

The MSU Beef Team Presents

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Cattle Call

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Getting Ready for Winter

Harlan Ritchie, PhD

MSU Department of Animal Science

Cull Cow Considerations

For much of the country, it's weaning, culling, and the time to prepare for winter. Cull cow sales account for about 20-25% of income in most cow-calf herds. If you have an adequate supply of economically priced feed, it might pay to hold off selling cull cows in order to market additional weight plus avoid the seasonal price low that usually occurs during November-December. After that, cow prices normally rise to their seasonal high in March-April. Over the years, price margins between these two periods average about \$4 to \$7/cwt. However, feeding cull cows can be tricky business. There are at least 5 important considerations if it is to be profitable:

- 1) Price margin needs to be positive
- 2) Feed costs cannot be abnormally high
- 3) Cows should be thin and not fleshy
- 4) Cows should be brought up on grain gradually to avoid rumen acidosis
- 5) The feeding period should not be overly long because feed efficiency starts to decline after about 60 days.

Illinois researchers fed a high-grain ration to cows for varying time periods. Feed conversions for the first 56 days averaged 6.6. From day 57 to day 84, they fell to 12.5. The overall average for 84 days was 7.9.

Cow Nutrition for Winter Months

Spring-calving pregnant cows going into winter should be fed according to body condition. If forage is limited, overly-fleshy cows can afford to lose some body weight without impairing later reproductive performance. Cows in moderate condition should be fed to maintain their weight. Thin cows should be fed so they are in moderate condition by calving time (condition score of 5 on a 1 to 9 scale).

Yearling Bull Nutritional Management

Going into the winter, yearling bulls finishing their first breeding season are often the forgotten members of the beef herd. These young bulls need to gain about 2 lb/day

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during the off-season in order to regain weight loss and attain 75% of their mature weight by 2 years of age. Depending upon their initial body weight, this can be achieved by feeding 8-12 lb of grain per day plus a full feed of forage, either hay or grazing stockpiled winter forage, and a salt-mineral mix containing about 8% phosphorus and adequately balanced to meet trace mineral requirements. *CC*

**Sickness During the Receiving Period
Had a Marked Effect on Carcass Traits
and Net Return**

Harlan Ritchie, PhD
MSU Department of Animal Science

Reports continue to mount regarding the detrimental effect of sickness of incoming feeder cattle on their ultimate carcass value. In an Oklahoma State University study, 406 sale barn purchased heifers (465 lb) were placed in commercial feedlots following a 42-day receiving period. Heifers were categorized by severity of Bovine Respiratory Disease (BRD); (1) never treated; (2) treated once; or (3) treated more than once. During the receiving period, heifers treated more than once gained significantly less weight than the other two groups, but they tended to compensate during the finishing period, resulting in no significant difference in final harvest weight. Nonetheless, there were important post-harvest differences, as shown in the following summary:

- ◆ Heifers treated for BRD during the receiving period tended to have lower (leaner) yield grades (2.53 vs. 2.42 vs. 2.36 for the three groups, respectively).
- ◆ Heifers that had multiple treatments for BRD had markedly lower marbling scores and a twenty-five percentage point reduction in percentage of Choice carcasses (66.2 vs. 59.4 vs. 41.1 for the three groups respectively).
- ◆ The twenty-five percentage point decrease in marbling score reduced carcass value by \$2.31 per 100 lb. of carcass weight.
- ◆ Gross value per carcass was reduced by \$4.00 for heifers with one treatment and \$19.29 for multiple-treated heifers. Medical cost for these two groups averaged \$7.48 and \$18.00, respectively.
- ◆ When medical costs were combined with the decrease in gross carcass value, the two treated groups netted \$37.34 and \$71.48 per head less than untreated heifers.

The authors concluded that the impact of BRD can extend beyond medication cost, mortality, and reduced performance, emphasizing the importance of prevention as early as possible. *CC*

**WEST BRANCH
FEEDER CALF SALE**

12 Noon on October 21, 2003
At the yards in West Branch MI

Offering approximately 1000 calves
All will be electronically identified
The majority will be weaned and double
vaccinated

For Buyer or Consignor information
Please Call:
Kevin Small 989-848-5641
Marty Galbraith 989-826-3793

**Michigan Animal Industry Initiative
Funds Beef Team Projects**

The Michigan State University Beef Team recently received support for two projects from the Michigan Animal Industry Initiative including publication and distribution of the *Cattle Call*. Continued support for the *Cattle Call* was a top priority of Beef Team as it serves as a continued linkage between the Beef Team and beef producers in Michigan. The second project funded involves studying *Mycoplasma bovis*, an emerging pathogen in Michigan's fed cattle industry. Led by Drs. Dan Grooms and Paul Coe from the College of Veterinary Medicine, this project is focused on determining how often feedlot cattle are dying from *Mycoplasma bovis* and what risk factors may predispose calves to contract the disease. For more information on this project, contact Dr. Dan Grooms (517-432-1494 or groomsd@cvm.msu.edu). More information on the Michigan Animal Industry Initiative can be found at <http://www.animalag.msu.edu/>. *CC*



Short of hay? Now what?

Ben Barlett, Beef Specialist
MSUE, Upper Peninsula

Are you a few bales short of a full load as you look at winter just around the corner? Was the weather too wet, too dry, too good a deal on the neighbors cows, or for whatever reason, are you thinking you will run out of round bales before you run out of winter? Let's briefly review your options so you can winter your cows cheaply and still have as many healthy, good doing calves next spring as possible.

The first step is to always double check your inventory of feed. Most people don't have to pull out pencil and paper since you "know" it usually takes "x" number of bales to get through the winter and if you have less than "x", you are short. But, what other feed resources might be available? Don't worry about the details; just do some brainstorming on what else could be used to stretch your existing hay supply. What about the neighbors corn stalks, the property across the road that an investor is just holding, or what about your own hay field re-growth? One of the easiest ways to make your hay last longer is to not start feeding so early. If your pasture runs out and you take out a bale of hay, the cows have got you trained to work for them instead of the cows working for you. It may take a little extra effort to put up some temporary fence but compare that against the cost to purchase 30 days worth of hay. The fence is an investment that will last but the hay (and your money) will quickly turn into "fertilizer".

It is getting late this year but two other very useful things you could have done back in July/August to extend your pasture season would have been to do some strategic nitrogen fertilizing and / or plant some annual crops. A small grain like oats or rye, annual ryegrass, or even a brassica like turnips are options to consider. We have sheep producers who have gone the entire winter, feeding hardly any hay, and beef producers in Ohio have used oats and almost completely eliminated their winter hay feeding. You will always need some hay on hand for storms, but it's amazing how little hay is needed with some planning.

Even when the snow is deep and extended grazing is not an option, there are still things you can do to make that hay go farther. Have you ever done the quick math to see how much hay you are "offering" each day. Offering and eating is not the same thing. If you have 1000 pound bales and you feed 3 of them to 35 cows every 2 days you are "offering" the each cow 42 pounds of hay per day. (3000 pounds of hay divided by 2 days = 1500 pounds divided by 35 cows = 42pounds per cow per day) Not many beef cows are big enough nor is most beef cow hay good enough that a cow can eat 42 pounds per day. It just becomes more fertilizer. In round bale feeder work done at MSU, the most important issue was to have the feeder larger than the bale so the cow could reach in to eat and therefore drop the extra hay inside the feeder. The fancy feeders did work better but they are also very expensive and usually heavy and hard to move. One way to decrease the hay lost is to chop the hay. We do not have many custom tub grinders and it is really hard to justify a grinder or chopper with our smaller herds even though we will increase

utilization and decrease losses. One potential option is a round baler that will slice the hay as the bale is being made. The core and outside are long hay but the middle can be sliced into about 6 inch lengths. It would be too late for this year, but a consideration when buying hay or when you buy your next baler.

When all else fails you just need to buy hay right? No. Buying hay is always just one of the options. It frequently is less expensive to start supplementing your existing supply of hay early in the year to stretch out the hay you do have. Running out of hay and then buying is usually the most expensive way to go. If you start early you can ration-out your hay by feeding straw, corn silage, corn grain, or a multitude of by product feeds. Commercial feed supplements like molasses tubs are frequently one of the most expensive ways to extend your hay supply. The key to low cost supplementation is knowing the quality of your hay, the nutritional needs of your cows, and then finding a low cost supplement that will work in your feeding system. It will take some effort but sometimes what appears to be expensive, for example corn grain, can be utilized to make up the least cost ration.

One other consideration with non traditional rations or when you are trying to stretch out your hay supply is the feed delivery system. It doesn't get much easier than filling up round bale feeders once or twice a week with hay bales. If you want to limit feed your hay you need to have enough feeders so that all cows can comfortably eat at one time. If you limit feed with too few feeders, the fat cows will get fatter and the skinner cows will get very skinny. An option is to unroll a bale of hay so all cows can eat at one time. Feed bunks will be needed for grain but grain can be fed every other day to cut down on winter chores.

A small hay pile is no reason to panic. The goal is a well fed cow fed as cheaply as possible. Sometimes a "problem" is just the opportunity we need to stimulate new thinking and new ways of doing things. *CC*



Effect of a 2-Step Weaning System on Performance of Calves

Dan Buskirk, PhD

MSU Department of Animal Science

A method to reduce stress at weaning has the potential to improve the health and performance of calves. A research group at the University of Saskatchewan's Western College of Veterinary Medicine fitted calves with anti-suckling devices (Figure 1) that allowed regular behavior and social interaction with their dams for at least four days before separation from their dam. The 2-step weaned calves called 85% less, walked 80% less, and spent 25% more time eating during the 4 days following separation compared to traditionally weaned calves. We would expect, that if this behavior is a consistent result of the treatment, 2-step weaning should also offer benefits in improved performance and health of weanling calves. The objective of this trial was to determine weight gain and sickness of calves weaned with the 2-step compared to the traditional method.



Fig. 1. Plastic weaning ring

The trial was conducted in the fall of 2002 at three locations in Michigan – Jon Haindl farm, Cooks; U.P. Experiment Station, Chatham; and Lake City Experiment Station, Lake City. Three-hundred eighty-two calves at the three locations were weighed and vaccinated. Calves were randomly allotted to one of two treatments: control (CON) or two step weaning (RING). Calves that received the RING treatment had a plastic calf weaning ring placed in their nose (Figure 2). Following processing, all calves were returned to their dams for 14 days. On d 14, all calves were weighed, booster vaccinated, and calves receiving the RING treatment had the plastic calf weaning ring removed. All calves remained separated from their dams after day 14. All calves were then separated with a fenceline weaned to pasture (2 locations) or drylot (1 location). Calves were again weighed on d 44 of the trial.

Weights were similar for the two treatment groups at the start of the trial (Table 1.). However, by 14 days after placing the rings, the RING treatment had gained more than a pound per day less than controls. Following ring removal RING calves continued to gain less weight than control calves.

Table 1. Performance of calves traditionally weaned (CON) or 2-step weaned with weaning rings (RING) at three locations

	Treatment ^a		P-value
	CON	RING	
Initial weight, lb (d-0)	460.4	449.4	0.11
Separation weight, lb (d-14)	482.7	456.1	<.001
Final weight, lb (d-44)	495.9	464.4	<.001
Pre-separation ADG, lb (d 0-14)	1.66	0.51	<.001
Post-separation ADG, lb (d 14-44)	0.48	0.27	<.001

^aLeast squares means.

The 2-Step weaning method clearly had a negative impact on calf performance when weaning rings were placed for 14 days. Approximately 90% of the RING treatment calves developed a pressure lesion on the inside of the nose. Performance of RING calves may have been reduced due to lesion soreness although these lesions quickly healed following removal of the rings. Another possible explanation for reduced weight gain is that the rings may have physically interfered with the ability of the calves to graze.

Ring retention was also problematic, especially at the location where calves had access to round bale feeders. A number of rings were also lost while working the calves through handling facilities. Retention ranged from 64% to 98% depending on trial location. There was no significant difference in ring retention between steers and heifers or due to weight of the calves.

One hundred nineteen of the trial calves were finished at the Michigan State University Beef Cattle Teaching and Research Center. There were no significant differences in number of times treated for sickness between treatments.

The Canadian researchers have suggested that weaning stress was reduced in their trials when rings were placed for as little as four days. Our testing extended the period to two weeks in an attempt to incorporate the practice into a typical system of processing calves for vaccinations. A shorter duration of ring placement may result in different performance responses. However, placing the rings for 14 days clearly reduced calf performance. *CC*

This research was conducted by Dan Buskirk, Ben Bartlett, Dan Grooms, Jon Haindl, Paul Naasz, Doug Nielsen, Matt McCurdy, Aaron Grant, and Guillermo Ortiz-Colon. We wish to thank Jon Haindl for cooperation in conducting this trial on his farm.

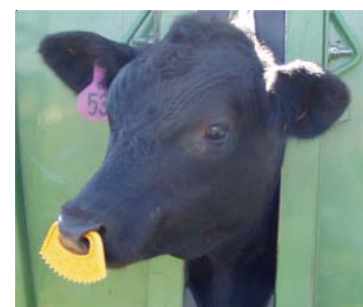


Fig. 2. Calf with plastic weaning ring in place.

Recycling Feedlot Runoff

...From the pages of *Agricultural Research* magazine

Cattle, unlike humans, do not have the luxury of flushing their waste down the toilet into elaborate treatment systems. But livestock producers have various ways of protecting the environment from cattle waste, and one method is to collect all the runoff from feedlots in special temporary storage ponds. These ponds do protect the environment, but they sometimes leak. Also, they smell bad and have to be emptied regularly. Agricultural engineers with the Agricultural Research Service have designed a system that solves these problems and comes with additional benefits. At the Roman L. Hruska U.S. Meat Animal Research Center (MARC) in Clay Center, Nebraska, John A. Nienaber, Roger A. Eigenberg, and Bryan L. Woodbury have designed a system for beef cattle feedlot runoff control and treatment that, once built, requires little work from the farmer. The feedlot at MARC is situated on top of a foothill. Rainfall runoff from a series of pens within this feedlot is directed to a shallow basin that runs the length of the pens. The runoff is collected and retained in the basin less than an hour, allowing the solid particles to settle. The runoff is then discharged to a hayfield, where the water and nutrients help the hay grow. The retained solids have to be removed from the basin once a year. They are spread on cornfields as a soil fertility amendment. - "This system is a great way for small to medium-sized facilities to recycle nutrients from animal manure," says Woodbury. Thousands of acres of corn and hay are planted each year for cattle to eat. Cattle are not able to use all the nutrients, such as nitrogen and phosphorus, contained in the feed. With this system, those nutrients are used to help grow the food cattle will eat, which saves money and prevents the nutrients from going into the environment. In the 3 years that the agricultural engineers have studied the system, there has been no runoff of nitrogen from the hayfields to the surrounding area. Nienaber points out that the costs of designing, building, and maintaining this system are less than those for traditional ponds. It costs a lot of money and time to build the large ponds and to periodically pump the waste out of them. Woodbury says the project will last another 5 years. During that time, the scientists will continue to evaluate the system's effectiveness.—By **David Elstein**, Agricultural Research Service Information Staff. *This research is part of Manure and Byproduct Utilization (#206), an ARS National Program described on the World Wide Web at www.nps.ars.usda.gov. - Bryan L. Woodbury, John A. Nienaber, and Roger A. Eigenberg are with the USDA-ARS Roman L. Hruska U.S. Meat Animal Research Center, P.O. Box 166, Clay Center, NE 68933-0166; phone (402) 762-4275 [Woodbury], (402) 762-4274 [Nienaber], (402) 762-4272 [Eigenberg], fax (402) 762-4273.* "Recycling Feedlot Runoff" was published in the **April 2003** issue of *Agricultural Research* magazine.

"This system is a great way for small to medium-sized facilities to recycle nutrients from animal manure,"

MCA/MSU BULL TEST PROGRAM CHANGES

David R. Hawkins and B. Dennis Banks

MSU Animal Science Department

The Michigan Cattlemen's Association Bull Test Committee recently approved changes for its 16th test. The test will again be hosted by the Oscar Plank family at Crystal, MI, but the sale location will now be at the bull test station site. The timeline for the 2003-04 Bull Test is as follows:

- September 3, 2003 – Nomination Deadline
- October 17 & 18, 2003 – Delivery to Plank Stock Farms
- November 5 & 6, 2003 – On Test Weight
- February 25 & 26, 2004 – Off Test Weight
- March 20, 2004 – Bull Test Sale at Plank Stock Farms

We anticipate a large consignment of Angus, Red Angus, Charolais, Hereford, Limousin, Shorthorn and Simmental bulls. During the 112 day test, the bulls will be evaluated for rate of gain, reproductive soundness and ultrasound body composition. In order to be eligible for the sale, each bull must meet minimum performance criteria. The sale index will be based on percentile rankings of several traits, including EPDs developed by the respective national breed associations.

At the 2003 MCA/MSU Bull Test Station Sale, 58 bulls sold for an average price of \$1,638. This was the highest average price in the 15 year history of the program. Over 60% of the bulls sold to buyers who had purchased bulls in previous MCA/MSU Bull Test sales. The average daily gain of all bulls tested in 2002-03 was 3.73 lbs. Several of the bulls tested ranked in the top 10% of their respective breeds for EPDs of different traits. The MCA/MSU Bull Test Program has been a consistent source of high quality genetics for the beef breeders in Michigan and surrounding states. **CC**



Michigan Cattlemen's Association 6th Annual Graded Feeder Calf Sale

Kevin S. Gould, Beef Specialist
MSUE, Ionia, MI

Cattle markets have rebounded to record level and look promising through 2004. Even though feeder prices high, there is no better time to add value to your calves. Pre-conditioning/Graded programs have been show nationwide to add value in the neighborhood of \$4-6/cwt for 550 pound beef steers. The MCA Graded sales over the past five years have resulted in similar prices compared to national trends. Economics point to an additional \$30/head to the consignor for added management and marketing efforts. For additional information about pre-conditioning programs for beef calves, please give me a call.

MCA has scheduled the Graded Feeder sale for December 12, 2003 at the United Producers St. Louis salebarn. Calves must be consigned by October 15 and weaned by October 29 to qualify. Sale requirements and consignment applications are available from MCA by calling (517) 347-8117.

Sale requirements have changed and now require all consignors to be 5-State Beef Initiative certified. If you are planning to consign calves and need to be 5-State certified, contact the MCA office.

CC

Time is running out for Michigan Cattle Producers

Kevin Kirk
Michigan Department of Agriculture

In an effort to rid the state of bovine TB, and to prove that Michigan was serious about the eradication efforts, the Animal Industry Act P.A. 466 was amended to require that all cattle and goat herds (outside a high risk area or potential high risk area) be whole herd tested for bovine tuberculosis (bovine TB) by December 31, 2003.

Since 1995, over 700,000 Michigan individual cattle and 14,000 cattle herds have been tested for bovine tuberculosis. One hundred percent of Michigan dairy herds have completed a whole herd bovine TB test, i.e. all 3300 dairy herds have been tested. Unfortunately, all of Michigan's beef and goat herds have not been tested. Although approximately 95% of beef herds have been tested, it is impossible to estimate the number of beef herds that have not been tested. Many of these untested farms may be unaware of the testing requirements or lack adequate facilities. They may not understand the test or the procedure. They may not think it applies to them.

All beef farms need to have a whole herd bovine TB test by December 31, 2003. If you know a farmer who hasn't yet had their whole herd test urge them to call Michigan Department of Agriculture (MDA) or their local fee basis veterinarian to schedule a test. MDA and some private veterinarians, have working facilities that can be brought to the farm so that the testing can be completed in a safe manner.

Bovine TB is a serious threat to our industry. Most of the industry has complied with the law. Cattle herds NOT tested by December 31, 2003 can face quarantine, movement restrictions, and paying for the whole herd test out of their pockets. In addition, producers should avoid purchasing animals from untested herds, because of the potential risk to theirs herds. By all means, avoid quarantine and possible unnecessary retesting of your herd. Don't jeopardize Michigan's cattle industry!

- If you have had your whole herd TB test DO NOT buy cattle from untested herds.
- Encourage untested herds to get tested
- If you haven't had your whole herd test, just do it!

For more information contact Kevin Kirk at the Michigan Department of Agriculture, 517-241-4339. Information about bovine TB can be found at www.bovinetb.com CC

Research Round-Up

Fenceline Weaning Reduced Stress and Improved Weight Gain in Beef Calves

The objective of this Univ. of California study was to determine if fenceline contact between calves and cows at weaning reduces behavioral distress and related reductions in weight gain compared to three treatments in which calves were totally separated from their dams. At the end of 7 days following weaning, calves in all treatments were placed on pasture in large groups. Fenceline separated calves spent more time eating, less time walking (pacing) and more time lying down than totally separated calves. They also bawled less than totally separated calves. Treatment differences were greatest during the first 3 days following weaning. The fenceline calves gained 95% more weight than the average of the three separated groups in the first 2 weeks (47 vs. 24 lb) and were still heavier at 10 weeks (110 vs. 84 lb) after weaning. The authors concluded that providing fenceline contact between cows and calves for 7 days after weaning reduces behavioral distress and minimizes losses in weight gain in the days following separation. Furthermore, totally separated calves did not compensate for early losses in weight gain even after 10 weeks (Price et al. 2003. J. Anim. Sci. 81:116).

Lower Gaining Cattle on Grass Failed to Compensate in the Feedyard

Texas A & M and Texas Tech Univ. researchers conducted a two-year study in which 189 steers and 72 heifers at two different experiment stations (Overton and Uvalde) were grazed at two stocking rates (High vs. Low) to create three different growth rates (High, Medium, Low) (Overall daily gains for the three growth groups averaged 1.83, 1.34, and 0.84 lbs, respectively). Cattle were then placed on feed to determine the effect of grazing growth rate (GG)

on feedlot and carcass traits. They were harvested upon visual evaluation at 0.4 in. external fat. Results differed somewhat between grazing locations, but in general the study revealed that GG had little appreciable effect on feedlot performance. Consequently, High GG cattle had greater in- and out-weights as well as greater carcass weights than Medium GG cattle. The same was true for Medium vs. Low GG cattle. Marbling score, fat thickness and yield grade were similar among High, Medium and Low GG cattle. Total carcass value in dollars favored High over Medium and Medium over Low GG cattle, largely because of increased carcass weight. These results indicated that lower performing cattle during a grazing growing period can compensate during the finishing period for some, but not necessarily all, of the reduced weight gain in the grazing period. Because low animal performance during the grazing period resulted in lower total carcass value, the authors suggested it may be beneficial for producers to program cattle to gain more during the grazing period (Cleere et al. 2003. Texas A & M Univ., College Station, Overton and Uvalde, and Texas Tech Univ., Lubbock).

Steers With More Variable Feed Intake Performed Better Than Those With More Consistent Intake

Lethbridge, Alberta, and Oklahoma State Univ. scientists conducted a study to determine the relationship between feeding behavior and performance of feedlot steers. A total of 74 steers were assigned to two pens equipped with a radio frequency ID system and feeding stalls that gave single animal access to a feed tub on load cells. Data collected were daily variation in feed intake (DVI) and total feed consumed per head per day (DDC). The 213-day trial consisted of a backgrounding and a finishing phase. Steers were grouped by their dry matter intake (DMI), average daily gain (ADG) and feed efficiency (FE) into high, medium, and low categories.

◆ High ADG steers had greater DVI and DDC in both phases than medium or low ADG steers.

◆ The best FE steers had greater DVI than average or poor FE steers.

◆ Compared to average or poor FE steers, DMI by the best FE steers was highest during backgrounding and lowest during

finishing. Their bunk visits were more frequent but they spent the least total time eating per day.

The authors concluded that, contrary to industry perception, steers with more variable eating patterns performed better in this study (Hickman, et al. 2002. J. Anim. Sci. 80 [Suppl. 1]:15).

Cattle Finished as Calves Had Higher Quality Grades and Better Eating Qualities Than Those Fed as Yearlings

Over the years, there has been a general belief that cattle fed as yearling achieve higher quality grades than those fed as calves. In recent years, some research trials have indicated there may be little or no difference. Univ. of Nebraska researchers conducted a study in which crossbred steer calves were assigned to one of two treatments: 1) placed on a finishing diet as calves and fed for 203 days; 2) backgrounded and then placed on a finishing diet as yearlings for 93 days. Both groups were fed to a targeted finishing endpoint of 0.5 in. backfat.

◆ As expected, yearling-feds had heavier carcasses (843 vs. 718 lb) and larger ribeyes (12.7 vs. 11.3 sq. in.) than calf-feds.

◆ Fat thickness and yield grade did not differ, but calf-feds had significantly higher marbling scores (511 vs. 353) and USDA quality grades.

◆ Loin steaks from calf-feds had significantly lower shear force values and significantly higher sensory scores for tenderness, flavor and overall acceptability. When adjusted to a constant marbling score, calf-feds were still significantly lower in shear force and significantly higher in tenderness and overall acceptability.

These results show that it is possible for calf-feds to have higher quality grades and better eating qualities than yearling-feds (Brewer et al. 2003. Nebraska Beef Cattle Report, MP 80-A).

No Association Between Residual Feed Intake and Carcass Composition

Residual feed intake (RFI) is defined as actual feed intake minus expected feed intake. Animals exhibiting a negative RFI have been shown in previous research to be more efficient than those having a positive RFI. In this study,

Alberta Agriculture and Univ. of Alberta scientists grouped 75 steers of three frame sizes into three (High, Medium, Low) RFI groups. Carcass compositions was determined by physical separation into three components—muscle, fat and bone. Nine wholesale cuts were also separated into these components. As expected, there was a clear relationship between frame size and composition. Large framed steers had more lean muscle deposition than medium framed steers and medium framed steers deposited more lean muscle than small framed steers. Conversely, there was an opposite trend for fat deposition. There was no association between RFI groups and carcass composition. The authors concluded that differences in RFI do not translate into composition differences in either the whole carcass or in wholesale cuts. In contrast, Texas workers (Carstens et al., 2002), reported a tendency for carcasses from low RFI steers to be leaner than those from high RFI steers (Wang et al. 2002. J. Anim. Sci [Suppl. 1]: 214).

Effects of Intervention Strategies to Reduce *E. coli*: 0157:H7 Shedding

Previous research has shown that adding competitive exclusion products (“probiotics”) containing *Lactobacillus acidophilus* organisms to the diet of feedlot cattle may reduce numbers of *E. coli* 0157:H7 shed in the feces. In this Univ. of Nebraska study, two experiments examined the effect of feeding two different *L. acidophilus* products in the diet of finishing steers at the rate of 1 billion colony forming units/steer/day. Although the differences were not statistically significant, there was a clear tendency for the supplemental groups to shed fewer 0157:H7 than the control steers. In one of the two experiments, a change during the final 14 days to a high-fiber, low-starch diet failed to cause a reduction in 0157:H7. Furthermore, the dietary shift resulted in a highly significant decline in carcass weight (793 vs. 812 lb). This study suggests that competitive exclusion organisms show promise of reducing the shedding of 0157:H7 in feedlot cattle (Folmer et al. 2003. Nebraska Beef Report, MP 80-A).

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