

Day of Calving



Management and housing play a significant role in the dam's ability to express her maternal behavior before and after calving, allowing the dam to successfully transition to the milking string. The calving pen becomes one of the most strategically placed areas on the farm and should include these four key components:

- Comfort and low stress
- Low health risks
- Opportunity for seclusion
- Convenience for people working with the cow and calf

Ideally, the maternity pen would mimic a cow's behavior if she were to calve outside in a clean, dry pasture with the added convenience to monitor calving and the ability to feed and deliver water to her while inside a facility. During this critical time period, the goal is to limit pen movements and provide social stability within the period of two weeks before calving. Depending on herd size and management, this can be achieved in one or more ways.

Traditional calving

Cows are moved from a dry cow group to a group maternity bedded pack pen within a few days of calving. Calving pens should provide a minimum of 120 square feet bedded area per cow in a group pen, or 144 square feet per cow in an individual calving pen. This is useful for smaller herds (<250 cows) that tend to have limited options. Traditional

calving can create challenges for delivery of different rations, however social stresses are generally less. An example would be a one group dry period (45-60 days), with scheduled weekly pen movements and minimizing maternity pen to 2 days or less using good stockmanship to predict calving and avoiding prolonged isolation. Water availability is needed here and should be located outside of the bedded pack area to reduce pathogen load of the area where cows are calving.

Just-in-time calving

Larger herds (>250 cows), can typically accommodate this system, moving cows from a prefresh pen with freestalls to an individual or group calving pen when signs of calving are very clear. A challenge to this system is recognizing signs of calving to avoid calving in unwanted areas. Keys to success with this system include; limiting new additions to once a week, locate calving pens close to prefresh pens and away from heavy traffic areas, and proper training of employees to identify and monitor stages of labor to reduce the incidence of increasing the number of stillbirths. Duration of stay should not exceed a few hours due to isolation of herd mates, access to feed and water, and exposure to pathogens. A clean bedded area of at least 144 square feet with a head-lock and gate in one corner will aid in assistance when needed. Flooring is an important consideration for the cow to lie down comfortably as well as provide good traction. This can be achieved by providing a layer of sand over the concrete, with fresh straw on top. This will need to be replaced for each cow entering the pen to avoid contamination issues. Another option would be to bed with shavings or straw on top of a cushioned mat or mattress surface.

Socially stable calving

Herds with more than 500 cows can manage pens of cows kept together in the same group throughout the prefresh (21 days) or entire dry period. Typically, these groups are kept in a series of bedded packs or a combination of freestall pens and a bedded pack for the final calving stage. Once a pen has met capacity (1-3 weeks), no new cows can be added to the group. To allow for adequate pen space (100 square feet per cow) at maximum fill, sizing the pen for 1.4x weekly calving rate can spread calvings out over 14 days. When the pen reaches 1-2 cows remaining, it is recommended to merge cows with the next calving group.



Courtesy of Jenn Bentley

Do cows have a preference where they calve?

As dairy operations have evolved, cows have decreased opportunity to find seclusion in the barn while they are calving. If they were out on pasture, seeking isolation is one of the most obvious behavioral changes prior to calving. Two preference tests were conducted to observe choices cows make at calving (Proudfoot et al., 2014).

The first experiment observed cows in a maternity pen with 2 large bedded packs: 1) an open pack where cows could easily see people and other cows in the barn, and 2) a sheltered pack surrounded by an eight foot high plywood enclosure where cows could find seclusion from the rest of the barn. Results indicated if the cows were housed alone in the pen, they were more likely to calve in the shelter, but only if they calved during the daytime (81 percent of cows that calved in the daytime used the shelter). If cows calved at night, they showed equal preference for both areas. Cows began increasing their use of the shelter about eight hours before calving. This is likely due to social competition for the shelter, making a secluded area in a group pen a challenge.

The second experiment replicated the first in a more practical setting. A five foot high plywood wall around half of the pen to create a secluded corner on one side, and a window on the other side where cows could have visual and head-to-head contact with familiar cows in the close-up group pen. The majority (79 percent) calved in the secluded corner of the pen. Cows began using the corner more in the hour before calving and remained in the corner with their calf during the hour after calving. This research provides insight in maternity pen design. Allowing the dam to express maternal behavior is a benefit to her welfare. More research is needed to determine other benefits of secluded housing, such as reduced dystocia and stillbirths. If individual calving pens must be located in a high-traffic area, consider

the use of screens to give the cow or heifer a quieter and less distracting environment. However, consider screens impediment on natural ventilation.

Summary

Calving in a clean, ventilated, well-bedded individual pen close enough for observation is the gold standard. This does not require facilities to be new or elaborate, but effective for management and health of the cow and calf. Shelter from inclement weather with access to running water and storage for instruments and supplies is recommended. A well-bedded area with good footing with some kind of restraint for assistance is essential. In cases where the cow may be in the calving pen longer than a day, designing a pen layout to include access to fresh feed and water is important. It is also important to consider duration of isolation from herd mates and the potential impact it may have on fresh cow performance.



Courtesy of Jenn Bentley

Acknowledgements

Authored by Jenn Bentley, dairy specialist, Iowa State University Extension and Outreach.

Resource used: "Dairy Cows Seek Isolation at Calving and when Ill" (Proudfoot, et al., JDS, 2014)

Funding for this project was provided by the North Central Risk Management Education Center and the USDA National Institute of Food and Agriculture.

This institution is an equal opportunity provider. For the full non-discrimination statement or accommodation inquiries, go to www.extension.iastate.edu/diversity/ext.