to no issues with disease. Massive congratulations to you all, on your fantastic achievements. Needless to say, making the decision for this year's winners really meant we had to nitpick through all the details.

**Our winner for this year;** Jess Maaka from Dukefield. A runner up last season, Jess has maintained a high level of calf care for multiple years and can this year lift the calf rearer trophy with pride.

**The runner ups, in no particular order:**

Meagan Wilcock from Wilcock Farming

And the entire calf rearing team at Claxby Farming. Ashley Spark, Olivia Gibb, Heidi Taylor, Kate Rive.

This is what we feel it's all about, the mutual respect for the hard work which goes into rearing these awesome animals.

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**ABOVE:** Jess Maaka from Dukefield, Calf Rearer of the Year, with Vet Paul Blondell.  
**BELOW:** One of the runner-ups, Jo Spencer-Bower (centre), with Veterinary Technicians Leanne Bisseker (left), and Tanna Scott (right).



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# Early Aged Pregnancy Detection

You will all be familiar with how we pregnancy scan: The vet comes out, dons their best ghostbusters outfit, and stands on the platform confirming if cows are in calf or not. But what you may not know is what we see when we do it. Below are some snapshots of some foetuses at 40, 65, and 100 days old.



We commonly age pregnancies based on the length of the whole foetus, or by the diameter of the head.

- At 40 days the whole foetus is just 2cm in length – Trying to age younger than this increases the chances of the foetus being missed, or a cow with just fluid in her uterus being mistaken as pregnant.
- At 100 days the head alone is 4cm in diameter - This takes over most of our field of view. When scanning any older than this and it is difficult to capture the whole head in the image to age it effectively.

Ageing pregnancies therefore is only reliable between days 40-100 (6-14 weeks) of pregnancy. I.e. to do it we must wait at-least 6 weeks after a cow has been mated but not more than 14 weeks.

If mating was only 8 weeks long then we could age all pregnancies in one hit 6 weeks after the end of mating. But alas, in order to get enough cows in calf we generally have to mate for much longer. A typical 11 week mating means that if we want to age all pregnancies then we need to do 2 scans.

The first scan should be 12-14 weeks after the PSM. This allows us to effectively age anything that conceived in the first 6-9 weeks of mating (this should be about 70-85% of cows). A second scan rechecks animals (animals that were not identified as pregnant at the first scan-approximately 20% of the herd) at least 6 weeks after the end of mating will allow us to age anything that conceived in the second half of mating.

## So, why bother doing aged pregnancy scans?

Accurate calving dates allow you to:

- Make strategic dry off decisions
- Make earlier culling decisions
- Manage body condition and late lactation feeding
- Better manage the dry period; including movements to and from the run off and formation of the springer mob
- Produce a detailed reproductive analysis including:
  - o Accurate 6-week in calf rate & conception rate
  - o Success of non-cycler treatments/mating interventions
  - o Performance after the 6 week mark i.e bull performance

This is a lot of extra information for the cost of rescanning a relatively small proportion of cows. Information you can use to make a number of important management decisions and have more control over the entire farm season. If you don't want these benefits and just want to know if your cows are pregnant or not, we can do a single scan 6 weeks after the end of mating.

**Call us nice and early to book in your pregnancy scanning. It's a busy time of year for us and we only have limited scanning units. The earlier you book, the better chance we will be able to do it on your preferred day.**



# Teat condition is udderly important

Regular monitoring of teat condition is a useful tool for assessing the milking routine and milking machine operation. But often this can be overlooked with automatic cup removers and automatic teat sprayers.

With mastitis being one of the biggest health issues facing the dairy industry, teat health becomes a key determinant for good milk quality and preventing udder infections.

Regular teat condition scoring should therefore be considered just as important as body condition scoring and locomotion scoring to keep mastitis rates and somatic cell counts in check.



Poor teat condition is a major risk factor for mastitis

## What should I look for as indicators I may have a problem?

There are many changes which can be monitored to provide insight into what is happening during the milking process. Things to look out for have been highlighted below:

### Cow behaviour

Previous experiences are remembered by cows so observing cows as they enter the shed/bale may provide insight into recent milking experiences. Once they are standing on the platform or in-shed observe for signs of shifting feet, stomping, kicking cups off early, or delays in milk let down as this could indicate they are uncomfortable. Being agitated after cups-off may also indicate uncomfortableness and possible teat damage.

### Teat skin condition

Teat skin condition is one of the cow's major defences against mastitis providing an essential barrier against bacterial invasion. Broken skin, cracking, chapping, and rough skin harbours more pathogenic bacteria, allowing colonisation of mastitis causing bacteria such as *Staph aureus*. Dirty teats are also prone to problems as mud strips away protective oils and moisture from the skin with a consequent loss of skin elasticity.

Evaluate the skin by lightly rubbing the teat surface with a finger and classifying as either normal (smooth, soft, supple), dry (scaly, rough, no cracking) or with open lesions. Dryness can be accelerated in cold or windy conditions and the presence of chapping may indicate poor teat spraying technique or inadequate proportions of emollient. Cows with dry and badly cracked skin are often slow milkers and the increased time with cups on can lead to more teat damage.



Sores/chaps/cracks



### Teat ends – openness of the teat orifice

Teat end condition should be assessed within 1 minute of cluster removal and before teat spraying. A closed teat end orifice is particularly important as this forms a critical barrier to prevent bacteria from entering the udder. Post-milking openness of the teat orifice (about the size of a match stick, >2mm in size) can be linked to high vacuum pressures, overmilking, heavy cluster weight or liner tension.



## Teat ends - hyperkeratosis

Milking machine induced teat damage commonly occurs at the ends of teats and appears as roughness or a callous. The skin's natural mechanism against regular damage is to thicken by producing extra layers of protective keratin in a process called hyperkeratosis. Low levels of hyperkeratosis appear as smooth rings and are a normal response to machine milking, but increased hyperkeratosis is associated with increased risk of intramammary infection.

Rough teat ends with cracks and pits provides a place for bacteria to survive and multiply outside the udder in close proximity to the teat orifice. Rough teat ends also alters skin elasticity around the teat opening and can hamper teat closure after milking. Skin thickening can also extend up the teat canal increasing the risk of new infection.

The degree of hyperkeratosis correlates to the degree of mechanical force placed on the teat while the cups are on. Some factors may include high vacuum pressure, prolonged overmilking, incorrectly set threshold for automatic cluster removal.

Assess for teat end damage around the teat opening. No rings or slightly raised smooth rings are acceptable, with the target of <20%. Roughened raised rings indicates a breakdown in skin integrity and is worthy of investigation.

## Swelling at or near the base of teats (ringing)

A visible line, thickened ring or swelling above the level of the liner mouthpiece may indicate high vacuum pressure, overmilking or teat cup crawl.

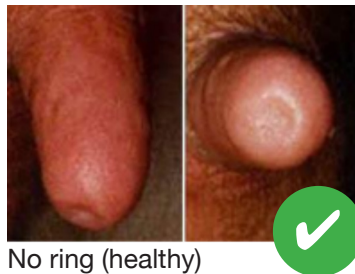
## Teat colour at the end of milking

Red or blue discolouration on the teat surface after cluster removal may point to problems with blood supply to the teat while the cups are on.

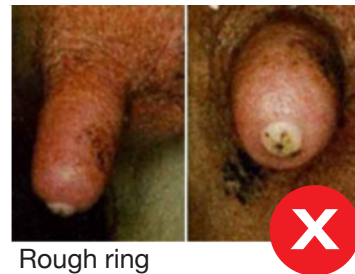
Red bruising or blood spots/blisters typically indicates damage to blood vessels, while blueness may indicate blood flow has been cut-off. Possible causes include high milking vacuum pressure, prolonged overmilking, pulsation failure or incompatible liner/shell.

## Teat firmness/hardness

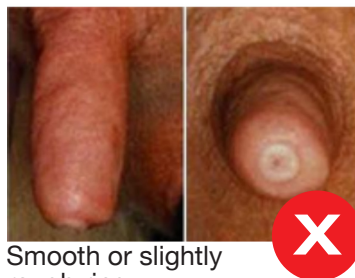
Teats should feel soft and compliant after milking. Swollen, hard or firm teats or flattening at the teat end (wedging) indicates milking induced changes.



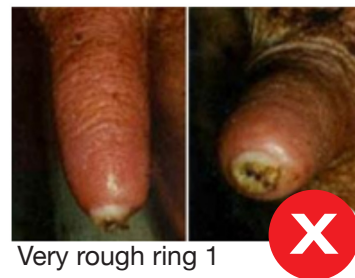
No ring (healthy)



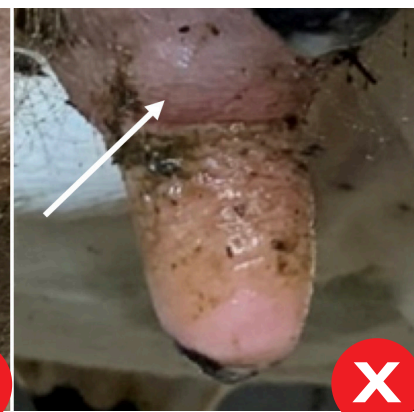
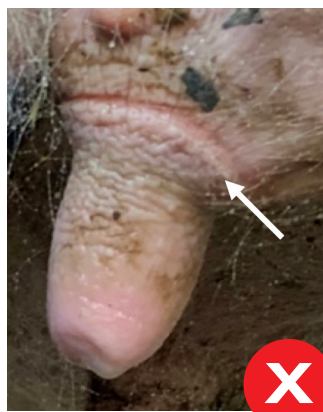
Rough ring



Smooth or slightly rough ring



Very rough ring 1



## Teat lesions

Any open lesions can harbour contagious pathogens such as *Staph aureus* but also cause pain and discomfort for the cow during milking.

Sores or lesions on teats may also be due to infectious causes such as viral and bacterial infections, these animals should be isolated from the milking herd and milked last to reduce further spread to healthy cows. Some lesions can be contagious to humans, so wearing gloves and disinfection is recommended.

Regular checks of teat condition are recommended to pick up and identify emerging issues and to take action

### TARGETS

Skin condition >95% supple  
Teat end damage >90% normal

Assessing 50 cows once a month as an early indicator of problems

## Teat spray coverage

Post-milking teat disinfection aims to kill bacteria that may have been transferred onto the teat surface during the milking process before they have the chance to enter the udder via the teat orifice. So, it stands to reason, teat disinfection will only be effective if it covers the entire teat. Teat spraying the entire teat surface is particularly important to contain contagious bacteria such as *Staph aureus* and *Strep agalactiae*.

Teat spray coverage can be checked using a paper towel wrapped around each teat to see if all the surface of the teat has been sprayed. Each cow should be receiving at least 20mL per milking for good coverage. Improving spray coverage may require an adjustment to manual techniques or recalibration of the automatic spray unit.



## Teat spray mixes

An accurate ratio of teat spray, emollient and water is a critical factor for maintaining teat softness. Emollients such as glycerine are effectively moisturisers/conditioners to maintain suppleness of teat skin, taking moisture from the air and trapping it on the skin surface to allow rehydration. Emollient concentrations should be determined once water has been added to the mixture and adding extra to achieve a concentration of 12-16%. It's important not to take a one-size-fits-all approach or to switch to seasonal mixes, but rather be guided by what the teats are telling you.

## Cluster alignment & liner slip (squawks)

Incorrectly aligned cups can lead to uneven milking out.

Liner slip, sudden fluctuations in vacuum, or rough removal of teat cups can result in the reverse upwards flow of milk when air enters, increasing the risk of spreading mastitis-causing bacteria.



# Udder Health Check

An important check at the cow level to give you assurance that the interaction between milking plant and cow is running optimally.

Of course, you know the cause of mastitis is bacteria, but did you know that damage to the teats / teat ends and the quality of the teat skin is a major risk factor for bacterial colonisation of the teat?

**The main cause of this damage comes from the milking plant.**

**To ensure this isn't an issue on your farm our recommendation is a milking time visit by our qualified Veterinary Technicians.**

These checks should be completed twice a year

- once during peak milking (late September)
- further check at late lactation (February)

During a visit the Veterinary Technician will assess:

- Teat ends
- Teat skin quality
- Teatsprayer function

Teat scoring is a starting point for improving milk quality and the cows will tell you what's wrong.

From this we can identify areas for action and opportunities for improvement such as:

- Teat spray essentials
- Milking machine function



Udder Health Check  
Post visit report  
Vet follow-up guidelines

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**Cost:** \$100+gst & travel\*

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\*Please note: if the results of the Udder Health Check are concerning and require further Veterinary attention, a follow-up visit from a vet may be required. Additional charges apply.



# Thiamine (Vitamin B1) Deficiency

## What is Thiamine?

Thiamine is used in the carbohydrate metabolism pathway in ruminants. It plays a critical role in supplying energy to various organs in the body, specifically the brain.

Thiamine is either ingested directly via feed or produced by certain bacteria in the rumen. It cannot be stored in the body.

## How do animals become deficient?

This usually occurs after a recent diet change, particularly onto lush pastures. Hence it is commonly seen in weaned calves in early summer.

The balance of bacteria changes in the rumen; fewer thiamine-producing bacteria are present, with an increase in bacteria that produce an enzyme which breaks down thiamine (thiaminases).

Lower production of thiamine leads to inhibited carbohydrate metabolism, which causes brain swelling, termed Polioencephalomalacia (PEM).

Secondary thiamine deficiency occurs through any process (e.g. sickness) which reduces feed intake and normal digestion. Grazing on soils high in sulphur levels can be a predisposing factor, as high sulphur levels inhibit production of thiamine (e.g. as in brassica crops). This may be a concern if you have had repeated cases over multiple seasons.

## What are the signs?

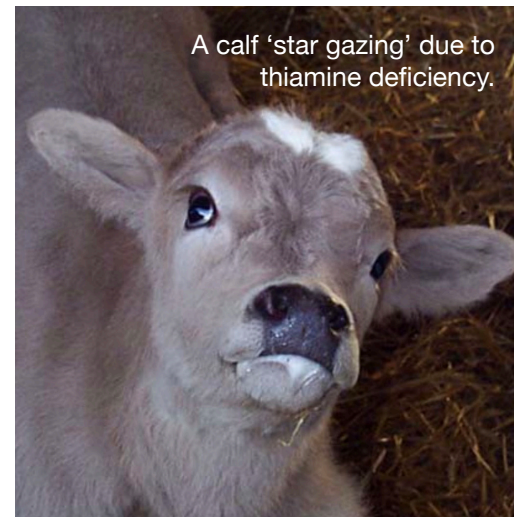
Brain swelling causes neurological signs. These can begin very mildly – e.g. calves are noticed at the back of the mob when being moved, separate themselves, reduced eating/drinking. This progresses to looking 'drunk', being wobbly, disorientated, blind, head pressing, shaking and trembling.

It can quickly progress to complete blindness as the brain swelling affects the optic nerve first and eventually can cause animals to go down and not be able to stand back up. They often appear to 'star gaze', turning their heads upwards.

## How can it be treated?

Acute cases are diagnosed by clinical signs as blood tests take a long time, and speed of treatment is the key to survival. An intravenous vitamin B1 injection is required. Follow up injections of vitamin B1 will be needed over the next few days, starting twice daily. An anti-inflammatory steroid injection can also be used.

If an entire mob is affected, an oral vitamin B drench can be used.



A calf 'star gazing' due to thiamine deficiency.

## How to prevent it?

Avoiding sudden changes in diet is the key factor to preventing thiamine deficiency, moving cattle onto higher quality feed slowly, with plenty of fibre available.

If a risk period is approaching, using a preventative oral B vitamin drench helps reduce the risk of an outbreak occurring.

For every pack of Eclipse E B12 & Se (500ml) purchased during November & December

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70lt Dometic Cool Ice chilly bins valued at \$399.00



Limited promotion, while gift vouchers last.

# Coughing Cattle

At this time of year and throughout summer, if you have animals on pasture coughing you should be suspicious of lungworm. Mobs of young calves can be severely affected due to reduced immunity and exposure to high larval loads on pasture, particularly if the same grazing area has been used for growing youngstock in the past.

Like intestinal worms, lungworm larvae are ingested from pasture, but then migrate from the intestines, travel through the bloodstream to the lungs where eggs are coughed up and swallowed, then excreted into faeces. Lungworm larvae can survive for a long time on pasture and their spread is facilitated by attaching to fungal spores in mushrooms growing in cow pats. A perfect storm can occur following wet weather, long drenching intervals and if calves are being reared on the same paddocks over multiple years.

## Why worry about lungworm?

A few animals affected may just be the tip of the iceberg as worms become lodged in airways leaving them struggling to breathe. Unlike intestinal worms, only a small number of worms are required to produce clinical disease. Outbreaks can occur when naïve animals with no immunity are exposed to worms for the first time.

Typically, adult cattle have developed immunity, but this is not always the case. Heifers grazing on a run-off block with a continuous drenching program remain naïve and face problems later when they enter the milking herd, as they may not have received enough natural challenge to develop immunity.

## How will I know if my cattle are affected with lungworm?

- Frequent coughing, especially after exercise
- Increased breathing rate when resting
- Discharge from nose or drooling
- Extended head and neck or gasping for air
- Reduced milk yield in adult cows
- Sudden death
- Youngstock may continue to eat but have poor coat and condition

Cross section of airways with lungworm >



Post-mortem examinations can be useful to diagnose infection.

## If I suspect lungworm infection, what should I do?

Thankfully, 'mectin-based' drenches are highly effective against lungworm and there are no current reports of resistance. Best results are achieved early in the course of disease before structural damage to the lungs occurs and to limit further larval contamination on pasture. The choice of product depends on duration of action and ease of administration.

Clinical signs may worsen after drenching as killed worms accumulate and block airflow in airways.

Also consider:

- Removal from affected pasture
- Anti-inflammatories are useful to reduce the reaction to larvae in severe cases
- Severely affected calves may need re-hydration

## YOUNGSTOCK (safe options for under 120kg)

### Injectable options



**Eclipse E** (*Eprinomectin, Levamisole*), available with B12 + selenium. Levamisole targets *Cooperia* worms while Eprinomectin is particularly good at killing *Ostertagia*, so the two active ingredients will kill the two most important parasites in young calves. Provides persistent activity against lungworm.  
**Dose rate:** 1mL/35kg, given under the skin

### Oral drenching options



**Turbo Advance** (*Eprinomectin, Levamisole*) + cobalt + selenium  
A good safe option for calves under 120kg.  
**Dose rate:** 1mL/10kg, given orally



**Turbo Initial** (*Eprinomectin, Levamisole, Diclazuril*) + cobalt + selenium. Provides cover against intestinal parasites plus protects against coccidia.  
A good safe option for weaned calves grazing on pasture and coming off coccidiostat-treated meal before they develop immunity to coccidia.  
**Dose rate:** 1mL/10kg, given orally

Regular drenching intervals for youngstock is important for lungworm control

## ADULT CATTLE

### Pour-on options

Most 'mectin-based' drenches (eg. Eclipse Pour-on, Boss, Reflex, Eprinex, Eprisure, Turbo Advance) are effective against adult and immature stages of lungworm but will not have persistent activity against subsequent pasture challenge.

### Injectable options



**Dectomax** (*Doramectin*) Provides persistent activity against infection and recommended for outbreak situations.  
**Dose rate:** 1mL/50kg, given under the skin



# 'It Feels Like Summer'

With a long and hot summer predicted this season, **heat stress** in our dairy cattle is something that we may see occurring. Whilst most of the research surrounding heat stress in cattle has been done in the Northern Hemisphere, we've reviewed the literature and highlighted some of the main points of interest, including what to look out for (physiologically and behaviourally), and how we can prevent the effects of heat stress having an impact on our cows here in North Canterbury.

## WHAT IS IT?

Heat stress can be defined as *'the sum of external factors acting on an animal that causes an increase in body temperature and results in a physiological response and changes in behaviour'*.

## BEHAVIOURAL CHANGES:

**Increased water intake**

**Reduced feed intake**

**Decreased activity & movement**

**Shade seeking**

**Aggression**

Water intake can increase by 1.2kg/degree C above the minimum ambient temperature (cows prefer temperatures under 20 degrees). Water accessibility is considered to be the most important resource for a heat-stressed dairy cow, and the provision of an adequate and fresh water supply should not be overlooked!

When a cow becomes heat stressed, she reduces her DMI which lowers metabolism and results in fewer nutrients and energy available for milk synthesis; this results in less milk production. Data suggests that lactating cows have an increased sensitivity to heat stress (when compared to non-lactating cows) due to the high metabolism required for milk production.

An increase in standing time is considered to be one of the major risk factors for lameness occurring. Therefore, heat stress is also considered to be a risk factor for lameness, as animals seek shade and decrease their level of activity.

Increased levels of competition for shade access can result in aggression between animals, and frustration of individual animals. **Frustration** is considered as 'an emotional state experienced when an individual fails to achieve expected gratification'. Some hypothesize that the feeling of frustration can be seen as aggression of an individual animal to another, when competition is high for a desired variable (such as shade) and water.

## PHYSIOLOGICAL CHANGES:

**Reduced milk production**

**Reduced reproductive performance**

**Increased respiration rate**

**Sweating**

**Reduced milk production is one of the first indicators that we see in the shed, that suggests a cow isn't doing too well.** Milk yield is an easy change to measure and has a direct link to farm profitability. However, there is generally a lag of 24-48 hours between an elevation in environmental temperatures and reduced milk production. So, whilst it is important to note a change in milk production, it is more an indicator that the cow *has* experienced heat stress.

**Food for thought:** Whilst the idea of a sprinkler system in the dairy yards sounds like a good idea to combat heat stress experienced by cows during yarding, some research suggests that these could have a negative impact on the animals, with an increase in avoidance behaviours such as shoving/pushing and lowering heads. Cattle appear to prefer to seek shelter (shade) in an effort to avoid adverse weather conditions. Therefore, providing shade on the yards or access to plenty of water (in/near the yards/tracks) may be a preferred approach.

## SUMMARY

Taking steps to prevent heat stress and providing animals with the adequate requirements to optimise their welfare (and so level of production) is the best approach to have on farm this summer. Our suggestions:

- Provide adequate access to a clean trough(s) and fresh water supply
- Where possible, limit milking/yarding to the cooler periods of the day
- Consider decreasing the frequency of milking when summer hits (consider 16 hourly milking intervals)
- Provide adequate shelter for your herd to allow all animals to seek shade from the sun; reducing their body temperature, and reducing the level of frustration and aggression experienced by individuals

# BVD and the constant threat

**Bovine Viral Diarrhoea (BVD) is one example of a disease that can persist within a herd/ community but with appropriate measures can also be managed to work towards elimination.**

This season we have reported a number of positive bulk milk BVD tests across the district. At some point, these affected herds have had exposure to a BVD-persistently infected (PI) animal, most likely away at a grazing block, which has then allowed a PI animal to enter the milking herd.

Research indicates a lot of dairy herds have cleared BVD but now have low immunity levels (a naïve herd that is highly susceptible) so the risk of a BVD incursion is now even more serious. As during the COVID-19 pandemic, eliminating BVD from your herd is a step in the right direction but is ineffective unless coupled with testing & culling, vaccination and adequate biosecurity.

## Health effects of BVD

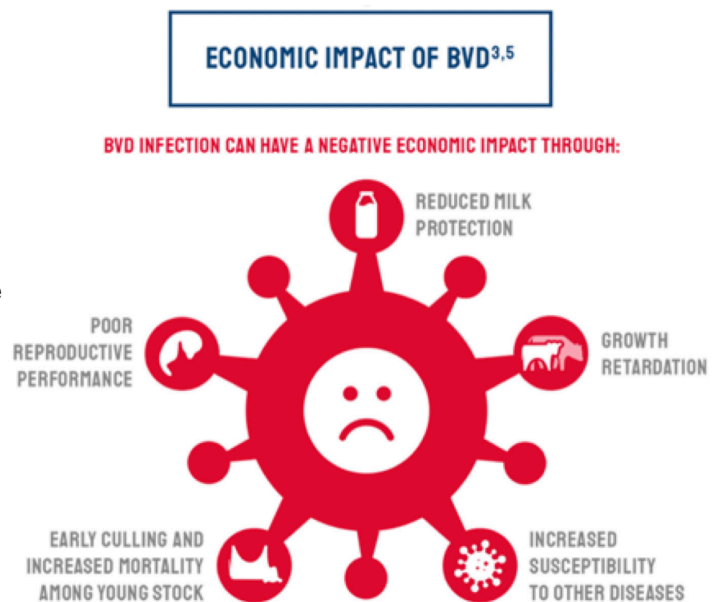
The effects of BVD within a herd are varied and far-reaching:

In heifers and cows, BVD seriously impacts fertility through early embryonic death, resulting in higher empty rates and long returns to service. Later on, it may cause abortions, stillbirths, mummified fetuses and even birth defects.

In bulls, BVD causes infertility which can have disastrous consequences on pregnancy rates. Bulls can shed the virus in semen if they become transiently infected and so become a major source of transmission during the breeding season.

BVD also causes immune suppression, so young calves can become more susceptible to other diseases such as pneumonia, scouring, coccidia.

Production effects include reduced milk yield and reduced growth rates. Research indicates a persistently infected (PI) animal has half the milk production of a non-PI animal, is approximately 70kg lighter at 21 months, has a lower survival rate, has a 17x higher risk of mastitis and a 12x increased risk of severe illness.



Courtesy BVD Zero, Boehringer Ingelheim

## The super-spreader – PI animals

BVD persistence within a herd occurs when a 'PI animal' (persistently infected animal) carries the disease and transmits the virus to other animals through close contact. The concept of 'close contact' can include co-mingling with a PI animal, a brief nose-to-nose encounter over a neighbouring fence line, or grazing in an environment contaminated with faeces from a PI animal.

A PI animal can only be created when the dam is exposed to the virus during the first 4 months of pregnancy, when the developing foetus has an immature immune system. The cow will become transiently infected, and like catching a cold, perhaps have a high temperature and be off-colour for a short period but will recover and develop antibodies. A transiently infected animal only transmits the virus for a short period of time. Unfortunately though, if the exposed foetus survives to birth, they become a 'virus factory' and will nearly continuously shed the virus throughout their entire lifetime, infecting other animals they have contact with.

**PI animals cannot be cured or treated and must be culled**



## Surveillance testing for BVD

**Bulk milk sampling the milking herd** - bulk milk sampling is extremely sensitive and effective in detecting BVD within the milking herd. There are 2 components to BVD bulk milk testing.

- **BVD bulk milk antibody ELISA** – Monitors for signs of ongoing BVD exposure. A spike between the start and end of season indicates the cows have been exposed during the risk period for generating PI calves. Testing all replacement heifer calves born next season is essential to identify any PI animals.

- **BVD bulk milk PCR test** – Screens the milkers for the presence of a PI animal. This test is essential BEFORE mating to ensure no PI animals have entered the milking herd since last season. Note: Bulk milk test results only reflect the BVD status of animals contributing to the vat on the day of sampling, so calves, heifers, colostrum or lame cows will need to be individually tested.

**Screening heifer replacements** - It only takes 1 cow to become exposed to get a PI animal. Calves should be treated as new introductions to the farm, so screening heifer replacements ASAP after birth will catch any breakthroughs. Ear notch sampling can be done at the time of disbudding and can differentiate between a persistently-infected, transiently-infected and a non-infected animal. **Stopping BVD is all about cutting off the supply of PI animals, so identifying them early allows quick removal!**

**Screening bulls** - Bulls are a high-risk group due to the timing of their introduction into the herd. A large number of AB calves are likely to be within the risk period for developing into a PI calf if exposed to BVD. **Ensure you only purchase BVD-tested bulls that have been vaccinated prior to arrival.**

**Individual blood testing** - While a scouring, poor-doing animal is a common sign for BVD infection, this is not always the case. Blood sampling individual animals can identify the presence of virus and confirm if the animal is persistently infected.



## Biosecurity

Don't become complacent if there is no evidence of infection within your herd. Maintaining good biosecurity measures is important to prevent future disease introduction. These measures include;

- ✓ Knowing the **BVD status of any introduced stock** onto the property (bulls, herd replacements, bought in stock)
- ✓ Ensuring **good boundary fencing** with neighbouring properties to prevent nose-to-contact. Double-fencing or not grazing adjacent stock at the same time are effective means of social distancing..
- ✓ Maintaining **good levels of hygiene**. The virus doesn't survive well in the environment but can be easily spread in faeces, saliva, milk, urine.
  - If you're sharing yards, spell these for at least a week before re-using.
  - If you're milking the neighbours herd due to breakdowns, ensure proper washdown between milking herds.
- ✓ Quarantining stock of unknown status until they are tested or vaccinated.

**Testing calves is the best way to see if your biosecurity plan is working and to monitor for breakthrough.**

The below example demonstrates the potential number of animals that a calf on a New Zealand dairy farm could come into contact with, all before her second mating:



**TOTAL - 7,017** cattle that she could have been exposed to. Of course, one calf will not be exposed to all these animals - but she could be exposed to any of them.





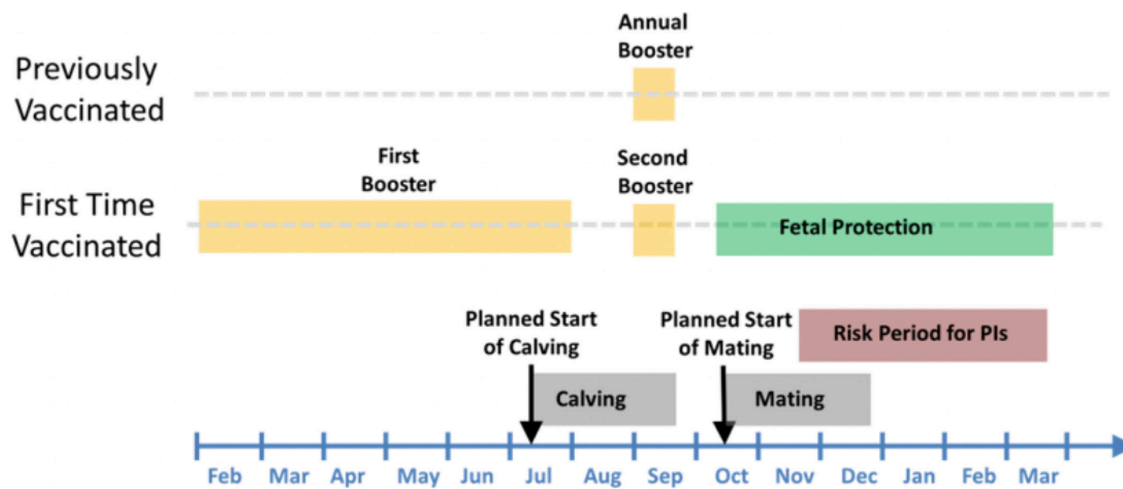
# BVD Vaccination

Vaccination remains the most effective means of breaking the cycle of transmission by preventing the formation of those pesky super-spreader PI animals. Although vaccination cannot completely stop animals from becoming infected, it will provide foetal protection by preventing virus spread across the placenta and formation of a PI calf. Vaccination will also reduce the severity of infection and minimizes production losses.

Note: Vaccination will have no effect on a PI animal as they cannot mount an immune response. They will continue to shed the virus even if vaccinated, so it is important to promptly remove PI animals and screen prior to vaccination.

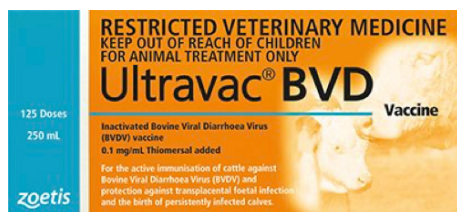
**Timing of vaccination is critical to break the transmission cycle.**

## RECOMMENDED VACCINATION SCHEDULE:



Courtesy BVDfree.org.nz

<b>Previously vaccinated animals</b>	: Annual booster, 2 weeks prior to PSM
<b>Previously unvaccinated animals (heifers)</b>	: 2 injections, 4 weeks apart, 1 month prior to PSM
<b>Bulls</b>	: 1 month prior to PSM : Vaccination of bulls is <b>ESSENTIAL</b> as the consequence of bulls becoming sick with BVD are severe.
<b>Carry-over cows/heifers leaving farm or away at grazing</b>	: Vaccinate before leaving the farm because often they don't return until they're ready to calve. : OR, vaccinate at least 1 month prior to PSM



The most devastating impacts of BVD are on pregnant cattle and their unborn calves, so protecting heifers and cows from infection during mating and gestation is critical. Protect the health of your herd by keeping BVD off your farm for good with Ultravac BVD® the premium foetal protection vaccine proven in New Zealand.

Work with your veterinarian to establish a **BVD eradication plan**, achieved by a combination of:



**Diagnosis and removal** of PI cattle



**Biosecurity** to minimise the risk of BVD re-entering



**Vaccination** to protect your herd – economic analysis shows that vaccination is an essential part of the most cost-effective BVD management plans<sup>3</sup>.

For more information on BVD visit [www.bvdfree.org.nz](http://www.bvdfree.org.nz)