

Improving beef calf survival

It is estimated that in the UK, around seven percent of registered beef calves die before reaching six months of age (Defra, 2008). Poor colostrum or milk provision, illness, disease or painful interventions are all important factors which influence calf mortality rates.

Importance of good-quality colostrum

Colostrum is vital to the newborn calf as it contains antibodies (also known as immunoglobulins or IgG) to provide immunity and is also rich in essential nutrients to provide energy for growth. It is recommended that calves should receive at least three litres of high-quality first-drawn colostrum within the first two hours of birth and then a further three litres six to 12 hours after birth.



If the mother's colostrum is not available or is of poor quality, colostrum replacers containing an IgG concentration over 170g/litre can provide sufficient immunoglobulins to achieve good passive transfer.

However, the ideal is good-quality colostrum from dams located where calves are going to be born. This ensures that the antibodies produced in the dam's colostrum relate to the diseases that the calf will be exposed to on that particular farm. Vaccination of dams against *E.coli* and Rotavirus before calving can improve colostrum quality while also protecting the calf against common causes of scour which the calf is likely to be exposed to in its first few weeks of life.

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Dr Sophia Hepple, a veterinary advisor for farmed animal welfare in the public sector, recently completed an AHDB Beef & Lamb-funded Nuffield Scholarship investigating ways of improving beef calf survival. Her scholarship involved visiting and interviewing suckler calf producers in England, Scotland, Serbia, Ireland, Northern Ireland, Australia and New Zealand on their calf rearing practices.

The study found that male calves were more likely to die before reaching six months of age compared to females. One explanation for this could be that bull calves are usually heavier than heifer calves at birth, resulting in an increased risk of calving difficulties. This not only increases the risk of stillbirth but also impacts on the future viability of the calf due to consequences of lack of colostrum and/or injuries sustained during birth.

Sophia also found that hygiene at calving was key to ensuring healthy, viable calves. While colostrum is key to protection against infection in early weeks, overwhelming exposure to disease will result in increased illness and mortality. For example, Cryptosporidiosis, a major cause of calf scour, can be associated with the build-up of disease in constantly used buildings. Therefore, buildings should be thoroughly cleaned out, disinfected and freshly bedded in preparation for calving time. Cleanliness is paramount and where possible, calving areas should be regularly cleaned out and disinfected.

Navel dipping is a cheap and effective method of protecting the calf from early infection. Research has shown that calves with non-dipped navels have an 11% higher mortality rate than those that are dipped. This should be done as soon as possible after birth using a clean dip cup and a seven percent iodine solution. This aids drying and speeds up the rate of closure of this potential infection route. Monitor the calves' navel closely for swelling, hardness or wetness to make sure that any infections are treated early.

A copy of Sophia's report can be found on the [Nuffield Farming Scholarship Trust website](#).

For further information on the management of the cow and calf around calving, see the BRP Manual [Feeding Suckler Cows and Calves for Better Returns](#).