

# CALVING EASE

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## How do you feed colostrum?

A report has recently been issued on dairy management practices in the United States. See <http://www.aphis.usda.gov/vs/ceah/ncahs/nahms/dairy/#dairy2007> for the full report released by the USDA. It includes information about newborn and colostrum management.

### How soon do you separate dams and heifer calves?

This national report says that among heifer calves born in 2006 two out of three (65.6 percent) were separated from their dams immediately (no nursing). This compares to a similar 2002 survey finding that 56 percent of the calves were separated without nursing. Another one calf in five was removed from the dam after nursing but less than 12 hours.

Why all the interest in when calves are separated from dams? Rest assured that this is not an “anti-nursing” campaign. Two research findings favor earlier rather than later separation. One study looked at the timing of colostrum feeding compared to when the calf consumed coliform bacteria. The calves were fed both colostrum and coliform bacteria in two different orders. They were: (1) bacteria first and then colostrum and (2) colostrum first and then bacteria. Results? All the calves that got the bacteria first became ill and many of them died. Among the calves that got colostrum first the illness was less severe and few died.

Moral of the story? It is especially important to prevent “manure meals” before the calf gets her first feeding of colostrum. “But,” you say, “I don’t feed manure to calves.” True. But calves left with their dams often help themselves to manure meals. Academically this is referred to as fecal-oral transmission of bacteria. Teat-seeking behavior has calves nosing around and licking under everything and especially places that are dark. That includes armpits, sides, and flanks of cows – areas with very high coliform bacteria counts. This does not take into account possible ingestion of bacteria from pens and bedding.

Separating calves from dams does not have to mean isolation. That is, as long as the calf cannot help herself to bacteria-contaminated surfaces (including mama) many farms have arrangements that allow the dams to continue to lick and mother the calves.

Another study from the early 1990's evaluated the success of passive transfer of immunity (that is when the calf consumes colostrum and the antibodies pass from her gut into the blood stream). Nursing calves were evaluated. About 40 percent of the calves that were allowed to nurse had inadequate passive transfer. Yes, two out of five calves ended up with inadequate immunity. In a more recent study researchers compared passive transfer between hand-fed and nursing calves. Hand-fed calves received three quarts of colostrum as soon after birth as possible. Nursing calves were encouraged to start nursing equally early and remained on their dams for three days. Hand-fed calves had superior passive transfer of antibodies. Hand feeding colostrum can be a much more effective way to end up with successful passive transfer of immunity.

### **How soon is hand feeding colostrum done?**

The 2006 data show that the average time between birth and the first colostrum feeding nationally is 3.3 hours. Comparable information was not collected in 2002.

Is this really a big deal? Yes, it is really important! Most of a calf's protection against protection against infections during the first several weeks of life comes from colostrum.

So, why are we interested in this time between birth and first colostrum feeding? It is widely known that a calf's ability to absorb colostral antibodies goes decreases with the passage of time after birth. Not so well known is how rapidly the absorption rate goes down over time. Estimates vary on the rapidity of this decline but they all agree that by six hours a significant loss has occurred; maybe as much as a 40 percent loss. The rate of loss slows somewhat over the next eighteen hours falling close to only ten percent of what it was at birth by eighteen hours. By twenty four hours virtually all of a calf's ability to absorb antibodies is gone.

The urgency of early feeding is compounded by variations in the volume fed and colostrum quality. When only two quarts of colostrum are fed at the first feeding the total number of antibodies available for absorption is limited. In these situations the calves really need to get their first feeding in less than two hours after birth.

Further, consider that not all colostrum is of excellent quality. Some colostrum has marginal concentrations of antibodies. Thus, taking advantage of the highest absorption rate by early feeding is very important when we feed less than excellent quality colostrum.

For a more complete guide to colostrum management, see [www.attica.cows.com](http://www.attica.cows.com) in the Calf Facts section the resource "Colostrum: Feeding Checklist."

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