

Single housing vs. group housing for dairy calves

Marjo Posio for Progressive Dairy Published on 19 August 2021

Especially in northern America, a long tradition has been to keep calves in individual outdoor hutches or to keep them in pens in a calf barn. It is an easy system to instruct employees and to observe calves. You see every time if a calf comes to drink milk, and calf health is easier to maintain when young animals are separated from each other. Due to the increase of automatic calf feeding systems, interest in group housing has also increased. Pressure from consumers to see calves raised in groups is also at play. How can we transition from single housing to group housing?

Grouping age

There are several different ways we can group in a calf barn. Different grouping systems make our jobs easier. Grouping is also important for calves, too. As we know, calves are social creatures. In pairs and groups, calves learn to play well with others, and calves play more when housed with others and when they have more space to play. Calves raised with partners are also more willing to try new things, for example, feeds such as calf total mixed ration (TMR), hay and pellets. This is especially important after weaning because we want calves to eat enough dry feed.

So, what is the best way to do grouping in a calf barn? For the first few days, we want to keep our newborn calves in individual pens because it's easier to teach them to drink. After they are five to seven days old, you can start to do pairings and small groups. This should be done before they are three weeks old because this is the best age to introduce them to new companions. One farmer told me that he did pairings at four weeks old, and he saw that calves were a little bit of scared each other. So, it is better to do it earlier.

Grouping size

When we want to minimize health risks and feed competition, age range and group size should be minimized. Groups of six to eight calves have lower incidences of respiratory disease or diarrhea than groups of 15 calves or more. The youngest and oldest calves in a group should differ by no more than 14 days of age, and if it's possible, age range inside the group should be seven days of age or less. In smaller herds, fewer calves are born each week, and this kind of grouping it is not possible. This means the age gap within a pair or group will be larger, so then it is even more important to have only small groups.

Silo pens

In group housing, an all-in/all-out system is very important. We want to keep groups small, and we don't want to mix calves between groups. We do this by having small pens – like small silos, typically from 8- to 12-feet wide with concrete sidewalls. Instead of cleaning these pens from the end-wall doors, we clean them from the side. Each pen is cleaned after we move calves away, and it stays empty until sometime before we bring new bedding and a new group of calves into it. The small group of calves continue to stay together.

Feeding space is important

We pay a lot of attention to maximizing our cows' feeding table space. It is at least as important as when a calf is drinking milk. Calves should never have to compete for resources during the first weeks of life. Every calf should have its own teat/nipple no matter if it is raised individually, with a pair or in a group. Different studies have shown that reduced teat availability can result in increased competitive behavior, reduced feeding time and lower milk intake for group-housed dairy calves. Better early-life growth also means earlier onset of puberty and higher milk production. In group housing, we must secure a feeding system to a calf to fulfill this demand. But, it doesn't mean that in a group system calves need to be fed with an automatic feeder.

An alternative – headlocks for calves

In several calf-barn projects we have designed, we have used headlocks in calf pens. These headlocks are special: There is a lift-up nipple bucket rack, which is down when we give milk. After calves drink the milk, we deliver a small quantity of water to rinse the bucket and nipple, and we let calves clean the bucket. Then the bucket rack is lifted up and a feed table is used to give hay and pellets. As we can lock calves when they drink milk, we can see how eager they are, and we also see if they don't drink. Also, stealing milk from other calves is not possible. Farms have different practices for how often they wash nipple buckets, but it is not happening every time and not even every day. Milk is typically delivered in this type of system with a milk delivery wagon or milk taxi, which heats – and if necessary, pasteurizes – the milk or milk drink. It has a delivery pistol and automatic cleaning.

Management skills

When choosing between an automatic milk feeder or conventional feeding with a milk taxi, you need different kinds of management skills. With automatic feeders, there is a need for computer skills, for example, to determine feeding and weaning programs for each group and to calibrate the automatic milk-feeding machine for correct water and powder dispensing. Also, you need to observe calves in a different way. Weaning, on the other hand, can be programmed in an automatic feeder. A milk taxi system requires good instructions for employees. With automatic feeders, you need to have an especially good “calf eye.” Even though a computer lets you know if a calf hasn't eaten its portion, it can be too late from the calf's point of view. In a system where you are not around when a calf drinks, you have to routinely check calves several times each day.

How to secure success in group housing

There are lots of other factors in a calf barn with group housing that need to be done right to succeed. Providing fresh air is perhaps the most critical one. All calf barns need supplemental fresh air tubes to secure air exchange in a calf pen. Taking care of bedding is important, too. For a farmer thinking to build a new calf barn or remodeling an old one, there are a lot of things to think about. Before making any drawings, it is best to sit down and think through all calf-management choices with your advisory team. A calf barn may sound like a small project, at least compared to a cow barn. As an investment, it is not that expensive, but it creates quite a big part of the daily work that is done on dairy farms. Labor-efficient calf barns with the highest calf comfort must be your goal. To get there, you need to find the most suitable management system for you and design a calf barn around it. ↩



- **Marjo Posio**
- *Dairy Management Specialist*
- 4D Barn
- [Email Marjo Posio](#)