

Antibodies Passed Down to Cattle Offspring via Milk

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OPINION

Immuno-globulins are a significant component of milk and colostrum's immunological action. They play a crucial role in the immunological connection that occurs when a mother passes on her passive immunity to her children. Among mammalian species, the mechanism of transmission differs. Cattle produce significant amounts of immune-rich colostrum and milk, making both secretions key potential sources of immune components that could help humans. Immune milk is a word that refers to a variety of bovine mammary gland products that have been tested against a variety of human diseases. Antibodies have been used by veterinarians to keep animals healthy for a long time. When it comes to the immune system health of production and companion animals, there are few fundamental variations in the immune system's original role. Mammals share a similar immune system, with small variations depending on the species. Even the variations between birds and mammals are minor because the immune system's goal is to keep infectious microorganisms like bacteria, viruses, and fungus out of the body while also destroying any contagious germs that do get inside.

Calves require particular attention and care as soon as they are born. There is a direct correlation between effective calf care and increased milk output and milking herd longevity. Calves have no immunity to disease when they are born. They rely exclusively on the passive immunity gained by sipping colostrum from their dam until they can build their own natural ability to resist sickness through exposure to disease organisms in their environment. Colostrum is the rich, creamy-yellow, viscous milk produced by cows shortly after they give birth, and it includes the antibodies

needed to pass immunity to their calves. It's just milk with added blood proteins and vitamins. It contains more than twice as much total solids as whole milk, thanks to higher protein and electrolyte levels. It also contains a substance that allows new-born calves to tap into their own fat reserves for instant sustenance.

Colostrum has nearly five times the protein and vitamins A, D, and E found in whole milk, with a protein content of 17–18 percent compared to 2.5–3.5 percent in milk. Within two days, however, they are no longer distinguishable from those seen in whole milk. Vitamin levels in colostrum are determined by the cow's vitamin status. Through maternal antibodies or immuno-globulins, blood proteins pass on passive immunity from mother to offspring (Ig).

These fundamental principles can be divided into three categories:

- Quality refers to the provision of high-quality colostrum
- Quantity ensures that calves consume enough antibodies
- The first feed should be timed correctly to enable optimal antibody absorption into the circulation.

Colostrum of high grade, the pregnant cow produces colostrum for up to 5 weeks before giving birth. Colostrum quality may suffer if cows are not carefully cared for. Providing high-quality nutrition for dry cows, ensuring their general health, and limiting pressures such as climate or overpopulation during late pregnancy are all examples of appropriate management.

Feeding of colostrum in a timely manner Antibody transmission diminishes by about 5% for every half hour after delivery that colostrum feeding is postponed. A calf that does not drink until it is six hours old has already missed out on 30 percent of the antibodies that may have entered its circulation.

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