

# Farm news

## Colostrum management in dairy calves

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### Why is colostrum management so vital for replacement heifers?

Shockingly, 16% of UK heifers born alive do not reach their 1st calving. According to AHDB in September 2019, the average replacement cost of a freshly calved heifer is £1459. Costly losses can be avoided by good management, and this starts right from birth.

Calves are born with no antibodies – nutrition and oxygen are provided via the placenta but no antibodies to any diseases on farm pass through! Colostrum contains vital antibodies from the dam against diseases that she has been exposed to, including those circulating on farm already. Colostrum also contains:



### So what are antibodies?

Antibodies, or immunoglobulins, are proteins in the blood made by white blood cells. Antibodies work by binding to circulating disease-causing bacteria or viruses to enable attack of these by other parts of the immune system or direct destruction.

- Immunoglobulin IgG – a small molecule that has the ability to move out of the bloodstream into tissue
- Immunoglobulin IgM – a bigger molecule that stays in the bloodstream and can deal with sepsis
- Immunoglobulin IgA – protects body surfaces such as the eye/gut/brain and kidneys

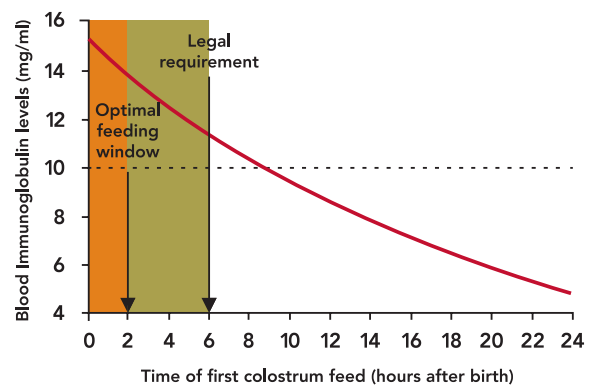
### How can you improve colostrum management on your farm?

#### 1. Give it QUICK

- As soon as possible – ideally within 2 hours (legally has to be within 6 hours of birth)
- Over the first 24 hours, pores in the calf's gut gradually 'close' so it cannot absorb the large antibodies in colostrum. Immediate administration helps avoid this occurring
- Feed at 38°C – it's absorbed best at body temperature

#### 2. Give ENOUGH

- Give 10% of bodyweight for the first feed (usually 3L - 4L)
- Give the second feed (another 3-4L within 12 hours)
- As a rule of thumb – a calf suckling for at least 20 minutes in the first feed consumes enough



#### 3. Check the QUALITY

- There is a huge variation in quality between cows, due to breed variance, dry period length, yield differences, nutrition status, poor hygiene...
- Quality decreases with time after birth by 3.7% in IgG content per hour and also when contaminated with bacteria
- Use a Brix refractometer to test colostrum quality (unaffected by temperature). Values above 22% can be used/stored for future use
- A colostrometer can also be used to test colostrum quality, but accuracy can be affected by temperature (ideally test at 22°C). Values at green (>50g/l) for colostrometer are acceptable



For more information call our practice on **01332 294929** or email [farmandequine@scarsdalevets.com](mailto:farmandequine@scarsdalevets.com)

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## Make sure you collect colostrum hygienically!

- Know the dam's disease status – i.e. Johne's /post-calving disease
- Ensure udder is clean before collection
- Do not contaminate colostrum on collection – wear gloves!
- Sanitise the cluster and pipework, both inside and out after every use
- Use a clean bucket and keep a lid on the bucket once collected
- Pasteurisation: this is a method of reducing numbers of bacteria present before refrigeration/freezing. Pasteurising DOES NOT make it okay to use poor quality/contaminated colostrum.
  - Heat treating colostrum at 60°C for 60 minutes does not negatively affect IgG levels, but can reduce bacteria such as E. coli, salmonella and Mycoplasma bovis
- Feed within one hour of collection if not refrigerating/freezing
- Storage:
  - Refrigeration @ 4 degrees** 24 hours max storage
  - Freezing @ -18 - -20 degrees** up to 1 year storage

## How do you know your colostrum is doing its job?

### Key performance indicators:

- Evaluate the calf's immunity - use blood samples taken by your vet between 24hrs and 7 days of age to test protein levels in blood which directly correlate to uptake of antibodies from colostrum
- Monitor disease levels in pre-weaned calves - keep up-to-date records of which calves are affected by disease (such as scours/pneumonia), treatment length and efficacy, alongside death rates.
  - Pneumonia incidence:** target less than 15% - (number of calves with pneumonia/no. of calves born) x 100
  - Scour incidence:** target less than 10% - (number of calves with scour/no. of calves born) x 100
  - Calf mortality:** target less than 2% - (number of calf deaths/no. of calves born) x 100
- It can be useful to split this KPI into number of deaths before and after 24hrs
- **Weigh your calves** – growth rates give an idea of how well youngstock are growing, which is an indirect method of monitoring efficiency of feed conversion alongside overall health. A growth rate can only be calculated when at least **2 measurements** have been made. Birthweight should be recorded, alongside at least a weaning weight. Then average daily liveweight gain can be calculated. Growth is at the most efficient during the first 2 months of life so highest possible growth rates should be aimed for during this period.
  - Target pre weaning growth rate:** 0.7-0.8kg/day

## Where to start?

1. Blood sample a minimum of 6 calves between the ages of 1-7 days old to see how effective your colostrum management has been
2. Work out your pneumonia/scour incidence from medicine records over the last 12 months
  - a. Has it been high?
  - b. At what ages are calves being affected?
  - c. If you have measured colostrum quality already – how have calves done that have received higher quality colostrum?
3. If you have already measured calf birth and weaning weights, work out your DLWG – are you hitting the target?

## Seeking participants for sheep and beef research project



The University of Liverpool is running a project to investigate Johne's disease on UK beef and sheep farms. Ovine Johne's disease is much more common than most people realise and this project will investigate the risk factors and effect of the disease on the productive lifespan of ewes and farm economics. Furthermore, little research has been done on cross species transmission and a major aim of this project is to better understand the risk posed by sheep to cattle for Johne's infection and vice versa.

They would like to invite sheep only, beef only and mixed beef and sheep farms to participate in this practical research, whether you think you have Johne's on your farm or not.

If you'd like to find out more about the project and register to take part go to [liverpool.onlinesurveys.ac.uk/johnes-disease-copy](http://liverpool.onlinesurveys.ac.uk/johnes-disease-copy)

A follow up, free-of-charge, flock visit and/or herd-level sampling and further data collection will be arranged later in the year for approximately 100 suitable farms.

Each enrolled farm will receive a detailed diagnostic report from the samples collected, free of charge.

For more information please email Laura Taylor at [L.Taylor11@liverpool.ac.uk](mailto:L.Taylor11@liverpool.ac.uk)



## References/further reading

1. AHDB://dairy.ahdb.org.uk/technical-information/animal-health-welfare/mastitis/symptoms-of-mastitis/milk-let-down-an-efficient-routine/#XZLSEZKiUk
2. Remnant, JG, Tremlett, A, Huxley, JN, Hudson, CD. (2017) Clinician attitudes to pain and use of analgesia in cattle: where are we 10 years on? *Veterinary Record* 181, 400. <https://veterinaryrecord.bmj.com/content/181/15/400>
3. Leach K.A. et al. 2010. Working towards reduction in cattle lameness: 1. Understanding the barriers to lameness control on dairy farms. *Res. Vet. Sci.* 89: 311-317.
4. Thomas H.J. et al. 2015. Evaluation of treatments for claw horn lesions in dairy cows in a randomized control trial. *J. Dairy Sci.* 98: 4477-4486.

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