

# **Calf Diarrhea: Treatment and Vaccination**

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# Overview

- **What causes calf diarrhea?**
- **Treatment protocols**
- **Vaccine protocols**



# Causes

- **Bacteria:**
  - E. coli
  - Salmonella
  - Clostridium perfringens

A lot of these cases don't benefit from antibiotics

- **Viruses:**
  - Rotavirus
  - Coronavirus
  - Bovine Viral Diarrhea virus

Antibiotics not effective for these pathogens

- **Parasites:**
  - Cryptosporidium
  - Eimeria

# Treatment

- Rehydration is crucial
- Will cover oral rehydration
- Antibiotics in select cases
- KEY: Detect diarrhea before fluid loss severe

Dehydration	Demeanor	Eyeball Recession	Skin Tent Duration (s)
<5%	Normal	None	<1
6%–8% (mild)	Slightly depressed	2–4 mm	1–2
8%–10% (moderate)	Depressed	4–6 mm	2–5
> 10% (severe)	Comatose (or dead)	>6 mm	>5

**These tend not to recover with oral fluids**

# Which oral electrolyte?

- They are not all the same
- They need to:
  - Supply electrolytes in appropriate quantity and ratio
  - Contain acetate, propionate or bicarbonate
  - Provide energy
- Lots of products on the market
- Consult with herd veterinarian on most appropriate choice for your situation

# How much to give?

- Too little = still sick
- Too much = usually urinates extra away
- Consider:
  - Degree of dehydration
  - Maintenance
  - Ongoing losses
- Include milk in your calculations
- Dehydration:
  - Body weight x % dehydrated
  - Slight depression: 6% dehydrated, 50kg calf = 3L
- Maintenance:  
50ml/kg/day, 50kg calf = 2.5L/day
- Ongoing loss: 1-4L/day
- 50kg calf: 6-10L total oral fluids/day including milk replacer

# What about antibiotics?

- **Need to use antibiotics responsibly**
- **Otherwise they will be taken away from us**
- **Do not use if normal:**
  - **Appetite**
  - **Rectal temperature**
  - **Activity level**
- **Limit to severe cases**
- **Avoid oral treatment with antibiotics**
- **Use your herd veterinarian to develop protocol:**
  - **As they have to write the prescription**

# Vaccination

- **Vaccines available for:**
  - Coronavirus, rotavirus
  - E. coli
  - Clostridium perfringens
- **Given to cow pre-calving**
- **Cow generates antibody, transfer in colostrum**
- **Label: “aids in the prevention...”**
- **Not magic bullets**
- **Need to ensure adequate colostrum gets into calf**
- **Use according to label as timing is important**



# Oral antibodies

- **Available against:**
  - E. coli
  - Clostridium perfringens
  - Coronavirus
- **Temporary immunization for newborn calves**
- **Label: “aids in the prevention...”**
- **Can be useful in a high risk situation**
- **Cost-benefit analysis from farm to farm**

# Take home messages

- **Recognize and treat diarrhea early**
- **Oral electrolytes key**
- **Vaccines available and can help**
- **Establish treatment and vaccination protocol with herd veterinarian**
- **Use all drugs according to label**

# Questions?

