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Calf Note #64 – Does housing method influence calf behavior?

Introduction

Housing calves in hutches has been an industry “standard” in the U.S. for many years. Much of the early research with hutch housing in the late 1950’s and 1960’s indicated that isolation of calves from herdmates reduced the risk of calves developing diseases. Later work indicated that calves could grow very well in hutches, even in the extreme climates of North Dakota and Minnesota.

One area that has not received as much attention is the potential that hutch housing might have an effect on calves later in life – particularly, after calving, when animal-human interactions become very important.

This Calf Note describes the research of Dr. Clive Arave of Utah State University, published in 1985 (1) to address this issue.

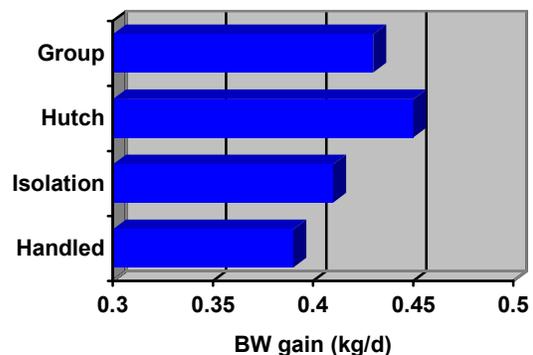
Now to the research...

In the study by Arave and others (1), 67 heifer calves were assigned at birth to be raised in:

- 1) groups of six calves per pen (3 x 3 m/calf)
- 2) an individual hutch (1.2 x 2.4 meters)
- 3) isolation in an individual hutch (1.2 x 2.4 meters) without visual contact with other calves
- 4) isolation (as in #3) but with daily handling (10 minutes/day) by the calf feeder

Calves were fed the same diet and were weaned at 10 weeks of age. At weaning, calves were exposed to an open field test of behavior for 3 consecutive days and blood glucocorticoid concentrations (an indicator of stress) were determined. After weaning, calves were assimilated into the normal herd routine until calving, when calves entered the milking string.

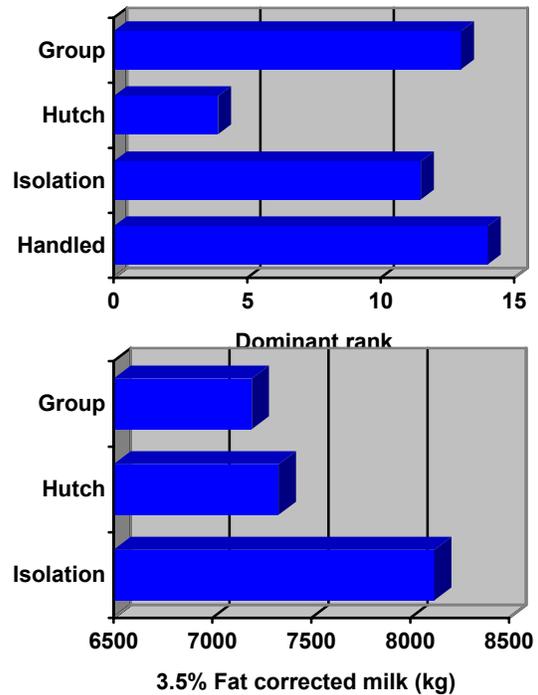
There were no differences in body weight at weaning in calves reared under the four management systems (see figure).



Although calves housed in groups did not grow any differently than calves housed in hutches, they did appear to be more stressed when removed from the group pens and placed in open field tests as indicated by their behavior. On the other hand, calves raised in hutches were less dominant than calves reared in the other housing (figure). Handling or

group housing calves generally resulted in calves that were more able to compete in their environment (measured at 10 – 12 months of age).

In the research study, calves housed in isolation (either with or without handling) produced more fat corrected milk after calving than other cows (see figure). The explanation for increased milk production in these cows is not clear – these calves had no contact with other animals prior to weaning, and only interacted with the calf raisers. Perhaps these calves were more docile throughout the rearing period and adapted more readily to the rigors of the milking routine than other calves. Other research indicates that animals raised in isolation generally have reduced aggressive behavior and it is possible that isolated calves became more “comfortable” or “imprinted” on the surrogate mother (calf raiser).



Conclusions

Methods of housing calves has a material impact on both their health status and potentially, on their later production, as indicated by these data. Surely, the use of individual hutches in the U.S. is well accepted on the basis of the improved calf health typical when calves are raised in hutches. However, the long-term implications of this type of housing might be important also. It seems that interaction with calf feeders may be beneficial in later adaptation to the milking system.

Reference

1. Arave, C. W., C. H. Mickelsen, and J. L. Walters. 1985. Effect of early rearing experience on subsequent behavior and production of Holstein heifers. *J. of Dairy Science*. 68:923-929.

Written by Dr. Jim Quigley (22 July 2000).
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