

Importance of Colostrum Feeding

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INTRODUCTION:

Calves need to receive individual attention and care immediately following birth. There is a direct link between good calf care and improved milk production and longevity in the milking herd. Calves are born with no immunity against disease. Until they can develop their own natural ability to resist disease, through exposure to the disease organisms in their surroundings, they depend entirely on the passive immunity acquired by drinking colostrum from their dam.

What is Colostrum?

Colostrum is the thick, creamy-yellow, sticky milk first produced by cows initially following calving, and contains the antibodies necessary to transfer immunity onto their calves. Colostrum should be given fresh as milked from the mother within 2 hours. During the first 3 days of its life, the calf should receive colostrum. The feeding of colostrum is important because of the following:

1. The protein content of colostrum is 17% as against only 3.5% in ordinary milk. A major portion of the protein is globulin in nature. Globulins are found in blood but are present only in traces in ordinary milk. The globulins of colostrum contain antibodies which help the body system in fighting disease and are called immunoglobulins (IgM, IgG, IgA). The newborn calf has little or no reserve of antibodies (antibodies cannot pass through the placental membranes) and its intestinal wall permits the passage of whole globulin at least during the first 12 hours of its life. Later in life, intact proteins are not absorbed.

3. The laxative action of the colostrum helps the calf in evacuating the accumulated faecal matter from its intestines. The faecal matter if not excreted may undergo fermentation and release toxins, causing ill health or even death.

Composition of colostrum & of milk:

COMPONENT		COLOSTRUM	MILK
Total	Solids	22.5	12.5
(%)			
Fat (%)		3.5	4.0
Lactose (%)		3.0	4.6
Protein (%)		14.3	3.3
Casein (%)		5.2	2.6
Albumin (%)		1.5	0.5
B-Lactoglobulin (%)		0.8	0.3
		0.27	0.13
a-Lactalbumin (%)		0.13	0.04
		5.5-6.8	0.09
Serum albumin (%)			
Immunoglobulin (%)			
Ash (%)		1.8	0.8

Vitamins

Vitamin A (ug/g fat)	45	8
	30	15
Vitamin D (ug/g fat)	125	20
	60	40
Vitamin E (ug/g fat)	500	150
Thiamine (ug/100g)	100	80
Riboflavin (ug/100g)		
Niacin (ug/100g)		

In certain situations, blood levels of antibodies in heifer calves are directly related to their milk production in later life. The chances of calves surviving the first few weeks of life are greatly reduced if they do not ingest and absorb these antibodies into their bloodstream. It takes far fewer disease organisms to cause disease outbreaks in such calves than if they can acquire immunity from their dam. Calves without adequate passive immunity are four times more likely to die and twice as likely to suffer disease, than those with it. Every half hour after birth that colostrum feeding is delayed, antibody transfer decreases by about 5%. A calf that does not drink until 6 hr old has then already lost the opportunity for 30% of the possible antibodies entering its bloodstream.

3 principles behind colostrum feeding: The principles can be categorised into 3 Qs namely:

1. Quality - is providing good quality colostrum
2. Quantity - is ensuring calves ingest sufficient antibodies.
3. Quickly- is the timing to ensure efficient

absorption of the antibodies into the blood.

CONCLUSION:

- Colostrum management makes a meaningful difference in calf development.
- Not feeding colostrum or poor feeding methods decrease calf health and increase morbidity as well as mortality rates.
- Feed maternal colostrum as the primary source of colostrum and rely on colostrum replacer as a backup or as needed.