

Calf Rearing Protocols

Scours is the cause of more than half of calf deaths

Scours forms a major threat in the first weeks of a hand reared calf's life and is the primary cause of death in calves from 2 to 30 days of age.

Preventative measures provide greater economical and animal health benefits than treatment options for scours.

From ensuring your shed is set up correctly prior to calving through to weaning, here are some key tips to giving your calves the best start to ensure healthy calves and thereby reducing the stress, workload and financial cost to the calf rearer.

If you have any questions or concerns regarding the health issues, treatments and suitable products, please contact your vet for specialist advice.

1 SETTING UP YOUR SHED

Ensuring your shed is set up correctly at the beginning of the season is imperative to a successful calf rearing season.

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| Ventilation | <ul style="list-style-type: none"> Ensure there is good ventilation without draughts. You should be able to light a match at calf level. |
| Partitioning | <ul style="list-style-type: none"> Smaller pens with less calves in each is ideal. Allow 1.2m per calf. Restrict pens to a maximum of 15 calves. Ideally partitions should be solid to prevent cross contamination of bacteria/viruses etc. Have a central walkway where possible for feeding. Rear bobby calves separately. |
| Bedding | <ul style="list-style-type: none"> Ensure your base has good drainage. Comfortable bedding such as wood shavings. Keep bedding clean and dry. Remove soiled bedding and top up with dry as required. Remove all bedding between seasons. |
| Hygiene | <ul style="list-style-type: none"> Disinfect at least twice weekly. Use a with a multi-strain disinfectant – ask your vet for advice on the best option. Have a rodent control system. |
| Water | <ul style="list-style-type: none"> Always have fresh, clean water available in pens. |
| Isolation | <ul style="list-style-type: none"> Have a designated hospital pen available. |

2 EARLY CARE

By giving your calves the best start you will limit health issues and save yourself time and money in the future.

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| Collection | <ul style="list-style-type: none"> ▪ Ensure calves are collected on a regular basis – at least twice a day. ▪ Clean trailer after each pick up. |
| Navel Spray | <ul style="list-style-type: none"> ▪ Spray calves navels before putting them in the trailer. This will limit the bacteria which can enter. ▪ Use 7% iodine tincture. |
| Warm & dry | <ul style="list-style-type: none"> ▪ Ensure calves are warm and dry when they are put into the pens. ▪ Have covers available for those that are wet/cold or sick. |
| Colostrum | <ul style="list-style-type: none"> ▪ Feed 4-6 litres Gold Colostrum is fed within 6 - 12 hours! This is when they are best able to absorb the antibodies and will help with their immunity, digestive development and overall health. ▪ Fresh colostrum for the first 24 hours of life. ▪ Gold Colostrum is best fed fresh but may be frozen for up to 6 months. Thaw/heat in warm water. Do not microwave. ▪ Store colostrum in a lidded vat/drum and stir regularly. Storage should be at 4°C or preserved using a chemical preservative such as potassium sorbate. |
| Observe | <ul style="list-style-type: none"> ▪ Check calves twice a day to pick up on any issues early on. |
| OptiGuard | <ul style="list-style-type: none"> ▪ Mix with water and drench each calf as they come into the shed. This will ensure early protection against scours. ▪ As OptiGuard slows down the rate of digestion, it may assist with antibody uptake from colostrum (providing this is fed within the first 6 - 12 hours) ▪ Have available in troughs for ad-lib intake |
| Vaccination | <ul style="list-style-type: none"> ▪ Refer to your vet for recommendation on vaccinating |

3

NUTRITION & FEEDING PRACTICES

You get out what you put in. Using quality ingredients is key to digestive health and growth.

Colostrum

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Milk replacement

- Choose a good quality calf milk replacer (preferably milk powder based curdling CMR) with:
 - Protein – min 24% protein
 - Fat – min 20%
 - Carbohydrates from milk lactose - approx. 42%
- Temperature should be 39-41°C – ensure powder is mixed completely
- Feed 2–3 times a day and ensure feeding takes place at the same time every day
- Follow recommendations of the manufacturer of the calf milk replacer.

Hygiene

- Even healthy calves shed low amounts of infectious organisms in their faeces; this amount goes up if the calf gets older.
- Therefore, feed calves in order of age, with the young ones fed first. Feed healthy calves first.
- While you will intuitively want to feed sick calves first – due to cross contamination it is important that you do not feed healthy calves after sick using the same equipment. Sanitise equipment after feeding sick calves.
- Better still have separate equipment for sick calves.
- Keep milk collection, storage and feeding equipment clean by scrubbing with hot water and a **multi strain** disinfectant.
- Remember to sanitise your hands, clothing and boots after handling sick calves!

Calf Meal

- A good quality calf starter is crucial for early rumen development – the structure of the grains gives texture and provides lots of fermentable carbohydrates for rumen development. Fermentation products, esp. butyrate, help grow the rumen papillae (the more and larger papillae, the better nutrient absorption later on).
- An ideal calf meal should contain:
 - Minimum 18-20% protein (ideally closer to 20%)
 - Calcium of approx. 0.4% DM and Phosphorous of approx.0.2% of DM (ratio is important)
 - Coccidiostat

Roughage

- Roughage is important for the development of a healthy rumen – and therefore ongoing weight gain and production.
- Pre-weaning a good quality calf starter should make up . <5% of DM before weaning, to avoid gut fill issues and low starter intake.
- After weaning free choice/unlimited roughage should be offered, such as:
 - Short chopped hay
 - Silage
 - Good quality pasture

OptiGuard

- Helps prevent scouring by absorbing extra moisture in the digestive system
- OptiGuard slows down the rate of digestion, therefore enabling more nutrients to be absorbed.
- Sprinkle on top of meal to encourage quicker transitioning.

4 SICK CALVES

Recognition, Management and Treatment

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| <h3>Recognition/ Behaviour</h3> | <ul style="list-style-type: none"> ▪ Because dehydration can kill so rapidly, it is important to recognize calf diarrhoea and the signs of dehydration as early as possible. ▪ Watch for calves that won't stand, aren't drinking, have droopy ears/head, limping, coughing, loud or shallow breathing, yellow/white form nostrils ▪ SEE CHART ON BACK for levels of dehydration and detection. ▪ Check calves twice daily, and provide an electrolyte solution immediately when signs of calf scours and/or dehydration are being observed. This will increase the chances the calf will recover rapidly. |
| <h3>Housing</h3> | <ul style="list-style-type: none"> ▪ Calves suffering from low levels of infection can be a source of infection to other calves. Therefore, keep calves in clean individual pens during the first 2 weeks of their life. Consider an "All-in All-out" system, and disinfect the pens regularly in between |
| <h3>Segregation</h3> | <ul style="list-style-type: none"> ▪ Separate a sick calf from the healthy ones as diarrhoea can spread from one calf to other animals within the herd. ▪ Give each calf a number (spray it on) ▪ Record symptoms, feeding etc against each of the calves ▪ Do not return recovered calves to the original pen. |
| <h3>Feeding</h3> | <ul style="list-style-type: none"> ▪ Provide electrolytes to any calf with diarrhoea or dehydration. ▪ Feed after healthy calves – or have designated equipment and rearer. ▪ Scrub feeding equipment after use – even if designated. |
| <h3>Hygiene</h3> | <ul style="list-style-type: none"> ▪ Disinfect gumboots, hands (or wear gloves), equipment etc, to avoid contaminating healthy calves. |
| <h3>Electrolytes</h3> | <ul style="list-style-type: none"> ▪ Mix it correctly or it won't work. ▪ Never exceed 2 litres of milk or electrolytes in one feed (1.5l for Jerseys and cross breeds) ▪ Wait 2 hours between electrolyte/milk feeding. ▪ NEVER withhold milk from a sick animal (electrolytes don't have sufficient energy on their own) ▪ If they wont drink milk – tube feed them. ▪ Any calf that is sick or not eating can have electrolytes. ▪ BE PATIENT! ▪ 123 rule <ul style="list-style-type: none"> 1 x Bottle per day = anything with diarrhoea (you won't even know they are dehydrated) 2 x Bottles per day = anything dehydrated (sunken eyes, droopy ears, skin tent, weak) 3 x Bottles per day = severe dehydration (very sunken eyes, cold mouth/ears/legs, lying flat) |
| <h3>OptiGuard</h3> | <ul style="list-style-type: none"> ▪ Drench with 20g of OptiGuard with each tube/electrolyte feed. ▪ This will help to reduce the effects of scouring by absorbing excess moisture in the digesta. |

5 WEANING

The best time to wean depends on your system.

| LIVE WEIGHT BASED | <ul style="list-style-type: none"> Jersey/crossbreed 70 - 85kg's Fresian 90 – 110kg's | | | | | |
|--|--|---|-------------|------|--|--|
| TIME BASED | <ul style="list-style-type: none"> Depends on system All Milk (restricted colostrum/milk) rumen slower to develop Restricted Milk + meal/roughage The above won't account for poor doers/health issues etc | <p>10 weeks 8 weeks</p> | | | | |
| FEED INTAKE BASED | <ul style="list-style-type: none"> How much meal are they eating? Can reduce milk once eating min 0.5kg/calf Calves should be eating approx. 700g to 1kg starter per day at weaning, depending on size 1-1.2kg/calf from weaning till 100kg Maintain meal for 1 month post weaning – ensure continuation of coccidiostat. Crude protein can be reduced. Sometimes calves do not thrive post-weaning so weigh them within 7 – 10 days to make sure they have gained weight from weaning. If they are not thriving post-weaning they may need continued access to calf meal regardless of weight or age. | | | | | |
| RELOCATION CRITERIA (FOR RECENTLY WEANED CALVES) | <ul style="list-style-type: none"> Relocation can lead to growth checks or be a trigger for animal health issues including pneumonia, scouring and parasites. The younger and more recently weaned the greater the risk as they will be undergoing changes in diet, rumen development and moving from individual or small group care to a larger mob environment. Criteria for relocation in individual and mob situations: <table border="1" data-bbox="552 1211 1501 1541"> <thead> <tr> <th data-bbox="552 1211 1002 1249">Individuals</th> <th data-bbox="1002 1211 1501 1249">Mobs</th> </tr> </thead> <tbody> <tr> <td data-bbox="552 1249 1002 1541"> <ul style="list-style-type: none"> Fully weaned and off milk for at least 2 weeks Competing in the mob Meet minimum weight targets Drenched and vaccinated In good health </td> <td data-bbox="1002 1249 1501 1541"> <ul style="list-style-type: none"> Transitioned onto a full pasture diet or supplement provided for transition Mob average meets weight-for-age target, grazing together as a group, prepared for transport Lightest animal with 10% of mob average (if they are a similar breed) </td> </tr> </tbody> </table> <p><i>(relocation criteria sourced from Dairy NZ website)</i></p> | | Individuals | Mobs | <ul style="list-style-type: none"> Fully weaned and off milk for at least 2 weeks Competing in the mob Meet minimum weight targets Drenched and vaccinated In good health | <ul style="list-style-type: none"> Transitioned onto a full pasture diet or supplement provided for transition Mob average meets weight-for-age target, grazing together as a group, prepared for transport Lightest animal with 10% of mob average (if they are a similar breed) |
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Clinical symptoms to help evaluate the level of dehydration in calves

| Dehydration | Behaviour | Symptoms | Eyeball Recession | Skin Tent Duration (sec) | Treatment |
|----------------------|-----------------------|--|----------------------|-----------------------------|--------------|
| <5% | Normal | Diarrhoea, no clinical signs, strong sucking reflex | None | <1 | Electrolytes |
| 6% - 8% (mild) | Slightly depressed | Still suckling, dry mouth and nose, sunken eyes, weak | 2-4mm | 1-2 | Electrolytes |
| 8%-10% (moderate) | Depressed | Lying down and unable to stand, eyes very sunken, dry gums, has cold ears and legs | 4-6mm | 2-5 | IV fluids |
| 10%-12% (severe) | Comatose | Calf is lying flat on its side hardly able to move, cold ears and legs, skin wont flatten when tented | 6-8mm | 5-10 | IV fluids |
| >12% | Comatose/dead | | 8-12mm | >10 | |