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## SUMMARY OF THE FIRST CALF SEMINAR

Colostrum intake is vital to Calf survival during the first weeks of life. We know that the calf does not start to manufacture its own immuno-globulins until about 10 day of life and should be fully competent by 8 weeks of age. Due to the nature of the placenta the calf is born with no immuno-globulins in its system to protect against viruses and bacteria which it will meet during the first few days of life.

Mother's colostrums is absolutely essential to provide the calf with some protection during the first few weeks and it is essential to ensure that the calf receives a good immune-globulin loading as soon as possible after birth. It was once thought that 4 pints in 4 hours was a suitable amount to feed but this has been disproved time and again due to the nature and quantity of colostum produced.

We know that colostrums quality improves with parity up to the third lactation (heifer's colostrums is thought to be the equivalent of a day 2 cow's colostrum) and also varies depending on breed of cow. The quality of the colostrum can be measured using a colostrometer prior to feeding. It must be remembered that this should be measured at room temperature as if too cold there may be an over-estimation of the immune-globulin content. If the reading is good then 4 litres should be fed as soon as possible.

It is generally thought that by feeding 4 litres of quality colostrum within the first 2 hours of life that this should provide a good level of immune-globulin transfer. This should be followed up with a second feed of 2 litres within the following 6 hours. Trial work has also shown that there is a wide variation in the calf's ability to absorb IgGs following colostrums intake. This will be dependent on such factors as

1. Cleanliness of the colostrum and environment, bacteria in the calf's stomach will inhibit IgG absorption.
2. Stress at the time of calving. Those that have had a difficult calving will have a reduced absorption of IgGs

If quality colostrum is not available i.e. a cow has calved in with milk fever or there is blood in the quarter then an alternative source of colostrum should be readily available. When a good third lactation animal has calved, she should be milked as cleanly as possible and her colostrums should be chilled and stored as soon as possible. It is thought that colostrum will keep for 7 days in the fridge but for up to 1 year in the freezer. It is advisable to store in 1-2 litre bags so that it can be readily thawed and available for use as quickly as possible. There are various methods of thawing colostrums and it is widely accepted that thawing in a bucket of warm water at 38C is probably the safest method of thawing colostrum so as not to damage the proteins (immune-globulins).

Artificial colostrum can be used if natural is not available but it must be remembered that not all commercial colostrum has the same levels of antibodies as good natural colostrums. As a foot note to this it must be remembered that colostrums is much more than a source of immune-globulins and it contains all sorts of growth hormones and factors that influence feed conversion plus vitamins and minerals. It has been shown in one trial in which a group of calves was split into 2 groups where one was fed 4 litres of natural colostrums and one fed 4 litres of colostrums replacer. It was shown that both had an adequate/good immunoglobulin level but that those that received the natural colostrum had improved growth rates of up to 30%.

#### How long should we feed colostrum for?

Well as it is a very good nutritional source the answer would be the longer the better. We know that colostrum contains more than one type of immune-globulin. IgG which is absorbed, IgM which is absorbed and helps to protect against septicaemias and IgA which has a local effect on the gut lining and help to prevent viruses and bacteria adhering to the gut lining and causing signs of diarrhoea. As the cells of the gut lining are shed then so is the protective mechanism of the IgA hence it needs to be fed on a daily basis for a minimum of 10 days (in the ideal world). It has been shown that the addition of 500mls of colostrum daily to either whole milk or milk replacer will be enough to provide an adequate supply of IgAs.

If you have any questions please contact us at the surgery and speak to one of the farm team

Ian Patton