CANADIAN LUING
Cattle Association

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MESSAGE FROM THE SECRETARY
by Iain Aitken

Welcome to our winter 2012 newsletter. I say winter but it still feels more like an extended fall with the mild weather we have been enjoying. Long may it continue as long as we get adequate moisture in the spring and summer!

In this edition I have written a follow-up article to my Larry Leonhardt/Shoshone article of last summer. I realize this view of cattle breeding is unconventional and that it challenges the views of the mainstream, but I believe that it is the only way to consistently produce "more from less" and thus lead to more efficient and profitable beef production.

Also in this edition we feature pictures of some of the rising two year old bulls we currently have for sale. As in previous years these are the product of our collective bull rearing program whereby the bulls have been reared together on my farm since weaning. They have been developed slowly on grass and a winter ration of silage and hay. This ensures that they have every chance of lasting to a ripe old age, free from the overgrown feet and burned out livers that often accompany bulls that have been overfed.

As always, the bulls are available private treaty on a first come, first served basis and we are prepared to keep them here until spring. If you want to know more about the bulls, or to come and see them please give me a call at (403) 843-0094 or email me at ieaitken@hotmail.com.

We have photographs of all the bulls for sale on our website www.luingcattle.com - click on the "Luing Cattle Association" tab and then "Cattle for Sale".

Dr. Bob Church has some Luing females of various ages available for sale from his Lochend herd. He can be contacted at (403) 208-3747

Medicine River 15X, polled.

A PLANNED SYSTEMATIC APPROACH TO CATTLE BREEDING

by Iain Aitken

Last August I travelled to Red Lodge, Montana to meet up with some cattle breeders whose philosophies are very different from the prevailing wisdom of the purebred sector. It was an outstanding success as an event, with friendships formed and great cattle discussions held. Red Lodge is where Larry Leonhardt pastures most of his Shoshone herd, so it was a chance to see his cattle as well as those of two other ranchers who have used Shoshone genetics to good effect in their commercial operations. Since my return I have spent much time reading Larry's writings and am slowly acquiring a better grasp of the genetic truths he has discovered over a lifetime of breeding cattle. The more I read, the more I understand how the conventional breeding methods used by most purebred breeders can never bring about the genetic goals their commercial customers seek with any consistency.

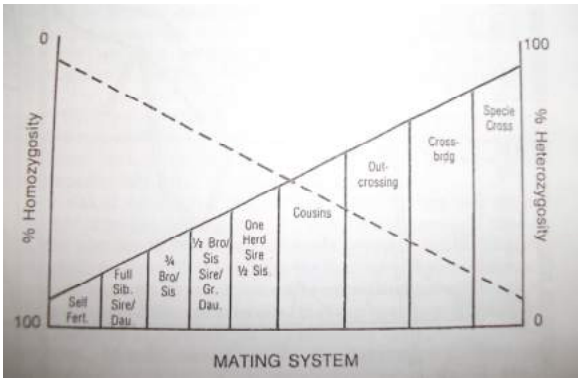
The biggest problem, in my opinion, is the misuse of heterosis in beef production systems. Heterosis (or hybrid vigor) gained by crossing two unrelated animals results in an "F1" offspring being able to outperform either of its straight-bred parents. Benefiting from heterosis in its most simple form can be achieved by crossing a terminal sire like a Charolais onto a straight bred maternal cow – the offspring will be terminal and should be treated as such.

A slightly reduced heterosis benefit can be captured in a crossbred cow like the black or red baldie. Crossing an Angus bull onto Horned Hereford cows produces a good commercial cow that can wean a heavier calf than either a straight-bred Angus or Hereford cow. The downside of heterosis is that the F1 cow cannot reproduce herself – no matter what you breed her to she will not produce a daughter that will exceed her own production and performance on the same feed resources.

Galena 90X, polled

Now it's easy to visualize the cross I'm talking about because they are different breeds, but we must realize that heterosis exists ***within*** our current breeds as well and to a much greater extent than it used to. By definition, all domesticated breeds were formed by gathering together foundation stock of similar or complimentary types and line-breeding or close-breeding them. The purpose of this close-breeding was to achieve stabilization of type by reducing heterosis and increasing homozygosis (homozygosis is the opposite of heterosis and is also referred to as "inbred depression"). This is the only way to create a breed or strain of cattle that will reproduce

themselves predictably and it works by reducing the variation present so that the animals are more likely to breed true.



The chart above demonstrates the levels of heterozygosis or homozygosis that are achieved by various mating combinations. The chart clearly demonstrates that out-crossing within a breed is very much on the increased heterosis side of the page, right next to crossbreeding, yet most purebred breeders proudly advertise their "outcross" genetics as the way ahead. This appears to be mainly a marketing strategy – branding the product as rare or unique - the only one that has a chance of correcting problems in your current herd thereby justifying paying an inflated price for. Being an outcross and probably an outlier for some in-vogue trait adds to the appeal but it all seems destined to end in disappointment as ***what you see*** (phenotypically) ***is not what you get*** (genetically) with any repeatability.

So why did we move from the point where most breeds were "breeds" (i.e. predictable pools of genetics with certain characteristics) to a point where the title "breed" means not much more than a collection of animals whose registration dues are paid to the same office?

I suppose it comes back to an unrealistic attempt to combine all the positive traits into one animal as well as financial considerations and bogus marketing. The benefits of heterosis are well known by the average purebred cattle breeder but instead of passing these benefits on to the commercial sector where they should be utilized, they are increasingly being retained in the purebred herd. This certainly enhances the performance of the purebred – it's a way to have bigger, faster growing bulls to sell. The commercial buyer of these bulls is being cheated, however, as the bulls can't reproduce themselves with any predictability and the effect of the hybrid vigor has already been diluted. The result of this is that both the purebred and commercial producer have increased culling rates and reduced production efficiency as the increased variation in the progeny means many are not able to perform the role they were bred for.

<u>True-line</u>

I'm convinced that Larry's approach of purifying strains of cattle with certain characteristics and then cross-breeding them at the commercial level will produce the most predictable, efficient and ultimately profitable beef production system. Larry established a program named "True-line" in the early 1980s, the intent of which was to establish an industry level alliance of breeders that would develop strains of cattle

along the lines of the above to increase the efficiency and profitability of commercial beef production. Perhaps his thinking was too far ahead of the times as sadly it did not achieve the uptake or recognition it deserved. There is renewed interest in the True-line concept amongst the group of breeders that met in Red Lodge last fall – perhaps now the industry (or at least a portion of it) is ready to move ahead with a systematic, planned genetic improvement system.

What became really clear at Red Lodge was that this is about population genetics – moving a whole herd or strain of cattle towards a goal. There were no exhibits of wonder cows or famous bulls as there are on most cattle tours, just many cows and bulls of a uniform type reflecting the tight genetic pool of their ancestry. It is clear that after forty years and many cattle generations this herd is stabilized at a level that is functional and efficient for the environment and the conditions under which the cattle are run. This level of stabilization has been achieved by purifying the strain of cattle through continual breeding of same "type-to-type" matings and elimination of outliers. There is no need or desire to bring outcross bloodlines into this herd to "enhance performance" as this would lead to randomizing the herd genetics again resulting in less predictable outcomes.

A Luing Application

With a greater understanding of the efficiency benefits to be derived from a True-line type approach to cattle breeding the goal for my Luing herd is to refine a proven, stabilized line of parent stock. The purpose of this strain of cattle will be purely maternal as there are already plenty of terminal genetics available in nearly every other breed. It certainly is not a "get rich quick" scheme and I expect it will make marketing our seed stock harder rather than easier. The reason? The inbred parent-stock will look different to what most buyers are used to selecting. I read that in the plant breeding world the in-bred parent lines used to make a successful hybrid are often pathetic looking plants in themselves and the same might apply to cattle. We must somehow train our eyes and minds to accept that we are looking at components of a final product – pieces in a jigsaw – rather than be disappointed that all the components don't look like the final product … in the case of cattle, the terminal steer.

To quote Larry: ***"The greatest mistake seed stock suppliers make is to pattern that stock after the commercial terminal product – which is more efficiently achieved by crossing."***

Greywood Balmoral 3X, polled

I see this stabilized parent stock line of Luing cattle we are developing having two obvious roles in beef production in Canada. One would be to provide females to breed to a terminal bull like a Charolais. This simple cross would maximize the benefits of hybrid vigor by combining the maternal goodness of the Luing and the enhanced meat yield capability of an appropriately selected Charolais. Having used Charolais bulls on Luing cows in the past, I am confident that there would be no trouble attracting a premium for the feeder calves as these good haired, tan calves are always in demand.

Given our current shortage of Luing females, another alternative is to use Luing bulls on Red Angus females to produce female F1 offspring that are better suited to Canadian conditions than the straight Angus that is so common nowadays. The Luing will contribute a heavier hair coat as well as improved foraging and wintering ability. I have found these two breeds to be very complimentary when crossed and, of course being an F1, you will collect the benefits of hybrid vigor through enhanced production efficiency, fertility and longevity. On the male side we have been very happy with this F1 cross as it gives us a steer that sells well in the sale ring as well as producing excellent quality beef in our grass-fed beef retailing program. In our experience the steers are easy to fatten on grass and marble very well.

Medicine River 5X, polled

<u>The Road Ahead</u>

I realize the breeding program I am involved in is going to be a difficult, time-consuming endeavor that likely won't be completed in my lifetime but each day is a small step towards the destination of my journey. Despite our breed being relatively young and really not that many generations removed from its Highland/Shorthorn origins, I think the level of heterosis within our breed are probably lower than in many other breeds. The gene pool in Canada is so small that there is a level of close breeding in almost every animal. In addition the foundations of this tight gene pool in Canada were sourced from the Cadzows while the breed in Scotland was still tightly bred and controlled by the founding family. I am quickly tightening up the gene pool within our herd by close-breeding, but realize equally that close breeding in itself

does not constitute genetic improvement or stabilization. Although I aim to concentrate the good genes we realize that we are also concentrating the bad ones, but at least this way they will be revealed and can be dealt with. Heterosis masks these negative traits and allows them to persist in the population. The cattle will have to be thoroughly evaluated so we can differentiate between the effects caused by heterosis rather than the truly superior animals and that will be a challenge given our limited herd size.

My hope is that as the years go by I will be able to breed cattle that will make our customers more money through improved consistency and efficiency in a hybrid based commercial system. We hope that you will stay with us for the journey

Little Valley 1X

Greywood Ardlarach 2X

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