



## SOLUTIONS ARE ON THE WAY

by KIERAN BRETT

**Grain growers want steady markets and a decent price. Livestock producers want performance they can afford. New varieties, new technology and new thinking can create a win-win situation for both.**

Traditionally, the relationship between grain growers and livestock producers has been a zero-sum game: for every winner, there's a corresponding loser. When feed grain prices are low, livestock feeders benefit but grain growers suffer. When prices are high, grain growers make money while livestock producers take it on the chin.

Today, this dynamic is beginning to change. Grain prices are more volatile than either growers or producers would like and the rise of the biofuels industry has disrupted the supply/demand picture in unexpected ways.

What if there was a third path that met the needs of both producers and buyers of feed grains? What if growers could consistently get a profitable price and some assurance of markets? What if livestock producers knew the grain they bought would perform well in the feed bunk, at a price they could live with?

According to Alan Hall, Director of New Initiatives with the Alberta Crop Industry Development Fund (ACIDF), this is the situation, and the opportunity, facing agriculture in Alberta today.

“We need new ways to meet the needs of both livestock feeders and crop growers. The good news is, significant research funding is in place, progress is being made and solutions are on the way.” says Hall.

### **\$45 Million In New Research Funding**

Hall explains that over the past three years, public and private entities have committed \$45 million to feed grains-related research. In his analysis, creating a new win-win relationship among grain growers and livestock producers will depend on three elements: new varieties, new technology and new thinking.

New varieties are on the way. A major focus of today's feed grains research is to breed plant varieties that meet the needs of both growers and feeders. This requires researchers to make a sharp break with the past.

“In the early 1970s, Canada's barley breeding programs were directed to produce plump, high-yielding varieties,” says Hall. “While these varieties may look good, that is often irrelevant to whether these varieties possess the energy required for efficient feed conversion.”

Today, in Hall's view, the attributes that matter most are higher yields, water-use efficiency, nutrient-use efficiency and available energy. Improving these four attributes will make tomorrow's feed grains a more profitable proposition for growers and feeders.

New technology will capture feed value. There might be no technology with greater potential to improve our understanding of feed grains than Near Infrared Spectroscopy (NIRS).

“Using NIRS, we will be able to price feed grains based on their constituents of protein, amino acids, starch, fiber and digestible energy, calibrate for individual species and finally attach a value to feeding performance in dairy, hog, poultry and feedlot applications,” says Hall. “Value and pricing would be based on what is in the feed and how well the animal performs on it. That is a huge improvement from pricing based on raw tonnage, and it will benefit both sellers and buyers of feed grains.”

New thinking improves sustainability. Hall admits that this new world for feed grains will take some getting used to, requiring all parties to be flexible and open-minded. Livestock feeders will have options to consider feed grains other than barley: low-tannin faba beans, for example, could be an excellent fit for hog rations. For their part, crop producers will have options to receive value for their crops not simply based on how much they grew, but on its nutritional profile.

Says Hall: “We need to get beyond the idea of winners and losers in this industry, and start working together for mutual benefit. This new generation of feed grains research is a major step in that direction.”

## **FEED GRAINS DRIVE ALBERTA'S COMPETITIVENESS**

**This long-time agribusiness insider sees wheat and barley falling behind U.S. Corn, and fast.**

Alberta takes justifiable pride in the scale and quality of its livestock sectors. So why, asks Art Froehlich, have we neglected the feed grains that make our beef, pork and poultry sectors possible in the first place?

“When we look at agriculture in the province, the foundation for most products is a viable feed grains industry,” says Froehlich, whose three decades in international agribusiness give him a unique view. “It all begins with our wheat, barley, oats, pulses, triticale and DDGS.”

Over the years, Froehlich has followed the province's agricultural competitiveness in great detail, from a variety of perspectives. He maintains that Alberta's competitiveness in feed grains faces a significant threat from a U.S. crop with more acres, more growers, more investment and a faster pace of innovation: corn.

Corn is one of a handful of globally significant crops – along with soybeans, rice and cotton – that are receiving the lion's share of world crop research spending. With current average U.S. yields now at 180 bushels per acre, there's every possibility this average will jump to 300 bushels within 10 years.

Froehlich has far too much faith in Canadian researchers, institutions, agribusiness and farmers to throw in the towel. All the same, time is becoming a factor and now is the time for Alberta feed grains to get moving.

“Canada, especially Alberta, could take a global leadership role in developing feed grains research,” says Froehlich. “We need significantly enhanced yields, along with economic traits that make nutrient use and water use more efficient. Corn is improving fast, and we need to catch up.”

## **BARLEY GROWERS LOOK AHEAD**

**Research into new varieties will add value for buyers, and technology will make that value visible.**

Over the past seven years, the Alberta Barley Commission (ABC) has funded feed grains research to the tune of \$260,000 per year. That's more than \$1.8 million in producer check-off dollars, mainly targeted to feed-related projects.

To ABC's CEO Mike Leslie, this underscores the desire of the province's barley growers to update research priorities from the 20th to the 21st century.

“Over the years, we've distorted the breeding program to produce large, round, 'pretty', plump kernels,” says Leslie. “There is no price signal relating to the feed sector. It's all about what's the highest yielding and what's the plumpest, with the most yellow grain in the eyes of the buyer.”

Like others at the grain-livestock interface, Leslie believes that Near-Infrared Spectroscopy (NIRS) technology has the potential to synchronize the needs and incentives of grain growers and livestock producers. As NIRS calibrations are developed, and demand for units lowers their cost, this technology will be a leap forward from the days of evaluating grain with the naked eye.

“We need to start valuing our product to the individual buyer,” says Leslie. “NIRS can tell you the amount of pork, beef and milk that can be produced from a bushel or a tonne of the feed grain. In time, NIRS in a feedlot or hog barn will become like a moisture tester in a grain elevator. It'll be an everyday part of the business.””

## **WANTED: BETTER DATA ON BEEF, BARLEY AND FEED VALUE**

**There's a lot we don't know about how cattle use feed. For the sake of beef producers and grain growers, we need to know more.**

How much Alberta barley does it take to add a pound of weight to an Alberta steer? Despite the importance of beef to our economy (\$3 billion in annual sales) and the importance of barley to beef producers (70% of feed barley goes into cattle), this question has no easy answer.

“The feeding industry needs to do a better job of defining feed value,” says Dr. Robert Peterson, head of research at Western Feedlots, a leading cattle feeder with facilities in Strathmore, High River and Mossleigh. “Then, we need to do a better job of integrating this information with crop breeding strategies. There's been an assumption that if we focus on bushel weight and plumpness, the barley will meet our needs. The fact is, bushel weight and plumpness have a low correlation to feeding value.”

Peterson explains that his company performs a wide range of research, often involving 30,000 to 70,000 animals at any given time. This research, paid for by the company, has provided insight into the feeding value of barley, corn, wheat, DDGS and alternative feedstuffs, fed alone and in combination with other grains.

What the industry lacks, and Peterson advocates, is an accurate way to link the feeding value of grain to the price a beef producer pays a grain grower. Near-Infrared Spectroscopy (NIRS) holds the promise of such an advance, and to feedlot operators, that day can't come soon enough.

## VIEW FROM THE PORK INDUSTRY

### **Producers seek made-for-hogs feed varieties, better crop access and less volatile prices.**

Pork production is a major contributor to Alberta's agricultural economy. The province's 1,000 producers raise 3.5 million pigs per year, about 15% of Canadian production. This makes pork the fourth most valuable commodity in Alberta agriculture, after beef, wheat and canola.

Even so, according to Stuart McKie, most of this sector's all-important feed grains only come to it as someone's Plan B.

“Feed for pigs has usually been secondary to food production,” explains McKie, Policy Specialist with Alberta Pork. “If the barley doesn't make malt or if it has frost damage, well you just feed it to pigs. Hog producers are open to the vagaries of the marketplace on both availability and price.”

What's the alternative? McKie likes the direction of current feed grains research that more directly addresses what pork producers want in feed grains. He's not looking for pork producers to gain at the expense of grain growers. With the right approach, the needs of these two inter-dependent groups can be fairly balanced.

“We are looking for a feed-grade grain that is meant for hogs specifically,” says McKie. “We want high-yielding, drought-resistant feed grains. If we can produce more grain per acre, that can provide a reasonable return for growers while keeping the price reasonable for pork producers.”

## FEED MILLS SEEK MORE STARCH PER ACRE

### **Export markets have called the shots on variety development for too long, says this industry leader. Let's pay more attention to what domestic buyers want.**

Bushels per acre? While this is traditionally how growers keep score, feed mills see things differently.

Graham Cooper, executive director of the Animal Nutrition Association of Canada, explains that Canadian standards for wheat and barley have long been influenced by a desire to have grain varieties that are distinct from those of other countries. The idea is to attract a premium price in export markets.

What matters to feed mills is starch, and in Cooper's view, improving starch yield per acre of crop will make Alberta's and Canada's feed grains more competitive.

“If we allow our plant breeders to select for starch yield per acre, we could displace some of the corn that is imported into Canada to make feed,” says Cooper. “The feed industry is not hung up about protein levels in wheat or barley, about milling characteristics, bread-making quality or malting quality. We blend a variety of ingredients to get the balance needed for a particular species or class of animal.

“What we want is a good supply of competitively priced grain, whether there is an export market for the grain or not. If the current standards were revised, producers would decide whether they were going to grow wheat for the export market or for the domestic feed market.”



## FEED SUMMITS SET RESEARCH PRIORITIES

**Producers, the feed industry, scientists and governments agree: focusing research on these key areas can improve Alberta's feed grains competitiveness.**

“We don't have unlimited resources or unlimited time,” says Alan Hall, Director of New Initiatives for the Alberta Crop Industry Development Fund (ACIDF), one of the Feed Summit organizers. “There was broad agreement that for feed grains to meet their potential, research and development must focus on specific priorities.”

The Feeds Summits came up with eight strategic priorities which could contribute solutions to feed grains competitiveness.

1. Create a new form of collaboration among crop and livestock producers and the feed industry. The Summits discussed starting an organization that allows the needs of all stakeholders to be addressed and balanced. This organization could also take the lead on communications.
2. Fast-track the development of new and better methods of feed evaluation, linked to markets and pricing. Technologies such as Near InfraRed Spectroscopy (NIRS) are seen as having the potential to create this crucial link between price and performance.
3. Improve genetics for both crops and livestock. Crops need improved ability to deliver usable energy, while livestock needs to get better at translating that energy into gain.
4. Learn more about by-products. DDGS from ethanol production will play a greater role in the feed mix and its feed value must be better understood. The same goes for by-products of food processing.
5. Set the course with a feed competitiveness strategy. This strategy, and the thinking behind it, could fuel progress on issues such as policy and regulation, research and development, incentives and trade.
6. Improve processing and manufacturing technologies. New approaches at the manufacturing level could boost feed performance while taming cost per unit.
7. Establish a Western Canadian Feed Grains Institute. The Feed Innovation Institute at the University of Saskatchewan is one model for how to unite and energize funders and performers of research.
8. Boost market returns for livestock and livestock products. The meat quality and market value of cattle and hogs relate directly to their feed. Improve the feed and you improve the value to feeders.

## \$45 MILLION IN RESEARCH INVESTMENT

Governments and other funding providers are backing feed grains R&D as never before. One of the key funders is the Alberta Crop Industry Development Fund (ACIDF), which has invested more than \$13 million in projects to improve feed competitiveness, including NIRS development, feed crop breeding, DDGS and improving forage production. ACIDF funding is one element of a current total of \$45 million in public and private investment in feed grains competitiveness.

## PARTNERS IN FEED GRAINS COMPETITIVENESS

**ACIDF** recognizes and thanks these partners for their contributions to feed grains research – whether as policy-setters, investors or performers of research -- for the benefit of all.

Agriculture and Agri-Food Canada  
Alberta Agricultural Products Marketing Council  
Alberta Agriculture and Food Council  
Alberta Agriculture and Rural Development  
Alberta Agriculture Research Institute  
Alberta Barley Commission  
Alberta Beef Producers  
Alberta Canola Producers Commission  
Alberta Cattle Feeders Association  
Alberta Chicken  
Alberta Livestock Industry Development Fund Ltd.  
Alberta Milk  
Alberta Pork  
Alberta Pulse Commission  
Alberta Research Council  
Animal Nutrition Association of Canada  
Canada Grain Commission  
Canadian International Grains Institute  
CIMMYT (feed grain germplasm development based in Mexico)  
Diversified Livestock Fund of Alberta Ltd.  
Feed Rite  
ICARDA (feed grain germplasm development based in Syria)  
Prairie Swine Centre  
Saskatchewan Agriculture and Food  
UniFeed  
University of Alberta  
University of Saskatchewan  
Viterra  
Western Feedlots



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*Over the next several months, ACIDF will be publishing follow-up articles that will look in depth at specific solutions to feed competitiveness and will outline investments being made by private industry, farmers, research organizations, government and funding agencies in present and future feed grains research and development.*