Ontario

OMAFRA *Virtual Beef*

Volume 5 Issue 3 **July 2006**

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Powerful Cattle Perform in the Feedlot

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Mystery In The Feedlot

Predicting cattle performance is one of the great **mysteries** of the complex art/science known as feedlot production. Feedstuffs are evaluated, rations are balanced and vaccines administered. Cattle are sorted and grouped for best effect. Bunks are managed and barn ventilation controlled. Sick calves are picked out quickly and treated with vetmeds and TLC. The cattle look great, they must be doing great! But are they?

Figure 1. BIO Ultrasound Technician Scott Bothwell uses real-time ultrasound to look under the hide

…….continued on next page

OMAFRA Virtual Beef is a technology transfer vehicle of the Ontario Ministry of Agriculture, Food & Rural Affairs.

This publication is available in electronic format at http://omafra.gov.on.ca/english/livestock/beef/news.html

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Virtual Beef is compiled by the OMAFRA Beef Team and edited by Tom Hamilton, Beef Program Lead, Production Systems

Feedlot operators know that some groups of cattle work well while others under perform, for no apparent reason. And even within some seemingly uniform groups there are both **doers** and **duds**, **power packed** cattle and those with a **power shortage**. Sometimes it seems like the only accurate evaluation possible is to feed the cattle first and then see how they measure up. But cattle feeders know that certain cow-calf farms seem to produce consistently superior performing calves, and these reputation cattle are in demand.

What's up with this?

Proper health management and good sorting are important. But a large part of the answer is in the **genetic make up** of the calves. However, most feeder cattle are sourced without accurate knowledge of their genetics. Educated guesses are made to place them in breed and breed cross categories based on their visual appearance. This assumed breed composition is then used as an informal predictor of feedlot performance, including daily gain and finished weight. But, as the sayings go, beauty is only skin deep, and **looks** can be **deceiving**! While some traits like frame score and muscling can be visually appraised, the true **genetic power** of these animals to grow, convert feed, finish and marble is hidden from our view, locked in their **DNA**!

Figure 2: Ultrasound scan image which is used to evaluate backfat, rib eye area and intramuscular fat

Wouldn't it be nice if we could accurately predict these performance characteristics **before** the cattle go on feed? This information would allow purchasers to accurately estimate the **economic value** of the cattle, and make informed buying decisions. This ability is near at hand. We live in the information age, and we can use existing **genetic information** to take a lot of the guess work out of predicting feedlot performance. This knowledge is of significant benefit when evaluating animals for a given feedlot production and marketing scenario, allowing feedlot operators to minimize at least some of the risk in feeding cattle.

Genetic Power

The feedlot performance potential of a calf is **strongly influenced** by its **genetic make up**. Most feedlot traits are highly heritable. The assortment of genes which the calf receives from its sire and dam exert a large impact on its **daily gain, feed conversion, finish weight, marbling** and **rib eye area.** Ontario is fortunate in having a wealth of genetic information on beef cattle available. Beef Improvement Ontario provides world leading genetic evaluations, and many Ontario seedstock producers participate in valuable breed based evaluation programs. So information is out there … how does it apply to the feedlot?

Let's consider a simplified example which shows the impact that calf genetics for daily gain can have on feedlot performance. We'll look at the effect on performance and economics of feeding calves (of the same breed type or cross) with either High Power, Average Power, or Low Power genetics for daily gain.

- **High Power Genetics**: steers from parents in the top 10% for postweaning gain genetics
- **Medium Power Genetics**: steers from parents who are average for postweaning gain genetics
- **Low Power Genetics**: steers from parents which are in the bottom 10% for postweaning gain genetics

Feedlot Scenario

- Finishing program, steers from 1000 lbs to 1400 lbs
- High Power steers gain 3.40 lbs/day
- Medium Power steers gain 3.20 lbs/day
- Low Power steers gain 3.00 lbs/day
- Corn based diet costs 5.3 cents per lb (as fed basis)

- Cattle consume 30 lbs (AF) of diet per day
- Daily feed cost is $1.59/hd/day
- Other costs including yardage, health, interest and marketing total 75 cents per head per day
- Feeder yearling purchased for $1.00 per lb live weight, or $1000/hd
- Finished cattle sale price 95 cents per lb live weight, or $1330/hd

Table 1 shows the impact that higher rates of gain have on production costs. Cattle that grow slower spend a longer time on feed and consume a lot more feed to put on the same weight gain than fast gaining cattle. The increased days on feed also result in higher costs for things like bedding and interest which accrue on a daily basis. In this scenario, **High Power** cattle would yield a margin of **$40 more** per head than Low Power cattle, and **$22 more** per head than the Medium Power group.

Table 1. Predicted Feedlot Performance By Genetic Power Groups

Genetic Power	Daily Gain (lbs/day)	Days On Feed	Total Feed (lbs)	Total Feed Cost ($)	Total Other Costs ($)	Yearling Cost ($)	Selling Price ($)	Margin ($/hd)*	Margin Relative to Low Power ($)
High	3.40	118	3540	182	89	1000	1330	59	**+40**
Medium	3.20	125	3750	199	94	1000	1330	37	**+18**
Low	3.00	133	3990	211	100	1000	1330	19	--

*margin = selling price – (yearling cost + total feed cost + total other costs)

Most feedlots have a fixed one time capacity, but turn cattle over more than once per year. If cattle move through the feedlot faster, more head per year can be fed in total in a given facility. Many feedlots want to maximize throughput to increase total revenue and dilute fixed costs. The faster they can turn cattle over, the higher the number of cattle they can market in a year, which maximizes annual income. Table 2 considers the impact of genetic power on annual productivity and margins on a per space basis assuming the lot is kept as full as possible. In this scenario **High Power** cattle require **15 fewer days** in the feedlot relative to Low Power cattle. This has a big impact on annual economic margin. **High Power** cattle would return an **additional $117 per feedlot space** relative to **Low Power** cattle, and an additional $67 per space relative to Medium Power cattle.

Table 2. Predicted Economic Performance Of Genetic Power Groups

Genetic Power	Days On Feed Per Head	Margin Per hd ($)	Number of Turns of Cattle per year*	Margin per Feedlot Space per Year ($)*	Margin Relative to Low Power ($)
High	118	59	2.78	164	**+117**
Medium	125	37	2.63	97	**+50**
Low	133	19	2.47	47	--

*based on maximum possible occupancy rate of 90%

The bottom line is that High Power cattle gain weight faster and go to market earlier, eating less total feed and accruing less yardage in the process. And fewer days spent in the feedlot by these animals allows more cattle to be flowed through the system in a given year. This **double benefit** of **more efficient** production and **more total throughput** makes these cattle **High Powered Performers**.

In this example we've considered only one genetic trait, daily gain. There are genetic evaluations available for a number of other

feedlot relevant traits, such as marbling, intramuscular fat, backfat, and rib eye area. These can be used to further describe the genetics of animals headed for the feedlot. Each has economic value in the feedlot enterprise, and can be used in conjunction with the specific needs and targets of an individual operation to **identify** the **cattle** that **best suit** that **system**.

The power of genetics is demonstrated by every individual in every group of cattle that goes through a feedlot. This power can be harnessed by feedlot operators and employed to identify the economic value of prospective feeder cattle. The mix of traits considered, and their relative weighting can be tailored for each feeding and marketing situation. **High Power Cattle** which **excel** in the desired traits will give consistently **superior performance** and **higher margins.**

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Traceability: An Information Tool for Agriculture

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What could possibly be common to managing the consequences of an ice storm, an animal or plant disease outbreak, GMO-free soybeans and efficient milk pick-up and delivery to processing? The answer is an **information tool** called **traceability**.

A traceability system captures three key pieces of information:

1. **product identification** (ID),
2. **premises identification** (ID)
3. **movement** of a product **between premises**.

When considering what other pieces of information can be linked to these three core data pieces, the options are limitless.

Traceability For Cattle

Starting at the farm level, the product identification would be the individual national ID tag currently used to identify cattle. The premises would be the farm, a land location. The land location could be identified by a civic address or geo-referenced coordinates.

A calf starting at a cow-calf farm could move through a number of locations in its lifetime. In essence, a traceability system would capture these movements, starting at the cow-calf operation, to back-grounding, to a feedlot, through an auction facility and to the point of slaughter, where the product changes to a carcass, and may take on a new form of identification.

So, after all this information has been captured, how can it be used?

Capturing product ID, premises ID and movement information has some direct implications and use in **emergency management**. Emergency management covers response planning, management and recovery from a crisis. A crisis could be anything from an ice-storm to an animal disease outbreak.

For example, in the event of an animal disease outbreak, the ability to pinpoint where infected animals have come from and moved through the system would help in **defining** the **disease zone**. This information would assist in containing the spread of the disease by

restricting movement in and out of the designated zone. During a crisis, these traceability pieces of information have to be available and easily accessible. Product ID, premises ID and movement information does not prevent the occurrence of a disease, but helps manage a disease outbreak to control spread and minimize impact.

Figure 1: Age Verified Cattle Stand Out From The Herd

Once established, a traceability system that captures product ID, premises ID and movement information can be built upon for multiple uses along the value-chain.

As an example, linking a calf's birth date to its identification number has been used for **age verification** purposes to gain access to international markets that pay **premiums.** This was possible because age and ID information was being stored and cross-referenced in the Canadian Cattle Identification Agency (CCIA) database.

In order to age verify cattle, the first step in the process involves the cow-calf producer entering birth date information, along with the corresponding ear tag number for that calf into the **CCIA database**. Once that information is in the CCIA database it can be accessed by interested parties along the beef value chain. (The birth date information is not stored on the tag, but is linked to the ID number of the animal in the CCIA database.)

The ability to query the CCIA database provides the cattle purchaser, at any point along the beef value chain, with age information. For example, a feedlot producer may wish to use birth information to sort cattle and group similar aged animals, which can then be fed and managed as uniform groups for marketing purposes. Accessing the age information on animals is achieved by **querying** the **national database** with a list of tag numbers and getting the cross-referenced birth date information (providing if it has been entered into the system). Similarly, at the processing level, cattle can be sorted by age much more accurately using birth date records instead of dentition, simply by querying the database for age information.

In Ontario, cattle producers have some options as to how they can enter their calves' birth date information into the Canadian Cattle Identification database in Calgary, as well as on querying the database for information. Some of those options include accessing the Canadian Cattle Identification database directly at: www.canadaid.com or by using services offered through organizations such as Beef Improvement Ontario. In order to query the CCIA database for age information, you have to be registered as a feedlot producer, an abattoir or a sales barn.

At the end of the day, traceability is just a tool. How you use it is up to you.

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The Branding Buzz!

Barry Potter
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- Get a **brand**
- Be **regional**
- Make more money by **adding value**

These buzz words are being tossed around our industry in an effort to stimulate individual farmers to develop a marketing plan that distinguishes **"a beef product"** from the industry norm of **"beef the commodity".** The

message is clear: it's no longer good enough to simply produce and sell a generic commodity. Farmers are being encouraged to produce a **branded product**. But how does one do this? And why should someone worry about doing this?

Establishing A Brand

At regional marketing seminars sponsored by the **Ontario Cattlemen's Association** during 2006, producers are being challenged to decide what they are going to produce.
At these seminars Bruce Cowper of **Mallot Creek** Consulting challenged farmers by asking two key questions

1. "What are three unique selling points of your product?"
2. "Why should the consumer spend his/her hard earned dollars on your product compared to the next package of beef on the shelf?"

There are many possible unique selling features.
Some unique selling points could be:

- local
- hormone free
- organic
- antibiotic free
- grass fed
- corn fed
- tender gene guaranteed
- age verified
- small farm produced

Figure 1: Branded Products Fill an Identified Niche Market

A producer group looking to develop a branded product needs to establish what will **differentiate their product** from someone else's. One of the most successful branded beef ventures in North America has been Certified Angus Beef. While perceived as being a high quality brand, it really only guarantees one thing at this point in time: fifty per cent of the genetics of that animal are Angus. This shows that brands don't have to be based on complex criteria to be successful!

The unique selling point can be as simple as specifying the breed or the location of the production of the animal. But make sure that whatever the **selling point** is it **adds value**. For example, the addition of DNA testing , plus ultrasound evaluation makes predictions of meat quality much more accurate compared with just specifying breed composition. This will result in higher and more consistent levels of consumer satisfaction, leading to increased demand for the branded product.

Supplying the Branded Product

To satisfy the demand created by a successful branding program, a supply chain must be established and maintained. Without production, a branded program is simply a concept. Unfortunately, the chicken and egg scenario arises. Without a market, what are the incentives to produce? But unless you have something to sell, why develop the market?

Mallot Creek urges groups to follow a **120% rule**. This means that in order to fill 100% of your market requirements, you should produce 120%. This is because not all animals produced will meet specification. For example, if you had a specification of no antibiotics, but an animal gets sick and needs treatment, then that animal would have to be pulled from the program. Or if you are feeding to an age end point, but the animal is not finished to that end point in time, it would have to go into another marketing program. Providing consistent product that meets the defined selling features is one of the major building blocks of a branded program. In order to see how you would fit in with a defined program, do an inventory of what product you have currently. What gaps may there be in production? Where do you need to fill in, or what do you need to do to meet program requirements? Many producers get hung up on year round supply. Certainly this can be a

critical point, since typical beef production systems do not lend themselves to a year round supply of fresh product. If year round supply is a critical deficiency in your program, consider **seasonal selling**. For example, the fruit and vegetable industry in Ontario, through the Foodland Ontario brand, has been very successful at marketing fresh produce for limited time periods in the year.

Marketing the product is crucial to the success of a branded program. If you choose local and fresh as major selling features, then targeting a local market would be important. Selling "Algoma Farm Fresh" beef in the Sault Ste. Marie area will have more cachet than selling the same product in a southern Ontario urban market. For most commodity producers, marketing is a whole new ball game. Yet, as Cowper puts it, the producer needs to be involved in marketing the product. He or she is the best seller of the product because he or she has produced it. Part of the success of branded programs is the story behind the product. Although using a third party to distribute your product may not be ideal (a third party will not focus exclusively on your product), hiring a marketer can be very beneficial. A sales person can focus on selling your product into the market place.

Clearly, the meat marketplace is a highly competitive, highly fractured industry. To gain its segment of the meat case window, a branded product needs to be different and consistent. **Building a brand** is an arduous process, but **rewards successful programs** which set themselves apart from the rest of the commodity beef in the market place.

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Snow Grazing Saves Feed Costs

*Winter is the **New** Grazing Season*

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If you have a cow-calf or stocker operation, now is the time to set things up for the new grazing season. No, I'm not talking about the usual Ontario grazing months of mid-May to September. The new grazing season I'm referring to starts after most beef cattle have migrated to the safety of the barn and the luxury of stored feed! It features freezing temperatures and a picturesque white blanket on the field. Completing the scene is a herd of healthy cattle, getting ready to welcome a flying sleigh pulled by small ruminants that will fuel up on the pasture prior to completing their global trip. That's right … grazing on December 24th. Is this possible? You'd better believe it is!

Research projects at the University of Guelph's New Liskeard Research Station have been part of the pioneering effort to explore the applicability of winter grazing in Ontario. At the start, skeptics were many, while supporters were few. Not many observers thought that beef cows would be able to survive past September in an outdoor system with only windbreaks for shelter and pasture for feed. Another factor which was thought to be a negative was the type of cows to be used … they were large frame crossbreds, averaging 1400 lbs, who were used to above average quality feed and excellent winter quarters.

For the initial experiment, researchers Christoph Wand and Jock Buchanan-Smith allocated dry, pregnant cows to three treatment groups. They were placed either on a grass pasture, a legume pasture or in a barn. Barn cows were fed baled forage. The timothy and trefoil dominated pastures had been harvested mid-July and allowed to regrow, "stockpiling" standing forage for fall usage. The trial commenced on Oct 9th, with cattle grazing controlled with electrified polywire, which was advanced daily to minimize trampling and

wastage. Cattle performance and health were closely monitored.

The results amazed researchers and observers alike! For the first 2 months, the pasture cattle out performed their herd mates in the barn (see Figure 1). These cows got down to business and did what beef cows do so well – grazing enthusiastically, and making efficient use of standing forage.

"But just wait till the snow comes and that north wind begins to howl" predicted the naysayers, "the cows will shiver and stand at the lane bawling to get back to their barn!" As in most years in Temiskaming, it got colder as November commenced, dipping to -18' C at night, with a light snow cover brightening the landscape (Figure 2). The cows bravely thrust their muzzles into the snow and kept on grazing! Although the cows had ready access to a windbreak, they rarely used it unless it was both cold and quite windy. They seemed to enjoy bedding down out in the fields, meditatively chewing their cud beneath twinkling stars on crisp nights, steaming like tea kettles with every breath.

As December advanced, snow cover increased and temperatures continued to drop. Analysis of samples of the standing forage showed that feed value decreased surprisingly little over the course of the trial, and was comparable with the baled forage fed to the barn cows. The grazing cows didn't show any signs of slowing down until snow depth exceeded 25 cm, and their intake of forage was reduced. This resulted in grazing cows starting to lose body weight and condition, and the cows were pulled from the fields on Dec. 18th.

Following these cows through calving, breeding, and weaning showed that fall/winter grazing did not have a negative impact on production parameters such as calving ease, pregnancy rate, calf survival or weaning weight. Extending the grazing season reduced expenses by about $50 per cow due to the lower cost of pasture versus feeding baled forage and reduced costs for bedding and manure handling. Subsequent research showed that fence movement could be reduced to once per week, without detriment, making the technique easy for farmers to apply.

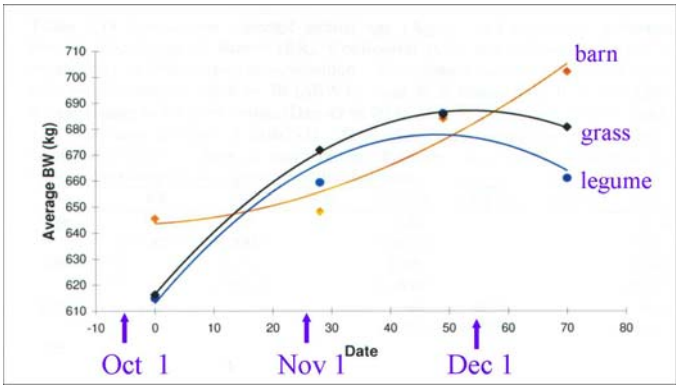

Figure 1. Cow Weight Change During Fall Grazing

Little capital investment is needed to implement extended season grazing. It's just a different way to manage the forage resource – letting the cows do their jobs as self propelled forage harvesters and manure spreaders. And what about the naysayer? Well, I was one of them; now I say: "There's no grazing like snow grazing"!

Figure 2. Grazing Through Snow

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