

Feeding Carrots or Sugar Beets to Cattle

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Root crops such as carrots and sugar beets can be fed to beef cattle. The nutrient contents are shown in Table 1. Root crops can have ash contents greater than listed in the table due to soil contamination. Long term storage may be a challenge with root crops.

Table 1. Comparison of nutrient composition of carrots and sugar beets to corn silage, hay and corn grain

Feed	DM, %	TDN, %	ME, Mcal/lb	CP, %	Fat, %	Ash, %	Ca, %	P, %	K, %	S, %
Carrots	12	84.0	1.35	9.9	1.4	8.2	.40	.35	2.80	.17
S. beets	20	75.1	1.23	6.8	.6	5.5	.24	.24	1.52	.06
Hay ^b	88	57.0	.94	15.5	2.4	9.7	.83	.25	1.78	.28
C. silage	35	72.0	1.18	8.7	3.1	3.6	.25	.22	1.14	.12
Corn	85	90.0	1.48	9.8	4.1	1.5	.09	.29	.44	.11

^a All nutrients except dry matter (DM) expressed on a DM basis

^b Alfalfa brome mixture (50:50)



Sugar beets

It is recommended to process sugar beets prior to feeding to eliminate the possibility of lodging in the esophagus or trachea and causing bloat or choke. This is likely more of a problem with small rather than large

sugar beets. Mashing the sugar beets by driving over them with a tractor may be sufficient processing. Sugar beets have a nutrient profile similar to corn silage. They may be most suited for use in cow and backgrounding/growing diets. The high sugar content may limit the use in backgrounding/growing diets to 20% of the dry matter (DM). Up to 50% of ration DM could be used in cow diets.

Carrots

Carrots are quite palatable and readily consumed by cattle. Carrots have 91% the metabolizable energy value of corn, on a DM basis. There is a popular press report that indicates 40% of a feedlot diet DM as carrots did not cause any deleterious affects. Feeding high levels of fresh

carrots may cause some scouring which can be minimized by storage for a few weeks. Carrots can also serve as an energy source in cow diets. A report indicated cows will eat up to 35 lb of carrots per day.

Pricing the root crops

Both root crops contain a lot of water so make sure the price reflects that. It is recommended to value these root crops on a DM (water free) basis and similar weight units. For example, suppose you were offered carrots at \$20/ton and you wanted to compare it to \$5.70/bu. corn. The value of carrots is a function of the energy content and moisture level. The first step is to convert corn price to \$/ton. There are 35.7 bu./ton (2000/56) of U.S. #2 corn (56 lb/bu.). Therefore, a ton of corn costs \$203.49/ton (as is) or \$239.40 (\$203.49/.85) on a DM basis. The cost of carrots on a DM basis is \$166.67/ton (\$20.00/.12). The carrots have an energy content of 1.35 Mcal of ME/lb of DM and a moisture level of 88%. Corn has 1.48 Mcal of ME/lb of DM and a 15% moisture level. The cost per Mcal of ME from corn and carrots would be \$.81 (\$239.40/(1.48 x 2,000)) and \$.62 (\$166.67/(1.35 x 2,000)), respectively. In this price comparison, carrots

continued on page 2

CONTENTS

Apples and Apple Pomace	2
Iodine Deficiency	3
Direct-Fed Microbial Research	4
Events Calendar	5
Managing Winter Feeding Sites	6
2009 Michigan BSE Clinics	7

were a better buy. The conclusion may change when the price relationship between corn and carrots is different. Tables 2 and 3 present the values of carrots and sugar beets at different corn and hay values. In the tables, no price adjustments were made for protein differences in the diets.

Table 2. Value of carrots and sugar beets as a replacement for corn in cattle diets with various corn prices

Value of corn				Value of carrots		Value of sugar beets	
\$/bu. (as-is)	\$/ton (as-is)	\$/ton DM	\$/Mcal ME/cwt	Equiv. price \$/ton DM	\$/ton (as-is)	Equiv. price \$/ton DM	\$/ton (as-is)
3	107.10	126	.04	114.93	13.79	104.72	20.94
4	142.80	168	.06	153.24	18.39	139.62	27.92
5	178.50	210	.07	191.55	22.99	174.53	34.91
6	214.20	252	.09	229.86	27.58	209.43	41.89
7	249.90	294	.10	268.18	32.18	244.34	48.87

*Corn DM = 85%; carrot DM = 12%; sugar beet DM = 20%

Table 3. Value of carrots and sugar beets as a replacement for hay in cattle diets with various hay prices

Value of hay			Value of carrots		Value of sugar beets	
\$/ton (as-is)	\$/ton DM	\$/Mcal ME/cwt	Equiv. price \$/ton DM	\$/ton (as-is)	Equiv. price \$/ton DM	\$/ton (as-is)
60.00	68.18	.04	97.92	11.75	89.22	17.84
80.00	90.91	.05	130.56	15.67	118.96	23.79
100.00	133.64	.06	163.20	19.58	148.69	29.74
120.00	136.36	.07	195.84	23.50	178.43	35.69
140.00	159.09	.08	228.48	27.42	208.17	41.63

*Hay DM = 88%; carrot DM = 12%; sugar beet DM = 20%



Michigan Feed Exchange

The Michigan Farm Bureau has created a website for those wishing to buy or sell feed commodities (including sugar beets, carrots, and apples)

www.michfb.com/feed

Feeding Apples or Apple Pomace in Cattle Diets

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Apples and apple pomace can be fed to beef cattle. The composition of apples and apple pomace are shown in Table 1. Apples have an energy value similar to corn silage, but with less crude protein. Apple pomace has considerably less metabolizable energy (ME) content than corn silage and only serves as an energy replacement for poor to average quality hay.

Little information is available on feeding apples so a precautionary strategy would be to have a dietary inclusion rate less than 20%. Studies from the first half of the 20th century were concerned about ruminal parakeratosis (damage and clumping of the ruminal epithelium) when apples were fed at high levels. More information is available on feeding apple pomace. From 40-60 pounds (as-fed) can be given to beef cows daily. Apple pomace works better in diets of cows with low energy demands, such as the second trimester of pregnancy. The total diet should be evaluated so that it is formulated to provide adequate protein.

The economic values of apples and apple pomace as replacements for hay or corn at different prices are shown in Tables 2 and 3. Apple pomace is not priced relative to corn as its energy value is too low to use as a replacement for corn. The prices in the tables represent the values on your farm and do not include transportation costs. Values for apple pomace and apples do not include adjustments for protein, as most forages in Michigan have excess protein content relative to the cow's requirements.

continued on page 3

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Table 1. Comparison of the nutrient profiles for apples and apple pomace with corn silage and corn (all nutrients except DM expressed on a DM basis)

	Apples	Apple pomace	Corn silage	Corn
Moisture, %	82.1	82.3	65.0	15.0
Dry matter, %	17.9	27.7	35.0	86.0
TDN, %	69.70	63.40	72.0	90.0
ME, Mcal/lb	1.15	0.65	1.18	1.48
Fat, %	2.20	2.60	3.10	4.1
Crude protein, %	2.80	4.30	8.70	9.8
Crude fiber, %	7.30	38.2	19.5	2.3
Calcium, %	0.06	0.15	0.25	0.03
Phosphorus, %	0.06	0.12	0.22	0.32
Potassium, %	0.78	0.58	1.14	0.44
Magnesium, %	0.28	0.07	0.18	0.12
Sulfur, %	0.06	0.11	0.12	.11
Sodium, %	0.06	0.01	0.01	.01

Table 2. Value of apples as a replacement for corn in cattle diets with various corn prices

	Value of corn			Value of apples	
	\$/bu (as-is)	\$/ton (as-is)	\$/ton DM	\$/Mcal ME/cwt	Equiv. price \$/ton DM
3	107.10	126	.04	97.91	17.53
4	142.80	168	.06	130.54	23.37
5	178.50	210	.07	163.18	29.21
6	214.20	252	.09	195.81	35.05
7	249.90	294	.10	228.45	40.89

^aCorn DM = 85%; apple DM = 18 %

Table 3. Value of apples as a replacement for hay in cattle diets with various hay prices

	Value of hay			Value of apples		Value of apple pomace	
	\$/ton (as-is)	\$/ton DM	\$/Mcal ME/cwt	Equiv. price \$/ton DM	\$/ton (as-is)	Equiv. price \$/ton DM	\$/ton (as-is)
60.00	68.18	.04	83.41	14.93	47.15	13.04	
80.00	90.91	.05	111.22	19.91	62.86	17.38	
100.00	133.64	.06	139.02	24.89	78.58	21.73	
120.00	136.36	.07	166.83	29.86	94.29	26.07	
140.00	159.09	.08	194.63	34.84	110.01	30.42	

^aHay DM = 88%; apple DM = 18 %; apple pomace DM = 27.7 %

Stillborn Calves in Michigan Linked to Iodine Deficiency

Dr. Jeannine Grobbel, Livestock Extension Educator

Last spring, stillborn calves were being reported in Michigan beef cow-calf herds where a large proportion of the diet consisted of sugar beet pulp. The losses were attributed to iodine deficiency, even though these herds were supplementing cows with a trace mineral mix that included iodine. Sugar beet pulp, as well as other alternative feed stocks, has the potential to be goitrogenic. Therefore, increased iodine supplementation is suggested when including beet pulp, turnips, or other goitrogens as a primary component of the diet.


The thyroid gland requires iodine to make thyroid hormone which is important for regulating metabolism. When insufficient iodine is available to the thyroid gland, a condition called goiter occurs which is characterized by an enlargement of the thyroid gland. In adult cattle,

clinical problems from goiter are rarely seen, but can result in reduced fertility and milk yield. However, congenital goiter in developing fetuses can occur when iodine deficiency occurs in the dam. Calves with congenital goiter may be stillborn or weak at birth. They may also be blind and lack a full haircoat.

Goitrogens are dietary components that inhibit iodine uptake from the gut and potentially resulting in the development of goiter. Examples of goitrogens are brassicas like turnips, rape-seed, or kale. Parts of other feeds such as white clover, carrots, linseed, cassava, sweet potatoes, lima beans, millets, peanuts, cottonseed, and soybeans also have the ability to decrease iodine uptake. Sugar beet pulp may also be associated with iodine deficiency. Even when the dietary levels of iodine are sufficient, feeding a ration with goitrogens can lead to iodine deficiencies and subsequent goiter. High calcium levels in drinking water may also decrease the adsorption of iodine. When iodine levels in the ration are already marginal, the risk of goiter increases.

Soils in the Great Lakes, Midwest, Northeast, and Rocky Mountain regions have been shown to be deficient in iodine levels. This results in crops and feedstuffs that are also low in iodine.

Iodine requirements for beef cattle are 0.23 mg/lb diet or 0.5 ppm (range of 0.2 – 2.0) of the total diet, as indicated by the National Research Council. This requirement of 0.5 ppm is raised to 1.0 – 2.0 ppm if goitrogens are present in the diet. The maximum tolerable level in the diet of beef cattle is 50 ppm. Sources indicate that if 25% or more of the diet is made up of feedstuffs associated with goitrogenic crops, then dietary iodine levels should increase to 1.0 ppm, especially for cows in late gestation or early lactation.

On the label of free-choice mineral mixes, iodine may be in the form of calcium iodate or ethylenediamine dihydroiodide, which are both quite stable and available. Additional supplementation of iodine in less stable forms (more susceptible to loss of iodine with exposure to light, heat, moisture, or other factors) includes potassium or sodium iodide, which are often used to fortify salt with iodine. Iodized salt is still a recommended source of supplemental iodine for all parts of the country, especially where origin of crops is unknown. 

For more on iodine supplementation, visit www.saltinstitute.org/47q.html

Effects of a Direct-fed Microbial to Steers Fed High Moisture Corn and Wet Distillers Grains

Dr. Steven Rust, MSU Dept. of Animal Science

Numerous studies have been conducted that demonstrate a small but significant improvement in feed conversion efficiency when a direct-fed microbial product containing a combination of *Lactobacillus acidophilus* (strain LA51) and *Propionibacterium freudenreichii* (strain PF24) was added to conventional corn-based feedlot diets. The purpose of this study was to determine whether this direct-fed combination of bacteria would improve feed conversion efficiency when wet distillers' grains with solubles were added to the diet.

Methods

Two hundred eighty crossbred beef steers weighing 847 lb (mostly black-hided) were purchased from Kentucky and West Virginia. After arrival at Michigan State University Beef Cattle Teaching and Research Center (BCTRC), the steers were vaccinated for IBR, PI₃, BVD, BRSV (Bovi-Shield Gold 5[®]) and 7-way Clostridium (Ultrabac[®] 7). Steers received a RFID ear tag for individual identification. At the first weigh period (28 d), steers were treated for parasites and given a Revalor[®]-S implant. The experimental design was a randomized complete block in which the steers were allocated to pens to assure homogeneous groups within and among pens. Cattle were allocated to pens based on the initial weight, purchase group, and hide color. The design included 4 treatments with 10 pen replications per treatment for a total of 40 slatted floor pens containing 7 animals each. Initial and final live weights were the average of two weights taken on consecutive days.

The direct-fed microbial treatments were combinations of *Lactobacillus acidophilus* (strain LA51) and *Propionibacterium freudenreichii* (strain PF24). The four dietary treatments were as follows: 1) control, no supplementation; 2) 10⁹ cfu PF24 + 10⁵ cfu LA51 per hd/d; 3) 10⁹ cfu PF24 + 10⁶ cfu LA51 per hd/d, and 4) 10⁹ cfu PF24 + 10⁷ cfu LA51 per hd/d. Feedlot staff were blinded to treatments during the trial. All four treatments were top-dressed. For each treatment, 35 lb of dry ground corn and a packet containing the assigned freeze-dried microbial treatment were blended in a cement mixer. Each steer, within a treatment, received 0.5 lb of this corn-microbial blend. For a pen of 7 steers,

3.5 lb of the resulting blend were placed onto the top of the daily feed delivery to the bunk and manually mixed. Feedlot diets were comprised of 54% high moisture corn, 31% wet distillers' grains, 7% corn silage, 3% hay, and 4% protein-mineral supplement (Table 1). The diets were formulated to ensure the total diet provided adequate protein, vitamins and minerals as defined by NRC (1996). Diets contained 60.1% DM and 16% CP. Rumensin[®] was added to the supplement to provide 320 mg of monensin per lb of supplement.

The three treatments containing the combination of bacteria were pooled for this analysis. The average dose level for the pooled treatment was 1×10⁹ cfu/hd/d of PF24 + 1×10⁶ cfu/hd/d of LA51. Average daily dry matter consumption, average daily gain, and feed conversion efficiency were determined. Final performance results are reported on a shrunk live weight (4% shrink) and carcass-adjusted basis. Carcass-adjusted ADG was calculated from a final weight derived by division of hot carcass weight including the kidney knob by .625. Cattle were sent to the Tyson Fresh Meats, Inc., Joslin, IL harvest facility when visually estimated to grade 75% USDA Choice or greater. Post-harvest, hot carcass weight, backfat thickness, ribeye area, KPH, marbling, quality grade, and yield grade were recorded.

Table 1. Ingredient and nutrient composition of the ration

Ingredient	DM content of feedstuff, %	Crude protein content of feedstuff, % (DM basis)	Amount in ration, % (DM basis)
High moisture corn	71.57	8.53	54.4
Wet distiller's grains	50.04	32.55	30.8
Dry ground corn ^a	89.09	8.70	1.7
Corn silage	38.32	7.42	6.8
Hay	88.27	13.38	3.2
Limestone	100.00	---	2.2
TM Salt	100.00	---	.6
Urea	99.00	281.00	.24
Akey TM premix #4	100.00	---	.08
Vitamin E	100.00	---	.002
Rumensin 80 ^b	100.00	---	.013

^aDry ground corn was used as a carrier for the direct-fed microbial

^bMonensin added to diet at rate of 28 ppm

Results and Discussion

A greater number of animals were removed from the study because of joint swelling and lameness than is usually observed in this facility. Historically, one percent or less has been removed from studies due to lameness; in this study, 3.6% were removed because of lameness. Most of the lameness was from swollen joints. Diagnosis by Dr. Dan Grooms indicated three potential sources of the joint swelling, Mycoplasma bovis (pneumonia followed by septicemia and septic arthritis), trauma (housed in closed confinement on

continued on page 5

concrete), or *Histophilus somnus* (septic arthritis). The potential sources of the joint swelling were not related to dietary treatments.

Weight gain and dry matter intake were similar among treatments (Table 2). Overall feed efficiency tended to be better for the direct-fed microbial treatments when expressed on a shrunk live weight ($P = 0.15$) basis. When expressed on a carcass gain basis (hot carcass weight/0.625), cattle fed the direct-fed microbial treatments were more efficient ($P = 0.06$). Ration energy values calculated from performance had a numerical advantage ($P < 0.16$) for the direct-fed treatment.

The effects of treatments on carcass characteristics are shown in Table 3. There was numerical advantage ($P=0.14$) for cattle fed the direct-fed microbial treatments to have larger ribeye areas than the control cattle. The other carcass traits were similar among treatments.

In summary, feeding a direct-fed microbial was beneficial in improving feed efficiency (+2.8%) in this study. The responses to direct-fed microbials in diets containing 31% modified wet distillers' grains with solubles (DGS) were similar to the results reported in a seven trial summary utilizing the same microorganisms and traditional feedlot diets without DGS (McPeake et. al., 2002). It appears that feeding 1×10^5 or 1×10^6 cfu/hd/d of *Lactobacillus acidophilus* strain LA51 in combination with 1×10^9 cfu/hd/d of *Propionibacterium freudenreichii* (strain PF24) is the optimum level (data not shown). The dose to optimize performance in this study supports the results from other studies (D. R. Ware; Nutritional Physiology, Corp., personal communication). Feeding the direct-fed microbial containing a combination of *Lactobacillus acidophilus* and *Propionibacterium freudenreichii* has also been shown to reduce shedding of *E. coli* 0157:H7 in feedlot steers. D.R. Ware suggests it takes a higher dose to reduce shedding.

Table 2. Direct-fed microbial treatments affects on performance.

	Control ^a	Direct-fed ^a	Prob.	95 % Confidence Interval ^b
# Steers	68	201	---	---
# Pens	10	30	---	---
In wt., lb	847.1	846.7	.55	845.7-848.7
Out wt., lb	1339.7	1347.3	.51	1314.1-1360.4
Shunk ADG, lb	3.23	3.29	.47	3.05-3.37
Carc. Adj ADG, lb	3.53	3.59	.45	3.35-3.68
DMI, lb/d	22.24	22.03	.65	21.38-23.18
Shunk gain/feed	.1451	.1494	.15	.1383-.1503
Carc. Adj gain/feed	.1588	.1633	.06	.1531-.1623
Carc. Adj. feed/gain	6.17	6.00	.07	6.04-6.41
ME, Mcal/lb	1.57	1.60	.15	1.51- 1.60
NE _m , Mcal/lb	1.12	1.17	.15	1.05-1.18
NE _g , Mcal/lb	.71	.72	.16	.68-.73

^aControl (no bacteria added to the diet); Direct-fed- average of three treatments which contained 1×10^9 cfu/hd/d of *Propionibacterium freudenreichii* strain PF24 and 1×10^6 cfu/hd/d of *Lactobacillus acidophilus* strain LA51

^b95% Confidence Interval- means not within the range listed differ


Table 3. Direct-fed microbial treatments affects on carcass characteristics

	Control ^a	Direct-fed ^a		95 % ^b Confidence Interval
# Steers	68	201	---	---
Dress, %	62.0	61.9	.66	61.5-62.58
Shrunk dress, %	64.6	64.5	.66	64.08-65.2
Hot car. wt., lb	829.6	834.5	.48	814.1-842.5
Backfat, in.	.54	.54	.97	.49-.59
Ribeye area, in ²	13.22	13.47	.14	12.81-13.50
KPH, %	2.00	1.98	.40	1.96-2.05
Calc. YG	3.18	3.10	.42	3.01-3.37
Grader YG	2.74	2.72	.82	2.53-2.96
Marbling ^c	557.1	553.6	.77	533.2-582.8
Quality grade ^d	17.87	17.93	.74	17.8-18.1
CAB, %	26.4	21.0	.32	16.9-38.7
Choice & Prime, %	77.9	77.7	.98	65.4-90.4

^aControl (no bacteria added to the diet); Direct-fed- average of three treatments which contained 1×10^9 cfu/hd/d of *Propionibacterium freudenreichii* strain PF24 and 1×10^6 cfu/hd/d of *Lactobacillus acidophilus* strain LA51

^b95% Confidence Interval- means not within the range listed differ

^cMarbling score: 500=small; 600=modest

^d17=Select+; 18=Choice- 

Upcoming Events Calendar

MI Cattlemen's Association Annual Conference

Jan 24 Sheraton, Lansing
Contact: MCA office (517) 347-8117

2009 Cattle Industry Annual Convention & NCBA Trade Show

Jan 28-31, Phoenix, AZ
Contact: www.beefusa.org

Agriculture's Conference on the Environment DISCOVER: Balancing Priorities Can Make a Difference

Jan. 28 • Lansing Center, Lansing
Contact: www.maeap.org/ACE or Jim Van Arkel (517) 241-2232

2009 Great Lakes Professional Cattle Feeding and Marketing Shortcourse

Jan 27, Feb 10 • E. Lansing, MI
Contact: Steven Rust (517) 432-1390
Jan 28, Feb 11 • Bowling Green, OH
Contact: Steven Boyles (614) 292-7669
Jan 29, Feb 12 • Wyoming, Ontario
Contact: Bryan Boyle (519) 845-0809 x408

Saving More Calves at Calving Time

Jan 29, Feb 5 • Clarksville, MI
Contact: Kevin Gould (616) 527-5357

Manure \$ense: Making the most with your manure

Feb. 3 • RESA Center, St. Johns
Feb. 17 • Farm Bureau Building, Bad Axe
Feb. 25 • Miller Library, Zeeland
Contact: www.animalagteam.msu.edu or Faye Watson (517) 353-3174

MSU Cow-Calf Management and Technology Seminar

Feb 17 • Marquette
Contact: Frank Wardynski (906) 884-4386
Feb 18 • Gaylord
Contact: Janice Rumph (231) 839-3001
Feb 19 • E. Lansing
Contact: Glynn Tonsor (517) 353-9848

Managing Beef Winter Feeding Sites to Protect the Environment and Save Fertilizer \$

*Jerry Lindquist, Osceola County MSU Ext. Director
Natalie Rector, MSU Ext. Manure Nutrient Educator*

As beef cow producers bring the herd in from summer pastures to smaller lots for the winter season they should consider two potential conditions they are creating. The first condition is an opportunity to gather a winter's worth of manure in a small location, value this fertilizer and then utilize it in the spring. The second condition is to accomplish the first condition before snow melt and spring rains potentially wash the nutrients away.



Rather than utilizing the entire pastures as they do during the growing season, cows are more efficiently taken care of during the winter by congregating them on smaller lots and providing them with feed, water and wind protection. These areas are likely to become void of vegetation, the soil will become compacted and manure nutrients will accumulate. When spring thaw and rains arrive, this can set the stage for run-off of soil and nutrients to surface waters. With this runoff goes valuable fertilizer that could be better utilized for crop production.

Value of manure nutrients

The economic value of those lost nutrients from a winter's worth of deposited manure can be staggering at today's fertilizer prices. The cost of fertilizer nutrients has increased three to four times over the last two years and

so has the value of the nutrients in manure. In one day, the average 1,250 pound beef cow produces 75 pounds of manure and urine. This manure has approximately 0.31 pounds of nitrogen (not all of this is retained), 0.19 pounds of phosphate, and 0.26 pounds of potassium. These manure nutrients when compared to commercial fertilizer (as of Sept. 2008) are worth roughly \$0.54/cow/day (not including the value of the micronutrients nor the organic matter). Over the course of 180 days of winter feeding each cow will drop \$97 of manure nutrients. In a typical Michigan herd with 25 cows, four heifers and one bull, this manure value is \$2,910 per year. Manure has become a valuable resource!

Depositing manure in the same lot, year after year, and not collecting and spreading it in the spring, is a missed opportunity. With potash and urea each approaching \$1,000 per ton, fewer cow/calf operators can afford to purchase these fertilizers for hay and pasture. Reallocating the manure nutrients from the winter lot to the surrounding pastures and hay fields will benefit the crops, help your pocket book and protect the environment. Soil testing both the wintering area and the surrounding fields will indicate where manure nutrients are best be utilized.

Site selection

Generally cow herd wintering sites are selected because of their location to feed, fresh water, wind shelter, water drainage, and ease of manager inspection. The most important site consideration from an environmental standpoint is to keep the livestock as far away as possible from surface water, which can often be accomplished by also locating the feed as far away as possible. These wintering sites, no matter how flat the slope, will experience some spring runoff. Sometimes this occurs while the soil is still frozen which increases the distance the nutrients will move. The greater the distance this runoff moves over adjoining pasture land or crop fields before it reaches surface water the greater the chance for the nutrients to settle in the farm land benefitting crops rather than reaching surface waters and contributing to aquatic weed growth. Maintenance of natural grass and wooded riparian areas is also important to water protection.

Reseeding winter areas

If the sod is destroyed in the winter area, consider reseeding it in the spring. Sorghum/sudans, millets,

continued on page 7

corn or pasture grasses can all be planted on these sites. It is best to plant harvestable crops on these sites and feed them somewhere else as if the cattle graze the crop many of the nutrients in the crop are just recycled back in the cattle manure. Soil testing the site will show the value of the existing nutrients and no additional fertilizer may be needed. A soil nitrate test will also be valuable for determining if there is sufficient nitrogen available and may also indicate if excessive levels could lead to accumulation in the feed crop, leading to toxicity or reproductive issues for the cows. Depending on the amount and concentration of the manure, it may be best to scrape and haul the top layer away or redistribute it in the pastures or crop fields prior to planting.




Feed and livestock management

Simply reducing the days that the cows are in the winter feeding sites can better balance and utilize the manure. Cows do not necessarily need to go to the winter lot until winter truly begins and can possibly leave before spring calving. Cows can walk a quarter of a mile or more for water, so even hay fields or crop stubble fields that have limited access to water can have temporary fencing installed and round bales fed for one or more of these months. Many years these fields will firm up in early winter so little hoof damage is done to hayfield sods, or minimal soil compaction is done to grain fields. The key is to monitor the fields, rotate feeding sites, and pull the cows when vegetation damage begins.

When using round bale feeders, move the feeder ring after each bale is fed. Round bale feeders left in the same location all winter will destroy the surrounding sod, compact the soil, and concentrate nutrients in that location. Systematic linear movement of round bale feeders across a field like an advancing army, commonly called "bale grazing", will go a long way in providing more uniform manure distribution. Starting this feeding

line at the opposite end of the field from where the water and mineral source is located is one way to have the cows spread the manure across the field more uniformly.

The greatest challenge in letting the cow herd spread the manure versus a manure spreader is achieving uniform distribution and utilization. By using feed, mineral, water, shade, and temporary fencing to control the cow's summer and winter movement and congregation not only will more uniform distribution be achieved, but there will be less damage to the sod.

Despite the current market trends, there are opportunities for cow/calf producers to lower costs of production and realize a profit. Better management of manure nutrients at winter feeding sites is one of those ways! 

2009 Michigan Bull Breeding Soundness Exam Clinics

The MSUE Beef Team encourages you to have a BSE conducted on your breeding bulls every year. Contact your veterinarian or take advantage of the following Breeding Soundness Exam Clinics organized by MSUE. To schedule an appointment at one of these BSE clinics, please call the appropriate contact person as soon as possible. The MSU College of Veterinary Medicine also regularly schedules in house appointments for BSE's. To schedule an appointment contact the MSU CVM Large Animal Clinic at 517-353-2964.

Location: Andy and Lynn Salinas Farm, Marion MI
Date: Friday, March 13, 2009
Contact: Andy Salinas at 231-743-6775

Location: Garry Voogt Farm, Marne MI
Date: Saturday, March 14, 2009
Contact: Kevin Gould at 616-527-5357

Location: MSU College of Veterinary Medicine
Date: March 21, 2009, or by appointment
Contact: Dr. Dan Grooms at 517-432-1494

Location: MSU Lake City Experiment Station
Date: Friday April 17, 2009
Contact: Janice Rumph at (231) 839-3001

Location: Chuck Preston Farm, Prescott MI
Date: Saturday April 18, 2009
Contact: Fred Hinkley at 989-345-0692

Location: Upper Peninsula of Michigan
Date: April 20-24, 2009
Contact: Ben Bartlett at 906-439-5880

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United States Department of Agriculture
2265C Anthony Hall
Michigan State University
East Lansing, MI 48824-1225

AN AFFIRMATIVE ACTION/EQUAL OPPORTUNITY INSTITUTION
ADDRESS RETURN SERVICE REQUESTED

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