Provita Protect

For new born calves

A Probiotic to aid the prevention of scours in young calves

MORTALITY IN CALVES

A recent ADAS study evidenced diarrhoea/scour as the most common disease in young unweaned calves accounting for 50% of all calf deaths.[1] Diarrhoea may be caused by bacterial, viral and protozoal infections; and quite often it may be a result of mixed infections. Other causative factors of calf scour can be inappropriate housing, feeding or stress which increases the animal's susceptibility to infection.

[1] ADAS Report: Economic impact of health & welfare issues in beef cattle & sheep in England

Cost of Diarrhoeal Mortality/Morbidity in Calves

An average of £33 per at risk calf is associated with a scour outbreak and DEFRA (2008) estimates figures to be 5 times higher if a calf dies due to scour.[1]
Further figures highlight that for a typical 100-cow herd (dairy), for a sick calf suffering from scour will cost £123.00 during a outbreak or £37.00 per calf born; therefore an outbreak cost of £3,700 to the herd.[2]

[2] National Animal Disease Information Service (NADIS) Calf Enteritis Survey

Antibiotic Use and Resistance

Antibiotic use for bacterial infectious diarrhoea can be very effective providing a causative microorganism has been identified and an appropriate antibiotic prescribed to treat it. Antibiotics should be reserved for treatment purposes and not for prophylactic therapy for scour prevention. Due to the unwarranted and irresponsible use of antibiotics, the natural process of antibiotic resistance has been accelerated. Resistance arises when bacteria survive exposure to an antibiotic that would normally kill or inhibit them, thus they are allowed to multiple and infect other hosts.
As a result there has been a concerted effort to reduce the use of antibiotics and antimicrobials as a whole within the agricultural industry. Antibiotic use has positively reduced in recent years but there are still greater reductions sought.[3] Consequently non-antibiotic alternatives and good management practices will be at the forefront of achieving such targets, whilst maintaining animal health.

[3] Targets Task Force Report 2017, Responsible Use of Medicines in Agriculture Alliance

PROVITA PROTECT FOR NEW BORN CALVES

Through good farm management practice, the incidence of disease outbreaks on farms can be substantially reduced.

Provita Protect should become part of the normal routine for the prevention of scours in young pre-ruminant calves. This preventative program reduces the cost of subsequent rehydration and antibiotic treatment, time and setbacks to animal health and performance.

Surveys have illustrated that just 29% of farms employed preventative measures for calf scour therefore there is still a need for adoption of preventative strategies on vast majority of farms. Scour prevention has an obvious health benefit as well as cost benefit, with typical cost benefit calculated for stopping a scour outbreak of £47.00.[1]

Provita Protect for New Born Calves is the first probiotic in the United Kingdom to obtain Marketing Authorisation. To obtain this Veterinary Licence it has undergone many years of rigorous testing to guarantee efficacy, quality, safety and ease of application for the stockman.

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WHY USE A PROBIOTIC

Animals are born with a sterile gut and digestive tract. Colonising the gut with beneficial bacteria as soon as possible after birth, will automatically reduce the incidence of infection by pathogens common to farm animals.

As animals develop, the digestive tract will naturally encounter populations of both beneficial lactic acid bacteria and potential disease-causing bacteria. The key to maintaining the health of animals is to ensure a balance in favour of a healthy gut flora. Should a healthy animal suffer stress, the chemical balance of its digestive tract can change, resulting in conditions within the gut which favour pathogens. At this point, an animal becomes susceptible to nutritional and infectious scours and appetite loss, resulting in a rapid loss of body condition and animal performance.

THE BENEFITS OF USING PROBIOTICS

Considerable independent trial work has been carried out on the benefits associated with probiotic use in recent years and the rationale behind using probiotics is summarised below:

1. **Competitive Exclusion in the Digestive Tract.**
   Providing high levels of beneficial bacteria interferes with the attachment of enteric pathogens, such as E. coli, to the gut wall, i.e. the objective is to crowd out the pathogens and prevent their establishment within the gut.

2. **Antimicrobial Effects**
   Probiotics are known to produce lactic acid and bacteriocins which have been shown to have an inhibitory effect on some pathogens.

3. **Lactic Acid Production**
   As the pH in the gut is reduced through the production of lactic acid, the environmental conditions within the intestine become unfavourable for some pathogens. The more acidic environment encourages increased enzymatic activity which improves digestion.

4. **Immune Stimulation**
   Probiotics may stimulate the body's immune response system against disease and although not yet fully proven, it is thought that antitoxins are also produced by lactobacilli.

5. **A probiotic does not build up bacterial resistance or cause side effects.**

WHEN TO USE PROVITA PROTECT

At Birth
Use Provita Protect as soon as possible after birth to establish a beneficial population of micro-organisms in the digestive tract. A calf's intestine which has been colonised by beneficial bacteria is less susceptible to infection from common farm pathogens which can cause major digestive upsets and scours.

Bought-in Calves
Provita Protect should also be administered to bought-in calves on arrival at the farm. Bought-in calves are subjected to a great deal of stress, including separation from the dam, travel, coming into contact with other calves from a variety of sources and changes in diet. These factors increase the susceptibility of bought-in calves to disease by infection, which may be prevented by a dose of Provita Protect immediately on arrival.

Stress
Provita Protect should therefore be used at times of stress including dietary and housing changes, grouping calves and moving them into rearing accommodation, introduction of calves to milk substitute, before and after transportation and other potential causes of appetite loss. Under such circumstances, Provita Protect will help to reduce or prevent intestinal upset and improve animal performance.

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PROVITA PROTECT FOR NEW BORN CALVES

Provita Protect contains three specially selected lactic acid forming bacterial strains, *Lactobacillus acidophilus* strains LA-101 and LA-107, and *Enterococcus faecium* strain SF-101, and should be used as an aid in providing protection from scours. These bacteria are able to survive and multiply within the intestine, providing protection for the animal against less desirable bacteria. By supplying high intakes of these beneficial bacteria, the intestinal well-being of the animal is established and maintained, thereby minimising the incidence of scours in growing calves.

PROVITA PROTECT TRIAL DATA

Provita Protect has been shown, in independent field trials, to help calves up to the age of twelve weeks resist pathogenic infection, thus avoiding the enteric upsets which cause diarrhoea. Treatment with Provita Protect has shown a significant reduction in the incidence of scouring in calves, resulting in improved growth rates and body condition.

- Provita Protect provided substantial protection against nutritional scours under a variety of management systems, regardless of whether calves were bucket or teat fed.
- Both home-bred dairy replacements and bought-in calves benefited following treatment with Provita Protect.
- Body condition at five weeks of age showed significant improvement in calves treated with Provita Protect. Treated calves showed a 7.5 % improvement in body condition (Significant at $P < 0.05$).

INCIDENCE OF SCOUR

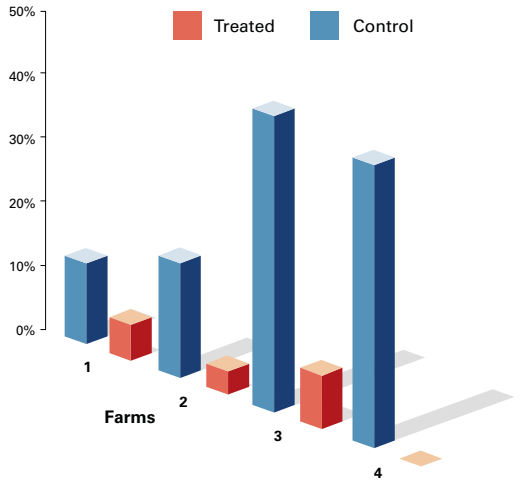
At three weeks of age independent trials, carried out by R.D.T. Services Ltd., involving over 200 calves on four different farms, produced the following results (Table 1 & Figure 1).
On all farms, calves treated with Provita Protect showed a significantly lower incidence of scour when compared with untreated calves.

TABLE 1 - EFFECTS OF PROVITA PROTECT ON SCOUR INCIDENCE

Farm	Calf Source	Breed Cross	Sex	% Calves with Scours	
				Control	Treated with Protect
1	Market	Continental x Friesian Hereford x Friesian	Heifers Bull-calves	12.5	5.6
2	Market	Limousin x Friesian Hereford x Friesian	Bull-calves	17.9	3.6
3	Market	Market	Bull-calves	46.1	8.3
4	Home Bred	Holstein	Heifers	44.0	0.0

FIGURE 1

Percentage of calves with scours.



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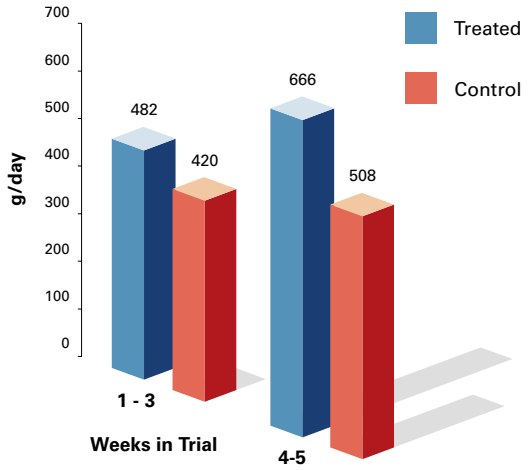
GROWTH RATE

In trials Provita Protect treated calves encountered a lower incidence of diarrhoea than the untreated calves. By maintaining the health status among these calves the setbacks in growth and losses in weight common in scouring calves was prevented.

Figure 2 highlights the improved performance, resulting from a preventative treatment of Provita Protect as shown by growth rates in young calves.

Between weeks 1 - 3, when the calves were on a restricted milk based diet, the Provita Protect treated calves showed a 14.8% higher growth rate than the untreated calves. During weeks 4 - 5 this advantage improved to 31.0% of an increase over the untreated animals when an ad-lib diet of concentrates and milk was available.

FIGURE 2: GROWTH RATES



ADAS TRIAL

In independent trials carried out by ADAS (Agricultural Development and Advisory Service), the three strains of lactic acid forming bacteria used in Provita Protect were shown, in vitro, to be inhibitory to 8 pathogens common to farm animals. The pathogens tested were: *E. coli* strains K88 and K99; *Salmonella* types *typhimurium, dublin* and *enteriditis*; *Staphylococcus aureus, Clostridium perfringens* and *Listeria monocytogenes*.

DOSAGE AND ADMINISTRATION

Provita Protect should be used for scour prevention in young pre-ruminant calves up to 12 weeks of age. Prime the automatic dose syringe by inverting the bottle after attachment and gently squeezing the pump. Shake container before administering each dose directly into the calf's mouth. Do not rinse syringe with water or add water to the container.

Treat calves with 5ml (2 doses) Provita Protect administered orally:

- as soon as possible after birth
- on arrival on farm for bought-in calves
- at times of stress, as necessary.

Following initial 5ml dose, calves should receive 2.5ml (1 stroke of pump) before the morning feed on the following two days.

CONTRA-INDICATIONS, WARNINGS

Do not use whilst administering therapeutic or in feed antibiotics. Chlortetracycline, Oxytetracycline, Tetracycline, Penicillin, Virginiamycin and Tylosin have been shown to be antagonistic to lactic acid bacteria. Withdrawal period for Provita Protect is nil. Store in a cool place (below 8°C). Protect from light. Do not freeze. Any contents remaining three months after the date on which the container was first opened should be discarded.

ACTIVE INGREDIENTS

A stable suspension of *Lactobacillus acidophilus* strains LA-101 and LA-107, and *Enterococcus faecium* strain SF-101 in food grade vegetable oil.

PACK SIZE

100ml plastic bottle with 2.5ml inverted pump delivery applicator.

POM VPS

PL No. 11543 /4001

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