Colostrum: Why feed to newborns?

Question: Why do we feed colostrum?
Answer: We feed colostrum for disease prevention, nutrition and "other" benefits. This is necessary because calves are born without disease protection. And, they need a good first meal after birth.

Question: What is in colostrum to prevent disease in calves?
Answer: Colostrum contains:

- maternal immune cells.
- antibodies (scientific name is immunoglobulins).
- "other" less well understood elements.

Question: What are maternal immune cells?
Answer: They are white blood cells. Their scientific names are:

- T and B lymphocytes.
- Neutrophils.
- Macrophages.

Question: How do maternal immune cells prevent disease?
Answer: They prevent disease by:

- Protecting against viruses, bacteria and parasites.
- Stimulating growth of the calf's immune system.
- Orienting the calf's immune system.

Question: What are antibodies (or, immunoglobulins)?
Answer: They are:

- Immunoglobulin G (IgG – 88%), Immunoglobulin M (IgM – 7%), and Immunoglobulin A (IgA – 5%).
- Large protein molecules that float in colostrum.

Question: How do antibodies (or, immunoglobulins) prevent disease?

Answer: They give:

- Systemic immunity – they go everywhere in the body.
- Septicemia immunity (especially IgM).
- Intestinal immunity to pathogens that cause scours.

Question: What are the "other" elements in colostrum?

Answer: They are:

- Cytokines.
- Immunomodulatory compounds such as interferon.
- Growth factors and hormones.
- "Other" unidentified compounds.

Question: How do these "other" elements prevent disease?

Answer: They do these things:

- Initiate growth of the immune system.
- Regulate activity of absorbed maternal immune cells.
- Enhance bactericidal effects.
- Protect intestine from bacterial colonization.
- Increase secretion of hormones that influence growth, secretion, and motility of the intestinal tract.

Question: What is in colostrum to provide nutrition for calves?

Answer: Lots! [at www.calffacts.com scroll to "Colostrum: Composition 1st 2nd 3rd milking]

- Two times the total solids compared to ordinary milk.
- Proteins (some that clot in the abomasum and others that go directly into the intestine for digestion.
- Mineral and vitamins important for initiating metabolism and development of the digestive system.
- Energy from fat and lactose. Compare milk at 0.69 Kcal/g in ordinary milk to colostrum with 1.16 Kcal/g.

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