

Scouring for Solutions: Tackling Calf Scours and Acidosis

At the end of a recent herd visit, I was asked to check out a couple calves, as there had been a few struggling with pneumonia over the last week or so.

“The calves all have scours and pneumonia! We’ve been treating with Nuflor, but they just don’t seem to be getting any better! What other kind of meds can we try?”

On examination, the calves were puffing, dull, and the inside of hutches were painted with yellow scours. When listening to their lungs, I could hear no crackles or wheezes...so what is going on with these calves? And what do we do to help them??

Causes of Heavy Breathing in Scouring Calves- NOT just pneumonia!

Heavy breathing in calves experiencing scours can result from several factors, not just from respiratory disease/pneumonia:

1. **Dehydration:** Severe diarrhea can lead to significant fluid loss, resulting in dehydration. This affects the calf's ability to regulate its body temperature and can cause increased respiratory effort.
2. **Acidosis:** Loss of electrolytes due to diarrhea can lead to metabolic acidosis- a disruption in the body's normal acid-base balance, making the blood more acidic. When blood becomes more acidic, calves may breathe faster to expel more carbon dioxide (CO₂). Lowering CO₂ levels helps raise blood pH back toward normal.
3. **Infection Spread:** Some infectious agents causing scours can also affect the respiratory system, leading to pneumonia or bronchitis.
4. **Stress:** Environmental stressors such as extreme temperatures, overcrowding, or weaning can exacerbate both scours and respiratory symptoms.

Steps to Help a Calf with Scours and Acidosis

1. Assess the Situation
 - Symptoms: Look for signs such as lethargy, diarrhea, decreased appetite, and dehydration. Hands on the calf- feel for swollen joints, or an infected navel.
 - Check Hydration: Assess hydration status. Signs of dehydration include sunken eyes, dry mucous membranes, and skin tenting.
2. Monitor temperature- and ensure it is an accurate reading! It can be difficult to accurately monitor temperature with scours as it can decrease the contact of the rectal tissue to the thermometer. A fever is considered as 39.5°C or 103.1°F. If there is a fever, consider antibiotic therapy for potential infectious cause scours, or other infection (Navel? Pneumonia?)
3. Provide Electrolytes

- Oral Electrolytes: Administer a balanced electrolyte solution designed for calves to help restore acid-base balance and hydration. (see attached chart for help with how much fluid to give- it's likely more than you think!)
- Fluid Therapy: If the calf is severely dehydrated, consider intravenous (IV) fluids under veterinary supervision

4. Bicarbonate supplementation

- By giving sodium bicarbonate (simple baking soda!), we can help correct the acidosis. In general, 2-4 tablespoons of baking soda in 2 liters of warm water or with electrolytes should be sufficient. Do not mix in with milk or milk replacer, as the bicarb will neutralize the calf's stomach acid, and interfere with the normal digestion of the milk/milk replacer. It is often best to wait 2 hours between electrolyte/bicarb treatment, and a feeding.

5. Monitor and Support

- Keep the Calf Comfortable: Ensure it has a clean, dry, and warm environment.
- Regular Monitoring: Check the calf's vital signs, hydration status, and overall demeanor regularly.
- Depending on the cause of scours, additional supplementation or antibiotic therapy may be indicated.

Conclusion

If you see a puffing calf, don't just run for the pneumonia drugs! Calf scours can lead to severe complications, including respiratory distress. Understanding the interconnectedness of these conditions is vital for effective management. Talk with one of our veterinarians for diagnosis and treatment tailored to the specific situation.

Dr. Meredith Vair, DVM

Hydration Chart for Calves

| Hydration Level | Clinical Signs | Percentage Dehydration |
|----------------------|---|------------------------|
| Normal | Bright eyes, moist mucous membranes, good skin elasticity | 0-5% |
| Mild Dehydration | Slightly sunken eyes, tacky mucous membranes, reduced skin elasticity | 6-8% |
| Moderate Dehydration | Sunken eyes, dry mucous membranes, noticeable skin tenting | 9-12% |
| Severe Dehydration | Very sunken eyes, very dry mucous membranes, extreme skin tenting | 13-15% |
| Critical Dehydration | Very sunken eyes, dry and cool skin, lethargy, shock signs | >15% |

Assessment Tips:

- **Skin Tenting:** Gently pinch the skin on the neck or shoulder; if it takes time to return to normal, the calf may be dehydrated.
- **Mucous Membranes:** Check the inside of the mouth; they should be moist.
- **Eye Appearance:** Look for how deeply the eyes are set in the head.

Guidelines for Feeding Electrolytes to Dehydrated Calves

The following is a guideline to the amount of fluids needed ABOVE the regular amount of milk/milk replacement the calf would normally drink in a day. If the calf is not currently drinking, that amount of fluid will need to be added to the requirements.

| % Dehydrated | Amount of Electrolytes required (L/day) | | |
|--------------|---|------------|-------------|
| | 60 lb calf | 80 lb calf | 100 lb calf |
| 5 | 1.5 | 2 | 2 |
| 8 | 2.5 | 3.25 | 4 |
| 10 | 3 | 4 | 5 |

****Calves that are 10% dehydrated or more may not be good candidates for oral rehydration therapy, and should be given additional support by IV fluid administration****

Reminder: If thinking acidosis from scouring, try giving 2-4 TBS baking soda to balance body pH

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Upcoming Holiday Season Hours

The clinic will be open Dec 24th from 8am to 12pm and closed Dec 25th and Dec 26th, returning to normal hours Dec 27th and Dec 28th. For New Year's hours; we are open Dec 31st from 8am to 4pm and closed Jan 1, 2025, returning to normal hours on Jan 2, 2025. As always, veterinarians will be available 24-7 for emergency service.

Save the Date – ANNUAL BEEF MEETING

This year's meeting has been planned for Wednesday November 20, 2024 at 6pm at Cowbell Brewing Co.