

# From dry off to pay off

Practical ways to maximise the value of your next lactation



zoetis

# Making dry off count

The decisions made leading up to the dry off period are crucial in the New Zealand dairy system. When and how cows are dried off can set you up for the future.

The dry period is a unique window of opportunity to fix existing problems and prevent future issues. By taking steps at dry off to manage the health of your cows and the quality of their colostrum, you can help to minimise the stress of things going wrong at a busy time like calving.

There are three important issues to consider during dry off: **building cow and calf immunity, mastitis management,** and **protection from parasites.**

What you do (or don't do) during dry off, impacts herd health and calving success and sets your cows up for their next lactation. By putting some of these ideas into practice, you'll be one step closer to making dry off pay off.

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## SECTION 1

# Building immunity

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## What's a healthy herd worth to you?

Dry off is the time of year when milk production must cease as quickly as possible while avoiding udder infections.<sup>1</sup> Yet, cows are not far away from the dramatic transition of being dry and heavily pregnant, to fully lactating. It's a physiologically stressful time where cows are vulnerable to a range of problems and disorders that can affect their health and productivity.

One key issue to consider during dry off is the need to build your herd's immunity against the many different diseases that threaten the health of cows and unborn calves. Dry off is a convenient and effective time to optimise nutrition, vaccinate against important disease threats, and to deliver various animal health treatments.

### **Starting pre-calving care at dry off will lead to:**

- **Fewer calving problems and fewer sick cows**
- **Better quality colostrum**
- **Thriving calves and reduced death rates**

You'll also reap the benefits of having a herd of healthy cows for their next lactation.

## Various threats to cow and unborn calf health

Even with the most well managed farm environments, there's always the risk of diseases infecting your herd.

Cattle that are affected by disease may not always show obvious signs. However, the disease may be impacting productivity by:

- Reducing growth rates
- Reducing reproductive success
- Reducing milk production

# Losses caused by disease outbreak are distressing and costly

There are several common diseases which threaten livestock in New Zealand, which can be managed at or around dry off.

## Clostridial diseases

Caused by bacteria of the genus *Clostridium*, which are widespread in the environment. Clostridial spores are normally found in soil and faeces and can survive in the environment for long periods of time. They can also be found in the gastrointestinal tract and tissues of healthy animals.

### The most important species of clostridia causing fatal disease in cattle in New Zealand are:

- Blackleg (*Clostridium chauvoei*)
- Tetanus (*Clostridium tetani*)
- Enterotoxaemia/pulpy kidney (*Clostridium perfringens* type D)
- Black disease (*Clostridium novyi*)
- Malignant oedema (*Clostridium septicum*)
- Sudden Death (*Clostridium sordellii*)

Even if the signs of disease are spotted early, it is usually too late, too costly or not possible to treat effectively. Death is always the unfortunate result.

## Leptospirosis

Leptospirosis is a zoonotic disease, meaning animals can transmit infection to humans. Not only does it pose an important safety and health risk for you, your family and your workers<sup>2</sup>, it can also cause significant reductions in the productivity and reproductive performance of your herd.

The two most important types of leptospirosis in cattle in New Zealand are *L. hardjo* and *L. pomona*. Leptospirosis can spread through contaminated water supplies, food, pastures and soil. Infected animals shed bacteria in their urine and in material from the reproductive tract during calving or abortion. Floods can also enhance the spread of leptospirosis.

Leptospirosis (lepto) is the most important zoonotic disease in New Zealand and causes serious illness in people, including death. Despite widespread vaccination of dairy herds, there has been a staggering 67% increase in incidence rates since 2016<sup>3</sup>. A large number of these cases were from high risk occupations such as farmers or livestock transporters.

For adult animals, there may be no obvious signs of infection. In other situations, abortions, delivery of weak or stillborn calves and/or reduced fertility may be observed.

Leptospirosis can cause a deadly illness in humans, so protection from the disease is an Occupational Health & Safety obligation for farmers and their staff.



## Calf scours

Calf scours is one of the most stressful and costly diseases for farmers to deal with. The ongoing diarrhoea results in affected calves losing essential body fluids, nutrients and electrolytes. The pathogens associated with infectious neonatal calf scours in New Zealand include, Rotavirus, *E. coli*\*, Cryptosporidia, Coccidia and Salmonella.

Rotavirus and cryptosporidium are recognised as the most clinically significant pathogens.

## Bovine viral diarrhoea (BVD)

BVD (bovine viral diarrhoea) is one of the most common and costly diseases in New Zealand cattle.

In New Zealand, about 15%-20% of dairy herds and 65% of beef herds are infected with BVD virus. Around 80% of New Zealand dairy and beef herds have had exposure to BVD virus at some point in time.<sup>4</sup>

BVD has been shown to cause scouring and ill thrift in young cattle. In adult cattle, BVD is associated with reproductive losses, reduced milk production and elevated milk somatic cell count.

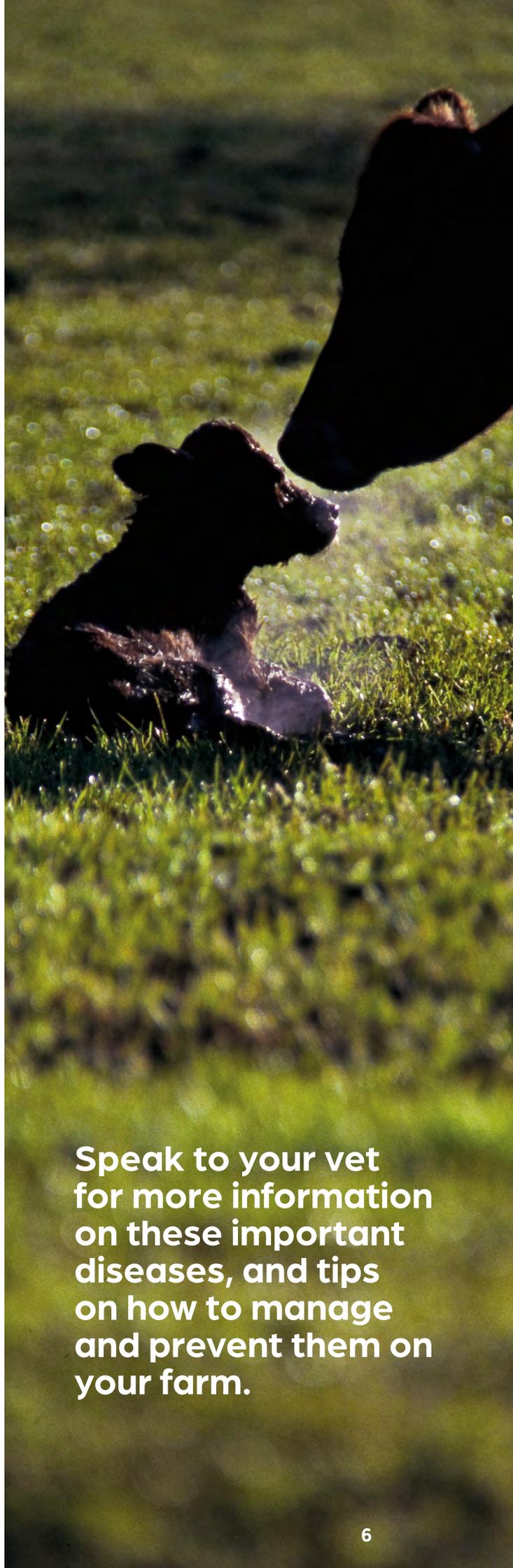
The effects of BVD virus on fertility and on the unborn calf are profound, including poor pregnancy rates, abortion, stillbirths, birth of “dummy calves” and the birth of persistently infected (PI) carriers of BVD virus. PI cattle are responsible for the maintenance of BVD virus infections and managing PIs is critical to BVD control.

## Other Infectious diseases

There are other infectious diseases that can lead to significant losses in your herd. These include:

- Mastitis causing pathogens e.g. *Streptococcus uberis*, *Staphylococcus aureus*
- Salmonellosis
- Pinkeye (or ‘bovine keratoconjunctivitis’)
- Johnes disease

\* *Escherichia coli*



**Speak to your vet  
for more information  
on these important  
diseases, and tips  
on how to manage  
and prevent them on  
your farm.**

# Prevention is better than cure



Managing sick animals for hours on end during the busy calving period or milking season can make for very stressful workdays. **That's why it makes sense to prevent illnesses at dry off.**

Dry off is an ideal time to ensure cows get the best possible immunity, and to enable them to pass this on to their calves when they are born. Annual vaccination enhances the level of immunity in your herd, maximising the health of your animals and your business. In the case of diseases such as leptospirosis, vaccination also protects the health and safety of you, your family and your staff.

**Leptospirosis** can be prevented using a dedicated leptospirosis vaccine (Leptosshield® or Leptosshield 3), or a combination vaccine that also contains the five most important clostridial antigens (Ultravac® 7in1). These vaccines all provide immunity against the two most important strains of leptospirosis – *L. hardjo* and *L. pomona*.

**Clostridial vaccines** are available as a 5 in 1 (Ultravac 5in1) product, 6 in 1 (Ultravac SD 6in1) or combined with leptospirosis protection in a 7 in 1 product (Ultravac 7in1).

**Ultravac 7in1 is the only combination vaccine in New Zealand**, which prevents leptospirosis and the five major clostridial diseases of cattle and sheep in New Zealand.

**Scourguard® 4K** is a pre-calving vaccine for pregnant cows and heifers to stimulate development and transfer of maternal antibodies in the colostrum. Once a calf receives an adequate dose of good quality colostrum, these antibodies will be the source of the calf's protection against scours caused by bovine rotavirus, coronavirus and *E. coli*. Scourguard 4K is the only vaccine that protects against both New Zealand strains of Rotavirus (G6 and G10), ensuring better cover for your calves.

**Scourguard 4K offers the most flexible schedule available** and therefore conveniently fits into your dry off to pre-calving management activities.

**Ultravac BVD** offers reliable insurance against PI's and BVD losses. Vaccination with Ultravac BVD is recommended to:

- Prevent disease in young stock; calves are generally vaccinated from 3 months of age
- Protect breeding stock by annual revaccination
- Prevent foetal infection and the birth of PI's (Persistently Infected or carrier calves)

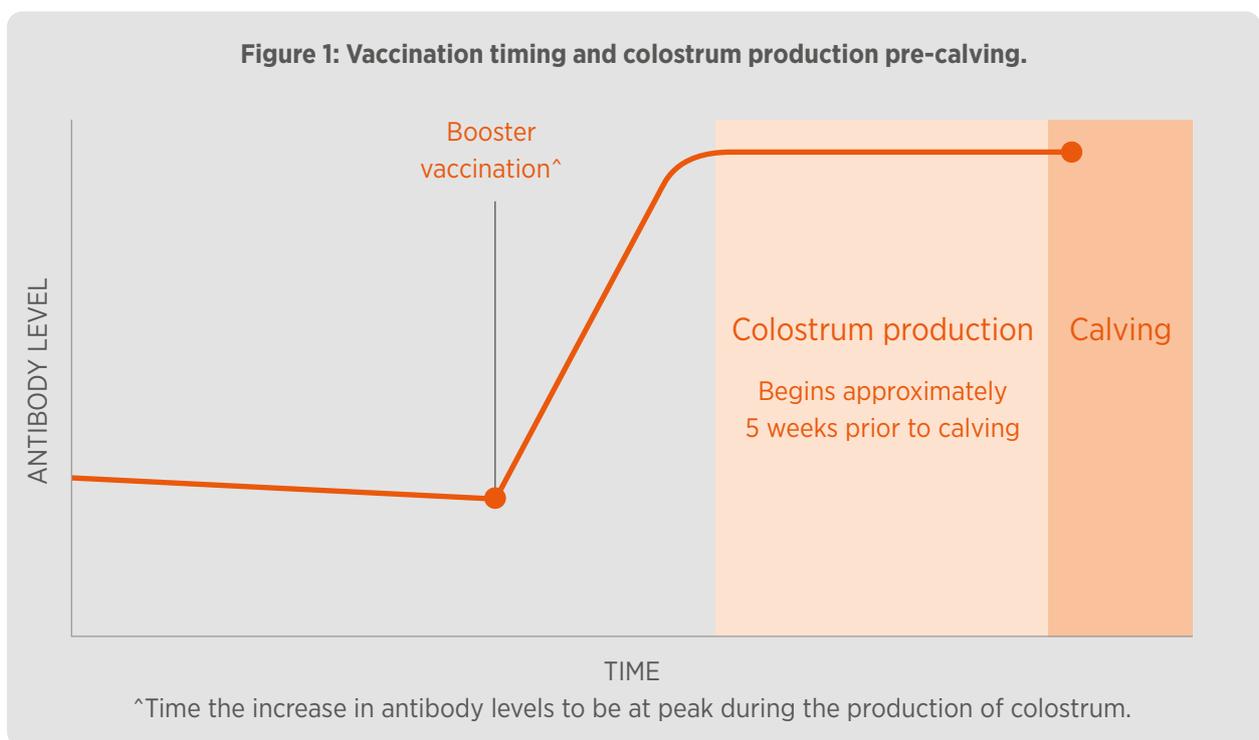
**Preventative vaccines** are available for a range of other diseases. Ask your veterinarian for advice about the most appropriate prevention plan for your farm.

# Supercharged colostrum?

For your calves – the future of your herd – good quality colostrum is crucial to provide protection against infectious diseases.<sup>5</sup> But did you know that it's possible to increase the amount of protective proteins (called antibodies) in a cow's colostrum, through effective vaccination?

Because colostrum begins to develop approximately five weeks before the birth of the calf, timing of vaccination is important. This ensures peak antibody levels reach your newborn calves, protecting them against the important diseases, such as clostridial disease and calf scours (see Figure 1). Vaccine labels carry specific instructions on the best time to administer the vaccinations for optimum results.

➔ For tips on managing failure of passive transfer (FPT) check out the **Scourguard colostrum calculator** at [dairywellness.co.nz](http://dairywellness.co.nz)



## Practical steps during dry off to help prevent illnesses:<sup>5</sup>



### Vaccinate

Review and implement a comprehensive vaccination program appropriate for your herd. Always read the label to determine the best time to administer vaccines.



### Practise good hygiene

Clean equipment and facilities thoroughly after use to minimise the risk of spreading disease.



### Handle and move stock carefully

Use a calm manner, deal with healthy cows before sick ones, and carefully isolate sick cows. This will help to reduce the risk of disease spreading.

# Mastitis management

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Don't tolerate the cost of mastitis

**\$180** That's the average cost to  
treat a single cow for mastitis.<sup>6</sup>

Multiply this figure to include herds across the country and it's clear that mastitis costs millions of dollars in lost time, labour and revenue each year for New Zealand dairy farmers.<sup>7</sup> Mastitis infections not only cause inflammation and pain for the cow, but also result in less milk being produced at reduced quality for processing. Furthermore, cows with mastitis in early lactation take longer to get back in calf and are more likely to be empty.



**SmartSAMM Gap Calculator**

If we want to maintain our domestic and international reputation for high quality milk products, then mastitis control should be a priority. **The financial rewards of mastitis control include increased production and reduced costs of treating infections and culling.** However, dismissing mastitis as inevitable only brings around frustration in the next lactation period from lost time, lost income and poorer herd health.

When it comes to mastitis, dry off represents an important stage in a cow's milk production cycle. While the udder prepares for the next lactation, it is particularly susceptible to infection. That's why dry off is the best time to minimise the effects of mastitis, by treating existing infections and preventing new ones.

# Mastitis risk begins at dry off

Mastitis is a condition where a cow's mammary glands become swollen and sore due to infection caused by bacteria entering the teat canal and moving into the udder. There are two main types of mastitis: **cow-associated (or contagious)**, and **environmental**.

Bacteria that cause cow-associated mastitis, including *Staphylococcus aureus* and *Streptococcus agalactiae*, are spread by contact of the teat end with infected milk during milking – via contaminated liners or milkers' hands. Some of these bacteria, e.g. *S. aureus*, can be very difficult to cure, especially during lactation. Dry off presents the best opportunity to get on top of these infections.

Bacteria that cause environmental mastitis are found in a cow's natural surroundings – for example, in soil, manure, bedding, calving pads and water. The main bacteria involved are *S. uberis*, *E. coli*, coliforms and *Pseudomonas* spp. Most cases of environmental mastitis enter the udder around dry off and/or calving time, when cows are very susceptible to infection because their natural defence mechanisms are low and their udders are swollen from milk either at dry off or pre-calving.

## Keeping cell counts (and costs) down

Bulk milk somatic cell counts (BMSCC) are frequently used as a measure of milk quality in dairy herds and serve as an indirect way of estimating the level of mastitis in the herd.

Low BMSCCs can often mean **premium prices for milk and a healthy herd**. Conversely, uncontrolled mastitis infections lead to a higher BMSCC in your herd, preventing premium payment bands from being achieved, and resulting in clinical cases that are a costly inconvenience to treat during the busy milking season.



# The financial impact

The financial impact of clinical and subclinical mastitis extends to ongoing production losses, discarded milk, veterinarian and medication costs, labour and also culling and penalty costs.

Moving from an actual BCSCC of 300,00 to 150,000 for a 300 cow herd could:

- ↑ increase milk production
- ↓ decrease culls
- ↓ decrease treatment cases
- ↑ increase profit by \$29,000.

## SmartSAMM Gap Calculator



**SAMPLE**

Economic benefits from achieving mastitis control targets

Herd owner  Herd  Date

Herd size  Annual milksolids (MS)  kg Milk price \$

**STEP 1** Compare your herds actual (A) with target (B), your desired performance.

	Actual (A)	Target (B)	Difference (A - B)	
Season average BMSCC	300	150	150	Lower BMSCC x 1,000 cells/mL (C)
No. of cases of clinical mastitis	60	30	30	Fewer clinical cases (D)
No. of mastitis culls	15	5	10	Fewer culls due to mastitis (E)

**STEP 2** Estimate your % milk production gain from lowering somatic cell count from Actual to Target.

In the table below "Circle the % number" between your Actual (A) and Target (B) BMSCC.  
For example moving from Actual 300 to Target 150 gives 2.1% more milk annually.

	Actual BMSCC (A) x 1,000 cells/mL	Target BMSCC (B) x 1,000 cells/mL			
		100	125	150	175
	200	2.1%	1.4%	0.9%	
	225	2.5%	1.8%	1.2%	
	250	2.8%	2.1%	1.5%	
	275	3.1%	2.4%	1.8%	
	300	3.3%	2.7%	2.1%	
	325	3.6%	2.9%	2.3%	
	350	3.8%	3.1%	2.6%	
	375	4.0%	3.3%	2.8%	
	400	4.2%	3.5%	3.0%	

**STEP 3** Increased milk production from lower BMSCC from (C) above

Read off your % number from table above e.g. 2.1% = 2.1/100

$2.1 / 100 \times \text{Annual MS } 100,000 \text{ kg} = 2,100 \text{ kg MS gain} \times \text{Milk price } 6.50 \text{ \$/kg} = \$ 13,600$

**STEP 4** Decreased cost from fewer clinical mastitis cases from (D) above

$30 \text{ (D)} \times \$180 \text{ per case} = \$ 5,400$

**STEP 5** Decreased cost from fewer culls due to mastitis from (E) above

$10 \text{ (E)} \times \$1,000 \text{ per mastitis cull} = \$ 10,000$

Tip: Round off numbers to the nearest \$100

Total \$ benefit of achieving your mastitis control targets = \$ 29,000

For more information visit [dairynz.co.nz/smartsamm](http://dairynz.co.nz/smartsamm)



# The role of dry off treatments is to treat existing infections and to prevent new ones from dry off until after calving



**Mastitis can be treated and prevented.** Dairy NZ recommends that farmers aim for a control goal where less than 5% of the herd has clinical mastitis during the first month of lactation, and less than 2% of the herd has clinical mastitis during every other month of the year.

## Teatseal®

Teatseal is a non-antibiotic teat sealant administered into the udder after the last milking which prevents new infections in the udder over the dry period.

- Use Teatseal in cows at dry off, and in maiden heifers prior to calving.
- Teatseal can be administered alone or after antibiotic dry cow therapy (DCT) if DCT has been used.
- Local and overseas studies have shown that applying Teatseal, with or without antibiotic DCT, significantly reduces the risk of intra-mammary infections and clinical mastitis in the next lactation.<sup>8</sup>
- Teatseal must be carefully stripped out of each treated teat at first milking; in line with colostrum management, milk from treated cows must not enter the vat for at least 8 milkings.
- Teatseal has been proven to remain in the teat canal for at least 20 weeks post infusion.<sup>9</sup>

## Antibiotic Dry Cow Therapy (DCT)

Is a formulation of antibiotic administered into the udder immediately after the last milking. The antibiotic is designed to kill mastitis-causing bacteria in the udder, and remains in the udder for an extended period. Because of this persistence in the udder, DCT provides some protection against the establishment of new udder infections during the dry period. However, no antibiotic dry cow therapy will remain in the teat canal for at least 20 weeks like Teatseal.

- The main strategies for administering antibiotic DCT are either to treat the entire herd (blanket DCT) or to perform it on part of your herd only (selective DCT). In New Zealand, most herds will be treated with selective therapy, where only infected cows receive antibiotics with or without Teatseal as well, with uninfected cows being protected by Teatseal alone.
- Antibiotic selection should be based on the product's ability to cure existing infections.
- Your veterinarian can help you to determine which pathogens are impacting your herd in order to select the most appropriate antibiotic DCT.

## Other practical tips to prevent mastitis

**Train staff and allocate sufficient time** – Lack of training and insufficient time can contribute to poor dry off outcomes. For example, if DCT or Teatseal is administered with poor attention to hygiene, bacteria may be pushed inside the teat canal and can cause mastitis.<sup>10</sup>

**Put cows in clean areas after treatment** – Don't allow cows to lie down on bare ground or soiled areas in the two hours immediately after you've given antibiotic DCT and/or Teatseal.<sup>10</sup>



Do you or your staff want to upskill and administer mastitis treatments and dry cow therapy to best practice standards? Do you want to extract the full value out of your dry cow therapy?

There is a new course that you can take without leaving your farm or needing anybody from outside to come onto your farm.

Zoetis and Otago Polytechnic have collaborated to make a short course on intramammary administration called the **“Best Practice Intramammary Administration for Dairy Cattle EduBit”**

➔ Visit [dairywellness.co.nz](https://dairywellness.co.nz) to find out more.

**EduBits.**  
Learn. Build. Succeed.



# Parasite control

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## Who's sucking profits out of your farm?



**Little creatures such as worms, flukes and lice, can cause big problems.**

With a busy workload leading up to dry off, it can be tempting to forget about parasites. However, it's important to remember they can be causing significant damage to your herd's health and productivity.

Parasite burdens are not usually visible in cows, so not treating them often results in a missed opportunity for improved production or reproduction.<sup>11, 12, 13, 14</sup> But when **left untreated, the economic losses from parasite infections can be costly.**<sup>15</sup> Uncontrolled parasitic diseases impair the health, reproduction, growth and milk production of calves and cows. Trials conducted on adult dairy cows globally and in NZ, consistently demonstrate that if they are infected with parasites, there is an economic cost to this.<sup>12, 13, 15, 16</sup>

Having a treatment strategy for parasite control pays off. Strategic treatment of cows that are stressed, in poor condition, or have had previous illness (i.e. immunosuppressed) leading up to dry off can help optimise milk production and reduce the effect of parasites on cow condition.

# More intensive farming means more parasites

There are two main types of parasites that cause diseases:

- **Internal parasites**, such as roundworms and flukes
- **External parasites**, such as mites and lice

Roundworms have a life cycle that requires eggs deposited on pasture to develop into larvae, ready for infection. This process can be as short as 10 days in ideal weather conditions (and take many months in cooler weather). In a rotational grazing system, this means that larvae may be ready to infect cows during the next visit.

Given the speed at which worms mature and are able to shed further eggs out onto pasture (3 weeks), pasture conditions prior to dry off are often ideal for ongoing worm survival. Higher stocking rates and especially calves grazed on the dairy platform, have also contributed to an increase in exposure to parasite larvae.<sup>17</sup>

## How parasites affect milk production

While parasite burdens have the greatest impact on young animals, they also impact negatively on lactating cows. Some parasites, such as roundworms, have the ability to reduce appetite through a complex interaction with the cows' immune system. A worm burden in lactating cows could be restricting cow output and reducing overall profitability without the cow showing any obvious signs of illness. Scientists have found that there can be a **15% drop in total milk production** for cows where both pre-calving and post-calving samples tested positive for the presence of worms.<sup>18</sup>

The small brown stomach worm (*Ostertagia ostertagi*) in particular has been noted to reduce productivity in the dairy cow. A study found that in dairy cows, milk production decreased when antibody measurements for *Ostertagia* increased.<sup>19</sup>

Dry off is an ideal time to look closely at minimising the hidden tax that parasites may be sucking out of your milk production.



# Which worms cause problems?

The most common parasites causing production losses in New Zealand are<sup>20</sup>



## Round worms: *ostertagia ostertagi*, *trichostrongylus* spp and *cooperia* spp

*Trichostrongylus* spp and *Cooperia* spp although there are many others. These are known as roundworms and act similarly in that they damage the lining of the gut (abomasum and intestines) reducing absorption of nutrients. As a result, protein is lost from the animal as well as water. The most obvious sign of worm infections is diarrhea. Lungworm is another important parasite that physically blocks the lungs, with heavy infections resulting in death.



## Liver fluke

Liver fluke are flatworms that live in the bile ducts of the liver. They cause damage by eating through the liver tissue causing bleeding and protein loss and possible liver dysfunction if they block bile ducts. Liver fluke are found in specific locations in NZ where their snail intermediate hosts live – these snails are not your average garden or water snail. To complete the lifecycle which is long and complex, they also need heat and water. Fluke are mainly found on the West Coast and upper South Island, Northland, East Coast and Taranaki, with some other scattered pockets in the North Island.

Normally, infections caused by fluke result in chronic wastage, due to ongoing ingestion of large numbers of infective stages in Autumn and Winter. However, often the first sign that may be seen of fluke is mention of it on the kill sheet, but this may have come from imported cattle. Fluke are long lived, so you don't instantly need to reach for a fluke drench product. Migrating liver fluke also make animals more susceptible to the clostridial disease Black disease, making vaccination against clostridia in fluke areas even more important.

Treatment for liver fluke should be strategic for best results. These times are in Autumn when larval ingestion is occurring, winter, when the last of the larvae have been ingested and Spring to clear out remaining adult fluke. Not all stock classes should get some or all of these treatments. Talk with your vet for best advice on when to treat which animals.



## Lice

Lice, both biting and sucking species, irritate cattle by burrowing and chewing on the surface of their skin. But unlike internal round worm infections, they don't generally cause economic loss to the animal – only to the gates and fences they scratch on! Lice infections in a herd are often (but not always) a sign of a deeper problem – stress in the herd, perhaps low feed, new herd mates, change in management, poor condition, or other diseases lowering their immunity.

Lice numbers build up over winter as they are protected in the longer Winter coats and enjoy the humidity and temperature provided. This leads to numbers peaking in the spring, but as nutrition improves and the winter coats fall out, lice mostly disappear. Heavily infested animals may need more than one treatment to clear a bad infection. Normally, one treatment in Autumn after the first frost or in spring, is sufficient to control lice.

Most (but not all) pour on treatments control both biting and sucking lice, whereas injectables mainly control sucking lice with limited success against biting lice. While lice are what you can see and are not pleasant for you or the cows, it is the parasites on the inside that are causing production losses. Reducing the impact of roundworms on cattle will have a beneficial effect on their overall health.

# Treating for parasites

Drenching part or all of the herd is a routine part of dry off management for many dairy farmers in New Zealand. A number of products can be administered at this time to protect dairy herds from parasite burdens. However, they don't all do the same job.



When selecting a product, look for one that covers a **broad spectrum of both internal and external parasites**, and offers **protection for a long period of time**.

Products with persistent activity extend the time between treatments, saving time and money. They also protect animals for longer against the larvae that they ingest every day. The longer the drench lasts the better their production will be. This is because their immune system does not have to divert protein and energy away from production (growth, weight gain, milk production), in order to kill parasites. Short acting drenches (all orals, some injectable and pour ons and all combination products for cattle) kill the parasites that are in the animals at the time of treatment only. The next day, animals get reinfected, and production is again impacted.

To minimise the development of drench resistance, drenching adults routinely should be avoided. However, there are often times when it is beneficial to either selectively treat individuals or to treat part or the whole of the herd.

**Cydectin Pour-On** has been trialled in NZ at late lactation, dry off and calving.<sup>12</sup> In each study, Cydectin treated cows produced more milk than the other group of cows (whether they were left untreated or given a short acting drench). Across the studies, there was an average lift in production of 4.26kg milk solids per cow for the rest of the lactation or following lactation. Cydectin Pour-On has the longest persistent activity against *Ostertagia* and Lungworm. In 2012 an independent NZ study<sup>21</sup> found it was still >99% effective against *Ostertagia ostertagi* on the farms where it was tested.

It has zero withholding periods for meat, milk and bobby calves, making it a very convenient product to have in the shed.

**Cydectin® Plus Fluke** is the longest lasting pour on combination worm and flukicide and with the shortest milk withholding available for a pour on (84 days for milk and meat). It has the same persistent activity claims as Cydectin Pour-On against the round worms and kills immature and adult stages of fluke.

# Other practical tips to reduce the burden of roundworms

**Manage grazing areas** – Avoid the build-up of high numbers of infective worm larvae on pastures. Prepare safe paddocks (those with low worm larval contamination) for young vulnerable calves, such as those used for cutting hay or silage.

**Plan drenching programs carefully** – Consult with your vet to help plan a program, using different actives and combinations for the parasites present in the age group at the time. The aim is to ensure costs are minimised, benefits are maximised and there is no build-up of resistance to drenches.



Refer to [www.wormwise.co.nz](http://www.wormwise.co.nz) for more information on managing parasites and drench resistance.



## SECTION 4

# Product stewardship

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Working together for a healthier,  
more sustainable future for all

Products have an impact on the environment at each stage of their lifecycle – from manufacturing, to freight, to end of life disposal. Minimising these impacts is crucial to achieving a more sustainable future.

Zoetis has introduced new options for you to dispose of selected products sustainably, reducing waste in landfill.



# Teatseal and Zoetis vaccines\* can now be recycled

## 1. Empty and return

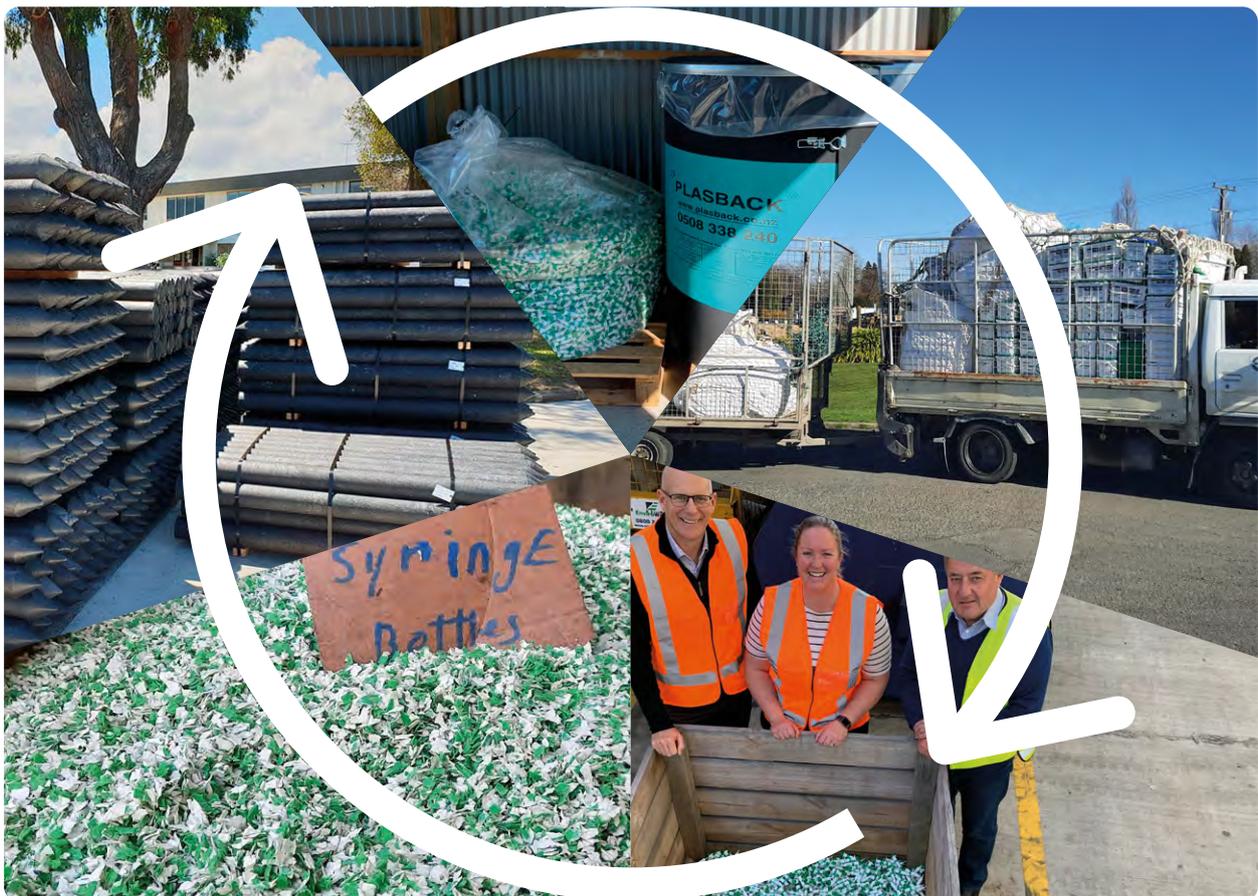
- Return used Zoetis livestock vaccine packs, and Teatseal tubes and buckets to your vet clinic.
- Stoppers and any string on the vaccine packs will need to be safely removed – we will supply cutters for this process.
- You can ask clinic staff for a receipt to use as part of your farm environmental plan.

## 2. Collection

- Empty plastic packaging will be collected by Plasback, an accredited product stewardship scheme provider.

## 3. Recycle

- Plastic packaging will be recycled into new FuturePost™ Fence posts, or reusable plant trays.



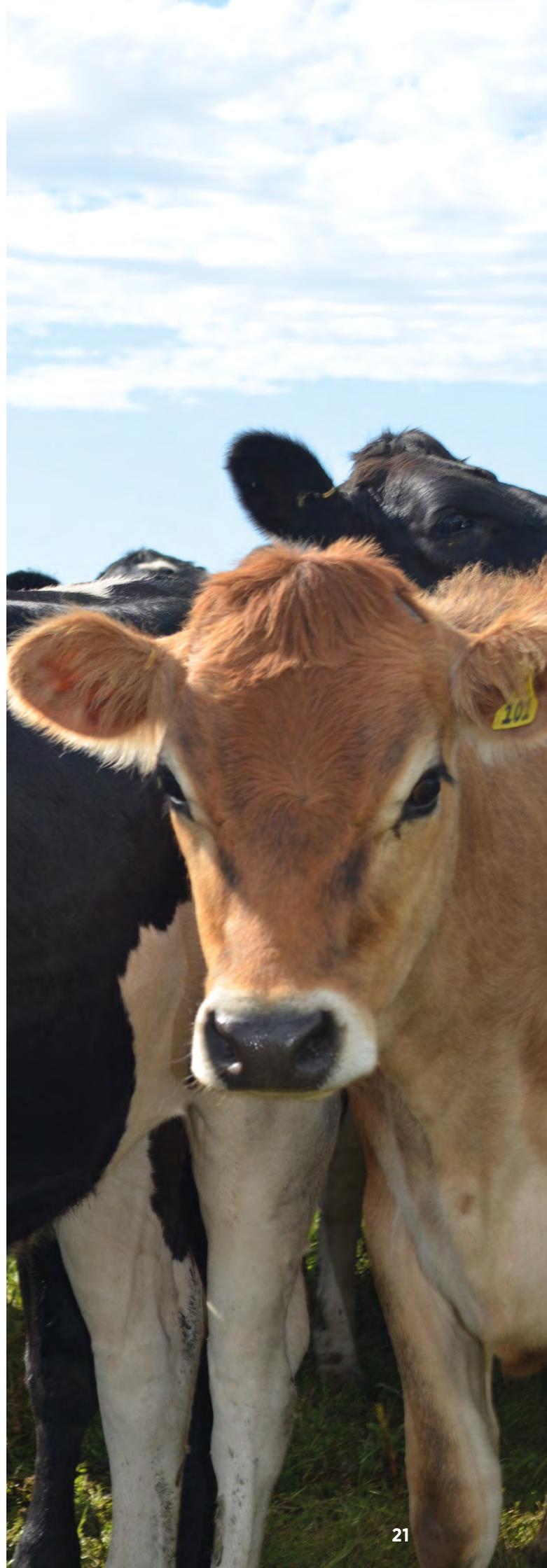
**Remember! Teatwipes are home compostable and marine biodegradable.**

\*Due to the nature of certain product ingredients, not all products are able to be recycled at this stage (see in clinic for details). Also, as different plastic types have unique recycling requirements, only Zoetis products may be recycled under these programmes. Draw off tubes are unable to be recycled at this time, but we are working on it!

# Cydectin Pour-On can be recycled

Empty Cydectin Pour-On containers can be recycled with Agrecovery. Containers must be triple rinsed to ensure they're free from residue inside and out.

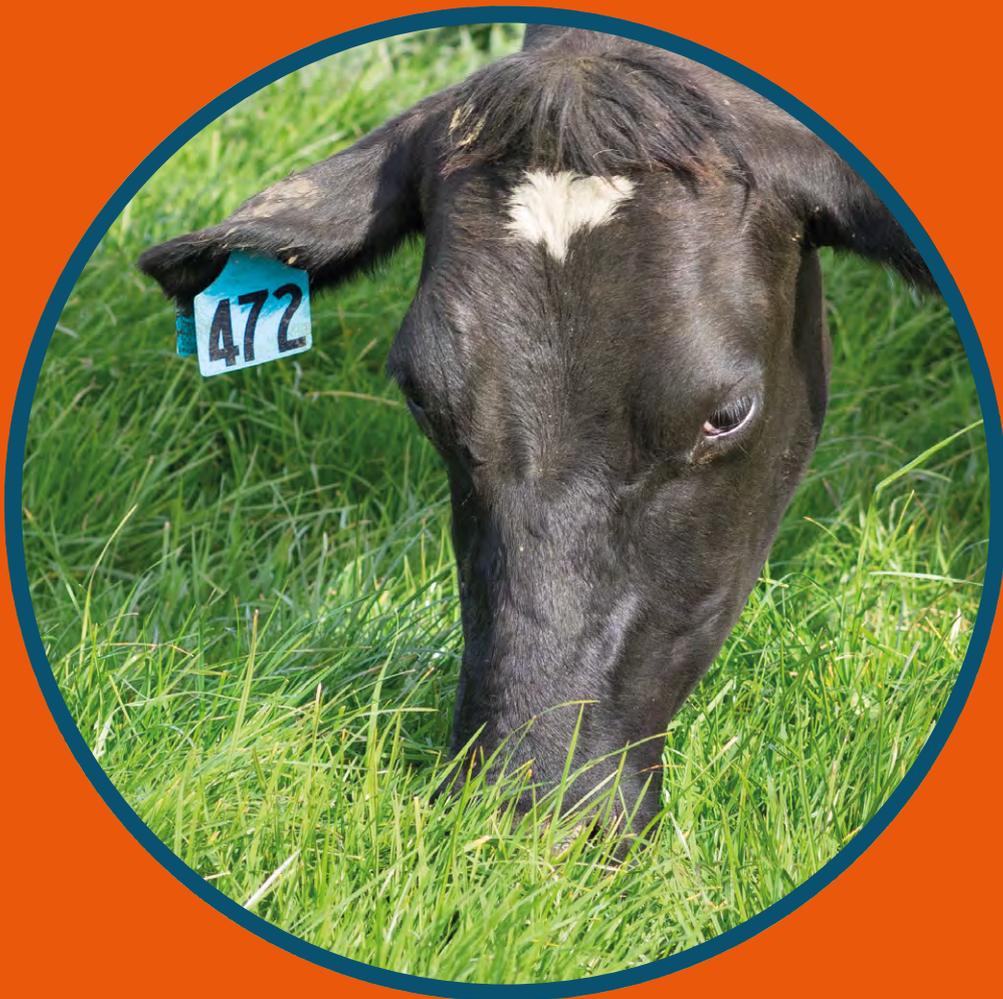
- ➔ **Visit [agrecovery.co.nz](https://agrecovery.co.nz) to find your local collection site.**
- ➔ **Talk to your vet – or learn more about how you can be involved at [livestocksolutions.co.nz](https://livestocksolutions.co.nz)**



SECTION 5

# Dry off checklist

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# Dry off checklist

Consult with your veterinarian to help tailor an appropriate dry off program for your operation.

## ✓ Management

WHAT	WHO	CONSIDERATIONS
<input type="checkbox"/> <b>Review dry off plan prior to dry off</b>	You & your veterinarian	Review previous dry off and calving and consider strategies to improve this dry off. Consider any cows to cull.
<input type="checkbox"/> <b>Dry off consultation</b>	Veterinarian	Formulate best practice plan to deliver herd health and productivity outcomes.
<input type="checkbox"/> <b>Monitor cows</b>	You	Check udders for swollen quarters daily for one week post dry off, and each week thereafter.
<input type="checkbox"/> <b>Lead feeding</b>	Vet or Nutritionist	Consult with your vet or nutritionist to formulate the best plan to prepare your herd for the upcoming lactation.
<input type="checkbox"/> <b>Manage animal health records</b>	You	Maintain accurate and up to date records of herd and animal treatments; ensures withhold periods are adhered to and future proofs the dairy industry.

## ✓ People

WHAT	WHO	CONSIDERATIONS
<input type="checkbox"/> <b>Review plans for calving</b>	All employees	Ensure all involved are aware of activities and trained for the season.
<input type="checkbox"/> <b>Workplace Health and Safety</b>	All employees	Review plans for workplace health and safety.

# ✓ Herd health

DISEASE/CONDITION /PROTECTION	PRODUCT	CONSIDERATIONS	MORE INFORMATION
<input type="checkbox"/> Treat existing infections and reduce the number of new infections that may occur during the dry period	<b>Dry Cow Therapy</b>	Ensure consultation with your veterinarian to devise appropriate program with or without dry cow therapy.	
<input type="checkbox"/> Prevent clinical mastitis during the calving period	<b>Teatseal</b>	Ask your vet about Teatseal's proven performance either given alone or in combination with dry cow therapy.	For best practice administration visit <a href="http://dairywellness.co.nz">dairywellness.co.nz</a>
<input type="checkbox"/> Protect you, your workers and your veterinarian from leptospirosis	<b>Ultravac 7in1</b> <i>Vaccinate cows with annual booster prior to periods of high risk for lepto, which is usually Autumn in NZ</i>  <i>Unvaccinated cows should receive 2 doses 4-6 weeks apart</i>	Ultravac 7in1 is convenient, being the only combined lepto and clostridal vaccine in NZ.	
<input type="checkbox"/> Prevent clostridial disease in cows (including black leg, tetanus & pulpy kidney)			
<input type="checkbox"/> Prevent leptospirosis in cows		Adults require annual vaccination to maintain good immunity and prevent disease and shedding of the leptospire.	
<input type="checkbox"/> Provide newborn calves with protection from clostridial disease		Ensure correct colostrum management to provide calves with maximum antibodies for maximum immunity.	
<input type="checkbox"/> Provide newborn calves with protection from leptospirosis		Ultravac 7in1 keeps unborn calves safe from leptospirosis by preventing urinary tract colonisation and placental and foetal infection.  It can be used in calves from 4 weeks to provide early age protection.	
<input type="checkbox"/> Control parasite burdens	<b>Cydectin Pour-On</b>	Speak to your vet or animal health consultant about a parasite control program based on effective drenches and non-chemical control methods.  Cydectin Pour-On offers broad spectrum and persistent activity against the parasites that count, coupled with nil milk, meat and bobby calf WHP.	Visit <a href="http://Wormwise.co.nz">Wormwise.co.nz</a> for information on parasite management.
<input type="checkbox"/> Aid in the prevention of calf scours caused by bovine rotavirus and <i>E. coli</i> , and control scours caused by bovine coronavirus	<b>Scourguard</b> <i>Vaccinate cows with annual booster 2-4 weeks prior to calving.</i>  <i>Previously unvaccinated cows should receive 2 doses 3-9 weeks apart, with the second dose occurring 2-6 weeks prior to calving.</i>	Speak to your vet about the best approach to scours prevention for your herd.  Scourguard 4K may be used for 63 days after opening, to minimise wastage and maximise convenience.	Refer to the product label.

\*Mastitis pathogen survey may be a suitable resource for dry off consultation.



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