

# Information Hub

## Rearing for a Reason: maximising heifer potential

The first three months of a heifer's life are without doubt the most critical time in her growth and development. Calves that suffer from disease or inadequate nutrition early in life are more likely to have reduced fertility and milk yields in their first lactation and an increased risk of being culled. Paying close attention to management during this period is essential to help heifers reach breeding condition on time and in optimal health so that they not only fulfil their potential but also deliver maximum profitability.

Modern dairy cows are achieving much higher yields than they did a decade ago, however little has changed in the way we manage our heifers to ensure that they are prepared for their potential. In order for a Holstein heifer to calve down at 22-23 months with a bodyweight of 540-580kg she must achieve a daily live weight gain (LWG) of 750-800g. 1 in 4 UK heifers have low (<600g) daily LWGs in their first six months of life and this is directly linked to an increased age at first calving, reduced fertility in their first lactation and reduced milk yield.

### Heifer Facts from a recent study:

- 1 in 7 heifers fails to reach their first lactation
- 1 in 3 heifers fails to reach their second lactation
- Poor fertility or milk yield are the most common reasons for culling heifers post-calving

So what can you do to ensure your heifers get off to the best start?

### 1. Follow the '4 Q's' of colostrum control

Calves are born with no immunity and rely solely on colostrum to provide it with the protection it needs when it encounters disease. Without it they will suffer from poor health, low growth rates and higher mortality. The majority of scour outbreaks that we see in newborn calves are due to inadequate colostrum management. Following the four principles of colostrum management is the most cost-effective way of ensuring future health:

#### Quickly – as soon as possible!

A calf is only able to absorb antibodies through its gut wall for the first six hours of life, after which its ability to do so decreases rapidly, therefore it is really important to maximise colostrum uptake in the first 6 hours. However, even once the gut has 'closed' and antibodies cannot be absorbed colostrum can still provide a protective 'binding' effect in the gut by preventing

absorption of bacteria and viruses and also stimulates rapid gut development, essential if target optimal growth is to be achieved.

#### Quality – How good is your colostrum?

It can be very difficult to assess the quality of colostrum on eye alone. If you are concerned about quality if for example you think calves are receiving sufficient colostrum but are still underperforming, then using a simple device such as colostrometer, can give you an indication of colostrum quality.

#### Quantity- don't leave it to chance

A minimum of 3 litres of good quality colostrum is needed to ensure that a calf has received sufficient antibodies. Aim for 3-4 litres in the first 6 hours and a further 3-4 litres in the following 24 hours of life is critical. It will take a calf 20 minutes of continual suckling to consume 2 litres, so even if you see the calf having a few suckles, don't assume it's had enough.

#### Quietly

Absorption of antibodies is significantly reduced if the calf is stressed when it receives the colostrum compared to those that are calm. Uptake of antibodies is also greater if the dam is present.

### 2. Exploit feed conversion efficiency when it is highest in the first 6 weeks of life.

This can be achieved by increasing milk replacer intake either by increasing the volume fed or gradually increasing the concentration e.g. from 10-15% solids. Two litres fed twice a day is rarely sufficient for the modern calf as to meet their maintenance and growth requirements they need up to 1kg of milk replacer solid per day, even more in cold weather. Ensuring buckets/troughs are clean is also important – calves have a sense of smell 6-8 times greater than ours and are unlikely to achieve good intakes from dirty buckets.

From two weeks of age ad lib calf-specific concentrates should be made available aiming to increase intakes to 2.5kg/calf/day at weaning to optimise rumen function and growth post-weaning. Clean fibre in the form of hay or straw should also be readily available and placing this in a rack will keep faecal contamination and potential disease spread to a minimum.

Whilst there is a cost involved with increased milk replacer use, this is more than recovered by the resultant lower age at calving, increased first lactation yields and heifers that are 'fit not fat'. It is estimated that achieving the target of 24 months at first calving saves £50 per month.

### 3. Maintain the optimal environment to reduce disease

Providing calves with a clean, dry and draught free environment is essential. Water is a very effective way of spreading disease amongst calves as it creates aerosols of bacteria and viruses which can easily enter the calves lungs. Therefore try to minimise the amount of water (other than fresh drinking water) in the calf pens by washing buckets etc in a separate area and dry sweeping areas rather than hosing down. Urea from soiled, wet bedding is very caustic and can damage the lining of the lungs, increasing the risk of pneumonia, therefore a regular supply of clean fresh bedding is needed.

### 4. Do not mix groups

Young calves are particularly vulnerable to disease and mixing them with older calves or cattle will expose them to a range of bacteria and viruses that their developing immune system cannot cope with. Rearing in batches according to size and age will reduce the risk of exposure to disease as well as allowing nutritional and management needs to be tailored to the individual group.

### 5. Monitor growth rates

Measuring calf weight and height at two separate points in time is sufficient to assess whether you are achieving target growth weights.

### 6. Keep good records!

Without good records it is difficult to assess mortality and disease rates and more importantly to monitor progress once changes are made.



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