Western Dairy News
for the West, about the West, from the West

Management practices on U.S. heifer-raising operations

A summary of results from the NAHMS Dairy Heifer Raiser 2011 study.

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Are any of your heifers raised off-site? If your operation has 500 or more cows, then you probably do send at least some of them to an off-site-facility.

According to the 2007 USDA National Animal Health Monitoring System's (NAHMS) Dairy study, about 25 percent of dairies in the Western United States and 10 percent of all U.S. dairies raised heifers off-site in 2006. It also estimated that 11 percent of U.S. heifers (approximately one million head) are raised off-site.

Although the 2007 study obtained estimates on the number of dairies that use heifer-raising operations, it did not present information about the management practices used on these operations. To fill this information gap, NAHMS initiated the Dairy Heifer Raiser 2011 study, a national look at this growing segment of the U.S. dairy industry.

One impetus of the 2011 study was the lack of published studies about the characteristics of heifer-raising facilities and the management practices they use. In addition, it was discovered that many dairy operations involved in recent bovine tuberculosis outbreaks used heifer-raising facilities, although they were not confirmed as the disease source. The association between off-site heifer raising and TB could be due to the relatively high number of operations that use heifer raisers. Another possibility is these operations could be involved in TB transmission.

The potential for spread of diseases such as TB on heifer-raising operations resulted in three objectives for the NAHMS Dairy Heifer Raiser study:

1. Provide the first comprehensive information on animal health and management practices for heifer-raising operations.

2. Evaluate the biosecurity risks associated with heifer-raising operations, such as commingling cattle from multiple operations and exposing young cattle to Mexican cattle.

3. Assist in the development of a biosecurity assessment that can be used to evaluate the risk of disease transmission.

Twenty-one states participated in the study and included the nation's major dairy states in terms of farm and cow numbers. The states were divided into two geographical regions: West (AZ, CA, CO, ID, KS, NM, TX, WA) and East (IN, IA, KY, MI, MN, MO, ND, NY, OH, PA, VT, VA, WI).

To be eligible for the study, operations must have raised at least 20 heifer calves for another operation during the previous year. A total of 228 operations participated in the study. In addition, heifer-raising operations were categorized by the number of heifers they raised during 2010: small (20-99 head); medium (100-999 head); and large (1,000 or more head).

Most start with weaned calves

There is a wide variation in the age of heifers going to and leaving from heifer-raising operations. Some operations receive calves within a day or so of birth, while others receive weaned calves or pregnant heifers. The majority, however, receive weaned calves and send them back to the owners as pregnant heifers.

(Operations that raise preweaned or wet calves are commonly referred to as calf ranches or calf nurseries, while operations that raise weaned and pregnant heifers are considered heifer raisers. Although this distinction is important because, depending on the age of the heifers and the housing type (hutch, feedlot, pasture, etc), the potential disease risks are different, the term "dairy heifer-raising operations" in this article refers to operations that raised any age dairy heifers.)

Raising heifers off-site reduces the amount of manure produced at single dairy sites and/or may allow dairy producers to maintain larger milking herds on the same acreage. Other advantages of raising heifers off-site include decreased exposure of calves to pathogens from older cattle and decreased labor and feed requirements.

Management of heifer-raising operations is focused entirely on heifers, which can result in increased attention to the feeding and health of calves. Personnel that work solely with calves are more attuned to calf behavior and may recognize sick calves earlier than workers with divergent duties. This is not always true for dairy operations, where milk and cows are the priority and the needs of calves do not necessarily come first.

Raising calves away from older cattle can also decrease disease transmission. Studies have shown that raising calves off-site reduces exposure to *Mycobacterium avium sp. paratuberculosis* (MAP), the cause of Johne's disease. Keeping calves of similar age in groups is an excellent method for reducing exposure to diseases generally associated with older cattle. This is especially important for very young calves that do not have mature immune systems and are not always capable of resisting disease.

Similar to most livestock enterprises, dairy heifer-raising operations face numerous challenges. More than 75 percent of producers participating in the NAHMS Dairy Heifer Raiser study reported that heifer health and client relations were very important challenges. Some producers noted they were not currently having disease problems with heifers, but maintaining healthy heifers was a very important challenge. Interestingly, labor cost, labor availability, and labor communication were very important challenges for less than 40 percent of producers.

Off-site heifer-raising operations present several major biosecurity concerns. For example, calves are sometimes commingled from multiple sources on these operations, which can lead to the spread of disease. Approximately 75 percent of heifer-raising operations raised heifers from more than one source and were, therefore, at risk for transmitting disease not only on their operation, but also to the dairy of origin.

Since more than two-thirds of heifers were raised under retained ownership agreements, the risk of these heifers acquiring a "new" disease and transmitting it back to the dairy of origin is of real concern and has, in fact, been reported for common diseases such as BVD, hairy heel warts, and salmonellosis.

An even greater commingling risk

While commingling dairy heifers presents one level of risk, commingling cattle intended for slaughter with dairy heifers intended for breeding presents even a higher risk. Even though the risk of slaughter cattle being infected with TB is very low, any dairy or heifer-raising operation that has been involved in a TB outbreak can attest that the potential consequences are not worth the risk.

Cattle of Mexican origin are considered an even higher risk of having TB, and there have been instances of dairy cattle being housed, pastured, or otherwise having contact with Mexican origin cattle. If the heifer raiser you use is also raising feeder or Mexican origin cattle in the same facility, you should be concerned. The ideal heifer-raising operation would either raise heifers from a single source or not allow contact or commingling of heifers from different sources.

Testing incoming heifers helps to decrease the risk of spreading disease when calves from multiple sources are commingled. Incoming heifers should be tested for BVD, especially if the heifer raiser also houses pregnant heifers, to prevent the introduction of persistently-infected BVD calves born at the source dairies. Of the common diseases encountered in dairy cattle, BVD is probably the easiest to eradicate, but it still takes considerable commitment and resources.

Milk can also be a source of disease transmission. The majority of heifer raisers in the West obtain heifers (about 90 percent) and waste milk (about 70 percent) from more than one dairy. We know milk can be contaminated with multiple disease agents such as Mycoplasma, Salmonella, MAP, *Cryptosporidium parvum*, and TB. The good news is that more than twice as many heifer raisers pasteurize waste milk as those who don't. Pasteurization is the most efficient way to reduce or eliminate pathogens in milk. For operations that feed preweaned calves, pasteurizing waste milk or feeding milk replacer is recommended.

The most recent National Health Monitoring System (NAHMS) Dairy Study found that Western dairies were 2½ times more likely to have their heifers raised off-site than for the U.S. as a whole.

Exposure of calves to wildlife is another concern to heifer-raising operations, as it is with dairy operations. More than 75 percent of heifer-raising operations had observed or seen signs of deer, coyotes, foxes, or raccoons on their operation. These animals can be carriers of diseases such as TB, BVD, leptospirosis, neosporosis, salmonellosis, and rabies. Admittedly, it is not always feasible to prevent all contact between calves and wildlife, but producers should and usually can prevent wildlife from contaminating feed supplies.

About 30 percent of dairy heifer shipments traveled 100 or more miles and 30 percent crossed state lines. Producers reported shipping heifers from Pennsylvania to California, Florida to Indiana, and Texas to Idaho, just to name a few. About 10 percent of operations shipped heifers internationally. Almost half of large heifer-raisers cleaned and disinfected transport vehicles, versus only a quarter of all heifer raisers. Shipping heifers can increase stress and lead to disease susceptibility, so minimizing the number and distance of shipments, as well as cleaning and disinfecting transport vehicles, helps improve biosecurity.

Heifer-raising "Gold Standards"

An excellent resource for raising heifers is the Dairy Calf and Heifer Association (DCHA). This organization focuses on the rearing and management of calves and has produced a series of best management practices that they refer to as the "Gold Standards".

There are three Gold Standard documents: Document I addresses production and performance standards established for Holstein calves from birth to six months of age. Document II addresses production and performance standards established for Holstein heifers from six months of age to freshening. I Document II addresses animal welfare standards for rearing calves and heifers from birth to freshening. All three Gold Standard documents are available on the DCHA website: http://www.calfandheifer.org/.

I recently had the opportunity to visit a large heifer-raising operation that has implemented many of the Gold Standard management practices. This operation obtains 400 to 500 day-old calves each day. Even so, a blood sample is collected from each calf and a serum total protein (TP) value is measured and recorded. The owner of this facility recorded the percentage of calves that had died by TP group – for more than 50,000 calves!

As expected, the percentage of calves that died in the low TP group was almost double the percentage in the high TP group. Death loss in the low TP group was lower, however, than many dairies and heifer raisers can claim among all their calves. The owner also sends individual calf result reports back to the dairies of origin to let the owners know how well their colostrum management program is working. This type of information, especially on this many calves raised in a single facility, is rarely available in published literature but is important to other producers, veterinarians, and consultants.

The youngest calves at this facility are fed milk replacer. Older calves are fed pooled, but pasteurized, waste milk from the dairies supplying calves. All calves were fed three times a day. Weaned calves, which were raised until they were four months old, were housed in drylot pens. This heifer-raiser also raised beef cattle, which were segregated to one side of the facility and did not have any direct contact with the dairy calves.

Any dairy producer would be happy with the quality of care that this operation provides, as well as the quality of heifers raised. If you are using or planning to use a heifer-raising operations for your heifers, tour the facilities and ask questions to be sure that their practices are meeting the DCHA Gold Standards.

The complete report from the NAHMS Dairy Heifer Raiser 2011 study is now available. All NAHMS reports are available in electronic form from the website at http://nahms.aphis.usda.gov. If you are interested in a hard copy report or have questions, please email NAHMS at: NAHMS@aphis.usda.gov

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