

Group Housing for Dairy Calves – A Viable Option With Potential Benefits

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Calf hutches and other forms of individual calf housing have been widely used for the past 50 years or so to reduce transmission of disease among dairy calves and the occurrence of cross-suckling (suckling of other calves, which can spread disease and cause skin damage in severe cases). However, this method of managing calves is labor intensive for farm workers, especially on larger dairies. For farms that are currently using hutches and do not wish to build new facilities to group house calves, paired housing is an option.

Paired calf housing in hutches provides many of the same advantages as group housing, including increased group learning and better weight gain after weaning. In recent years, group housing of dairy calves, either in paired hutches or group pens, has become a more commonly used method of raising dairy replacements. According to a 2007 USDA dairy survey approximately 70 percent of dairy operations housed pre-weaned calves in individual pens or hutches while around 15 percent utilized group housing. Group housing offers several feeding options for producers: robotic milk feeders and nipple feeders, which are best suited for group pens, or conventional buckets and bottles, which work well for pair-housed calves.

Why group housing?

Group housing utilizing robotic feeders or nipple feeders has many advantages, especially when it comes to labor costs and time spent managing calves. Both group housing and pair

housing also provide a more natural environment for calves, which may reduce stress and encourage group learning. In a study at the University of Delaware, calves housed in individual hutches required approximately 10 minutes per day of labor to manage. This labor equates to around 8 hours each day for a farm with 50 calves, and on a larger farm with 100 calves or more, time devoted to managing calves can exceed 16 hours. Calves housed in a group with a computerized feeder required around 1 minute per day of labor, requiring only about 1 hour per day devoted to feeding 50 calves. Even on a farm double the size it may be possible to reduce feeding time to only 2 hours per day. Time saved feeding calves could reduce staffing needs in the calf barn, engage in other management tasks to ensure the health of those calves, or free up more time to perform other chores around the farm.

Group housing also provides a more natural environment for calves and may help reduce stress. A study at the University of British Columbia found that pair-housed calves may have handled the stress of weaning better than individually housed calves indicated by the fact that pair-housed calves continued to gain weight after weaning while individually housed calves experienced a lag in weight gain after weaning. Group- or pair-housed calves also experience group learning. In a study performed at Utah State University, calves housed in groups learned to eat calf starter at an earlier age than calves housed individually. Consumption of calf starter promotes rumen development, which increases feed efficiency and keeps calves on track for weaning at 6-7 weeks of age.

Management challenges

Despite the advantages of group housing, it presents several unique management challenges. The first is that competition in the group environment can prevent smaller or weaker calves from getting adequate milk and starter. During a study at the University of British Columbia, young calves added to groups of older animals had reduced visits to a computerized feeder due to competition. Fortunately, these calves were able to make up for reduced feeder visits by consuming more milk at each visit. There is also the possibility of disease transmission due to close contact between animals or cross-suckling. According to a study performed at the Agriculture Canada Research Station in Quebec, cross-suckling can be increased by milk consumption, inadequate milk intake, or missed meals. Another challenge is that calves housed in groups are more likely to contract diseases. During a study at the Institute for Animal Production in the Netherlands, it was determined that contagious respiratory and digestive illnesses may be a greater problem in group-housed calves. Since group housing has become more prevalent recently there are many management strategies that can help deal with these problems:

Group by age and provide sufficient space

Housing calves in groups with consideration for group size and calf age can help keep calves healthy by reducing competition for milk and grain and allowing space for adequate resting behavior. The University of Minnesota dairy extension team recommends that to reduce undesirable behaviors such as cross-suckling and allow adequate space for calves to lie down, each animal should be allowed 16 square feet of space. It is also recommended that calves be grouped by age; a one-week age gap works well since it allows calves to be weaned as a group and reduces competition.

Computer feeders: Labor-reducing machines

Proper feeding equipment for group-housed calves can help alleviate some of the challenges of group housing. During a study performed at the Institute of Animal Sciences at the Swiss Federal Institute of Technology, it was found that calves fed less than 7 L of milk per day had an increased incidence of cross-suckling, therefore, providing calves with adequate milk is critical. Cross-suckling also appears to occur most often after ingesting milk. Computer feeders are the most advanced option for feeding group-housed calves. These feeders allow calves access to milk several times a day and use an RFID system to identify calves. Computerized feeders can be configured to allow different milk meal sizes and frequencies to suit the needs of any dairy. Computer feeders are costly, but when the reduction in labor cost is considered it is possible for a 200-cow dairy to regain the cost of the feeder over 2-3 years. It is worth noting that while the computerized feeder can help reduce the need for labor in the calf barn it is not a substitute for observation and good management.

Nipple feeders and buckets: Cost-effective feeding methods

A less costly method of feeding group-housed calves is by using a nipple feeder with multiple teats or a bucket. Nipple feeders are recommended over buckets because they allow calves something to suckle after they finish drinking. During a study at the Danish Institute of Agricultural Sciences, it was also found that group-housed calves fed from buckets and teats consumed the same amount of milk; however, bucket calves left the bucket after finishing and suckled other calves while nipple feeder calves continued to suckle the teats after the feeder was empty. It is especially important to be sure calves are healthy and have a strong suckle reflex when using the nipple feeder, as calves will compete for teats even when there is one teat per calf.

The final stretch

Regardless of feeding system, cross-suckling in group-housed calves may increase during and immediately following weaning and will usually disappear once weaning is complete. Special attention is required to ensure healthy weaning of group-housed calves. Calves should be weaned gradually and offered grain and after-the-milk meal to help distract from cross-suckling. A study performed in at the Pacific AgriFood Research Center in Canada suggested that delaying weaning from milk until around 12 weeks of age can help decrease cross-suckling behavior.

Conclusions

Group housing of calves is an excellent way to raise healthy dairy replacements while increasing farm efficiency. Problems associated with group housing can be reduced through proper management and equipment. In group housing, each calf should have at least 16 square feet of space to allow for normal movement and lying behavior. Calves are competitive feeders,

so groups should be close in age (preferably no more than 1 week apart) and all calves introduced to the group should be healthy and strong. Nipple feeders are a cost-effective alternative to expensive computerized feeders and can help reduce cross-suckling by giving calves something to suckle after finishing their meal. Raising calves in pairs is a good way to obtain some of the benefits of group pen housing such as group learning, which leads to increased grain intake and increased gain after weaning without the need to build new facilities. Regardless of the system chosen, close observation and good sanitation in the calf barn are always essential to raising healthy dairy calves.



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