

# HYDRAFAST

Oral Rehydration  
Solution for Calves



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## Oral Rehydration Solution for Calves

Rehydration with an oral rehydration solution, supplying electrolytes and energy, remains the cornerstone of supportive management of calf scour.

Current knowledge of calf scour indicates that an oral rehydration solution must satisfy the following four indications:<sup>1</sup>

1. Supply sufficient sodium to maximise the absorption of water by osmosis. (Water follows the sodium through the gut endothelium).
2. Provide agents which facilitate and maximise the absorption of sodium (e.g. glucose, glycine, citrate, acetate, propionate).
3. Provide an alkalinising agent to address the metabolic acidosis of the scouring calf.
4. Provide energy, as scouring calves are in a state of negative energy balance.

Hydrafast is a next generation oral rehydration solution which optimally achieves these goals. Hydrafast was developed alongside Professor Gayle Hallowell, Professor of Veterinary Internal Medicine and Critical Care at the School of Veterinary Medicine and Science, University of Nottingham.

*“This new ORS formula for calves is both practical and research-based, and should address what we know calves need when they have diarrhoea. It provides nutrition as well as an optimal electrolyte balance.”*



PROFESSOR GAYLE HALLOWELL

## FEATURES OF HYDRAFAST

- ✓ Delivers ideal sodium levels for water absorption and rehydration.<sup>1</sup>
- ✓ Provides high glucose levels for energy, and as the main co-transporter of sodium.<sup>1,2</sup>
- ✓ Includes acetate, propionate, and citrate as acid buffers. These also act as sodium co-transporters and further energy sources.<sup>1</sup>
- ✓ Contains Glycine, an amino acid which facilitates sodium absorption and speeds mucosal regeneration.<sup>7</sup>
- ✓ All components of Hydrafast are carefully balanced achieving the desired osmolality, strong ion difference and sodium: glucose ratio.<sup>1,2,8</sup>

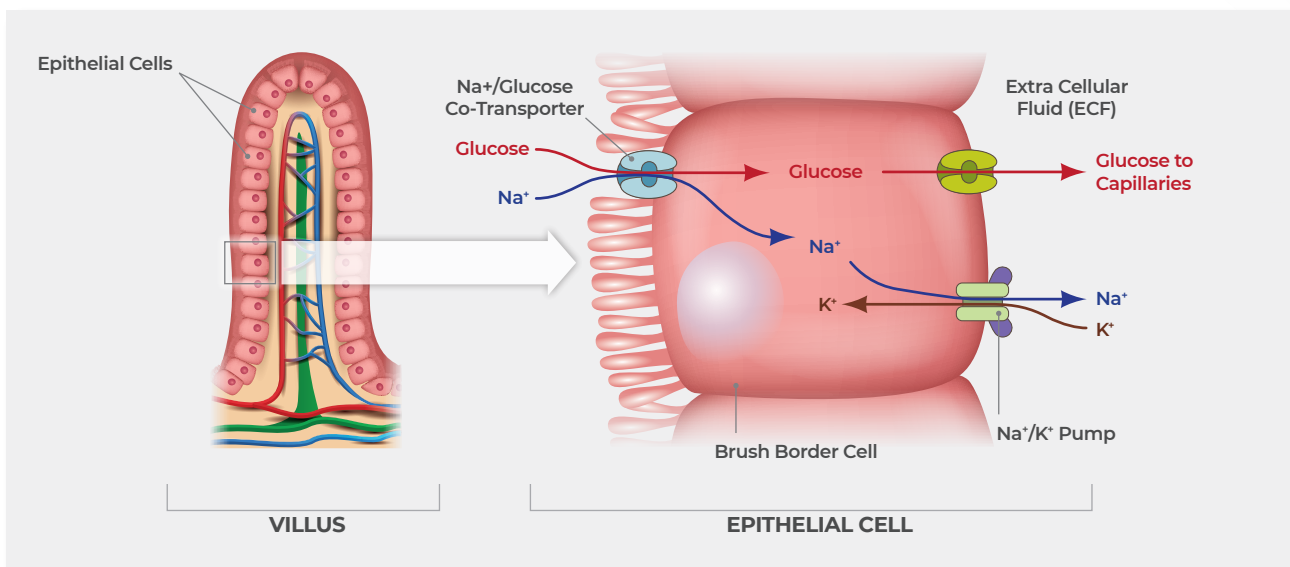


# HOW HYDRAFAST WORKS

## Rehydration:

Sodium is the major solute involved in water homeostasis. Water molecules move with sodium. In the scouring calf we want to drive water absorption from the lumen of the gut, across the epithelium, and into the body tissues and plasma (Extracellular Fluid).

Absorption of glucose from the gut goes hand in hand with that of sodium i.e. as glucose is absorbed the amount of sodium absorbed (and therefore water) increases. A similar mechanism exists for certain amino acids, so the addition of glycine in Hydrafast further drives sodium absorption, with the added benefit of aiding mucosal regeneration.<sup>6,7</sup>



## Buffers and electrolytes:

Acetate, citrate, and propionate act as buffers to counteract acidosis. These do not alkalise the abomasum as bicarbonate does, which can allow bacterial growth and adversely affect milk clot formation.<sup>1,4</sup>

The potassium in Hydrafast helps to replace losses in scour.<sup>1</sup>

## Energy provision:

Young calves have a large surface area: bodyweight ratio and consequently have a high energy requirement. They also have few reserves of fat. Hydrafast contains much higher levels of glucose than other oral rehydration products and thus helps minimise the weight loss often seen in scouring calves, and maintain immune strength for recovery.<sup>1,2,5</sup>

Hydrafast is reconstituted to a 2 litre solution with an osmolarity (osmotic strength) of 570 mOsm/L due mainly to the glucose content. As the osmolarity at the tip of the intestinal villus in a calf's gut is around 600 mOsm/L<sup>12</sup>, Hydrafast's more concentrated solution is physiologically more appropriate than products with a lower osmolarity.<sup>2</sup>



# HOW TO USE HYDRAFAST

Research has shown that continuing milk feeding during calf scour is very important to maintain calf strength and aid recovery. However, HydrFAST is much more effective than milk at rehydrating the calf and preventing metabolic acidosis, keeping the calf bright, so using HydrFAST alongside milk from the onset of scour is vital.<sup>2,3,4</sup>

## Ideal protocol:

- At first signs of scour feed 2 litres of prepared HydrFAST solution twice daily and continue for at least 2 days.
- Also continue milk feeding the calf or allow calf to suckle as normal if possible. Ongoing nutrition from milk is important for the calf's recovery. If milk feeding, ensure a 3-hour gap between HydrFAST and milk feeding.
- Administer HydrFAST orally, preferably using a feeding bottle with teat. Alternatively, bucket or tube feeding can be used.

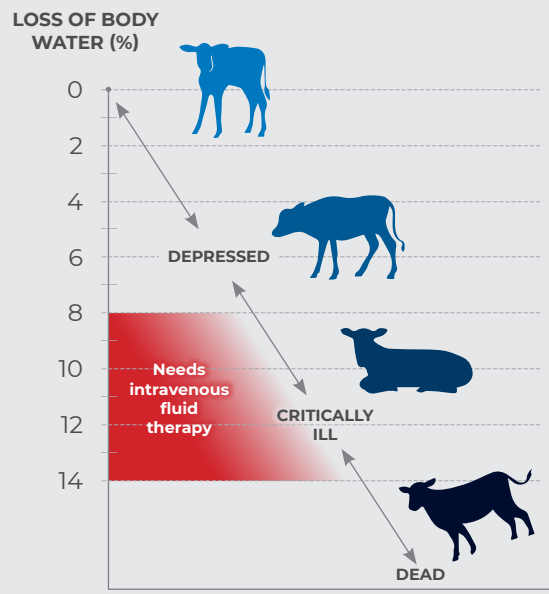
## Consider IV fluids if any of the following apply:

- The calf can't maintain sternal recumbency
- The calf is extremely depressed with no suckle reflex
- The calf still appears dehydrated after 48 hours of oral HydrFAST

## Mixing instructions:

Mix the contents of one sachet in 2 litres of clean, fresh, warm water and mix thoroughly. Feed immediately.

HydrFAST is a complete dietetic feedingstuff for the particular nutritional purpose of stabilisation of water and electrolyte balance. For use in the case of risk of, during periods of, or recovery from digestive disturbance (diarrhoea).



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