



Colostrum provision to calves



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Biology and needs of calves

At birth, calves' immune system is not mature so their immunity relies on antibodies from the dam. The placenta of ruminants only allows 5–10% of the maternal antibodies to reach the foetus. The colostrum, synthesised during the last weeks of pregnancy, contains large amounts of antibodies, especially immunoglobulin G. Most of the maternal antibodies transferred to the newborn calf are provided by colostrum after birth. The calf intestine is very permeable for the first hours after birth, allowing the passage of the antibodies to the calf's blood. Thereafter permeability declines so that at 24 h after birth, antibodies cannot cross the intestine. Colostrum of good quality, that contains large amounts of antibodies, should be provided to calves soon after birth. Calves that do not receive appropriate amounts of colostrum during the right time period, or receive colostrum of poor quality, are very sensitive to microbial infections, with neonatal diarrhoea being the most common symptom, potentially leading to death. In addition, colostrum is rich in carbohydrates, fat and proteins, vitamins and iron essential for calf nutrition and vigour.



Legal requirements

Council directive 2008/119/EC regulates the administration of colostrum to calves.

'Each calf must receive bovine colostrum as soon as possible after it is born and in any case within the first six hours of life.'
(Annex 1, 15.)



Methods

Newborn calves must receive colostrum to be well protected against infectious diseases. The colostrum can come from their dam or another cow. Both the **timing** of the colostrum provision, the **quantity** of the colostrum ingested by the calves, and the **quality** of the colostrum are essential to ensure full vigour and protection of the calf during its first weeks of life. A deficit in colostrum provision has long term impacts on calf health and growth.

More information in the **Thematic Factsheet 'Colostrum provision to calves'**.

What to check

The following information regarding the provision of colostrum to newborn calves should be collected from the farmer:

Criterion	Response	Reference
If the calves are let with their dam, what do you do if a calf has difficulties to suckle?		Help the calf to stand up and find the teats
If the calves are let with their dam, how do you check that a calf drunk colostrum from the dam?		Palpation of the calf belly, presence of the suckling reflex
If calves are given colostrum instead of suckling, how this is done?		Use of a teat bottle
How do you clean the equipment used for colostrum feeding?		Cleaning and disinfection after each use
What time after birth are newborn calves provided with colostrum ?	_____ h	Within 2-3 h after birth
Do you provide a second colostrum meal? When?	No ? Yes? _____ h	Yes, within 6-12 hours after birth
What amount of colostrum do you provide during the first 12 h?	_____ L	10% of the calf weight
Do you check the quality of colostrum ? How?	No? Yes?	Yes, with a Brixmeter
What threshold do you use to conclude on the quality of colostrum?		Brixmeter : 22% (50 g/L protein)
What do you do if the cow does not have colostrum or colostrum is of a poor quality?		Use of colostrum from another cow of the herd
Do you have a strategy to collect spare colostrum?		Keeping colostrum from healthy cows that have a very good colostrum (>100 g/L proteins)
How do you store spare colostrum?		Refrigerate or freeze
How long do you keep spare colostrum?		24 h if refrigerated 1 year if frozen (then thawed in a water bath)
Do you have a written protocole in place to ensure colostrum provision to calves?		Yes, see below
If yes, What does it contain?		<ul style="list-style-type: none"> - Time the calf is left with its dam - How to provide colostrum when the dam does not accept the calf for suckling or suckling is not possible because of specific health issues on the farm - How colostrum is collected, frozen and defrosted before use - How the quality of the colostrum is checked - How the amount of colostrum ingested by the calf is managed - How the ingestion of colostrum and the vitality of calves is checked - How equipment is disinfected