Colostrum Management

Colostrum is the thick, yellow, high energy milk produced by the cow in the first few days after calving. It is full of essential nutrients and antibodies that the calf needs after birth. Colostrum is the fuel of life and making sure calves get enough is the cornerstone to all successful calf rearing enterprises.

The '4 Qs' of colostrum management are crucial to ensure calves get off to the best possible start in life. As newborn calves receive no protective antibodies from the cow through the placenta to resist disease challenges, it is essential that these are absorbed via colostrum.

Compared to milk, colostrum has:

- 2 x the total solids
- 4 x the protein
- 60 x the antibodies
- 1.5 x the fat
- 8 x the vitamins A, B12,D and E
- 4 x the amount of calcium, phosphorus and magnesium
- 20 x the amount of copper, zinc, iron and cobalt

If calves miss out on colostrum in the first 24 hours of life then the chance of poor health including scours, low growth rates and high mortality is greatly increased.

THE 4 Q'S OF COLOSTRUM MANAGEMENT

Q1 QUALITY

Colostrum quality can vary enormously between animals, so good quality colostrum from the first milking of healthy cows should only be fed. Antibody content declines rapidly after the first milking. Do not use colostrum from induced cows, premature calvings, heifers, cows that have been dripping milk pre calving, or sick cows (including cows with mastitis or metabolic disorders. Keep colostrum from first milkings separate for the newborn calves and later colostrum (days 1- 4 of the cows milkings) stored, and feed it to calves up to three weeks of age.

Good quality colostrum can be stored using colostrum keepers provided it is stirred daily and kept in a cool shaded area.

Quality can be poor for many reasons:

- Age of cow - colostrum from cows in their first lactation usually contains fewer antibodies as they have yet to be exposed to a wide range of pathogens.
- Breed of cow – purebred Holstein colostrum typically contains lower antibody levels than that from Jersey cows.
- Short dry periods of less than three weeks.
- High yielding cows - those producing more than eight litres at first milking with poor transition diets.
- Poor hygiene - high levels of bacteria in colostrum have

Q2 QUANTITY

A calf needs approximately 10% of its body weight in colostrum in the first 12-24 hours of life (i.e. 2.5 – 3L for Jerseys, 3.5 – 4L for Friesians) before the gut pores close and no more antibodies can be absorbed into the bloodstream. Ideally, two litres is given in the first six hours and two litres in the next six hours. Give every calf colostrum as it comes in. If a calf looks full and bright, give it one litre of colostrum as soon as it arrives, for all other calves – those that are tucked up, shivering, weak, premature, twins, or that had assisted calvings – give two litres.

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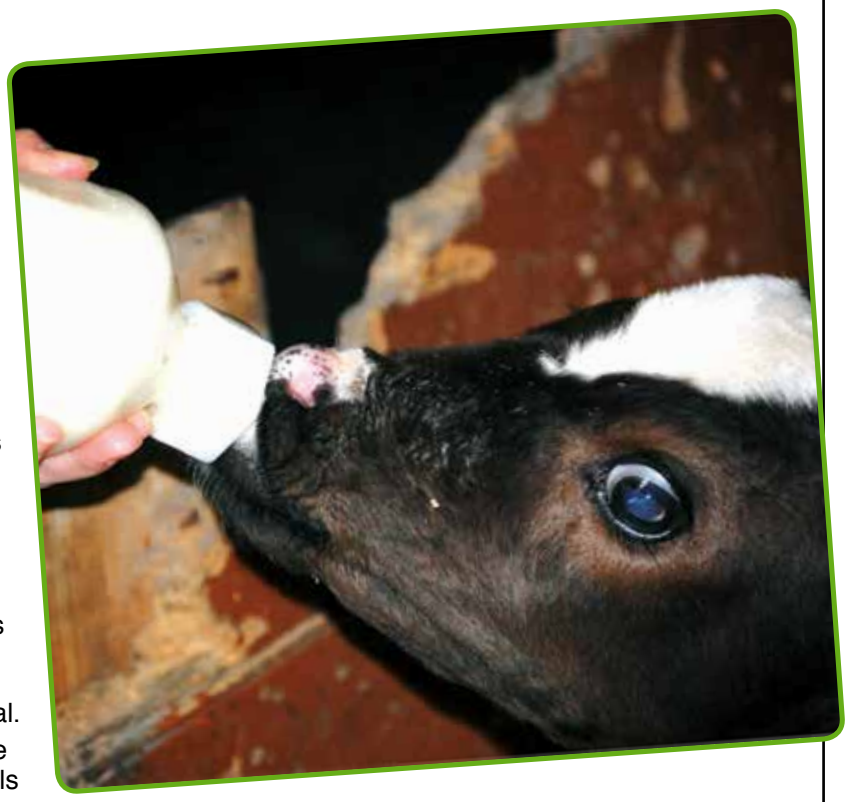
General Health and Health Planning GH

Q3 Quickly



50% of Friesian calves, and 80% of Jersey calves left on their mothers receive inadequate colostrum.

Collect calves from the paddock at least twice a day. Once a day collection means that some calves will have to wait almost 24 hours for their first feed. This is too long. Ideally, colostrum should be fed as soon as possible after birth and, at the latest, within six to 12 hours.

At birth the calf's gut is permeable which means it can absorb the large antibody molecules directly into its bloodstream. Over the first twenty-four hours the gut rapidly 'closes' and these molecules can no longer be absorbed, so it is essential that the calf ingests sufficient antibodies as soon as possible after birth.

After the gut pores have closed, the calf will no longer be able to absorb the antibodies in colostrum into the bloodstream, but the antibodies will still be present in the gut and provide local immunity. Continuing to feed colostrum, either fresh or stored, to calves is therefore still beneficial.

A blood test can be carried out on calves from one to five days old. The test measures antibody levels in the blood, and shows whether colostrum intake has been adequate or not.

Q4 QUIETLY

If calves are stressed while being fed colostrum, then they won't absorb the antibodies as efficiently as those that are calm. This means a stressed calf will require more colostrum in order to achieve the same level of immunity as an unstressed calf.

A rough job is also an unhygienic job and bacterial contamination will not only increase the risk of disease but will also interfere with passive transfer of the antibodies into the bloodstream. If calves are having trouble suckling on a feeder use a bottle and teat, or a stomach tube calf drencher if the calf will not suckle. For the first feed, it may be quicker and easier to use the drencher.

REARING SYSTEMS

There is a wide range of heifer rearing systems and the system must be assessed and chosen to suit the farm and staff. Which system chosen will depend on cost, the amount of labour available and the required performance of the animals.

Recent trial work has shown that the most efficient rearing systems include the following:

- Whole milk or concentrated milk replacer fed once a day for five weeks.
- High protein pellets fed at 1.5kg/day for 10 weeks.
- Access to pasture from four weeks.
- Access to clean water and fibre at all times from birth.

The ratio of different feeds used and the timing of when they are introduced and removed will affect the cost of raising a calf to weaning, as well as growth rates and weaning checks.

For more information contact your local XLVets practice:

xLvets Excellence in Practice

WELFARM

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