

# Electrolyte Use



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Electrolytes are an important tool to use when supporting scouring and dehydrated calves. Scours are the leading cause of death in young calves, primarily because scours cause calves to rapidly dehydrate. It is important to monitor calves daily and treat them quickly when needed.

A calf needs to receive 10% of its body weight in fluids each day for maintenance, while a growing calf will require even more<sup>1</sup>. Scouring calves need the calories from milk feedings as well as the extra fluids and nutrition that electrolytes provide. Electrolytes should be fed between the normal milk feedings. Mixing milk and electrolytes together interferes with the clotting mechanism of the milk and is not recommended<sup>1</sup>. It is best to start with a higher feeding rate of electrolytes and reduce it as the calf's condition improves. If a calf is not drinking on its own, the use of an esophageal feeder may be required.

There are two main types of scours: nutritional and pathogenic. Nutritional scours are caused by changes to the calves' diet such as a change in milk solids, temperature, volume or a change in the feeding schedule<sup>2</sup>. If milk replacer is being fed, producers can inadvertently cause scours by varying the solids concentration of the mix. Sometimes calf feeders will add extra milk replacer powder to the mix in effort to produce additional calories during cold weather. This will negatively alter total solids percentage of the mix, often leading to scours. Optimal total solids concentrations for milk or milk replacer solutions are 12.5%- 14%. Remember to keep mixing procedures, temperature, and time consistent to help prevent gastrointestinal upset. Another important protection against scours is feeding an adequate amount of colostrum in a timely fashion. Four quarts of colostrum should be fed to a newborn calf within four hours. It is important to test colostrum to ensure it has a level of 200 grams IgG or above. Proper freezing and thawing practices should be reviewed with all personnel responsible for calf care.

Pathogenic scours are caused by bacteria, protozoa, or viruses. Infection occurs from contact with other calves, equipment or through the environment.

Working with a veterinarian will help to determine the type of scours calves are experiencing. Fecal samples can be taken to diagnose the type of scours. It is important to help reduce exposure to pathogens by bedding with 25 pounds of long stem wheat straw everyday for every 1,000 pounds of calf bodyweight. Proper cleaning and sanitizing of feeding equipment, hutches or pens, and barns is essential for calf health. A vaccination protocol should be discussed with a veterinarian to determine the best plan for each farm. Proper ventilation can also be helpful in reducing respiratory issues in calves. Crystal Creek<sup>®</sup> has several effective supplements that support calves experiencing dehydration and scours.

Calf 180<sup>®</sup> is a dietary supplement providing electrolytes, fibers, and vitamins for pre-weaned calves. This product contains plant pectins, which help to firm up the stool. While pectins are beneficial for the majority of calf scour cases, they are not recommended for calves with E. coli or Salmonella scours. For E.coli and Salmonella scours, the bacteria need to be shed out of the calves' digestive system rapidly, so an electrolyte without pectins such as Replena-Lytes<sup>®</sup> is a better choice.

Replena-Lytes<sup>®</sup> is another dietary supplement providing a source of electrolytes and energy for calves needing extra nutrition. It is a balanced and proven formulation of highly available ingredients to provide dietary support to dehydrated calves. Replena-Lytes<sup>®</sup> helps to counteract dehydration and increase nutrient absorption.

Providing proper hydration can help shorten the severity and duration of calf scours. Consider the type of electrolyte best suited for the variety of scours being experienced. When caring for a scouring calf, remember to add extra feedings of electrolytes in addition to the normal milk feedings. Electrolytes should be fed independent of the milk and not mixed in with the milk. It is imperative to keep feeding time, volume, temperature and milk solids consistent. Lastly, remember that electrolyte therapy needs to be paired with a prevention plan to address the cause of the scours.

<sup>1</sup> Lewis, Roy. "Electrolyte Replacement Best Treatment for Scouring Calves." *The Western Producer*, 30 Jan. 2013.

<sup>2</sup> *Electrolytes for Dairy Calves*. Retrieved from: [www.extension.psu.edu/electrolytes-for-dairy-calves](http://www.extension.psu.edu/electrolytes-for-dairy-calves).