Maximising Calf Survival – The Importance of the First 24 Hours

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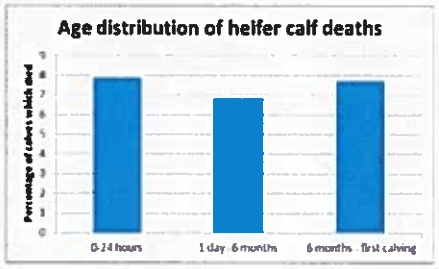
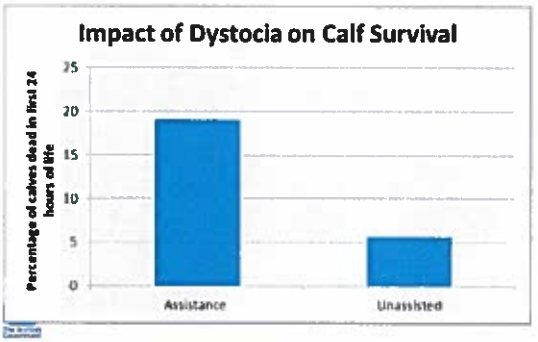
Introduction

- Why are the first 24 hours important?
  - Dystocia
  - Colostrum
  - Acquiring pathogens

Heifer mortality



Mortality of unassisted versus assisted calvings



Importance of good colostrum

- 40% of calf mortality associated with insufficient antibodies in the blood
- Our experience on farm
  - All calves with low antibody levels were treated for scour and/or pneumonia, 1 with reasonable levels was treated

Septicaemia

Navel ill

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Liver abscesses

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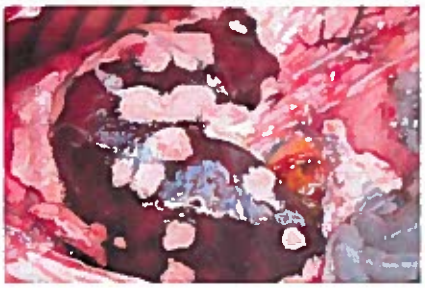

Joint Ill

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Joint ill

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Joint ill

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Normal brain

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Meningitis

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Meningitis

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Lung abscesses

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Normal lungs

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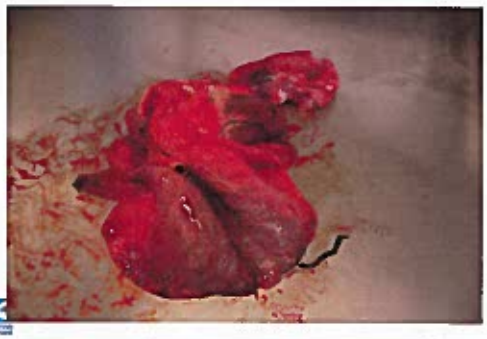

Pneumonia

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Scours

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The frustrations of colostrum management

- The levels of blood antibody levels required depend on the disease challenge
- Feeding poor quality colostrum will result in low blood antibody levels
- Feeding good quality colostrum doesn't always give high blood antibody levels

Areas to consider

- **Calf viability/difficult calvings**
- Timing of milking
- Volume/quality
- Timing of administration
- **Cleanliness**

1) Calf viability

- Affects likelihood of standing to suck
- What affects calf viability?
  - Difficult calvings
  - **Slow calvings**
  - Infections
  - Trace elements?

Slow calvings

- Very difficult to detect
- Three main causes
  - Stress in the dam (particularly heifers)
  - Low calcium
  - Over-conditioned cows

What happens in a slow/difficult calving?

- Calf is starved of oxygen
- Build up of lactic acid
- Acts like a poison
  - Calves are dopey
  - Suppresses heart rate and lung function
  - Take longer to stand, poor suck reflex, don't absorb colostrum
- Important cause of calf deaths in the first few hours

Dealing with acidosis

- Taking longer than 15 minutes to sitting up is a strong predictor of impending death
- Pinpoint haemorrhages into the whites of the eye and conjunctiva
- Acidosis can be corrected – 50mls of 8.4% bicarbonate into the vein
- If don't correct – low levels of antibody and often become rumen drinkers

Rumen drinking

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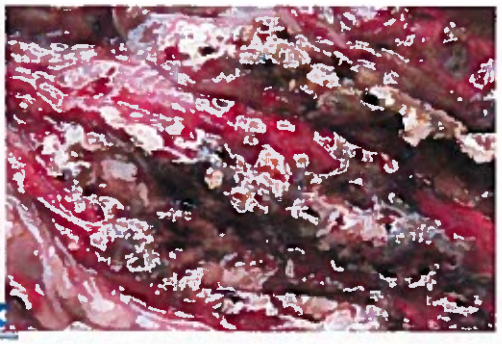

Are they going to drink themselves?

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- Dairy calves – not even if they're healthy!
  - Left to suckle the dam = 61.4%
  - Stomach tubing = 10.8%

What about beef calves?

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Beef calves and colostrum

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- Much stronger maternal instinct
- Calves tend to suck unless something is wrong
- Biggest cause of something going wrong is calf viability
- Other things – pendulous udders, cow temperament etc. of importance in individuals but less important on a herd basis

Beef cattle - Calgary

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- Failure to suckle the dam:
- Unassisted
  - Weak suckle = 78%
  - Strong suckle = 8%
- Easy assist
  - Weak suckle = 94%
  - Strong suckle = 26%
- Difficult assist
  - Weak suckle = 98%
  - Strong suckle = 49%

Beware cleft palates

2) Timing of milking

- Timing of milking
  - 6 hours = 17% reduction
  - 10 hours = 27% reduction
  - 14 hours = 33% reduction

3) Volume and quality

- Quality very variable
- Some evidence that heifers will produce poorer quality colostrum
- Some evidence that the higher the colostrum yield, the lower the quality
- Both very variable - test

Volume

- Lots of different protocols!
- Best advice
  - 3 litres within the first 2 hours (must be within the first 6)
  - Second feed within next 12 hours

4) Timing

- Within 2 hours
- Must be within 6
- If you start, must keep going
- Bacteria speed up the gut closing

5) Cleanliness

- Disease challenge
  - Johne's
  - *Salmonella*
  - *Mycoplasma bovis*
- Reduces colostrum quality
  - Bacteria bind to the antibodies
  - Speeds up gut closure
  - Milk goes sour

Maximising cleanliness

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- Don't pool
- Storage – even in fridge counts often unacceptable after 2 days
- Can add potassium sorbate (TBCs < 100 000 for 6 days)
- Freezing – up to a year. Defrost – don't expose to >60°C
- Adequate disinfection of buckets, utensils
- Stomach tube hygiene

Measuring colostrum cleanliness

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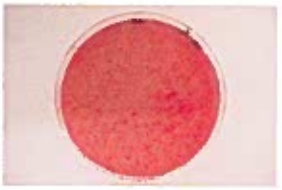
- TBCs and TCCs in colostrum can be measured
- Useful as part of an investigation into low colostrum levels
- As well as whether it is contributing to the problem, can highlight at which point contamination occurs



Pasteurisation

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- Can be useful for Johne's disease, *Mycoplasma bovis* and *Salmonella* Dublin
- Improves antibody absorption
- However, not be all and end all of control
- Needs careful monitoring
- Reduces bacterial load, doesn't sterilise it
- Reduces Ig levels (only pasteurise >60 g/l)
- Small batches
- Monitor by cultures and assessment of calf Ig status
- Can achieve equal efficiency of absorption with hygienic collecting and handling
- If method of feeding not sufficiently hygienic, TBCs and TCCs at point of feeding can be higher than pre-pasteurisation

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