

# Feed cost controls reviewed

**T**HE 2008 annual meeting of the Dairy Calf & Heifer Assn. was held April 1-3 in Rochester, Minn., where a winter snowstorm greeted everyone, but spring sunshine reigned after that.

About 400 attendees were joined by 80 exhibitors in this 12th annual meeting. The program continues to evolve with a pre-conference seminar, more time for networking and interactions, simultaneous tracks and virtual tours. It has become more difficult to have actual tours due to many logistical issues and some concern as to whether animal rights activists might take advantage of such a program.

These virtual tours of a Wisconsin calf ranch, Minnesota large dairy calf and heifer operation and North Dakota heifer grower were outstanding. The company sponsoring the virtual tours made them seamless, and the spokesperson for each was well versed on describing the operations.

Later in the program, two more virtual tours were done: one with a radio frequency identification program used by a large New Mexico dairy bull calf operation and another of a calf grower in Minnesota meeting the Beef Quality Assurance program for best management practices.

Rather than try to cover all subjects addressed, I will contribute some snippets and then concentrate on just two programs in more depth.

## New horizons

Wayne Thompson of Allenwaite Farms Inc. was the first to use an automated feeding unit in the U.S. beginning in November 1999. A separate building was constructed to accommodate this unit and system.

A very early-weaning program by the end of four weeks of age is followed with more than 700 calves going through this program every year. Since starter intake is even more critical for such an early-weaning program, the starter feeding portion of this automatic feeding system was discontinued in favor of feeding

## Bottom Line

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in a trough because it was observed that when calves were waiting in line to eat, they often got tired of waiting and went to lie down instead (personal correspondence).

Alan Waybright of Mason Dixon Farms raises about 1,200 heifer calves per year. While the farm uses pasteurized waste milk, clinically mastitic cows and Johne's-positive cows are not milked into this pool.

All calves are weaned at 38 days of age, and starter is fed beginning at three days of age. Calves are housed in a monoslope building facing southeast, with water always available at bite-button waterers. This herd has been closed since 1970, had a 2% calf death loss last year and sells 200-300 heifers annually.

Drew Vermeire of Nouriche Nutrition Ltd. provided underlying feeding and nutritional principles needed to optimize calf performance and returns. He also described various milk replacer manufacturing systems, milk replacer mixing and feeding equipment and systems along with some French veal calf performance data with different feeding and housing systems.

## Feed costs

Greg Bethard indicated that since feed costs are the largest portion of total heifer rearing costs, efforts to control those costs should be directed in these seven ways:

(1) Minimize shrinkage and waste in storage since this is more important than ever with expensive feeds. For instance, 10% shrinkage of \$55-per-ton alfalfa haylage = \$5.50. So, silages should be well packed and covered, shrinkage should be monitored using feed management software, total feed costs per head should come from financial

statements and the difference between these last two categories will indicate shrinkage losses.

(2) Avoid weighbacks and feed wastage at bunks. Striving for zero weighbacks could save 5.25 cents per head per day versus 3% weighbacks on a \$1.75 daily ration cost. Feed bunk design should limit waste, which will more likely occur with J-bunks and bulky rations. This may necessitate feeding several times daily or pushing up feed to avoid waste on flat feeding surfaces.

(3) Avoid overfeeding minerals, vitamins and protein. In Bethard's opinion, protein on full-fed heifers should be 17% for postweaning calves younger than six months, 15-16% for open heifers older than six months and 13-14% for pregnant heifers. Also, free-choice salt plus mineral pack should meet National Research Council (NRC) requirements, along with monensin (200 mg per day), and generally use no organic minerals for weaned heifers. Ensure that vitamins A, D and E meet NRC requirements; B vitamins are generally not needed for weaned heifers.

Body condition and growth rates determine appropriate energy, which varies with each facility and each ration. Growers must visually monitor on a regular basis. Do clients want "slick and strong" heifers or "tall and thin" heifers? (4) PROCURE forages that make an inexpensive ration and look at rations, not ingredients. This may change year to year based on relative prices for protein and energy. High-protein/low-energy forages are best, such as wheat silage, oat silage and alfalfa hay or silage. Consider using "fillers" such as corn stalks, grass hay, straw or soybean hay. Use corn silage and sorghum silage in limited quantities.

Many different byproducts work in heifer rations such as gin trash, chili meal, carrot pulp, brewers grains (wet or dry), distillery byproducts, bakery byproducts, chocolate, etc. Utilize locally available byproducts where hauling is minimal. Having a total mixed ration mixer is a must.

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## Performance of calves fed different milk replacers

	20/20	28/16
Milk replacer fed (97% dry matter), lb.	49.2	97.8
Milk replacer cost, \$/lb.	1.20	1.52
Calf starter fed (89% dry matter), lb.	122.3	87.3
Calf starter cost, \$/lb.	0.235	0.252
Total 56 days cost, \$	87.82	170.7
Gain to 56 days, lb.	80.5	99.8
Feed cost, \$/lb. gain	1.09	1.71

(5) Minimize maintenance costs. For high-stress conditions based on temperature, humidity, wind, storms, mud depth and hair coat, this can necessitate an additional 6 Mcal per day of metabolizable energy for a 1,000 lb. heifer with a dry matter intake (DMI) of 22 lb. per day. This high stress would require 5 lb. more DMI, which could cost another 35 cents per day.

Solutions include keeping heifers dry and clean, providing windbreaks, keeping the feeding area and travel areas free of deep mud and manure and providing a dry place to lie down.

(6) Purchase ingredients that result in the cheapest ration, not necessarily the cheapest ingredients. Simply considering cost per pound of protein or cost per megacalorie of energy ignores the replacement value of filling other dry matter slots and can lead to erroneous conclusions.

(7) Consider limit feeding, where appropriate. While research and field experience shows that limit feeding can work, it requires a higher level of management, such as feeding based on DMI as a percentage of bodyweight, and to provide daily pounds of protein and megacalories of energy, daily pen counts must be accurate. Feed bunks also need

to be read at least weekly and adjusted to heifer size and desired intakes, and forage dry matters, mixing, etc., are more critical.

### Milk replacers

Steve Hayes of APC developed an interesting analysis based on two types of feeding programs: investor or saver driven.

The investor goal "is to feed the calf ample nutrients to allow the calf to fully realize its genetic potential for growth while on milk," while the saver goal is "to feed the calf as little milk as is needed to support growth and encourage the intake of calf starter so weaning of the calf can be as early as is practical."

While not endorsing any particular program, data from a calf trial (Chester-Jones, 2007) were used in which either a 20% protein/20% fat milk replacer or 28% protein/16% fat milk replacer were fed (Table).

A number of benefits and drawbacks of each program were delineated in the paper. For instance, is greater cost per pound of weight gain offset by other benefits that also need to be factored in?

Contrary to these data, a study at Michigan State University (Brown et al.,

2005) found that an investor-type milk replacer program had both lower cost per pound of gain and higher gain per pound of intake ( $P < 0.001$ ) than a saver-type milk replacer program after eight weeks of milk replacer feeding.

The 2007 National Animal Health Monitoring System survey lists many liquid feeding programs dairy producers use that, along with different ways/amounts/days of liquid feeding, result in a spectrum of such programs, including using a hybrid of various liquid sources. It is a subject on which to ruminate.

### The Bottom Line

Progressive changes in the annual Dairy Calf & Heifer Assn. program were well received. Suggestions to control feed costs were reviewed, as were types of feeding programs, based on presentations made for young calves and growing heifers.

### References

Brown, E.G., M.J. VandeHaar, K.M. Daniels, J.S. Liesman, L.T. Chapin, D.H. Kiesler and M.S. Weber Nielsen. 2005. *J. Dairy Sci.* 88:585-594.