



CALVES HOUSED IN PAIRS eat more, wean more smoothly, and appear to be more adaptable to changes in routine.

The buddy system benefits calves

Pair housing is a way to reap some rewards of group housing without making major facility changes.

by Jennifer Bentley

INDIVIDUAL calf hutches have been the accepted and traditional method for raising dairy calves the last 50-plus years, with over 70% of U.S. dairy farms raising calves individually in some way. While this practice allows for reduced disease transmission between calves, it intensifies the labor for dairy farm workers.

In the last few years, the dairy industry has made a shift toward group housing, with automation playing a major role in this trend. For producers who have made this change, it has reduced the physical labor of feeding calves and allowed more focus on health and management. However, not all producers can make this change to automation and group housing due to facilities or cost.

Pair housing of calves is another option for raising calves to gain some of the health, growth, and social behavior benefits that have been identified in group housing. Overall, this transition to pair housing may be an easier change for producers to make with fewer adjustments to calf management needed. The milk delivery system may not change, hutches and pens can be retrofitted, and there is no need for a new building.

Pair-housed calves eat more

Calf starter intake is a major driver of rumen development and gets calves on track for the transition to weaning. One study conducted at the University of British Columbia looked at the difference in starter intake and weight gain of calves that were individually reared or paired at 6 or 43 days of age. All calves were fed 8 liters of milk per day for the first 4 weeks of life, followed by 6 liters per

day until Week 7, when the amount of milk fed was reduced by 20% each day until weaning age at 8 weeks.

By Week 6, early paired calves ate more calf starter compared to the individually and late-paired calves. Early paired calves' starter intake remained greater even two weeks postweaning (Week 10) than that of the other two groups.

While the preweaning period did not show any body weight gain differences between groups, when measured two weeks postweaning, early paired calves gained nearly 2 pounds per day. The individually fed calves gained 1.67 pounds per day and the late-paired calves gained 1.6 pounds per day.

The time period around weaning can be stressful for the calf as changes are taking place both in nutrition and environment, impacting growth and health. The results from this study demonstrate that early pairing of calves may initiate earlier consumption of calf starter, improve weight gain two weeks postweaning, and create a smoother transition through the weaning period.

In another study looking at impacts at the time of weaning with individual or paired calves, starter intake was higher in calves previously paired than individually housed calves. More vocalization (weaning distress) can also occur during this transition, but this study found paired calves had less vocalization than those that came from individual housing.

More adaptable to change

In a review by Joao Costa, published in the *Journal of Dairy Science*, he shared that individual housing is associated with lower social ranking and competitive success, more aggressiveness, and a greater fear response.

A study at the University of British Columbia evaluated the cognitive learning behavior of calves individually housed or pair housed. Calves were given a test to determine how well they learn. During the first phase, calves received a positive milk reward or a negative "time-out" based on the computer screen color. All calves learned quickly which side to approach, and no differences in behavior were identified between the two types of housing.

When the test was reversed and calves had to learn that rewards came from the opposite color, individually housed calves never did adjust and were more persistent in what they had previously learned. The paired calves did much better with change when the task was reversed.

This was also tested by placing a red bin in the test pen. At first, both groups were fearful of the bin, sniffing and touching it before eventually approaching it. However, the difference in behavior was noticed in the individually housed calves, as they treated each exposure to the red bin as if it was new every time. They were more fearful and cautious, while the paired calves quickly adapted.

These reviews show early life socialization impacts the calf's flexibility and adaptability to housing, feed, and learning new skills. This could play an important role in a cow's ability to adapt to change. A cow is exposed to many new things in its lifetime from new diets or feedstuffs to social groups and housing as it transitions from the hutch to a bedded pack to then stalls. Cows must also adapt to milking systems like parlors or robots.

While the benefits of pair housing are evident, it does bring along its own set of unique challenges, such as cross-sucking. Nipple feeders are preferred over buckets as it takes longer for the calf to consume the milk and they will continue to suckle on the teat after finishing their milk rather than suckling on another calf.

Providing adequate nutrition and greater amounts of milk will also aid in the calf feeling satiated during the milk-fed phase. A gradual weaning process is recommended with consideration to calf starter intake prior to weaning.

To reduce competition around feeding, calves should be healthy and have a strong suckle reflex. There should be no more than a week age difference between the two calves.

Follow best management practices in all areas of calf care if considering the move to a paired or group housing system. The advantages and disadvantages should be considered carefully and fully discussed with farm employees and your herd veterinarian. Take into consideration housing, space requirements, ventilation, and bedding. A protocol for colostrum management and good sanitation of equipment should already be in place.

Pair housing provides yet another option to raise calves and can impact the calf positively with the right management. Benefits of group housing behavior can also be expressed with pair housing, including social behavior, flexibility to change, learning new tasks, and resiliency to stress. 🐄