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IN THIS ISSUE

How Feed Efficiency Affects the Profitability and Environmental Impact of Feedlot Cattle

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The analogy of farm animals as manufacturing machines has been employed for a long time to represent the different aspects of the whole animals' energetic metabolism. Similar to machines, animals consume fuel (feed), produce a product (carcass) and, in accordance with their production level, energy will be lost, mainly as heat and gas emissions. Therefore, the lower the energetic losses relative to the energetic input (feed intake), the greater the animal's energetic efficiency. Differences in energetic efficiency may have important economic and environmental implications.

At the Elora Beef Research Center, University of Guelph, leading edge equipment for assessing metabolic differences in cattle with known feed efficiency is currently in operation. This equipment features individual cattle stalls equipped with head chambers designed to continuously sample gasses (Figure 1).

Figure 1. Feedlot steers in individual stalls for 24h continuous gasses assessment at Elora Beef Research Center, University of Guelph.

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While an animal is restrained in the stall, sensors monitor the consumption of oxygen and the production of both carbon dioxide and methane, with measurements being taking each second. These measurements allow the calculation of metabolic heat production of the animal (indirect calorimetry).

An animal's metabolic rate has a profound effect on the efficiency of feed utilization. The indirect calorimeter is the gold standard for equipment for evaluating metabolic rate in cattle. While not directly usable on commercial farms, its application on research centers, for testing alternative assessments which could be applied in commercial herds for feed efficiency, is crucial. The ultimate goal of these investigations is to fully evaluate the application of potential indicators for feed efficiency such as infrared thermography, blood plasma parameters (hormones and metabolites) and behaviour traits.

The experimental procedure for evaluating potential indicators for feed efficiency includes a 112 day feeding test to assess individual feed intake on a daily basis, plus body weights and ultrasound data collected every 28 days. At the end of the test, these data are used for ranking cattle according to feed efficiency. Following this, cattle with from each extreme of the efficiency ranking are selected for gasses measurement. (For example, out of 120 steers the 12 best and the 12 worst for feed efficiency would be selected) Each of these animals then have their gasses sampled for 24hrs in the calorimeter. At the same time, infrared pictures of 8 different body locations (e.g. feet, snout, eye, flanks) and blood samples are collected on an hourly basis to study how hormones and metabolite concentrations change over the 24h. In addition, pedometers are placed in these cattle during the 24h sampling period to quantify number of steps and time spent standing or lying down.

Feedlot steers (mainly Angus and Simmental crosses) were fed a ration of 80% high moisture corn, 12% haylage, 5% soybean meal and 3% mineral premix. Preliminary results revealed that high feed efficiency steers were consuming around 3 kg less feed a day (as fed basis) during the 112 days of feedlot than low efficiency cattle. This represents about 336 kg less feed per head for cattle which achieved the same body weight and carcass composition at the end of feedlot period. This equates to saving a tonne of feed for every 3 high efficiency cattle fed. The calorimetry data is also encouraging. These data indicated that high efficiency steers have significantly more efficient "metabolic engines". High efficiency steers produced around 20% less heat and 40% less methane than low efficient cattle. The lower methane production of the high efficiency cattle not only represents a great environmental benefit for this type of cattle, but also helps to explain their efficiency advantage since methane (a combustible gas) is an important avenue for energy loss in cattle.

We are currently analyzing these data in conjunction with infrared data and blood parameters. We expect to have more clues regarding the identification of more efficient cattle in the near future.

We would like to thank the staff at Elora Beef Research Center for their assistance with these laborious trials, and also our big crew of volunteers (28 hard working students), as well as the support from Beef Cattle Research Council, OMAFRA and Ontario Cattlemens Association.

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Distillers Grains and Soybean Hulls – A Complementary Combination for Cattle Performance

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Introduction

The profitability and ultimately the sustainability of any beef farm largely depends upon the operator's ability to add value to both home grown and purchased feed ingredients by feeding them to cattle. Given the strong market prices for corn experienced in the past few months, adding value to corn by feeding it to beef cattle has become a challenge. It has spurred on the interest of many beef producers to consider other effective alternative feed ingredients to replace at least some of the corn in beef rations.

Soyhulls and distillers grains are two examples of by-product ingredients that can be effective in sustaining or even improving cattle performance while reducing feed costs. Research in recent years is suggesting that combining these two feed ingredients in beef rations can be an effective replacement for corn.

Soybean Hulls

Soybean hulls and soybean oil meal are by-products of the soybean processing industry, where soybeans are processed for oil extraction. The hulls are made up of the seedcoats of the soybeans that are removed during the process. These hulls are usually toasted to destroy urease activity and ground to the desirable particle size. They can be purchased in a pelletted form as well as a loose form. Soybean hulls or "soyhulls", as they are often referred to, consist mainly of highly digestible fibre and are low in starch content. Both of these attributes make them a good potential alternative feed ingredient for ruminants. They are particularly valuable as a supplement for beef cattle on a high forage diet, as they are a good source of energy and are also beneficial to overall fibre digestion. Several research

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projects have illustrated their value in beef rations. The energy value of soyhull is often reported to be lower than grain corn, similar to oats or ear corn meal. However, it has been shown that when soyhulls are substituted for grain corn on a one to one basis as a portion of high forage based rations, they are capable of supporting similar animal performance. This suggests that in this situation, the energy level of soyhulls is very similar to grain corn.

Distillers Grains

Distillers grains were originally only generated as a by-product of alcohol beverage plants. Now, with the growth of corn based ethanol production and the presence of six dry-milling plants operating in Ontario, they are becoming a more common alternative feed ingredient. Like soyhulls, distillers grains are low in starch and high in fibre. Several research trials have demonstrated their value as an effective source of energy, protein and phosphorus in all stages of production for beef cattle. Distiller's grains from ethanol plants can be purchased and utilized in different forms: Distillers Dried Grains with Solubles (DDGS), Wet Distillers Grains (WDG), Modified Distillers Grains (MDG) and Condensed Distillers Solubles (CDS). Distillers grains are considered to have higher energy values than corn, but like soyhulls their energy value decreases slightly when included at rates beyond what is considered optimum.

Table 1. Example of nutrient content (dry matter basis) of shelled corn, DDGS, and soybean hulls

	Shelled Corn	Distillers Dried Grains With Solubes (DDGS)	Soybean Hulls
Crude Protein	9.0%	30.0%	12.0%
TDN	88%	90%	77%
Fat	4.3%	10.6%	2.1%
Calcium	0.02%	0.12%	0.55%
Phosphorus	0.30%	0.80%	0.17%
Sulphur	0.11%	0.80%	0.11%
By Pass protein	55%	55%	25%
NDF	10.8%	31.0%	60.3%

Combining Soyhulls and DDGS in Backgrounding Rations

Combining soyhulls and distillers grains for inclusion in beef backgrounding rations can be an effective strategy. While these by-products are similar in that they consist of relatively high fibre and have a low starch content, their individual nutrient profiles are different and can be quite complementary. Soyhulls are low in fat, crude protein and minerals such as phosphorus and sulphur while DDGS contain a more concentrated level of these nutrients (Table 1).

Florida researchers compared the performance of soybean hulls and DDGS in a backgrounding feed trial[1]. The 600 lb cattle were divided into 4 treatment groups for the 42 day trial. They were fed on a high forage diet (free choice bahiagrass hay) which was supplemented with either DDGS alone (6.17 lbs/hd/day), DDGS/SBH (4.19 lbs of DDGS & 2.16 lbs of soyhulls), SBH/DDGS (4.52 lbs & 2.11 lb) or SBH alone (6.87 lbs of soyhulls). As Table 2 summarizes, they discovered that the cattle on the two combinations of soyhulls and distillers grains had superior gains compared to either the soyhulls or DDGS fed alone. The DDGS/ SBH (4.19 DDGS & 2.16 SBH) combination resulted in the best feed conversion (7.69:1) while the other SBH/DDGS (4.52 & 2.11) combination resulted in slightly better gain (1.83 lbs).

This demonstrates that there may be a synergistic effect by combining these complementary by-products in high forage, backgrounding rations.

Table 2. Comparison of Dried Distillers Grains and Soybean Hulls as Supplements for Backgrounding Calves

	Co-product Supplement			
	DDGS	**DDG/SBH**	**SBH/DDG**	**SBH**
Initial bodyweight, lb	604	608	606	600
Bodyweight gain, lb/day				
Day 0-14	0.73	1.19	1.37	1.39
Day 14-28	1.98	2.07	1.78	1.48
Day 28-42	2.05	2.07	2.36	1.50
Day 0-42	1.59	1.76	1.83	1.45
Estimated mean hay intake, lb/d	6.0	7.16	7.95	6.45
Estimated total intake, lb/d	11.45	12.84	13.85	12.58
Feed: Gain	7.81	7.69	8.13	9.26

DDGS= 6.17 lb/d distillers dried grains; DDG/SBH = 4.19 lb/d DDG, 2.16 lb/d soybean hulls; BH/DDG= 4.52 lb/d SBH, 2.11 lb/d DDG; SBH,= 6.87 lb/d SBH.

Soyhulls and DDGS in Finishing Rations

Soyhulls are finely ground and because of this it is generally accepted that they can pass through the rumen quite rapidly. By supplementing them in high forage rations, that passage time is slowed down, allowing for more energy to be derived from them. Therefore, using soyhulls in a high concentrate (finishing) ration that has a high rate of passage that will potentially reduce their energy value and is not recommended.

However, researchers at the University of Illinois compared the performance of growing/finishing beef cattle when a combination of soyhulls and DDGS replaced part of the ration in a typical corn finishing diet. In this 196 day feeding trial they were also trying establish if there was an optimum length of feeding period for this DDGS/soyhull combination in a finishing ration. The two different diets fed are illustrated in Tables 3 and 4.

240 steers were used to determine the optimum length of time for feeding a diet containing 40% dried distillers grains with solubles (DDGS) and 35% soybean hull (SH, DM basis) to feedlot cattle. Treatments consisted of feeding the DDGS-SH diet for 56, 84, 112, 140, and 196 d before switching to a corn-based finishing diet. All cattle were harvested after 196 d. The performance results of this trial are shown in Table 5.

Table 3. Ingredients and nutrient composition of distillers-soybean hull diet

Ingredient	%, DM basis
Dried Distillers grain	40.00
Soybean hulls	35.00
Corn silage	15.00
Ground corn	9.01
Limestone	0.68
Rumensin (80)	0.02
Thiamine	0.03
Trace-mineralized salt[1]	0.10
Copper sulphate	0.01
Vitamins A, D, and E	0.01
Liquid fat	0.15
Nutrient composition	% DM basis
CP	17.1
ADF	29.4
NDF	47.4
Calcium	0.75
Phosphorus	0.44

Table 4. Ingredient composition of the finishing diet

Ingredient	%, DM basis
Dried Distillers grain	25.00
High-moisture corn	57.00
Corn silage	8.00
Ground corn	8.57
Limestone	0.65
Urea	0.50
Rumensin (80)	0.02
Trace-mineralized salt[1]	0.10
Copper sulphate	0.01
Vitamins A, D, and E	0.01
Liquid fat	0.15
Nutrient composition	% DM basis
CP	15.2
ADF	9.2
NDF	21.7
Calcium	0.52
Phosphorus	0.41

Table 5. Effect of length of time on a high distillers-soybean hull diet on live animal performance

Item	56	84	112	140	196
On-trial wt. (lbs)	667	674	671	671	667
56 DOF[1] wt. (lbs)	886	869	894	888	879
84 DOF wt. (lbs)	974	984	1005	1003	990
112 DOF wt. (lbs)	1068	1058	1087	1090	1062
140 DOF wt. (lbs)	1171	1169	1189	1201	1183
168 DOF wt. (lbs)	1263	1233	1267	1273	1275
Final live wt. (lbs)	1316	1294	1329	346	1353
Final SBW[2] (lbs)	1263	1242	1275	1292	1299
DMI [3] (lbs)	18.2	18.2	19.5	19.8	21.2
AFW [4] (lbs)	1310	1298	1330	1349	1354
ADG[5] (lbs/d)	3.31	3.21	3.39	3.49	3.54
Feed:Gain[6]	5.44	5.61	5.69	5.63	5.95

Notes:
[1]DOF = days on feed.
[2]SBW = shrunk body weight (Final BW × 0.96).
[3]DMI = dry matter feed intake
[4]AFW = hot carcass weight/0.6287 (average dressing percentage of all steers).
[5]ADG = average daily gain
[6]Generated using hot carcass weight

As shown in Table 5 performance summary, replacing part of the finishing diet with a combination of DDGS and soyhulls resulted in very similar cattle performance both from an average daily gain and feed conversion perspective. Although carcass quality results are not shown here, the combination of soyhulls and DDGS in the finishing ration had no negative impacts on carcass quality.

The Bottom Line

- Soyhulls and distillers grains are both effective by-product feed ingredients for beef cattle.
- Their high fibre and low starch content make them particularly good high forage ration supplements.
- Their nutrient profiles complement each other, enhancing their combined profile.
- The combination of soyhulls and DDGS in high forage backgrounding program may enhance animal performance.
- The combination of soyhulls and DDGS can be an effective replacement for some of the grain corn in a finishing ration.

The cost effectiveness from including soyhulls and DDGS will depend upon the price of these two by-products, compared to grain corn or other alternative ingredients at the time of feeding.

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Assessing Your Facilities for Safety and Serviceability

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A very simplistic definition of the Second Law of Thermodynamics states that everything goes from "order to disorder". This is very true when it comes to farm buildings! In this article I want to describe how to assess your beef buildings for future use. A lot can be learned by doing a systematic visual inspection of your buildings in a common sense approach.

You should assess your building in two major areas …

Safety

Is the building structurally sound?

Serviceability

Will it still perform the function that it was intended to?

Let's look at the following components while asking these two questions.

Posts and Trusses

First, look at how the basic structure is holding up – the posts and trusses. Examine the support posts. Have they been sitting in manure unprotected? Are they starting to rot, or has their diameter even been reduced by livestock chewing or constant wear from machinery operation? The other obvious thing is mechanical damage. Has a post been knocked out of alignment by a loader tractor or worse still, cracked or broken?

What about the trusses? Have any of the bottom chords (the horizontal truss segments closest to the floor) been broken by moving big bales with a loader? One broken bottom chord may not make a significant difference at the moment, as trusses are designed to work as a unit with those next to it. However, if two adjacent ones are broken or bottom chords are broken on several trusses, they need to be repaired. Don't forget about the single one either. Repairing it now will prevent a major problem developing in the future.

The other important items to inspect with roof trusses are the gusset plates (the flat pieces of metal which sandwich joints between truss members), especially the peak gusset plates if there is an open ridge (Figure 1). Beef barns need to ventilate, and that heat and humidity is usually exhausted up through an open ridge and out of the building. This means that this warm humid air will all pass over the gusset plate at the peak. Over time this can lead to severe deterioration in the gusset plates. Even though the wood can still be sound, if the connections let go the trusses can fail and lead to roof collapse. Alternatively, depending on the age of the building and how much moisture has accumulated in the truss area, the wood around the gusset

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plates may be affected by constant moistening and drying, and the connection between the truss members and the gusset plates may become weak.

There is also recent interest in putting solar panels on south facing beef barn roofs. The roof will not have been initially designed for the extra weight of the solar panels and the truss strength needs to be evaluated by an engineer. This is something that cannot be done by a routine visual inspection.

Figure 1. Gusset plates deteriorate with moisture and time

Electrical

It is also very important to evaluate the electrical system from a safety point of view. One of the major causes of barn fires is the failure of the electrical system, either by poor connections that overheat, or a variety of other electrical problems. Problems with electrical circuits are not as easy to determine visually as some structural issues. Some insurance companies offer thermographic inspections to determine if hot spots are occurring in the electrical system. It is important to visually inspect for rodent damage or dust and dirt build up near lighting fixtures or service panels that could lead to overheating or short circuits. The humidity in a beef barn will cause electrical components to deteriorate over time, similar to its effect on the structure. It is especially important to periodically inspect service panels to make sure the grounds are still in place and the components are working properly. This is best done by a qualified electrician.

Manure Storage

Many slatted-floor beef barns were constructed in the mid to late 1970's and early 1980's. These barns are now 30 years old or more, and even though they may have been well built at the time, manure acids and gases are quite corrosive. Manure acids will eat away at the concrete causing it to deteriorate and possibly flake off (Figure 2). Over time, manure gases can seep through concrete and start to corrode the reinforcing steel. This causes the steel to rust and expand causing the concrete around it to crack which allows more manure gases to enter, and the cycle goes on. These actions will affect not only the slats on the floor, but also the post and beams supporting them.

Figure 2. Slats, beams and posts deteriorate when exposed to manure gases

The slats may look fine from the top surface, but may be deteriorating underneath. An inspection should be done by an engineer if there are signs of deterioration. This needs to be done from underneath and precautions need to be taken when entering a confined space like a manure storage, or even removing a section of slats and trying to look underneath. A self contained breathing apparatus is necessary to avoid the risk of breathing manure gas.

Feeding

Silage acids will eat away at the concrete in feed mangers. If the concrete becomes pitted to the point that feed begins to spoil in the pitted area, feed intake may be reduced. The manger will also become difficult to clean. There are several types of epoxy coatings that can be used to repair the concrete surfaces. If new mangers are being poured, there are additives that can be added to the concrete mix to make it more durable. There are also high-strength concrete mixes that can be used.

Flooring

Flooring may become slippery over time due to scraping with scraper blades or front-end loaders. It is possible to improve traction by grooving the floors in a diamond pattern or milling the floor surface.

Insulation

There are items that are not safety hazards but will affect how well the building functions. One of these is insulation. Most beef barns have very little insulation. If they do, it is usually a minimal amount of insulation under the roof steel. If insulation is not protected by minimizing bird perching areas or by bird screen, it will become damaged over time (Figure 3). Rodents will also damage insulation. If insulation under the roof steel becomes damaged, the effect to the inside environment may not be that noticeable as the insulation may still reduce condensation under certain conditions. However, some insulation is designed to act as vapour barrier, and once it is damaged moisture will pass through it and accumulate between the insulation and the steel roofing. This moisture accelerates the deterioration of the roof steel.

Figure 3. Birds and rodents will damage unprotected insulation

Ventilation

Good ventilation is not only important for the health of your cattle, but also for the health of your building. If moisture is not removed from your building, it will lead not only to the rusting of the roof steel, but also the rusting of truss gusset plates. Both can greatly weaken the roof structure. Ventilation curtains need to be replaced periodically when they become damaged. If your barn was built before adjustable curtains were common, you may be using individual doors that open and close to adjust ventilation rates. If this is the case, you can greatly improve ventilation by opening up the wall continuously and installing adjustable curtains. This will not only allow more air when needed, but you will be able to make adjustments easier.

Summary

Beef barns don't last forever. A systematic visual inspection will help you identify areas that need maintenance before they become big problems. Some issues are safety issues and need to be addressed immediately. Others affect the function of the building, and although they can be left unattended for a period of time, they may eventually affect your profitability. Assess your facilities regularly and address problems as they arise!

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Hedging Using Futures price protection for cattle producers

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Hedging with futures is one of the marketing tools that can be used to forward price a commodity to protect against a price movement. This article reviews the basics of hedging using a Chicago Mercantile Exchange (CME) live cattle futures contract as a short hedge (selling) for protection against a potential price decline. This discussion only considers the hedging of cattle and not the value of the Canadian dollar versus the American dollar.

A good starting point is to become familiar with some of the common futures trading terms.

- **Short** – is to sell a futures contract when participating in the futures market
- **Long** – is to buy a futures contract when participating in the futures market
- **Hedge** – taking a futures market position that is equal and opposite a cash market position
- **Short Hedge** – is to sell a futures contract. This is to protect against the risk of a decrease in the commodity price to be sold in the cash market in the future.
- **Long Hedge** – is to buy a futures contract. This is to protect against the risk of an increase in the commodity price to be purchased in the cash market in the future.
- **Offset** – is to take the opposite position of the original futures contract for the same delivery month. i.e. a seller of a futures contract (short position) offsets by purchasing (long position) the same number of contracts for the same delivery month
- **Basis** – the difference between the local cash price and a nearby futures price
- **Nearby Futures** – is the next delivery month or sometimes called the spot month
- **Margin** – money deposited by both the sellers and buyers of futures contracts as a performance bond to ensure the terms of the contract are met.

The OMAFRA factsheet, "Managing Commodity Price Risk Using Hedging and Options" available at www.ontario.ca/agbusiness provides further explanations.

What is a futures contract?

A futures contract is a standardized agreement that states the commodity, quantity, quality, expiry date and whether it is deliverable or cash settled. Futures contracts are traded (sold and purchased) on regulated exchanges (i.e. CME) to establish a price.

A CME live cattle contract is for 40,000 pounds. Therefore the number of head it represents will depend on the live market weight of cattle. For example, for cattle marketed at 1,450 pounds a futures contract would represent approximately 27 head. Contracts are available for the months of February, April, June, August, October, and December. They expire the last business day of the contract month. For example, the December 2011 live cattle contract will expire on December 30, 2011. Live cattle futures contracts are deliverable upon expiry. To remove the obligation to make or take delivery of cattle, the futures contract needs to be offset prior to expiry. In fact, very few futures contracts are delivered upon, they are offset. Generally, the trading in futures contracts is not for the exchange of the physical commodity, but rather it is the trading of obligations. Complete contract specifications for live cattle (and other futures contracts) are provided on the CME Group website (www.cmegroup.com).

Who trades futures contracts?

There are basically two types of traders who participate in the futures market, hedgers and speculators. Hedgers produce or use (i.e. farmers and packers) the physical commodity (i.e. live cattle) and trade futures with the goal to reduce price risk or establish prices for a commodity. Speculators generally do not trade or use the physical commodity. They trade futures to profit from the price movement in the futures market. Remember, for every seller there is a buyer and for every buyer there is a seller.

There are two types of hedgers, a short hedger who wants to protect against a price decline and a long hedger who wants to protect against a price rise. An example of a short hedger would be a cattle producer finishing cattle who wants to protect a future price against a potential decline. To start the hedge they would sell a live cattle futures contract. An example of a long hedger would be a cattle producer who needs corn for feed and who wants to protect a future corn price against a potential increase. To start the hedge he would buy a corn futures contract.

What is hedging with futures?

To hedge is to take a futures position that is equal and opposite to a position held in the cash market. The objective is to manage the risk of an adverse move in prices. Hedging works because futures and cash prices both respond to the underlying forces of supply and demand. This means they both tend to move together and in the same direction over time. Also, the futures contract delivery provision (or threat of delivery) helps to ensure the futures and cash prices eventually move together.

Example of a cattle short hedge

Cattle were purchased at the end of March 2011 and fed to be marketed the end of September 2011.

At the end of March the October 2011, live cattle futures were valued at US$125 per cwt. The risk was that cattle prices could fall prior to the cattle being ready to market. Also, a potential profit could be realized at this price level.

To protect against declining prices, a short hedge was put in place by selling one CME live cattle futures October 2011 contract for US$125 per cwt. The estimated market price was C$111.35 per cwt. This was based on a Canadian dollar being worth $1.03 U.S. and a historical basis of minus C$10 per cwt. for cattle being marketed the end of September (US$125 ÷ 1.03 - $10).

The cattle were fed and sold to a packer at the end of September for C$106.66 per cwt weighing 1,450 pounds. At the same time the CME live cattle futures October 2011 contract was offset by purchasing one October 2011 contract for US$120 per cwt.

The futures contract was sold for US$125 and purchased for US$120 for a gain of US$5 per cwt. The value of the Canadian dollar was 97 cents U.S. making a futures contract gain of $5.15 per cwt. Canadian.

By hedging, a price of C$111.81 per cwt was realized. This was made up of the $106.66 per cwt from the cash market and $5.15 per cwt from the futures. This was based on the futures contract representing approximately 27 head of cattle at 1,450 pounds (i.e. 40,000 pounds per contract ÷ 1450 per head).

The other costs that need to be accounted for are the brokerage fees (i.e. 12.5 cents per cwt. assuming a $50 fee/contract) and carrying costs (cost to carry the margin account, for this example would have been minimal to zero).

A short hedge provides protection against declining prices. If prices had gone up in the above example, the value realized from the futures hedge would have declined but the cash price should have increased since the two prices generally move in the same direction over time (not necessarily the same amount). The difference between the local cash price and the futures price is the basis.

What is the basis?

Basis is the difference between the local cash price and the nearby futures price.

Basis = Local Cash Price C$/cwt – (Nearby month CME live cattle futures price US$/cwt X exchange rate)

For example, assume the Ontario cattle price is C$106.66 per cwt, the nearby month CME live cattle futures price is US$120 per cwt and the exchange rate is $1.03

Basis = $106.66 – ($120 X 1.03) = $106.66 – $123.60 = -$16.94/cwt

Many factors can influence the basis, most notably changes in the local supply and demand and transportation costs.

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What is margin?

Futures trading is conducted using a margin account. When a futures trader enters into a futures position they are required to post an initial margin amount as specified by the futures exchange.

Currently, for CME live cattle futures the initial margin to be posted is US$1,650 per contract. At the end of each trading day, futures positions are "marked to the market".

If you had sold one live cattle futures contract for $125 and at the end of the day the contract settled at $124, $1 per cwt or $400 per contract would be put in your margin account. (Note you sold the futures contract for $125 and if you were to offset it by purchasing at $124, you would make $1 per cwt. Therefore $1 per cwt increase in the margin account)

Conversely if the contract settled at $126, $1 per cwt or $400 per contract would be taken out of your margin account. (Note you sold the futures contract for $125 and if you were to offset it by purchasing at $126, you would lose $1 per cwt, therefore the margin account is reduced)

The margin account is good faith money to honour the changes in the contract values.

If the amount of money in the margin account falls below a specified maintenance margin, the futures trader gets a "margin call" and has to add money to the margin account. This must be done immediately to avoid losing the futures position.

Therefore it is important to be aware of the potential cash flow commitments that can result.

The cost of the margin account for a hedging position is the cost to carry the margin account (i.e. any interest costs that are realized).

In summary, hedging with futures is one of the marketing tools that can used to forward price a commodity to protect against a movement in the price. Basically, you use a futures contract as a temporary substitute for an intended transaction in the cash market that will occur at a later date. This way you extend the marketing window and work on minimizing price risk with a marketing tool that is relatively easy to enter and exit. Keep in mind that margin money needs to be accounted for, the quantity (40,000 pounds) that the contract covers, the basis and exchange rate risk. This article provided a basic overview of using a futures contract as a short hedge to manage price risk. A CME resource with more detailed information, "Self-Study Guide to Hedging with Livestock Futures and Options" is available at www.cmegroup.com.

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Major Changes to Compensation Program for Livestock Damaged by Wildlife in Ontario

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The Ontario Wildlife Damage Compensation Program came into effect on July 1, 2011. It is part of Growing Forward, a federal, provincial and territorial initiative. It incorporates many significant changes to compensation for the owners of livestock, poultry and bees which are killed and/or damaged by wildlife.

Among the changes is an expanded list of eligible species of animals:

Table 1. Eligible Animal Species

Alpaca	Llama
Bison	Mule
Cattle	Ostrich
Donkey	Poultry
Emu	Rabbit
Farmed deer	Rhea
Farmed elk	Sheep
Fur-bearing animal	Swine
Goat	Beehives, bee colonies and beehive equipment
Horse	

As well, the list of eligible predators has been lengthened. Compensation for damage to livestock and poultry may be available for wildlife damage caused by:

Table 2. Eligible Predators for Livestock and Poultry Damage

Bear	Hawk
Bobcat	Lynx
Coyote	Mink
Crow	Raccoon
Eagle	Raven
Elk	Turkey vulture
Fisher	Weasel
Fox	Wolf

The program may cover, for beehives, bee colonies and beehive related equipment, wildlife damage caused by:

Table 3. Eligible Predators for Bee Related Damage

Bear	Raccoon
Deer	Skunk

Potential Value of Compensation for Cattle

The maximum potential compensation for registered cattle is $8,000 per hd. The maximum potential compensation for non-registered cattle is $2,500 per hd.

Process For Determining Losses For Weaned Beef and Dairy Calves:

The award is determined by estimating the weight and using the current price for the class of animal in published industry averages.

For Young Calves (not weaned):
This option represents the minimum standard.
Beef calves are assumed to weigh 500 pounds at weaning age. The current market price for a weaned calf is determined by consulting published industry averages. Newborn calves and calves up to 1 month of age are to be compensated at 70 % of weaning value. If the market price of weaned calves is $1.70 per pound, then a 500 pound calf is valued at $1.70 x 500 =$850.

Newborn and calves up to 1 month of age will be compensated at 70 percent of the total value or 70 % x $850 = $595.00.
The value increases by 5% per month and reaches full value at 7 months of age. For example, a 2 month old calf is 75% of value, 3 months is 80%, 4 months is 85% and 5 months is 90% and 6 months is 95%

For more details on the Ontario Wildlife Damage Compensation Program and related topics, go to http://www.omafra.gov.on.ca/english/livestock/predation.htm#identify or Ontario.ca/predation.

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New and Timely Information Available on our Website

- Cold Stress in Cows factsheet 07-011
- Fall Graze to Stretch the Grass Season
- Wintering Livestock Using Alternate Day Feeding
- Feed Quality and Mycotoxin Concerns in Corn

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