OMAFRA *Virtual Beef*

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Some Feeding Tips For Tough Times

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Cattle feeding costs are high. Since feed costs can account for 80% of the variable cost of production (about 60% of the total costs), any changes to ration cost can have a huge impact on profitability. This being the case, you need to make sure that you're feeding the most economical ration that you can. Here are some tips to help you get the best value out of your feeding program.

Protein Levels:

Overfeeding protein will cost you money. A 1,000 lb steer consuming about 10 kg (22 lb) of Dry Matter and a 12% Crude Protein Ration would consume about 1.2 kg of protein per head per day. If you are feeding a ration that provides 13% Crude Protein, then this is equal to around 0.21 kg of extra 48% soybean meal per head per day.

Figure 1: Feed Can Account For 80% of Variable Feedlot Costs

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At $425.00 per tonne for soymeal, this adds up to about 8.85 cents/head/day. This may not sound like much, but if you are feeding 200 head for 165 days, it adds up – to just over $2,900.00. There are there are other protein sources that are more economical than 48% SBM – but it did get your attention! The fact of the matter is, if you are overfeeding protein, it is costing you money!

Are You Feeding Urea – and Are You Feeding Enough?

Urea is a great source of non protein nitrogen (NPN) for beef feedlot animals. When fed as part of a balanced ration, urea is converted by rumen microbes into true protein, which the animal can utilize. While urea can't be the only protein source you feed, it should be incorporated into finishing rations. How much urea you can feed depends on a few things, such as if you are feeding other sources of NPN, like ammoniated corn silage – but in general 100 grams per head per day is not unreasonable for finishing animals. It is your cheapest source of protein, so make sure that you are using some. Work with your nutritionist to determine the best feeding rate for your operation.

Phosphorus Levels:

Many rations contain high levels of corn grain or corn processing products such as distillers grains or gluten. These provide rich sources of phosphorus. With the recent increases in phosphate prices, overfeeding phosphorous could be costing you more than you think. Make sure that your supplement or trace mineral package is properly designed for your rations. If your ration contains higher levels of corn, distillers or gluten, you may need very little additional phosphorous.

Feed Additives – Medications and Others:

Not all of your ration additives may be necessary and they may not always consistently enhance your performance. To be cost effective, any additive must consistently improve your feed conversion, average daily gain or carcass merit. Additives should be evaluated based on their return on investment and you need to question whether they are really worth the added expense. What do these additives cost/head/day and are they putting money in YOUR pocket?

Figure 2: Urea Can Be An Economical Supplement In Many Feedlot Diets

Alternative Feed Ingredients:

There may be some alternative ingredients that are available in your area. The biggest question always is are they cost effective? As with any feed ingredient, the price and nutrient content of these alternative feeds will need to be evaluated *before* you purchase. In order to help you figure this out, OMAFRA has put together a Factsheet – Comparative Feed Values for Ruminants, order no. 03-005 which can be found at:

http://www.omafra.gov.on.ca/english/livestock/dairy/facts/03-005.htm

At the bottom of the Factsheet, there is a link to "An Interactive Version of Petersen's Equations". Petersen's equations are used to calculate the value of alternative feeds based on their combined protein and energy contents in comparison to the nutritive values and costs of corn and soybean meal. It should be noted that Petersen's equations do not accurately evaluate feeds that are mainly suppliers of fiber, by-pass protein, fat or phosphorus. Other considerations such as palatability, digestibility, nutritional variation, storage costs, shrink, "shelf-life", transportation and/or handling challenges are NOT taken into consideration. However, it will provide you with a fairly quick

answer as to whether or not you should consider incorporating this alternative ingredient into your ration. If it looks good, contact your feed company and ask them to look at some rations for you in order to get a better handle on the potential cost savings to your operation.

There is no "quick fix" for these high feed prices. But what you need to do is evaluate all aspects of your feeding program in order to help you figure out where you may be able to save some money. Work with your nutritionist and/or feed company and get your feeds and rations tested. The savings you may realize from some minor ration adjustments could easily cover the cost of the analysis, while putting some additional money back into your pocket.

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Preventing Mouldy Hay Using Propionic Acid

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Trying to make dry hay between rainstorms can be frustrating. When haymaking periods without rain are short, we frequently get into a no-win situation. Either the hay isn't dry enough to bale before the next rain and it gets rain-damaged, or it gets baled "tough" before it is quite dry enough and becomes mouldy, poor quality, dusty hay. Propionic acid can be used as a dry hay preservative to prevent mould when baling hay at moistures that would otherwise be too high.

Mould Damage
Moulds greatly reduce the value of dry hay, particularly when targeting the "quality" horse hay or dairy hay markets. Moulds consume hay nutrients and cause dry matter losses, as well as producing toxins that are detrimental to animal health. Mouldy, dusty hay contains spores that can cause respiratory problems, particularly with horses. Mould growth can even result in hay fires from spontaneous combustion.

Propionic Acid Preservatives
Propionic acid is an organic acid that acts as a fungicide, inhibiting the growth of aerobic micro-organisms that can cause heating and moulding. Other organic acids, such as acetic and citric acids are sometimes also included, but propionic acid is the most effective as a mould inhibitor.

The propionic acid inhibits mould growth while the bales "sweat' and "cure" down to safe moisture levels by dissipation and evaporation. Do not confuse organic acid hay preservatives with enzyme, bacterial inoculants or nutritive additive products, which differ in modes-of-action and effectiveness. Propionic acid is sprayed onto hay as it enters the baler. Equipment includes a baler-mounted applicator with a pump, nozzles, and tank.

Hay treated with buffered propionic and other organic acid products is safe to feed to livestock. Propionic and acetic acids are organic acids that are produced by microbes in the rumen (and the cecum and colon of horses) and then used by the animal as part of the digestion process.

The Hay Drying Curve
A standing crop of forage is about 70 – 80% moisture. Initially the drying rate is quite rapid, but slows considerably when it gets to the low 20s. Getting the moisture down that last few percent before baling can take a lot of drying time.

Inevitably, there will be situations when the storm clouds are moving in, but the hay isn't quite ready to bale. Rain on almost-dry raked hay is much more damaging than rain on hay that has just been cut. Using propionic acid enables us to bale considerably earlier. This is especially true with poor, slow drying conditions, such as high relative humidity and

low wind speed. With large square balers, the use of propionic acid is almost a necessity, because the moisture must be very low to avoid spoilage.

Buffered Acid Products
The original propionic acid products were unbuffered, which meant they were highly corrosive, very volatile, and difficult to work with. Products now marketed are buffered to a pH of 5.8 – 6.0 with ammonium hydroxide. Buffered products are much less volatile and corrosive, making them much easier to use. Other ingredients sometimes included are surfactants and green colouring. Products differ in concentration of propionic acid, so purchase decisions should be based on the price per kg of active ingredient.

Follow Label Directions
Read and follow label directions. Enough acid must be applied using the correct rate of active ingredient at various moisture levels for it to work properly. Different products have different concentrations of active ingredient. Using very dilute products provides greater coverage, but requires more water to be applied on the hay you are trying to dry.

Recommended Moisture Levels
Optimum moisture levels for safe storage vary according to bale type and density. Dry hay storage moisture guidelines without propionic acid for various bale types are:
Small square: 15 – 18%
Large round (soft core): 13 – 16%
Large square & large round (hard core):
12 – 15%

Specific acid application rates at various moisture levels are detailed on the product labels. At lower moisture levels, product costs are typically in the $7 – 14 per tonne range. If targeting quality hay, these costs are easily recoverable. While some product labels indicate acid can be added to hay up to 35% moisture, this would be at a much higher risk of heating and spoilage, as well as significantly increasing the amount and cost of the product per tonne of hay, making this less practical. When using propionic acid, most hay producers seldom exceed 25% moisture.

Using Electronic Moisture Testers
An accurate measure of hay moisture is required to determine the proper application rate. Electronic moisture testers estimate percent moisture by measuring the resistance of electricity to move through a hay sample. The wetter the hay, the more electricity flows through. There are two basic types - hand-held probes and in-baler sensors. In-baler moisture sensors enable the operator to monitor moisture on-the-go from the tractor seat. Sensors can be located in-chamber on square balers, and on the sidewalls of large round balers. In-baler sensors have the advantage of giving numerous, continuous readings. Application rates can then be adjusted either manually or automatically according to the moisture. In-baler moisture sensors with automatic applicators are virtually standard on large square balers, and are also available for large round and small square balers.

Figure 1: Optimum moisture level for small square bales is 15-18%

Electronic moisture testers are an excellent tool, but keep in mind that they cannot guarantee there are no errors in application rates. Hay can gain or lose three to five percentage points of moisture in an hour, and there can easily be five percentage points of variation in a windrow. Accuracy is affected by bale density, whether it is grass or alfalfa, whether it is plant moisture or dew moisture, and whether acid has already been applied. Electronic moisture testers need to be calibrated to the conditions and well maintained. Beware that digital readings do not give you a false sense of accuracy. Moisture

testers should be used to supplement personal experience.

Applicator Capital Costs
Basic acid applicators, including a small tank, pump and nozzles, start for about $1000. Probe-type hand-held moisture testers can be purchased for about $300. Of course, adding bigger tanks, in-line moisture sensors and automatic flow regulators can add a few thousand more to the cost.

When Is Using Acid Most Economical?
The main advantages to using propionic acid to preserve hay are less mould, reduced drying time, less potential rain damage and more weather suitable for baling. Using propionic acid provides baling flexibility. You can start earlier, quit later in the day and keep the baler baling when the weather isn't perfect.

There are 3 situations when propionic acid application to dry hay is most economical:

- used strategically to avoid rain damage on "almost-dry hay" when the weather doesn't co-operate,
- large dense bales that are difficult to dry to low enough moistures to avoid mould,
- custom operators and producers baling large volumes that can pass the costs onto customers that demand mould- and dust-free hay.

Baling at higher moisture also reduces mechanical harvest loss from leaf shattering and should increase forage quality. So, does it pay to use propionic acid all the time and bale at higher moistures to prevent leaf loss, or only strategically when the weather doesn't co-operate? This will depend on the expected amount of raking and leaf loss, the final value of the hay product and the nutritional requirements of what it will be fed to. Routine acid application to reduce leaf loss would be more economical on alfalfa hay than on mixed or grass hay, and more beneficial when targeting higher value, well-stored, high quality hay.

Cautions
There is a "learning curve" to achieve a high batting average when making "no rain, mould-free" hay. Although a useful and successful tool, the use of propionic acid will add to that learning curve. Errors can result in mouldy hay, or even worse, a dangerously heating mow.

Application at the correct and uniform rate is key. Uneven windrows or fields with wet spots will not have uniform moisture. Use a moisture tester to determine application rate, using the highest reading. If you use the average reading, you won't get enough acid on much of the hay to prevent spoilage. Spraying should be as uniform as possible to ensure good coverage.

Hay can still heat and become mouldy and discoloured if inadequate acid is applied. Tightly stacked bales in a confined area don't allow the bales to "sweat" and cure. The acid can dissipate in 4-6 months, which may be before hay moisture is low enough if conditions are unfavourable. Extended periods of high humidity will extend the curing time. Don't store treated and untreated dry hay in direct contact with each other as the moisture will migrate to the dry hay.

Some horse owners aren't comfortable feeding acid treated hay and prefer not to purchase it. There may initially be some propionic odour in the hay until it has dissipated. Be sure to inform hay buyers that propionic acid has been applied.

Conclusions
Propionic acid is most economical when used strategically to avoid rain-damage and mould with poor weather conditions. Propionic acid is very effective with higher density bales, such as large squares, that need to be drier at baling to avoid mould growth.

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Labeling Requirements for Meat Products

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Labeling is an important means of communicating product information between you and your customers. All meat products sold to the public, including at the farmgate, farmers' markets or any other retail outlets, require proper labeling.

To help ensure a safe meat supply for consumers, all meat offered for sale in Ontario must be inspected and animals must be slaughtered at licensed abattoirs. Meat products produced in provincially-licensed plants are labelled in accordance with several regulations:

Provincial regulations:

- Meat Regulation (Ontario Regulation 31/05) under the Food Safety and Quality Act
- Beef Regulation (Ontario Regulation 685/94) under the Farm Products Grades and Sales Act

Figure 1: Ontario Meat Inspection Legend

Federal regulations:

- Meat Inspection Regulations (Canada),
- Food and Drug Regulations (Canada),
- Consumer Packaging and Labeling Regulations (Canada) and;
- Livestock and Poultry Carcass Grading Regulations (Canada).

A carcass or part of a carcass that has been approved and stamped with the meat inspection legend is considered to be fully labeled.

Prepackaged products (self-serve at retail) must be labeled with the inspection legend and the following mandatory information:

Mandatory label information

Inspection legend — the Ontario meat inspection legend provides buyers with assurance that the meat product is from a provincially licensed meat plant. The legend also bears a unique number that allows the plant of origin to be easily identified.

Common name —the common name prescribed by the Food and Drugs Act, or the name by which the product is commonly known.

Net quantity — the net quantity of the product in metric, except for individual servings of food.

Name and address — the label must have the name and address (including postal code) of the person or company responsible for production of the product or for whom the product was prepared, prefaced by "prepared for".

List of ingredients — foods that contain more than one ingredient require a list of ingredients.

Durable life date — if the product has a shelf life of 90 days or less, a "best before" date is required.

Production date or code — must be included if the production date cannot be determined from the durable shelf life date.

Storage instructions — for consumer and bulk products if the product must be stored at a different temperature than room temperature. Storage instructions should state "Keep refrigerated" or "Keep frozen."

Cooking instructions — if the product is not a ready-to-eat meat product but has the appearance of, or could be mistaken for, a

ready-to-eat meat product, the label must indicate “uncooked”, “ready to cook” or an equivalent term. The label must also include comprehensive cooking instructions that will result in safe consumption of the product.

Bilingual information — all information on the label must be in both English and French (there are a few exceptions).

Nutrition Labeling — nutrition labeling is required on all pre-packaged products with some exceptions. The nutrition information panel is referred to as "Nutrition Facts Table (NFT)."

Declaration of percent protein — if the meat product contains water or phosphate salts, and the product is not cured or preserved and/or there is no standard for the product, a declaration of the percent meat protein present in the product must be included as part of the product common name.

Beef grade — if the beef is graded, the label should indicate the grade; if the beef is ungraded, the words “ungraded beef” should appear on the label.

Figure 2: Inspected carcasses

Additional information

Allergens — while the labeling of allergens is not required by the legislation, it is strongly recommended that there be some indication on the label. It is recommended that the following allergens be listed if they are present in foods as either ingredients or components: peanuts, tree nuts, sesame seeds, milk, eggs, fish, crustaceans and shellfish, soy, wheat and sulphites.

Depending on the type of product, there may be additional labelling requirements.
For more information, please consult:

OMAFRA’s website – Labelling
www.omafra.gov.on.ca/english/food/inspection/meatinsp/mi_label.htm

Ontario Regulation 31/05 Part 12 (Meat)
www.e-laws.gov.on.ca/DBLaws/Regs/English/050031_e.htm

Ontario Regulation 685/94 (Beef)
http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_940685_e.htm

CFIA Manual of Procedures Chapter 7 (Canada)
www.inspection.gc.ca/english/anima/meavia/mmopmmhv/table7e.shtml

Guide to Food Labelling and Advertising (Canada)
www.inspection.gc.ca/english/fssa/labeti/guide/toce.shtml

Food and Drug Regulations (Canada)
laws.justice.gc.ca./en/F-27/C.R.C.-c.870/index.html

Consumer Packaging and Labelling Regulations (Canada)
laws.justice.gc.ca./en/C-38/C.R.C.-c.417/index.html

Livestock and Poultry Carcass Grading Regulations (Canada)
http://laws.justice.gc.ca/en/C-0.4/SOR-92-541

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Cow-calf Benchmarking

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If you compare a group of farms for profitability there will always be those that are more profitable than others. So what is it about those top farms that allow them to consistently outperform others? Is it in the production system, either better yields or farm size? Or is it advanced marketing savvy? Or perhaps it's on the cost side with better cost management?

Getting answers to these types of questions is the objective of a cow-calf benchmarking study being done by OMAFRA and the Food, Agriculture and Resource Economics Department at University of Guelph. The Ontario Cattlemen's Association is assisting with the study and the Agricultural Management Institute has provided funding.

45 Ontario cow calf producers contributed their time and information to the cow-calf benchmarking project. There was good geographic and herd size representation in the group. The farms came from a cross section of Ontario and the herd size ranged from 25 cows to 350. The average herd size for the group was 110 cows.

So what have we learned so far? One of the overall observations was that you did not have to be big to make a profit, but it helped. The high profit group had 74 more cows than the low profit group. There were some smaller farms in the high profit group but they needed to excel in all or most of the key performance areas to get there. Of the twelve high profit farms, four had herds less than 100 cows, with one below 50. The larger herds could do less well in one area and still have positive results. They were better able to spread their costs over more production.

The study is focused on gaining insight into what the key performance indicators are. What are the top performing herds doing differently that puts them at the top?

Starting on the revenue side, the first indicator was a big variation in the returns per calf sold. The range within the group for dollars received per calf sold was $390 - $800. Exploring this a little further revealed there was not one single marketing avenue that came out a clear winner. What was clear was that those farms that put management time and effort into deciding how they were going to market their calves, in whatever form that took, were rewarded.

The second area was in feeding management. The total feed package (purchased plus home-grown feeds), cost the high profit group 24 percent less than the low profit farms. This was closely related to pasture management. Those that used rotational or intensive grazing reduced their pasture acreage requirement and fed less. What was interesting was that the high profit farms spent more on purchased feeds. They tended to use more alternate/by product feeds in their rations. Feeding management needs some further investigation to determine if this was related to feed wastage, a question of feed quality, or an issue of feed inventory tracking.

It would seem to go without saying that keeping calves alive will result in better profits. There was enough variation in mortality that this was a key to success. Having a herd health prevention program, full time people on the farm and access to barn facilities all appear to be factors contributing to reduced mortality.

While the project has shed light on some of the questions, plans are underway to collect another year of data to help confirm these findings and explore more key performance indicators. More participants are always welcome. If you are interested in participating please contact John Molenhuis at:
613 475-9472 or john.molenhuis@ontario.ca.

The financial summary of the cow calf benchmarking study is posted at the Financial Analysis Section of the OMAFRA Agricultural Business Management website: www.ontario.ca/agbusiness.

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