Virginia Cooperative Extension
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DAIRY PIPELINE

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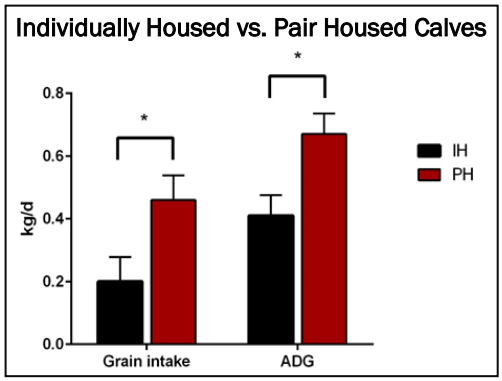

Figure 1. Grain intake and average daily gain (ADG) during the 10 day weaning period for individually housed (IH) and pair housed (PH) calves.

"Improving social and feeding behaviors in calves may help dairy producers reduce the number of inferior cows with little to no additional investment."

ALTERNATIVE HOUSING: RAISING CALVES IN PAIRS

—Turner Swartz, Ph.D. Student with Dr. Christina Petersson-Wolfe, ths120@vt.edu

Almost every farm has at least one heifer at the bottom of the pecking order and last to eat at the feed bunk. The sub-par performance of these heifers results in a delay to breeding weight, and in turn, an increase in age at first calving. Recent research has shown that changes in calf management may help improve feeding and social behaviors. You may have heard of this system before—the buddy system and it works for calves!

An experiment was performed by Miller-Cushon and DeVries at the University of Guelph to investigate the differences in feed intake, average daily gain, feeding behaviors, and social behaviors between individual and social calf housing. Twenty calves were housed either individually or in pairs for the first seven weeks of life. Calves were fed an acidified milk replacer and a calf starter for the first 39 days (pre-weaning period), and then gradually weaned over a period of 10 days (weaning period). At 50 days of age (post-weaning period), calves that were originally housed individually were now paired with another calf that was also previously housed individually. At this stage of the experiment, a preference test was performed after weaning to determine if housing type during the pre-weaning period would alter feeding and social behaviors when calves were older.

Two heads are better than one!

Calves housed in pairs consumed significantly more grain at the end of pre-weaning period, and during the 10 day weaning period than calves housed individually. This resulted in an increase in average daily gain during the weaning period, suggesting that calves housed in pairs had a smoother transition from a milk based diet to a grain based diet when compared to calves housed individually (Figure 1).

During the post-weaning period, both pair housed and individually housed calves consumed the same amount of grain. However, pair housed calves consumed more meals of grain per day than individually housed calves. Also, displacements, or when a calf pushed another calf away from the grain, rarely occurred during this experiment. From these two findings, it could be speculated that calves housed individually found social feeding more stressful than calves housed in pairs, even though the calves were not being pressured.

But what did the calves learn?

After calves were weaned, a preference test was performed to determine if calves favored eating grain socially or individually, by giving the calf the option of eating grain with another calf or alone. Calves that were originally housed in pairs were more competitive, and preferred to eat grain socially than calves that were originally housed individually. Because this change in behavior continued weeks after the calves were weaned, the authors speculated that these changes in social and feeding behaviors may persist throughout the calves' lives. By preventing the development of this submissive behavior during the pre-weaning period, dairy producers can expect to see fewer passive heifers and cows.

With the current milk price depression, dairy producers may be looking for ways to improve efficiency and reduce the number of inferior heifers and cows on their farm. Pair housing calves may improve social and feeding behaviors that could potentially persist throughout adulthood. Improving social and feeding behaviors in calves may help dairy producers reduce the number of inferior cows with little to no additional investment.

Miller-Cushon, E. K., and T. J. DeVries. 2016. Effect of social housing on the development of feeding behavior and social feeding preferences of dairy calves. J. Dairy Sci. 99:1–12.

Upcoming Events

See VTDairy for details.

July 5, 2016
7:00 pm - Rhodes Driver Dairy Heat detection and records keeping Twilight Meeting (Rockingham)

July 15, 2016
7:00 pm - VA Dairy Expo, Berryville, VA

July 19, 2016
Hands-on calf program at Seth Jamison farm in Callaway (Franklin)

July 26, 2016
7:00 pm - SCC/Mastitis Twilight Meeting (Rockingham)

August 1, 2016
State Dairy Judging Contest Harvue/Waverly Farms

August 1, 2016
State 4H/FFA Dairy Youth Field Day
Clarke & Frederick Counties

August 4, 2016
VA Colored Breed Show

August 5, 2016
VA Sale of Stars

August 6, 2016
VA Summer Holstein Show

August 9, 2016
7:00pm – SUDIA, milk promotion ice cream social

August 15, 2016
Rockingham County Fair

If you are a person with a disability and require any auxiliary aids, services or other accommodations for any Extension event, please discuss your accommodation needs with the Extension staff at your local Extension office at least 1 week prior to the event.

"...it is critical to allocate the time and resources for them to thrive."

Opportunity for Improving Calf & Heifer Management: More Complete Records

—David R. Winston, Extension Dairy Scientist, dwinston@vt.edu

The importance of getting calves off to a good start is not a new concept. Because calves are an investment in the herd for years to come and the heifer enterprise accounts for 15-20% of the cost of milk production, it is critical to allocate the time and resources for them to thrive.

What does success look like in calf and heifer management? Ideally, calves should double their birth weight by weaning, and morbidity and mortality rates should be low. The Dairy Calf and Heifer Association (www.calfandheifer.org) established Gold Standards for calf and heifer management. These guidelines provide excellent resources for evaluating the calf and heifer enterprise.

Consider the many ways that calf housing and management varies within the dairy community. Facilities for calves include hutches, individual pens, and group housing. Some are raised indoors, some outdoors. Some barns have natural ventilations, others mechanical. Bedding materials may be sawdust, shavings, or straw. Farmers have liquid diet choices of milk replacer, saleable milk, waste milk, and/or fermented colostrum. Calves are fed milk or replacer using a nipple bottle, bucket, or an automatic calf feeder. Weaning strategies vary and may include grain intake, age, and/or size. Health programs differ widely based on local conditions and veterinarian recommendations.

Calf and heifer recordkeeping is another area with wide variation between farms—and one in which many farms have an opportunity for improvement. Although basic functions may be accomplished using written records, this system has limitations. It is much easier to sort and summarize data if records are kept in an electronic format using spreadsheets, PCDART, or other software geared toward the heifer enterprise.

Obstacles to having more complete calf and heifer records include: time that it takes to record and analyze data, inefficient means of organizing the data (technology), and inconsistency in identifying diseases, treatments, and outcomes. The more individuals recording data, the more likely that consistency issues will arise unless a clear protocol for recording information is in place. A national standard on recording health information does not exist, so farmers should work with their veterinarian to develop a standard, consistent way of recording health information.

A manager could use a calf and heifer information system to quickly record life and health events, easily look up information on individual animals, summarize health events, and then use the summary to evaluate progress toward meeting herd goals. Information collected can be used to make culling decisions, evaluate individual and overall calf health, and troubleshoot problem areas.

When designing or revising a recordkeeping system for calves and heifers, first consider the questions that need to be answered. For example, what is the mortality rate? What is the morbidity rate? What are the average daily gains by group/pen? What is the average age at first conception? What diseases are most problematic in the herd? What group(s) of heifers are these diseases affecting? When poor doers are identified, are there any health events (e.g., pneumonia, scours) in their health histories? Once the basic questions are known, the data that needs to be collected becomes more apparent. This data may include: growth measurements (weight, height), vaccinations, health events including date, treatment and outcomes, reproductive events, and mortality information (date of death, necropsy results).

The overall goal of the heifer enterprise is to economically raise heifers to be of adequate size and body condition to calve at a reasonable age and to produce high levels of high quality milk during the first lactation. A complete recordkeeping system would help dairy farmers achieve this goal.

For more information on Dairy Extension or to learn about current programs, visit us at VTDairy —Home of the Dairy Extension Program at: www.vtdairy.dasc.vt.edu.

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Milk Quality & Milking Management

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