OMAFRA Virtual Beef

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IN THIS ISSUE

Investing Today for a 2020 Return? Read the Numbers!

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It's Spring and the press is full of advice and advertisements for Financial Investments. The Agriculture Press is also full of advertisements for investments—Genetic Investments in the form of a bull! The same as with stocks or bonds, we need to carefully consider the right purchase of Genetic Investments for our business.

Before we pick the right investments, however, we do need to know the goals we are aiming for. In your herd are those goals the top selling set of steer calves, perhaps the most easy keeping cow herd going, or the top rail price for your finished steers?

In the banking world we pay close attention to the interest rate and length of time we tie up the investment for. In the cattle world that is length of use or influence from the bull, and the interest rate is indicated by his performance numbers, not his looks! Are we considering this a short,

Figure 1. The bull has an ongoing impact on herd productivity

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medium or long term investment? As length of term and interest rate increases so does the list of requirements and time invested in picking the "right" one. You need to read the numbers.

A short term bull might be one you buy to get the heifers/ cows bred. This would be like just buying as RRSP to get the tax deduction. Any bull with the right equipment will do. However, if you intend to calve out those females or keep a market for bred heifers then the overriding criteria for this might be calving ease –the main goal being to get a live calf on the ground. A nod may go toward marketability of the calves, but this would be a secondary selection trait. You need to read the performance numbers.

A medium term might be the bull that you plan to keep for 2-3 years and market the calves at weaning. While getting a live calf is still very important, the criteria of market appeal and weaning weight probably move to the head of the list. If you are going to background or finish the calves, traits like feed efficiency, marbling and muscling/ yield enter into your selection equation. You need to read the performance numbers.

The long term investor is one who plans on keeping replacements out of the bull and putting them back into the herd. This investment is the one that will be paying out or costing you money in 2020. After all, the bull bought this spring will have his first daughters on the ground in 2011. They will get bred in 2012 and drop their first calves in 2013. Add two more years of replacement heifers to this and in 2020 all the 7, 8, and 9 year old ladies in the herd are a result of this 2010 bull buy. These are the cows that we expect to do the heavy lifting as far as returns from the cow herd. So that creates quite a stiff criteria list for this bull to live up to. Not only does he need calving ease and marketability for his steer calves, he also needs to pass on ease of keeping and maternal traits to his daughters. Think of him as a Laddered GIC and Balanced Investment all in one. This will necessitate considering even more performance data, so you really need to read the numbers.

As the criteria list increases your time invested in research and the $ investment probably needs to increase as well. We need to read the numbers and do the math. The bull purchase price is not a place to "go cheap" but rather weigh out the potential returns. If we look at a pretty normal Ontario herd with 40 cows bred over three years we have 120 calves. Rate those at 500 lbs (pretty conservative) then we will market 60,000lbs. If the bull even makes 2 cents a lb difference on the sale price of the calves that is $1200. Add in some extra weight on the calves (10-15 lbs/calf) and you will have the equivalent of another calf in weight. So even in a small herd an extra $500 to $1,000 well invested in the bull can pay dividends.

So how to make that bull buying decision? Start with research into what sells best in your market. Actually list the traits you want and then rank them. Its just like grocery shopping – impulse buying because something looks really good is easier to avoid if you have a list to work from. Then look at the numbers. EPD's from breed associations, and or bull test stations are your best guide. If you feel there are too many numbers on the page then highlight the numbers you really need or use one of the selection indexes that roll a number of traits together. Don't toss the numbers and just go on looks. We don't buy investments because the salesperson is attractive!

An additional piece of information to ask for is DNA testing. The DNA trait profile now includes: Residual feed intake (feed efficiency), Average daily gain, Tenderness, Marbling, Quality grade, Yield grade, Fat thickness, Ribeye area, Heifer pregnancy rate, Stayability (longevity), Calving ease, and Docility. This allows us "numbers "or ratings for many traits that are very difficult and time consuming to measure.

This simply adds to the information you have to make that investment decision. So get your selection criteria together, gather the performance numbers, read them, narrow the candidate list then look at the bulls and talk to the breeders. Then make your investment decisions. Remember it's not just a bull purchase but an investment in your 2020 marketing plan!

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Rotational Grazing Primer

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What Is Rotational Grazing

What is rotational grazing? As I talk to farmers across the province about grazing management, I have come to realize that rotational grazing means different things to different people.

The dictionary definition of rotation is "to change or alternate in a particular sequence; regular variation". To a crop producer, rotation means a different crop or sequence of crops in a field over a number of years. When we talk about rotation in relation to grazing, the most important factor is the state of the grass growth. The guiding principal of rotational grazing is to give the grass crop every opportunity to grow and produce forage for the livestock. The rotation refers to the movement of the livestock from one paddock to another during the grazing season.

According to the University of Guelph and OMAFRA Beef Cow-Calf Benchmarking Study, the biggest cost component is feed. When asked about grazing practices, over half of the participants reported that they were rotational grazing. However, there was a big range in the results that they were achieving.

Figure 1. A well managed rotational system provides high quality forage.

Grazing & Rest Periods

The concept behind rotational grazing is to harvest the grass quickly and then give the forage time to recover and re-grow. This is accomplished by giving the livestock enough grass for the prescribed feeding period and then moving them to a new field. The more frequent these moves, the more productive the pastures will be. The maximum length of time in a paddock should be 5 days. Why 5 days? Grass starts to re-grow five days after it is harvested. When does a hay field begin to green-up after being cut? There is usually new growth started in 5-6 days. In a pasture, this new growth is candy to the livestock and they quickly re-graze it. This re-grazing depletes the root reserves of the plants, reducing plant vigor and subsequent growth.

An optimal rotational grazing system has the livestock moving to fresh grass every 1 to 3 days. If the grazing period is longer, there will be reduced performance by both the livestock and the grass. Think of the pasture field as a feed bunk. Would you expect livestock to perform well if the feed bunk was only filled every five days? Fresh feed encourages consumption and increased consumption means increased performance.

Number of Paddocks Required

For each group of livestock that you have on pasture, there should be a minimum of 10 paddocks to give the grass an opportunity to recover from the grazing. Twenty paddocks will go a long way to encouraging increased animal intake. Thirty paddocks will allow you to realize the full potential of both the pasture and the grazing livestock. This may seem like a lot of paddocks, but with the use of electric fence, including some temporary or portable fence, it does not need to be insurmountable. Cattle trained to electric fence and accustomed to moving every 1-2 days to fresh grass will meet you at the gate for their next move.

Increased Season Long Carrying Capacity

Grass growth varies during the season. Rapid growth occurs in May and June. Much slower growth happens during July and August, when temperatures are higher and moisture is less available. Pasture managers who use an effective rotational system find that they have increased grass growth and carrying capacity throughout the season and a dramatically reduced need for feeding hay.

Rotational grazing means fresh grass every 1-3 days and a sufficient rest period for the grass to grow to the optimum grazing height (20-40 cm). Rotational grazing at this level will provide the most high quality forage at the least cost. Refer to the following websites for more detailed information:

www.omafra.gov.on.ca/english/crops/field/forages.html
www.ontarioforagecouncil.com
www.foragebeef.ca.

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Reducing *E. coli O157:H7* Contaminated Cattle Leaving the Farm for Slaughter

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We continue to hear about food borne sickness outbreaks caused by the pathogen *E. coli O157:H7* (O157). The most serious form of sickness from this organism is haemolytic uremic syndrome (HUS), a disease characterized by kidney failure which can result in death, especially in young children.

The chances of O157 causing sickness are greater from eating undercooked contaminated beef products, consuming contaminated ready to eat fruits and vegetables or drinking contaminated water than from properly cooked products. Carriers of the O157 pathogen can be livestock, wildlife, birds, pets and even other humans, but by far the biggest culprit for harbouring the pathogen is cattle.

Figure 1. Minimizing the amount of manure tag on feedlot animals is the first step in reducing *E. coli* .

Cattle that harbour, or have O157 "colonize", in their digestive tracts show no signs of any type of sickness and their production performance is not affected. Producers have no idea their animals are shedding the pathogen unless fecal samples from their herd are tested, which is expensive and not practical. Studies have shown that if testing was carried out on each herd many times over a one year period O157 shedders will be found. Prevalence of shedding has seasonal and stress period effects. For example shedding goes up when animals are stressed at weaning. Therefore, every farm manager should assume they have some O157 pathogens in the manure produced from their cattle.

It is important to know that even if an animal has O157 colonized in its digestive tract, the meat and muscle of that animal does not harbour the pathogen. O157 contamination in food and water is the result of cross-contamination of pathogens from feces. When beef, especially hamburger, becomes contaminated it is due to cross-contamination at the meat processing facility during slaughter from contact of the carcass with the hide or the contents of the intestines. Packing plants have installed several intervention methods in the slaughter process to help control O157 but they are not absolute, which leads to some pathogens surviving the process.

Farm managers can do their part in helping to control O157 by reducing the pathogen load on hides and in the guts of cattle leaving the farm before traveling to the packing plant. In order to reduce the O157 pathogen load, here are some pre-slaughter interventions to implement:

1. Adopt a vaccination program for O157 reduction

Canada now has an approved vaccine developed by Bioniche Life Sciences Inc. called Econiche(TM) that will reduce O157 shedding. Consult your herd veterinarian about a program. This will reduce the total amount of O157 in the farm environment.

2. Keep watering sources free of manure

Water sources can be a vector for spreading O157 from animal to animal. Ensure water bowls/troughs are drained and cleaned after being soiled by cattle feces.

3. Equipment used for handling feed and removing manure

Equipment, like the water sources, can be a vector for spreading O157 from animal to animal. If the same loader is used to move manure as well as feed it should be thoroughly cleaned between uses. If that is not possible there should be equipment designated for either feeding or manure handling, never both.

4. Use adequate bedding to keep hides free of excess tag

Market cattle with excess tag are a high risk carrier for O157 at slaughter. The risk of contamination to the meat can occur in two ways, first when the knife used to split a hide passes through tag it carries contamination into the carcass. Second, when the hide is pulled in the very moist environment of the kill floor, tag particles easily become airborne with the potential to cross-contaminate all surfaces they come in contact with. Use of adequate bedding is therefore very important in the housing area to prevent tag accumulation on hides.

5. Preparing cattle for shipping to slaughter

Shrink cattle for 12 to 24 hours before shipping. Reducing gut fill helps reduce manure excreted in holding pens, when loading on trucks and during trucking. Use low stress cattle handling techniques. Calm cattle excrete less manure.

6. Clean trucks

Load cattle onto clean trucks with clean, adequate bedding. This will help prevent hides being contaminated with pathogens from previous loads of cattle transported with the truck.
By following these practices the O157 pathogen load on and in market cattle will be reduced when cattle arrive for slaughter. Along with the interventions put in place by the packers, these steps will collectively reduce the probabilities of contaminated end product, which translates to fewer cases of food borne illness caused by O157.

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Emergency Off-farm Housing for Cattle

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Background

On rare occasions, the delivery of cattle which have been transported off the farm may be prevented by extraordinary circumstances. These situations could include a closure of the Canada/United States border due to disease or regulatory issues, a work stoppage at a processing plant, or the cessation of business at a processor or feedlot to which the cattle were to be delivered. It may not be feasible to return these animals to the farm they originated from as their ownership may have changed and/or the farm of origin may have not have adequate space or feed. In these situations it would be necessary to provide emergency housing and feed for the animals until a long term solution is found.

Factors which must be taken into account in organizing temporary care include:

- Human safety
- Animal safety
- Animal care
    - Water
    - Feed
    - Shelter (if necessary)
    - Animal health
- Handling and reloading cattle
- Environmental impact
- Record keeping

According to the Beef Cattle Code of Practice, cattle in transit should not be without food and water longer than 48 hrs.

Figure 1. The BSE crisis closed export borders to cattle.

Containment

The first need which must be met when providing temporary housing for cattle is physical containment of the animals. This requires fencing or penning capable of withstanding cattle pressure. Suitable areas could include barn yards on farms which have been used for livestock in the past, but are currently empty or underutilized, or fair or exhibition grounds which are used periodically for displaying livestock or horses. Another possibility is the utilization of adequately fenced pastures which are currently free of livestock. Other opportunities such as vacant industrial yards which are bordered by heavy duty chain link fencing may be available on a local basis. The owners/operators of these premises need to be contacted to determine their willingness to host the displaced cattle. Municipal authorities should be contacted to determine if zoning regulations permit animal housing, or if temporary permission for animal housing can be obtained under exceptional circumstances.

Although electric fencing is an excellent on-farm option for livestock containment under normal situations, it is not recommended under this situation. Animals need to be “trained” to electric fencing, and some of the cattle in this situation may not have this in their background. This could lead to break outs, endangering the cattle, property and human safety if animals wander onto roadways.

When introduced into any new environment, cattle will travel the fence line to establish the boundaries of their new territory. They will test the fencing to identify any weak spots, and will attempt to push through the barrier at any apparently vulnerable locations. Extreme vigilance is necessary during the first day to ensure that weak spots can be fortified to prevent escapes.

Environmental Impact

If the proposed site has not previously housed cattle, it should be evaluated for its ability to host the cattle without adversely effecting the environment. Of particular concern is the effect which runoff from the cattle yard may have on nearby watercourses or well sites. There may also be potential impacts of odour and noise on neighbouring businesses or residences. Consulting with an Agricultural Engineer would help to identify potential environmental hazards and develop plans to address them.

Water

Water is the most essential nutrient. Cattle require large amounts of clean water on a daily basis. After physical containment is achieved, the next priority is to provide an adequate supply of water. Water requirement is directly linked to temperature: the higher the temperature the more water required. Heavy feedlot animals would require about 35 litres of water at 10 C., but this increases to almost 80 litres at 30 C. One truck load of 40 animals would require up to 3200 litres per day. For comparison, typical home heating oil tank holds about 1000 litres. For emergency situations, almost any large clean open top container is a potential water trough. Ensure that the container is clean and never contained toxic chemicals. They can be filled using a garden hose, but since flow is limited it is much more efficient to use larger diameter piping connected to the water supply. Most industrial buildings will have a suitable water supply. Fire hydrant connections may also be available in urbanized areas.

Sufficient waterers must be provided to ensure that all cattle have adequate access. A rule of thumb is that 1 linear foot of water trough perimeter will supply up to 16 head of cattle. Non-concrete waterers must be kept at least 25% full to provide enough weight to prevent cattle from tipping them over. Low cost, easy to install float operated valves are available to automate the filling of water troughs. Water troughs are high traffic areas, and hoof action combined with splashed/overflowed water can quickly create a muddy area. The water troughs may have to be emptied and moved periodically to prevent mud bogs from developing.

In winter, provision of water is complicated by freezing temperatures. This can be dealt with in several ways. In the short term, the amount of water supplied can be controlled just to meet the cattle’s daily needs, with the trough allowed to remain nearly empty over night, and the supply line drained. The trough is then filled with fresh water in the morning and the cattle will drink the water before it freezes. For the longer term, water proof electric elements can be installed to prevent freezing, but water lines must still be drained or pulled back into a warm building.

Feed

Ruminant animals such as cattle will suffer metabolic upset if feed is not provided on a regular basis. Animals which are being shipped for slaughter are normally held off feed and water for a period of time prior to shipment. As a result, providing feed (as well as water) to these animals must be a high priority. Animals which have been in a feedlot will have been on diet which contains a high percentage of grain. However, it is not necessary or even advisable to feed them a high grain diet during an unscheduled holding period. Providing a forage based diet (such as dry hay) will promote rumen motility and cud chewing, which will induce the production of natural buffer. This will encourage the maintenance of normal rumen bacterial populations and help to prevent rumen stasis and/or acidosis.

Small amounts of a grain mix may eventually be added to the diet if necessary to provided supplementary protein and minerals. Hay can be fed daily on the ground. Unrolling large round bales will help to limit wastage but is not essential. Depending on the length of time the cattle will be at the location, it may be worthwhile to obtain portable metal bale feeders to limit waste and ensure all cattle are receiving adequate feed. Large salt blocks should be placed in the pen to supply salt to the animals. If cattle will be on site for an extended period of time, then free choice mineral (matching the feed) should also be provided.

Shelter

Cattle older than a few months of age can withstand cold temperatures, as long as they have available shelter from strong winds. They do not need a roof over their heads. If the site does not have adequate wind protection (barns, buildings, bush lot etc.) and the weather is wintry, temporary windbreaks can be constructed using plastic mesh windscreen attached to wooden frames. If convenient, these can be placed along the outside of existing fencing. If they have to be placed inside the enclosure, they will need to be protected from the cattle with temporary electric fencing.

The need to provide bedding material (such as straw) will depend on season and vary by location. During summer conditions where a grassed field is part of the enclosure, no bedding should be required. During winter, or if cattle are confined to pens, some bedding will be needed to provide a dry area for cattle to lie down. Large bales of straw can be obtained and placed in pens. Cattle will spread the bales around. If straw is not available, truck loads of wood shavings may be dumped in pens or on the ground.

Animal Health

Most animals which are being transported will be in a healthy state, however the stress of longer than normal waiting times on a truck may cause problems. When cattle are off loaded at the temporary site they should be evaluated for any signs of physical trauma such as lameness, as a well as digestive upset indicated by diarrhea, or respiratory stress such as coughing or panting. Animals which exhibit signs of illness should be penned off from the main group and attended to by a veterinarian. Portable gates can be used to make a temporary hospital pen. Ensure these animals have access to water, feed, and a dry bedded resting area.

Bio-security and Human Safety

If the cattle are being housed a novel location, they may attract people who are drawn out of curiosity. In order to prevent possible injuries to these people, who are not likely acquainted with livestock, the cattle housing area should be secured from the public and their pets. Existing fencing can be utilized, and access roads can be signed or manned to prevent unwanted traffic. The local police should be informed of the situation so they are prepared to respond to calls, and they may be able to provide a security presence during the unloading and initial "excitement" period. They should also be supplied with a list of experienced cattle handlers who would be available to assist in the case of an animal break out or other incident.

Preventing access to unauthorized people will also go a long way to ensure the biosecurity of the cattle. Authorized people who have access to the cattle yard should follow basic biosecurity protocols such as wearing disposable footwear or disinfecting boots prior to and after visiting the cattle yard. This will minimize the risk of transferring pathogens into or away from the cattle yard.

Only people who are experienced with livestock should be allowed to work with the cattle. Using feeders placed along the edge of a fence line or pen will permit feed without people having to enter the cattle pen. This will promote human safety and reduce the risk of cattle escape during the operation of a gate into the pen.

Handling and Loading

Eventually, the cattle will have to loaded on to a truck. If an on-site handling/loading facility is not pre-existing, a temporary corral and loading chute will have to provided. These consist of metal gates which are pinned together in an arrangement suitable to the conditions. They could be borrowed or rented temporarily. If cattle are to be on site for a long term, it will be necessary to obtain a head-gate and working chute so that sick animals can be examined and treated.

Record Keeping

A copy of the load manifest should be kept by the person in charge of the cattle at the temporary site. An initial head count should be made as animals are unloaded from the truck. Animal tag numbers should be recorded. This can be used as a checklist as animals are removed or to identify animals which may escape. The cattle should be counted daily to ensure that there have been no escapes. If an animal is removed from the site for any reason, this should be noted on the manifest or similar document, including the tag number of the animal, the reason it is being removed, where it is being taken, and who is removing it.

Summary

Emergency situations, by definition, take us by surprise. This document can act as a checklist of priorities and opportunities for temporary housing of cattle stranded in transit.

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