

Bull's Eye

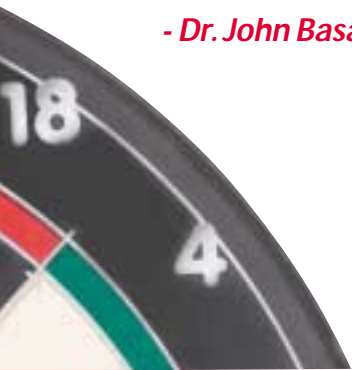
Targeting the Message

Young bulls are expected to grow big and strong – as quickly as possible. A study to sort out which animals develop the fastest and sharing this information with breeders could improve the Alberta beef herd and save the industry hundreds of millions of dollars.



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- Dr. John Basarab, AAFRD



If someone could show you how to save more than half a billion dollars, you would probably listen. Yet even with an incentive to hear about new research, it isn't always an easy job to make people aware of the latest developments. That is why there is a firm commitment to technology transfer among agricultural research scientists. They work hard to make sure that their findings result in concrete savings – or innovations.

A great example is the work of Dr. John Basarab, a research scientist with Alberta Agriculture, Food and Rural Development and a member of the Western Forage Beef Group. His findings have the potential to save cattle producers over \$100 per year in feed costs per head. Consider that there are over six million cattle in Alberta alone and that adds up pretty quickly.

Basarab has been working to identify animals that have a natural genetic advantage for gaining weight with less feed. Many cattle will take six to seven pounds of feed to put on one pound of weight; dropping that to five pounds of feed could make a real difference to all cattle producers.

Believing that genetics has a large role to play in the difference in weight gain, Basarab created a study that isolated the

factors involved to focus on selecting animals that had a natural predisposition to be efficient eaters. He created a study at Olds College and the Lacombe Research Centre involving 148 bull calves of various breeds. Each animal wore an ear tag with an identifying code, and using technology created by GrowSafe Systems in Airdrie, computers were able to accurately measure what each bull ate. This minimized the effects of other variables such as feed differences, weather, housing, and inaccurate feed measurements, to focus in on the efficiency of individual bulls. Ultimately, the results were compared to assess the net feed intake of each animal.

Quite simply, net feed intake is the difference between an animal's actual feed intake and its expected feed requirements for maintenance and growth. The variation is quite significant. In one of the trials, the most efficient bull ate \$45.69 less feed over a 120-day trial compared to the least efficient bull. Multiply that out over the course of a year and the size of a herd and it really adds up.

“This is a very large initiative, right from farmers to genetic marker work with the University of Alberta to speed the selection process even further,” explains Basarab. Net feed efficiency can be used to select cattle that are more feed efficient, without affecting body size and growth rate, or adversely affecting meat characteristics like marbling and grade. Overall, the impact on the industry could be high from both a dollar and cents perspective and an environmental one. The benefits of selecting breeding cattle based on their net feed efficiency could include:

- improved competitiveness,
- increased value of Canada's genetic stock,
- potential reductions in methane emissions due to better feed conversion, and
- reduced manure production.

Basarab and his research team, including Neil French at Olds College, are working hard to translate their findings into meaningful action for beef breeders and into useful information for cattle producers.

Add this to Basarab's work on achieving



top beef grades, and he has a chance to make a real difference to farmers' bottom lines. For example, his research found that yearling heifer calves placed on pasture for 105 days, on extended grazing for another 45 days, and then on a finishing diet for 120 days, consistently resulted in carcasses that graded 75-80% AAA, the highest grade possible. In contrast, omitting the 45 days grazing resulted in only 35-40% grading AAA. This has the potential to increase the value of each animal at point of sale.

So Basarab is one scientist who has lots of news to share with producers. His findings on net feed efficiency, as well as feeding practices, could see farmers winning both ways: saving feed costs and getting a better dollar for producing a higher grade of meat. Getting these messages into the hands of farmers who put them into practice is essential to turning these findings from theory into an economic boom. That's why there has to be a plan in place to target the messages to the right people.

Taking Aim

Funders, including the members of the Alberta Agriculture Funding Consortium, actively encourage scientists to develop



plans to communicate research findings. “It is actually part of the funding application process to prepare a plan for extension and technology transfer,” explains Freda Molenkamp of the Alberta Agricultural Research Institute. “We know that knowledge only really has meaning if it is shared.”

With such support for good communications initiatives, Basarab has taken a proactive approach. Working together with Pat Ramsey, a Beef Specialist with Alberta Agriculture, Food and Rural Development, the two have made an unbeatable team in getting out the message about these findings.

Starting with identifying the right audiences, Ramsey and Basarab have focused on working with the Alberta Breed Associations and the breed improvement coordinators to get information into the hands of the seed stock industry (the gene breeders of purebred bulls). For more than a year, there has been consistent contact, including visits, events at Olds College, and monthly Internet reports to interested groups.

These initial steps are only one part of the long-term plan Basarab and Ramsey have developed. Basarab describes it as an extension plan which is rather like planning for commercialization of applied research. In the end, it is all about converting research into practice.

As the work progressed, more was done to get the story directly to beef producers. A number of media interviews were conducted, including television, newspaper, and magazines. Ramsey has also been a keynote speaker at several conferences within Alberta and even in the U.S. As well, Basarab continues to raise the profile of their findings by presenting papers and technical articles at events like the meeting of the Canadian Society of Animal Science.

The duo has also made good use of the Internet, not only sending reports to participating breed groups, but also launching a web site for the feed efficiency tests. “The results went almost immediately to producers,” explains Basarab, who takes pride in the work done to date and intends to continue the

process. Plus, the efforts are paying off as everyone from fellow scientists to 4-H kids learns about the work.

Among the successes was an article published in the *Western Producer* last winter. The story highlighting the importance of net feed efficiency, raised the profile of the research right across the Prairies. The article also quoted rancher Doug Havens of Madden, Alberta about the significance of the findings to his own operation. “When hay is 12 cents a pound, that’s when you start thinking efficiency.” Talking about his own operation, he explained the need for a good tool to help him purchase the right animals.

Right on Target

Havens is not alone. Other Alberta producers appreciate the research and the effort to make it available to the people who will implement it. Basarab and Ramsey have both spent a great deal of time working with the various beef breeds organizations to translate this into the development of good seed stock.

Asked to volunteer in the study, Alan Marshall of Future Farms in Innisfail, Alberta was very interested. Marshall sells Charolais breeding stock in addition to operating a feedlot, and he could see the effects of genetics without being able to scientifically prove it. In his own operation, he observed that when he penned calves from different breeders, he could see significant gain differences. “I could have four pens of calves and have a 60% variation on efficiency,” he points out.

With this kind of anecdotal evidence, he wasn’t surprised to see more concrete results coming out of Basarab’s work. The most important finding to Marshall is the fact that Basarab was able to isolate the variables of weight gain to focus on genetics. This should be the foundation for future breeding decisions.

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Fellow seed stock producer, Grant Hirsche of Hirsche Herefords agrees. He also believes good genetics are the foundation to improving the industry and has assisted the study, providing young bulls from his High River farm to track and sire. Basarab's wisdom in working right from the start of a young bull's life is important. Certainly finding out an animal is more efficient just as it is being finished and is about to head to market won't do much to improve the overall genetics of the Alberta herd. Hirsche is quick to note that starting with young seed stock has been an essential leaping off point.

For Hirsche, it has also become a bit of a hobby. "I've followed these bulls through every month: followed what they've gained; what's happened on marbling; and how Herefords are going against other breeds," he says. He credits the scientists with providing the results regularly on the Internet and through seminars. "I think the information (on the study) is very accessible," he observes.

Most importantly, he can see its potential to make a real difference for Alberta farmers. Noting gain variations of 20-40%, Hirsche believes, "It is an outstanding program and a great idea. Bottom line, we're trying to get cattle efficiency just like every industry is trying to find ways to do things better and cheaper." That's going to have to come right from the start with the seed stock industry.

As well as working with beef breed groups, the research team has been able to create a "score" on feed efficiency to help cattle buyers more easily understand whether an animal has the desirable genetics. Simply a formula, it is the difference between an animal's actual feed intake and its anticipated feed requirements. If it was expected to eat 30 pounds of feed and only ate 25 pounds but still achieved the same growth, it would score -5. In this case scoring a

negative number is actually a good thing. In effect, it represents a potential drop in feed costs.

The easy to understand scoring system helps producers put the net efficiency factor into their buying decision. There are many elements to this equation, including traditional factors such as the Record of Performance and, of course, price. Now farmers can also consider how much it will cost to get that animal to market.

Yet, with agriculture, it's just not that simple. Marshall points out that the net feed efficiency findings are really important in a feedlot setting, but for animals in a herd other traits may be more important, including hardiness and ability to survive on straw stacks.

Marshall also notes that it takes some adjusting to get used to the net negative number. "You need to understand more than the print out - you need to understand the score," he counsels other producers. Still, he believes auctions already demonstrate the fact that producers are trying to measure the benefits of genetics, with significant variations in the price per pound for good stock. Now they will have the benefit of a tool to better inform those decisions.

More importantly, before that calf ever gets to auction, seed stock producers are working with Ramsey and Basarab to screen for good parents that will increase net feed efficiency in their offspring. Those offspring, and continued good breeding thereafter, has the potential to save cattle producers millions - half a billion or more - in feed costs. That improves beef economics all the way to the grocery store shelf. So it's no wonder that Basarab and Ramsey are finding their message right on target. **r&d**

Did you know?

- As of July 1, 2003, there were 6,050,000 cattle and calves in Alberta.
- Feed and pasture represent more than 60% of the variable production costs of a pound of beef.

For Results...

Visit the web for all the results at www.nucleus.com/~highwood/feedtest/index.htm.

