

WHAT'S ON YOUR MIND AT CALVING TIME?

HERD REPLACEMENT COSTS LABOUR STRESS LIVE EXPORT PRODUCTIVITY EMOTION GROWTH

RELATIONSHIPS ANTIBIOTICS HARD WORK HERD REPLACEMENT LOST OPPORTUNITY DAMAGE WEAR AND TEAR

FEAR DREAD ILLNESS

PROFIT LOSSES GROWTH

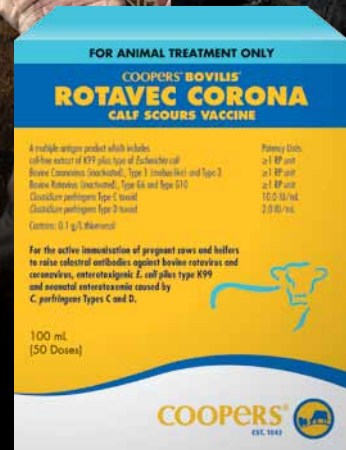
REDUCTION TREATMENT REPUTATION ELECTROLYTES VETERINARIAN

STRESS

REPUTATION



THINK CALF SCOURS
THINK ROTAVEC



COOPERS[®] BOVILIS[®]
ROTAVEC CORONA

CALF SCOURS

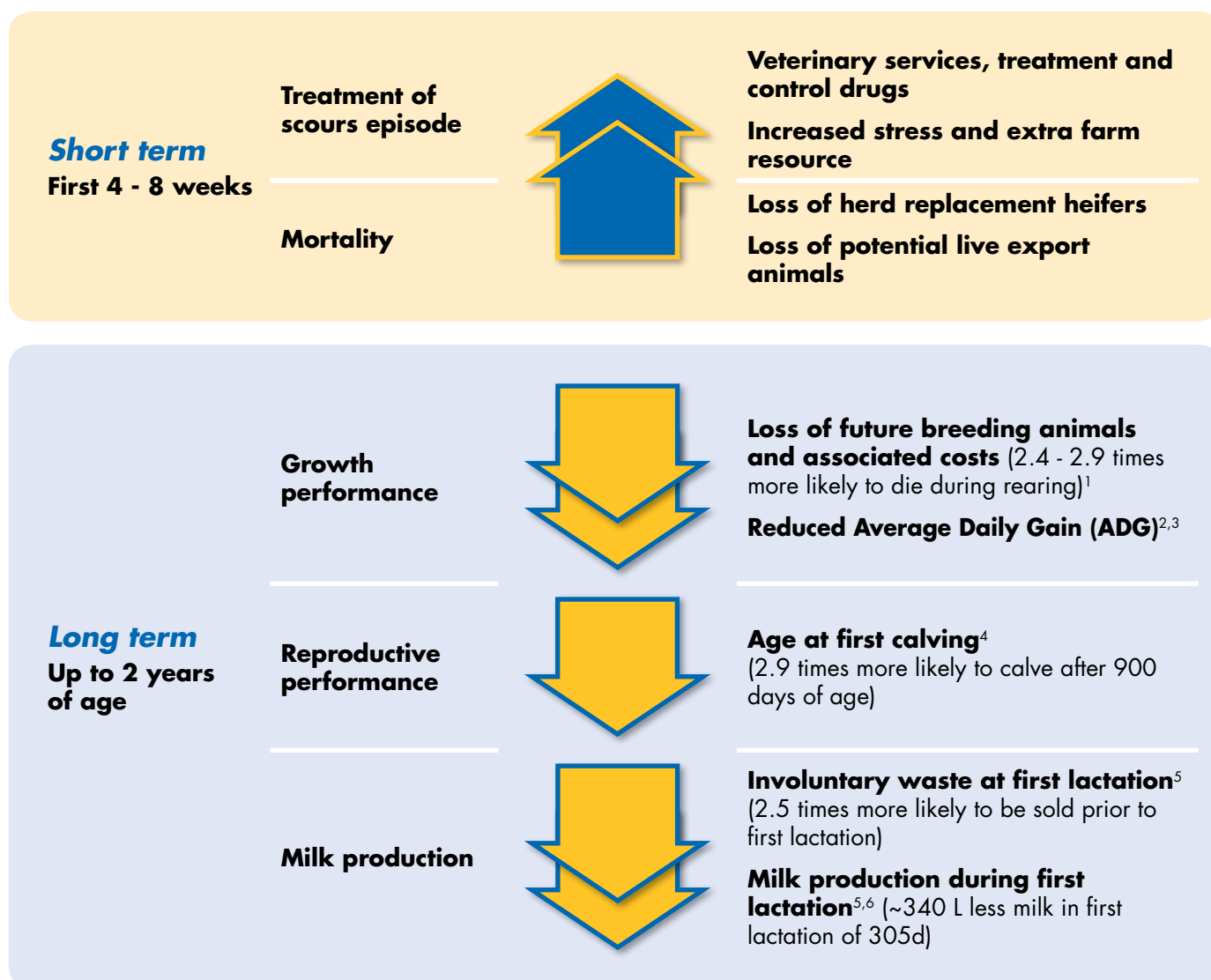
THE WIDESPREAD PROBLEM

Neonatal diarrhoea is one of the main calf diseases in Australia, with large economic losses for both dairy and beef cattle. The costs of calf scours can have life long impacts on the animal's performance.

AN ISSUE FOR EVERY FARM

Every dairy farm has the potential for a calf scours outbreak. Coopers® can offer producers treatment and control options for wide range of the common pathogenic causes of scours.

EFFECT OF CALF SCOURS ON NEONATAL HEALTH AND PERFORMANCE



1. Gulliksen SM, Lie KI, Løken T, Osterås O (2009) Calf mortality in Norwegian dairy herds. *J Dairy Sci*; 92(6): 2782 - 95.
2. Schmoldt et al. (1979) Effects of diseases on growth, nutrient intake, and nutrient conversion comparison in drinking calf. *Monatsh Veterinaemed*; 34: 95.
3. Donovan GA, Dohoo IR, Montgomery DM, Bennett FL (1998) Calf and disease factors affecting growth in female Holstein calves in Florida, USA. *Prev Vet Med*; 33: 1 - 10.
4. Waltner-Toews D, Martin SW, Meek AH (1986) The effect of early calfhood health status on survivorship and age at first calving. *Can J Vet Res*; 50(3): 314 - 7.
5. Svensson C, Hultgren J (2008) Associations Between Housing, Management, and Morbidity During Rearing and Subsequent First-Lactation Milk Production of Dairy Cows in Southwest Sweden. *J Dairy Sci*; 91: 1510-18.
6. Soberon F, Raffrenato E, Everett RW, van Amburg ME (2009) Early life management and long term productivity of dairy calves. *Proc Joint Annual Meeting ADSA-CSAS-ASAS* p. 130.
7. Average Herd Size – Dairy Australia Industry Statistics 2008/09, Average calving – University of Adelaide Agri business resources, Treatment costs – Based on Industry standard prices June 2014, Economics of heifer rearing Richard Moss QDPI.

THINK WHAT CALF SCOURS COULD COST

WELFARE & LABOUR STRESS & CHALLENGES

A scours outbreak ramps up your stress levels, robs you of family time, and exposes everyone to the distress of seeing calves suffer. The increased processes to manage and minimise scours in calves can lead to frustration and disappointment when outbreaks continue to spread over the calving period. The ongoing demand to improve animal welfare in animal production requires preventative programs such as vaccination to minimise potential of scours episodes on farms.

On average, calf scours costs the dairy industry around \$26 for every dairy cow or heifer on the farm – in treatment costs and loss of calves alone⁷. **Treatment costs** such as electrolytes, antibiotics, additional feeding requirements all increase the early costs of scours even before the long term production and profit impacts are calculated.

PROFIT & LOSS

Reaching the lucrative dairy live export segment has become an important element of the dairy business and has a significant impact on the cash flow. There is strong competition and strict requirements to be eligible for the live export market. Poor doers often get excluded compared to larger healthier calves and calves that die are a missed opportunity.

LIVE EXPORT MARKET

LONG TERM GROWTH SETBACKS

An outbreak of scours has long term impacts. Calves that survive scours often are 'poor doers' because the linings of their intestinal tracts have been permanently damaged by the scours pathogens. Poor nutrient absorption leads to reduced growth rates, potentially affecting the final weight and/or time taken to reach markets.

Your heifers are your milking future and reduced growth rates caused by calf scours can delay key management milestones such as age to joining weight and even delay first calf entry to the herd by up to 180 days⁴. Often this leads to animals being sold prior to calving as they simply do not fit into the herd management program – leading to a loss of key genetic gain. For those that do enter the herd, their first six months of milk production is lost.

The scours affected animals that do enter the herd can have a reduced lactation in their first year, often as much as ~340 L less milk than unaffected heifers^{5,6}. This has significant impact on the herd production and profit returns across the annual intake of replacement heifers.

HERD FERTILITY & PRODUCTION CHALLENGES REPLACEMENTS

In every dairy business, the prevention of scours in early life can help producers to maximise calf health and performance to reach their full genetic potential.

PREVENTION IS THE SOLUTION

COOPERS® BOVILIS® ROTAVEC CORONA

THINK... ROTAVEC CORONA

Rotavec Corona has become an important calf scours management tool for dairy and beef producers. Scours can occur on any farm when least expected, and can spread rapidly. Producers using vaccination as a part of their program see the benefit in many different ways.

BROADEST SPECTRUM CALF SCOURS VACCINE AVAILABLE⁹

Rotavec Corona offers producers the broadest calf scours vaccine available for maximum coverage against common scours pathogens. As most scours episodes are caused by multiple pathogens⁸ – targeting as many pathogens as possible can reduce the total scours events across the calving season.

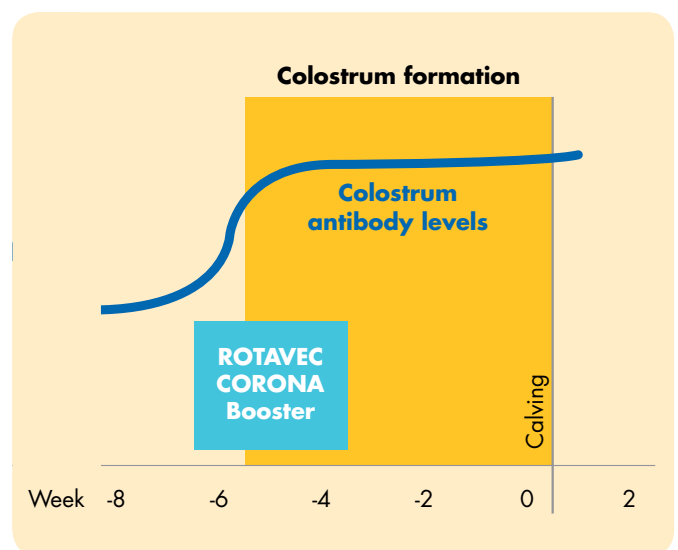
THE HIDDEN KILLER

Clostridial perfringens (Type C) can kill young calves before visible signs of calf scours appear through the release of toxins. Rotavec Corona provides coverage against *Cl. perfringens* (Type C), which is not found in common clostridial vaccines.



MAXIMISE YOUR COLOSTRAL ANTIBODY DEFENCE

Rotavec Corona vaccine utilises a best practice dose program to maximise antibody levels in colostrum at point of calving. By vaccinating animals around the beginning of colostrum formation higher levels of antibody can concentrate in colostrum, providing improved passive immunity for the newborn calf.



Only Rotavec Corona offers coverage against four scours pathogens in one vaccine:

- Rotavirus
- *E. coli*
- Coronavirus
- *Clostridium perfringens* (Types C and D)

8. Izzo et al. Prevalence of major enteric pathogens in Australian dairy calves with diarrhoea. Australian Veterinary Journal 2011; 89:167 - 173.

9. Broadest spectrum refers to total number of antigen types in Rotavec Corona.

A PROGRAM DESIGNED TO OPTIMISE CALF PERFORMANCE

Year 1: 2 dose program

Year 2: annual booster (2 shots for first calf heifers)

DOSE 1: Sensitising

+

DOSE 2: Booster

=

OPTIMUM CALF SCOURS DEFENCE



-12 to -10 weeks



-6 to -4 weeks

Calving



PRE-CALVING VACCINATIONS

COLOSTRUM – PASSIVE TRANSFER OF ANTIBODIES

ENVIRONMENTAL CONTAMINATION

Rotavec Corona has a registered claim to reduce the shedding of rotavirus and coronavirus compared to unvaccinated calves. This benefit of vaccination is vital in reducing the spread of the disease to other calves and also helps to reduce the environmental loading during the entire calving season.

ENGINEERED TECHNOLOGY FOR THE MODERN FARM

The cell wall of *E. coli* can produce dangerous endotoxins which can cause abortion in pregnant cattle. Rotavec Corona is engineered with SUB-UNIT technology to only use parts of the *E. coli* cell (pili) to maximise immune response without the potential for side effects. The benefit is a strong and targeted *E. coli* immune response and a reduced risk of reactions – local or systemic.

COOPERS® BOVILIS® ROTAVEC CORONA

Calf scours vaccination against Rotavirus, Coronavirus, *E. coli* and *Clostridium perfringens* (Types C and D)

Dosage and administration:

2 mL subcutaneously

Sensitising dose: 10 - 12 weeks prior to calving

Booster dose: 4 - 6 weeks after initial vaccination (i.e. 4 - 6 weeks prior to calving)

Annual booster: 4 - 6 weeks prior to calving

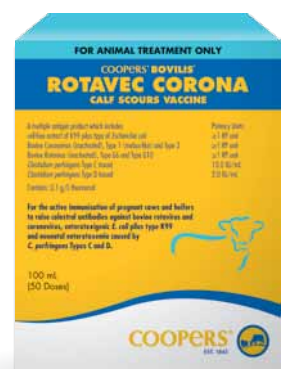
Milk Withholding Period: NIL

Meat Withholding Period: NIL

Export Slaughter Interval (ESI): NIL

Packaging: 20 mL and 100 mL bottles

Storage: Store at 2 - 8°C
(refrigerate, do not freeze – discard if previously frozen)



SALMONELLA

THE DISEASE

Salmonellosis has been recognised as a cause of septicaemia, abortion, severe scours, death and production loss in Australian cattle herds, in both adult cattle and newborn calves.

Severe economic losses and animal welfare issues can arise from Salmonella infections. *Salmonella typhimurium* and *Salmonella dublin* continue to be the most common serovars identified from cattle in Australia^{10,11}.

AN ISSUE FOR EVERYONE ON THE FARM

Cattle can pass Salmonella disease onto humans (zoonosis) via faeces and affected staff and family members can become severely ill from the infection. Herd vaccination against the disease will help to reduce environmental shedding, incidence of the disease in cattle and risk to humans.

COOPERS® BOVILIS® S

An aid in the control of cattle salmonellosis caused by *Salmonella dublin* and *Salmonella typhimurium*

Vaccination program:

Unvaccinated cows and heifers: Vaccinate twice in late pregnancy, approximately 8 and 3 weeks prior to calving. *Previously Vaccinated Cows:* Give a booster dose every 12 months, approximately 3 weeks prior to calving.

Calves: Calves should be fed colostrum from properly vaccinated cows for at least 5 days after birth. This should ensure calves are protected for the first few critical weeks of life. If further protection of calves is required, they can be vaccinated from 8 weeks of age, and then given a booster 3 - 4 weeks later.

Withholding Periods: NIL

Presentation: Available in 100 mL (50 dose) and 250 mL (125 dose) bottles

Dosage and administration: 2 mL by subcutaneous injection

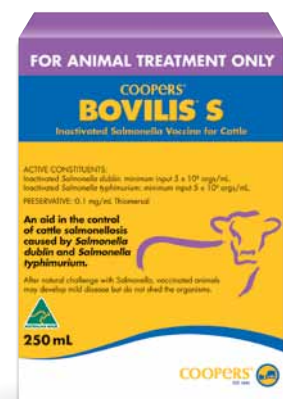
Storage: Store at 2 - 8°C

Cows

Salmonellosis in cows can be deadly and outbreaks can occur suddenly, with many animals impacted. This can have significant impact on a herds milk production for extended periods, with outbreaks requiring immediate veterinary intervention and long term vaccination prevention.

Calves

Salmonella can cause severe calf scours and deaths, setting back long term performance of the animal. Calves born onto properties with known Salmonella issues (i.e. currently vaccinating against the disease) should consider commencing a vaccination program for all calves after 8 weeks of age, followed by annual boosters. This program can help to protect all young animals on the property until they join the milking herd.



10. Australian Salmonella Reference Centre 2008 Annual Report.

11. Vanselow et al (2007) Salmonella and on-farm risk factors in healthy slaughter-age cattle and sheep in eastern Australia. Australian Veterinary Journal 85 (12) 498-502.

12. Smith and Rose. Waterborne Cryptosporidiosis: Current Status, 1998.

13. Parkinson TJ et al. Diseases of Cattle in Australasia. VetLearn 72, 2010.

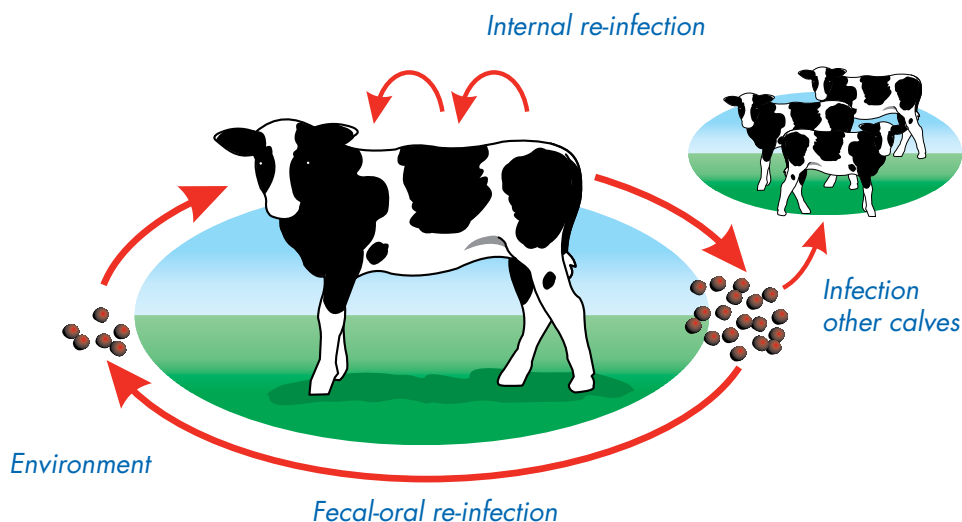
CRYPTOSPORIDIA

A COMMON CAUSE OF SCOURS

Neonatal calf diarrhoea caused by this protozoal parasite usually has a high morbidity with a low mortality rate. In Australia studies have found that cryptosporidia is found in over 80%⁸ of scouring calves as both single and multiple pathogen infections.

Cryptosporidia is a major issue because once a calf is infected, *C. parvum* rapidly multiplies and causes severe damage to the intestinal wall.

Massive environmental contamination can occur in a short period and the oocysts are resistant to nearly all antimicrobial and anticoccidial agents, as well as most disinfectants meaning cryptosporidia can survive in the environment for long periods.



CRYPTOSPORIDIA TRANSMISSION TO HUMANS

Cattle are a major source of *C. parvum* and important in the transmission of the disease to farm workers or veterinarians, either directly or through the contamination of the environment and drinking water^{12,13}.

Control of *C. parvum* is important for both the health of the calves and the health of farm personnel and other people that can be at risk of being exposed to the protozoal parasite.

THE SOLUTION TO CRYPTOSPORIDIA INFECTIONS

Halofuginone is an oral remedy that offers:

- A product that can be used for prevention and aid in control of symptoms.
- High reduction in oocyst (egg) output to reduce contamination and ongoing spread.
- Suppresses the protozoal parasite rather than killing it and hence does not significantly interfere with the development of host immunity.
- Reduce symptoms like diarrhoea after treatment starts.
- Only for use following a confirmed diagnosis of *Cryptosporidium parvum*.

**ASK YOUR LOCAL VETERINARIAN
about the use of Halofuginone Lactate
in your calving management.**

FIND OUT MORE ON SCOURS FROM COOPERS

FINDING OUT WHAT'S CAUSING SCOURS ON YOUR FARM

Coopers can help producers better understand which pathogens are causing scours on their property.



Diagnosis

With the onset of diarrhoea comes rapid dehydration and debilitation. Rehydration, along with antibiotics / antiprotozoals where appropriate, is generally the cornerstone of treatment of affected calves.

It is important to accurately diagnose the specific pathogens causing the calf scours challenge. The Rainbow 6 test kit is a calf side test that can be easily used on farm to diagnose Rotavirus, Coronavirus, *E. coli*, *Cryptosporidium parvum* and *Clostridium perfringens*.

Benefits of the **Rainbow 6 test kit**:

- Identify major scours pathogens for more appropriate treatment and prevention strategies.
- Rapid diagnosis, with results available in 10 - 15 minutes.
- Available from your local veterinarian.



THE COOPERS RANGE CAN PROVIDE A FULL RANGE OF SCOURS PREVENTATIVES

**Rotavirus, Coronavirus,
E. coli and *Clostridium perfringens*
(Types C and D)**

COOPERS[®] BOVILIS[®]
ROTAVEC CORONA

**Salmonella
(cows and
calves)**

COOPERS[®]
BOVILIS[®] S

Cryptosporidia
**ASK YOUR VET about
Halofuginone Lactate**



For further information,
call your local Coopers Territory Sales Manager on
Toll Free **1800 885 576**

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