



# CEDAR GROVE VETERINARY SERVICE NEWSLETTER



APRIL 2019

## CALF DIARRHEA: WHEN FLUIDS SHOULD BE GIVEN

Calf scours can be devastating and costly to any farmer. The causes and prevention of scours is a topic for a different article because regardless of the cause of diarrhea, the most devastating outcome is dehydration. It can be difficult for producers to decide when oral electrolytes are enough or when IV fluids may be necessary. There is also the issue of metabolic acidosis that is a consequence of dehydration. This often can be just as devastating but is not often addressed with simple fluid administration.

Dehydration occurs during scours due to losses of fluids in

the feces and lack of fluid intake. Calves in the first week of life don't often consume a lot of water, which means they are entirely reliant on milk for fluid intake. Therefore, it is important when signs of diarrhea are identified to replace the fluids being lost. When a calf can stand and has a suckle reflex, this can be accomplished with high quality electrolyte solutions. The key to feeding electrolytes is to maintain milk feedings in addition to the electrolytes. There is no proof that "resting the gut" by not feeding milk will help the calf. The electrolytes should be treated as an additional meal between milk feedings.

Calves that lack a suckle reflex still require fluids for rehydration, but at this point IV fluids are necessary. Giving calves large amounts of fluids IV can be a tricky thing to learn and if a farmer is uncomfortable with that method of administration, they should consult a veterinarian. Subcutaneous fluids or fluids under the skin don't have the rehydration power of oral electrolyte solutions or IV fluids. Therefore, they are not a good alternative. The most common

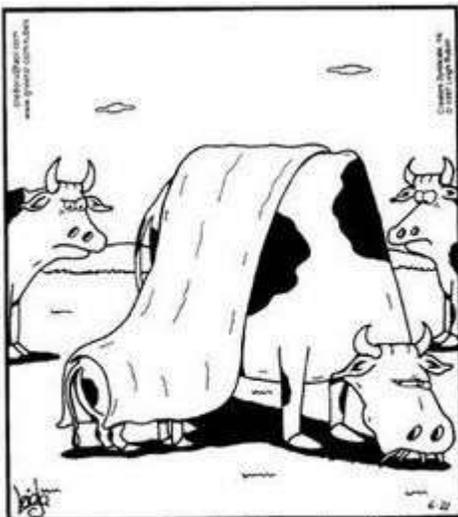
## TEST YOUR DAIRY FARMING KNOWLEDGE

- 1) Approximately how many farmers in the US are part of the millennial generation (age 34 and under)?
  - a. 198,326
  - b. 215,489
  - c. 257,454
  - d. 302,163
- 2) In the last few years, what percent of beef comes from the dairy sector (including cull cows, dairy steers, and heifers)?
  - a) 9-12%
  - b) 19-22%
  - c) 25-28%
  - d) 36-40%
- 3) What percentage of the US population has a self-diagnosed dairy intolerance (either to lactose or protein in the milk)?
  - a) 1-2%
  - b) 5-8%
  - c) 15-20%
  - d) 25-30%

*Answers on back*

fluid administered to calves for rehydration is Lactated Ringers Solution (LRS).

Finally, metabolic acidosis, especially in older calves, is a consequence of dehydration and can lead to dullness, decreased suckle reflex, weakness, recumbency, and death. Metabolic acidosis can



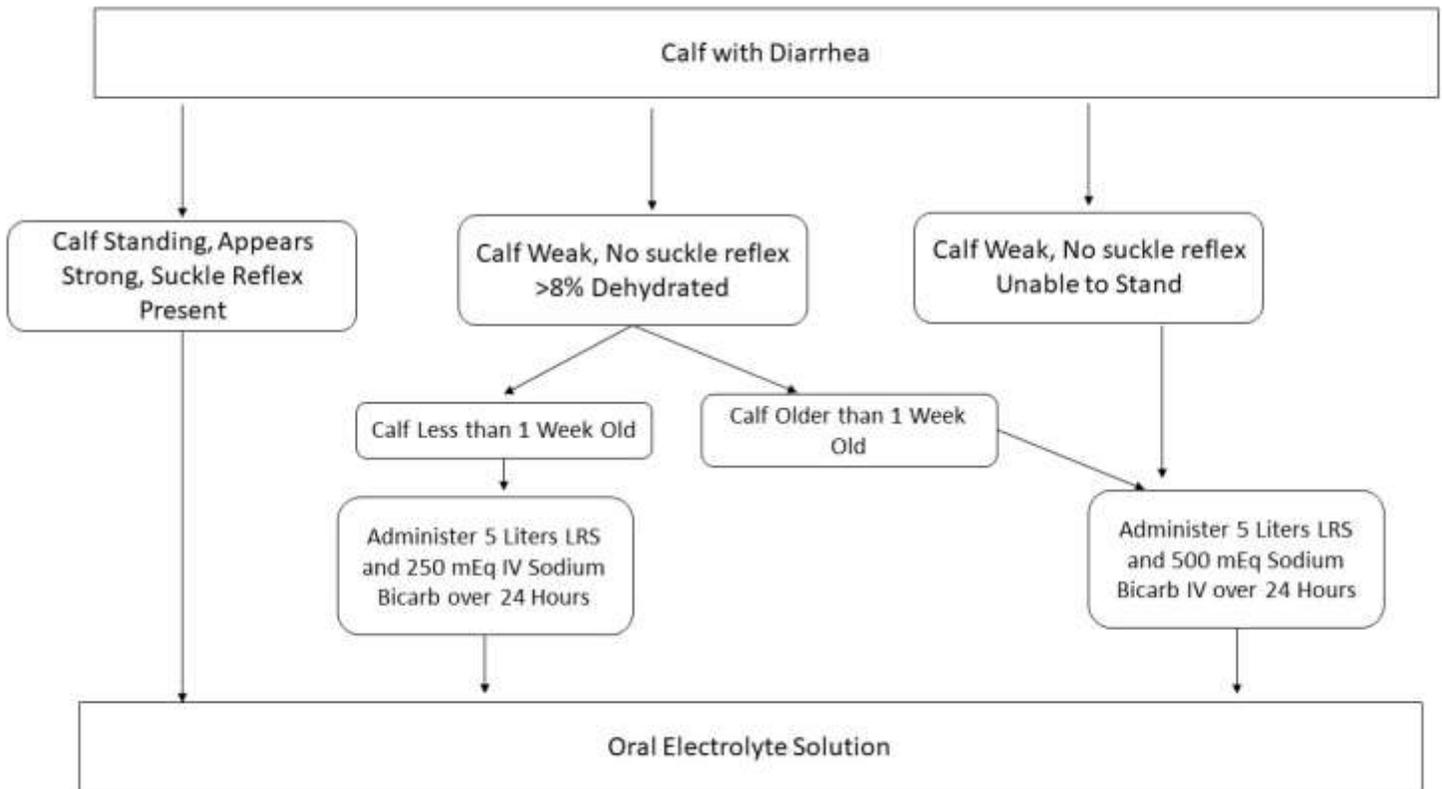
Even when practiced discreetly, raised eyebrows and disapproving glances still meet with those who dare to udder-feed in public.

be reversed if an alkalinizing agent is given. Oral electrolyte solutions often contain an alkalinizing agent in the form of bicarbonate, propionate or acetate. For calves that require IV fluids, they often will also need some form of alkalinizing agent as well. This can be accomplished by combining 13 grams of baking soda with 1-liter sterile water

and administering that to the calf IV. Additionally, sodium bicarbonate 8.4% is sold by the 100ml bottle. This can be added to LRS. Calves often will require at least 1-2 bottle to properly correct acidosis.

For many farm workers, the concept of what to do when a calf has diarrhea can be overwhelming. For that reason, we have included a flow chart

with this newsletter along with helpful tables regarding calf diarrhea that can be posted in calf areas to help make decisions about calf care. Of course, any questions can always be directed towards a veterinarian.



% Dehydration	Demeanor	Sunken Eye	Skin Test
<6%	Normal	None	None
6-8%	Depressed	2-4 mm	1-3 seconds
8-10%	Depressed	4-6 mm	2-5 seconds
10-12%	Comatose	6-8 mm	5-10 seconds
>12 %	Dead	8-12 mm	>10 seconds

Bicarb Source	Amount per ml	Amount needed for 250 mEq	Amount needed for 500 mEq
8.4% Sodium Bicarb	1 mEq/ml	250 ml (2.5 bottles)	500 ml (5 bottles)
5 % Sodium Bicarb	0.6 mEq/ml	415 ml	834 ml
13 grams baking soda in 1L sterile water	155 mEq/ Liter of solution	1.5 Liters	3 Liters

Farm Knowledge Answers

1) C 2) B 3) D

