

WE BELIEVE IN GROWING ALBERTA'S ECONOMY

the LINK



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Dr. Michele Veeman has always taken a keen interest in public perceptions. Her latest study, entitled "Risk Perceptions, Social Interactions, and the Influence of Information on Social Attitudes to Agriculture Biotechnology," is exploring the trade-offs people make when purchasing food.

Biototechnology. Frankenfoods. GMO. You'd have to be living under a rock for the past few years to not have heard these buzzwords. Still, it is unclear if the general population really understands the issues surrounding biotechnology. How reliable is the information they receive? How informed are consumers? Do they trust information sources? And when all is said and done, just how does the general Canadian population feel about biotechnology?

Dr. Michele Veeman, professor in the Department of Rural Economy at the University of Alberta, has watched the biotechnology issue evolve from the very beginning. She has taken a keen interest in pinning down some concrete answers on public awareness and acceptance of biotechnology, specifically with plant-derived genetically modified organisms (GMOs). "In the past four years, more research has been oriented to the consumer and social attitudes towards food safety and quality," she explains.

Currently, Veeman is involved in several projects pertaining in some way to biotechnology, from the cost of identity-preserving non-GM wheat to social attitudes concerning government regulation of biotech policies. Dr. Veeman has a great team to work with, including several Master of Science (M.Sc.) students and two professors. Izzy Huygen, along



Dr. Michele Veeman

with Dr. Mel Lerohl, is researching the cost implications of identity-preserving non-GMO wheat. As well, Elspeth White, working with Dr. Victor Adamowicz, is focusing on a case study of the costs of pesticide damage averted from a pest resistant crop. Dianne McCann has also worked with Adamowicz on a survey to explore acceptance of various regulatory policies for biotechnology.

The largest project Veeman heads, entitled "Risk Perceptions, Social Interactions, and the Influence of Information on Social Attitudes to Agriculture Biotechnology," is a collaborative study

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DID YOU KNOW...

The top five agri-food exports from Alberta in 2001 were:

- beef and veal at \$1.7 billion
- wheat at \$1.2 billion
- live cattle at \$712 million
- canola at \$448 million
- pork at \$217 million

Alberta food sales from grocery stores and supermarkets exceeded \$7.3 billion in 2001, while restaurant, caterer and tavern receipts totalled about \$4.5 billion.

According to the 2001 Census of Agriculture, farms are 11 per cent bigger, but there are 11 per cent fewer of them, compared to the last Census in 1996. The 2001 Census counted 246,923 farms in Canada, with an average size of 676 acres.



► Buying Biotechnology?

Continued

with Adamowicz, in which they are gathering data from an extensive, nationwide, Internet-based survey conducted during December 2002. The project, largely funded by AARI, includes an experiment based on 800 Canadians' choices indicating how labelling, price, food safety, and health perceptions factor into grocery purchasing decisions, and how opinions and information about biotechnology affect these choices.

Veeman and her team consider it imperative to document how factors influence peoples' perceptions and attitudes to food biotechnology. "It will be helpful to see how attitudes and trade-offs (in choices) vary," she says. Trade-offs in this case may be between higher or lower prices for food with certain environmental or food quality benefits or costs. "It will also be helpful to know how the public is influenced by information (such as on labels, in the media, or from different interest groups). This should give us a better understanding of how consumers' attitudes are formed and changed, how people may react to different information, and how risk information could best be communicated."

The survey is statistically configured to use detailed demographic information to provide very specific answers to its questions about what choice would be made and by whom. "Peoples' attitudes towards perceived risks and benefits are often different for people who differ in age, gender, income, education and occupation," says Veeman. "We don't just want to know the general perceptions of participants. We want to know how different socio-demographic factors affect peoples' perceptions and food choices relative to a biotechnologically

derived food, and how these perceptions and choices may change with specific forms of information given in the process of the survey," expands Veeman. "We want to know what are the trusted sources of information."

In this particular survey, subjects were asked to describe their preferences in bread, first in terms of texture, brand name, price, slice width, and ingredients (whole-wheat, white, multi-grain, etc.). Consumers were then asked to state what sort of perceptions they have of their common bread purchases concerning fibre, pesticide residue, sodium, and GMO content.

"We don't just want to know the general perceptions of participants. We want to know how different socio-demographic factors affect peoples' perceptions and food choices relative to a biotechnologically derived food, and how these perceptions and choices may change with specific forms of information given in the process of the survey."

Dr. Michele Veeman,
Professor, Department of Rural
Economy at the University of Alberta

Once these basic preferences were identified, consumers were then faced with different scenarios that affect purchasing decisions. As the survey proceeded, the preference factors included in the list of options were altered in some way, in different combinations, to determine what factors are more important in the final purchase decision. For example, some purchase decision scenarios included "contains genetically modified/engineered ingredients" in the list

of ingredients.

Participants were also asked to rate how high they perceived their risks to be from a series of health and environmental factors. In the course of the survey, respondents could choose to access further information, from specific sources, about agricultural biotechnology and the possible impacts that it could have on food quality and the environment.

To evaluate what the general public already knew, or perceived, about biotechnology, the consumer was finally asked to respond to common statements made about biotechnology in food, and

decide whether they are true or false. An interesting segment of the study asked how reliable the participant felt various sources of biotech information were, including the government or research institutions.

Veeman is encouraged by the potential in this type of interactive computer-based survey, as well as by the usefulness of the results. "On a professional level, this type of research is unique. We've developed this survey to be more sophisticated and interactive than what has been done in the past."

Now that the survey has been completed, the results may finally give a clear snapshot of how Canadians feel about food safety and biotechnology. Veeman is certain that many industry players are anxious to discover just what perceptions are out there. "I think that the results will be relevant on all levels – government and policy makers, producers, industry leaders, and the general public."

What does the future hold for Veeman's research? "We will be gleaning and analyzing the information from the Risk Perceptions study this year and into 2004. This study only dealt with the plant GMO issue. With colleagues in this Department, we would like to study the acceptance of animal-based GMOs, which appear to be less acceptable to many consumers: the issues that underlie risk perceptions for food deserve more research."

There is still much work to be done to create awareness and deliver accurate information about biotechnology to the general public. Investigating the public acceptance of more biotechnology topics or practices, to gain a better understanding of how attitudes are formed and may change, will aid in keeping the agriculture industry moving forward. Veeman and her associates understand that current social pressures from the European Union, and the world, make it imperative for Canadians to stay ahead of the curve concerning biotechnology acceptance and tolerance. She certainly has her work cut out for her.

Sample Survey Questions Posed to Participants

- Based on what you know or think, is the bread you most often buy...

- Organic
- Low in fat
- High in fibre
- Free of pesticide residues
- Low in sodium
- High in nutrition
- Free of genetically modified/engineered organisms

Answer yes, no, or I don't know

- Which would you purchase? If neither, choose "I would not purchase today"

- National brand, 100% whole-wheat bread for \$0.99. Contains whole-wheat flour, water, yeast, vegetable oil, sugar, and salt.
- National brand, white bread for \$0.99. Contains wheat flour, water, yeast, vegetable oil, sugar, salt, genetically engineered/modified ingredients.

- How much of a health risk do you think these pose to you personally? Rank as "almost no risk" to "high risk"

- Use of genetically engineered/modified products in food production
- BSE (mad cow disease)
- Pesticide residues in food
- Fat and cholesterol content
- Use of hormones in food production
- Bacterial contamination of food
- Use of food additives
- Use of antibiotics in food production



Dr. Pete Desai

Dr. Pete Desai has been a member of the AARI Board of Directors since 1999, and currently serves as the Vice Chair of the Board. He has gained the experience necessary to fill these roles with great competence through his farming background and his scientific and marketing career at Dow AgroSciences Canada Inc. His involvement in agriculture spans over 30 years.

Desai has a vision for AARI – a leadership role in building the best team culture among the research community in North America. Sharing knowledge can allow researchers to become leaders in their fields, and a team approach is critical to this sharing, especially at a time when the knowledge base is growing exponentially. If AARI were to act as a catalyst to bring diverse stakeholders together with an eye toward defining Alberta's advantages in the industry, he holds that it would be possible for the province to capture a strong share of the global market. Cooperation will also provide a rare opportunity to open a new bio-economic sector, one that will help stabilize the provincial economy in rural and urban areas.

Desai strongly believes that the "Do It" attitude of Albertans, combined with what he defines as a "renewable population", puts the province in the position to become a model for agriculture innovation in North America. He is committed to fostering a dynamite research and development culture of teamwork.

▶ For a Better Alberta

“Very ambitious, aggressive growth” is AARI’s goal for Alberta’s entire agricultural industry and its partners, and AARI is leading the way with a strategic business plan for the province that will get Alberta to the pinnacle of innovation, research, development, and commercialization in the broader area of life sciences. “20-10 by 2010” is how Alan Hall, Director of AARI, describes the plan – \$20 billion in value-added business and \$10 billion in primary production for the province of Alberta by the year 2010. “That’s our target, the direction we’re heading,” he says.

To achieve this ambitious goal, Alberta’s life sciences industry needs a strong foundation of support. Thus AARI is leading and facilitating the development of a strategic Framework and Business Plan for the entire agricultural research and technology development system in Alberta, in cooperation with numerous partners with an interest in the life sciences industry. This business plan brings together investment, direction, goals, infrastructure, and human resources under a single, focused plan, so that all of the agricultural R&D industry in Alberta will work together to push Alberta agriculture further as a single, cohesive unit.

Building Focus

There are two areas within the R&D system that are key to building a focused team of collaborators and projects. “Number one,” says Hall, “are we doing the right research? Number two, are we doing it in the right way?”

Hall says that researchers need to first

determine priority areas of research, and then use due diligence in their preparation, doing background investigation before they embark on a project. He calls it “competitive intelligence” – making sure that conducting a research project is necessary because it hasn’t been done before or isn’t otherwise available. “Can we access other research instead of doing it ourselves?” is the question Hall says researchers should first be asking.

If the research needs to be done, then making sure it’s done well is the next step. “After the research proposal is pulled together, are we confident the team can do the research well? Are the resources available?” he asks.

Building Partnerships

Hall believes that Alberta’s agricultural R&D industry already does a good job of ensuring research is done well. Part of that success relates to the existing Funding Consortium that reviews, approves, and funds research projects. AARI played a critical role in the creation of the Funding Consortium, and the Consortium’s function is a key mechanism in ensuring that strategic funding decisions and investments are made.

The Consortium currently consists of six public research funding agencies including Alberta Crop Industry Development Fund (ACIDF), Alberta Livestock Industry Development Fund (ALIDF), Diversified Livestock Fund of Alberta (DLFOA), Agriculture and Food Council (AGFC), AVAC Ltd., and AARI. However, Hall says

AARI seeks to put Alberta’s life sciences and agricultural research and development (R&D) sectors on the map by 2005, and off the charts by 2010, as an internationally renowned centre of world-class research. To achieve such an ambitious goal, the Institute and its partners have set out a strategic business plan for the entire agricultural R&D system.

this group will grow as R&D grows in Alberta. “In the future, there will be expansion, with more funds added, and a second funding round-table for non-research projects, which will include market research, education, and pre-commercialization activities.

The Consortium works as a group to review research proposals, and then decides which organization will fund the project. One application reaches six potential funders. This process even facilitates partnerships among the funders, scaling up the size of the research and leading to larger projects. “This is creating a critical mass of funding which is attracting further investment in the province,” Hall says. The Consortium will play a key role in developing leading edge research proposals, and ensuring priority areas continue to receive necessary funding.

Partnerships among various industry groups are also part of the strategy for the R&D system. “This is part of an overall Life Sciences Strategy in Alberta,” Hall says. “Researchers will come from agriculture to work with the energy industry, and the same on the health side, whether researching nutrition, or nutraceuticals, or the potential in pharmaceuticals. Establishing the R&D system is a key brick in building partnerships with other sectors.”

Investing Back

New investments into the R&D system itself are key to the strategy and to achieving the goals set out for the province. Of primary importance is building the human resources and infrastructure to support new research. AARI will lead work with the research sector to work with and attract the research projects and collaborators, both locally and

The Changing Alberta Agricultural Industry

From 2000	To 2010
Traditional (Commodity Focus)	New Products (High Tech/High Value)
Food	Unique Food & Non-Food
Emerging Areas of Research Excellence	Strategic Globally Recognized Research
Adopting Technology	Commercializing Technology
Sustaining Resources	Enhancing Resources
Production Driven	Consumer and Knowledge Driven
Economies of Scale	Value-Added and Diversification
Sectoral (Agriculture and Food)	Strategic Alliances with Health, Energy, Information Technology, Forestry, and Environment Sectors
Rural Maintenance	Rural Enhancement

► Navigating the Lagoon

Manure management is burgeoning, literally. As a result, there has been a need to get a handle on where research was required and find ways to fund it effectively. A group effort made five well-defined projects possible.



abroad, to help Alberta reach its goal to excel in R&D on an international level. With the R&D structure in place, investment in priority research projects that are forward-looking and innovative will commence.

There are a number of priority research areas that AARI and its partners have identified in Alberta's R&D system. These areas include:

- Value-Added Health and Food Products: including health and nutritional properties of foods; food ingredient and fermentation products from crops; agri-based health, therapeutic, and wellness products; value-enhanced fresh and processed meats; and food safety.
- Bio-Products: including development of new bio-materials, such as bio-polymers, plant-derived fibres, and bio-composites.
- Sustainable Production: three main areas, including management, monitoring, and amelioration of natural resources such as water, soil and air; crop opportunities, such as value-added, diverse crops and crop products; and livestock opportunities, such as animal welfare and care, plus animal genetics and proteomics (study of proteins).
- Economics and Marketing: including market studies, as well as policy and regulation for new products.

Alberta Benefits

Bringing Alberta's R&D collaborators and research projects together under an approved, system-wide plan, and having each of the players align their individual business plans under the broader plan, will make the system function together, achieving higher goals and greater understanding than the projects could individually. The synergy created by bringing these projects together will benefit far more than those directly involved in the agricultural R&D industry; it will reach farmers and consumers in Alberta and abroad.

Better use of funding, research capabilities, and tools to develop new products and technology will benefit everyone in Alberta, Canada, and around the world. As AARI continues to meet its goals, the Institute will continue to evolve, ensuring AARI contributes to continuing improvement of the world-class R&D system it has helped to build in Alberta.

What do you do when you have 37 applications for funding in a single research area, demanding more resources than are available? Well, you get scientists and industry together to reduce it to a reasonable number of projects.

In 2001, the funding round table was faced with a whopping 37 applications just in the area of manure management. The three funders – the Alberta Agricultural Research Institute (AARI), the Alberta Livestock Industry Development Fund (ALIDF), and the Alberta Crop Industry Development Fund (ACIDF) – worked cooperatively to bring together stakeholders from the research community, the livestock sector, and other government funders to make sense of it all.

"The feeling from the funding consortium was that there were too many disconnected proposals," recalls Freda Molenkamp of AARI. "To see 37 proposals come in and not to see a common thread or game plan was concerning." In the interests of creating a plan from start to finish, a moderated workshop took place before the final funding call.

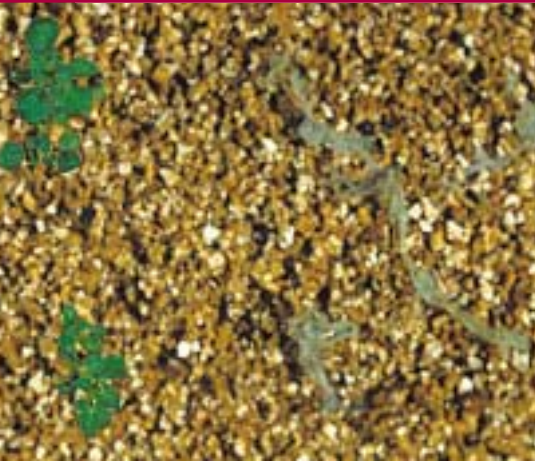
Together, the broader group was able to make great progress in clarifying the key priorities:

- agronomics and manure management
- odour
- energy and treatment

In each area, teams were asked to identify knowledge gaps and prioritize them. Out of this effort came a greater understanding of how the systems were related. In the area of agronomics and management, it was noted that proper understanding would lead to "the optimum efficiency of nutrients, value-added opportunities, and increased public trust." In addition to equipping farmers with tools like Best Management Practices, there was a broad-based understanding among scientists and funders alike that public education and social policy must be addressed to ensure the future success of the livestock industry in Alberta.

From this positive collaboration came a reduced number of proposals, five of which were funded in 2001. Plus, a framework is in place to guide future funding efforts in this critical area. Molenkamp also notes that everyone learned from the process, including the funders who gained a greater understanding of how scientists can collaborate and the importance of getting the strategic work done earlier in the process. Now with 20 proposals this year on the topic of Integrated Pest Management, a similar system is being used to help coordinate efforts in this area, too.

► Potato Potential



The potato research that Dr. Larry Kawchuk and others in Alberta are doing will help potato plants fend off diseases like this without the help of fungicides.

Did you know that there are now more potato acres grown in Western Canada than in Eastern Canada? Estimates place potato production in Alberta alone at around 400,000 metric tonnes per year, and much of that is thanks to research that allows both the production and processing sectors to flourish.

AARI has supported a multitude of research projects on potato production for more than 20 years. The developments that have come out of early research have pushed potato production in Alberta to an average of 400,000 metric

A Triple Look

Dr. Larry Kawchuk takes his research into potatoes in three parts:

- 1) He identifies the specific genes that resist certain diseases.**
- 2) He works with plant breeders to create varieties that have resistance.**
- 3) He develops diagnostics to detect disease pathogens.**

tonnes per year, or 19 per cent of the potatoes produced in Canada.

This growth has attracted more business to Alberta, including two new potato processing plants in Southern Alberta, McCain and Lamb Weston, which opened in 1999 and 2000, respectively. Acreage increased to even greater numbers with this increase in processing capacity.

While the future for Alberta's potatoes looks bright, research must continue to improve potato quality and yield to remain leaders in the industry. New requirements for end uses of potatoes, including processing requirements and possibly nutraceutical and pharmaceutical applications, mean new varieties must continually be developed and researched.

Incorporating disease resistance into current and new varieties is of primary importance to ensure the best quality, while reducing the need for pest control.

Some of the current work that AARI is supporting in potato research involves using the latest techniques in plant analysis to identify disease resistance in potatoes, and then creating disease resistant varieties. Dr. Larry Kawchuk is a Research Scientist in Pathology with Agriculture and Agri-Food Canada's Lethbridge Research Centre. He has been involved in a number of projects relating to potato diseases, including several that incorporate the use of molecular markers for identifying and managing diseases through the genes.

Kawchuk says there are three parts to the research he conducts. First, he studies potato diseases such as potato moptop virus and late blight, and develops diagnostics to detect the presence of pathogens. Kawchuk says this portion of his research allows identification of diseases to certify that potatoes are disease-free.

The second portion of his research involves developing potato crops for disease resistance. For this, Kawchuk works with other researchers in the field of plant breeding, such as Dr. Dermot Lynch with the Lethbridge Research Centre, to create potato varieties with resistance to diseases incorporated right into the plant. Kawchuk says that incorporating verticillium wilt and late blight resistance into potatoes is going on right now.

Finally, Kawchuk says he uses molecular markers to "pull out" resistance genes in potatoes, and he studies these genes to better understand how the plant defends itself against pathogens. "We can then take full advantage of that resistance and

move it into individual varieties that need it," he says.

All of this research has significant benefits to farmers, consumers, and the public in general, not the least of which is fewer chemicals applied to potato fields. "We cut down on the chemicals required by making the crop itself resistant." He adds that the trend toward reducing chemical inputs in agriculture makes resistant potato varieties even more important. "We must act now, because future reductions in chemical applications will be difficult if there are no alternatives in place."

Kawchuk says there are numerous other benefits to his research as well, such as cost savings by not having to apply chemical in the first place. "It's a saving to the grower, that is hopefully passed down the chain to the consuming public," he says.

Gaining a better price and better access for potato products in export markets is another benefit that could put Alberta ahead in the potato market. "If we can guarantee a competitive, disease-free product, there is a sales advantage," he says.

As Kawchuk and his colleagues in Alberta strive to create better potato varieties, they are also expanding the uses for potatoes. Kawchuk says one of his current projects is working with the Department of Defence to create potato varieties that grow vaccines to safely and inexpensively protect our Canadian troops.

This innovative research ensures that Alberta's potato industry will continue to expand, not just in production and processing capability, but in new end uses too.

► Making the Grade

Dr. John Basarab has given producers new understanding of the best feeding practices that yield top-grade beef carcasses. He's now adding to that by examining other factors, such as breeding decisions and genetic feed efficiency to develop a long-term understanding of herd development that will pay off with the Alberta beef industry getting the greatest premiums possible.

How much do cow/calf management, breeding practices, and sires play a role in the development of carcass quality? Dr. John Basarab, a Research Scientist with Alberta Agriculture, Food and Rural Development and member of the Western Forage Beef Group, determined over a one-year study that there was as much as a \$250 per animal difference in carcass value due to these variables.

Basarab has over 25 years experience in beef cattle production and management. He is very enthusiastic about improving not only the profitability of beef production, but also the quality and consistency of the beef product. The carcass trace-back research was a one-year project, funded in part by AARI that tracked 1,118 calves from seven Alberta ranches from birth through to slaughter.

According to Basarab, if you follow calves from weaning until slaughter you can identify pre-finishing management systems that affect carcass quality. For example, 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 per cent AAA, the highest grade possible. In contrast, yearling heifer calves placed on pasture for 105 days and then on a finishing diet for 120 days resulted in carcasses that graded 35-40 per cent AAA. Basarab explained that, "Older calves were at the body weight/age breakpoint where intramuscular fat deposition accelerates, thus causing a difference in the level of marbling and therefore the higher percentage of AAA grade beef produced." Marbling is defined as the fat striations in the meat. This is considered an extremely desirable trait as it enhances the taste and



tenderness of meat. The more marbling that is found in the meat, the higher the grade of the carcass.

Different sires also played a role in carcass value. Over a hundred sires were tested through the process from various ranches across Alberta and some sires didn't produce any marbling while other sires were shown to provide various levels of marbling.

More feedlots want to pay on a pricing grid, rewarding the presence of characteristics that both the packer and the consumer want, and discounting what they don't want.

Therefore, if producers select sires that provide the desired level of marbling, and then follow up this breeding program with a management system that backgrounds calves to a later stage of development, they can deliver to the meat packer a greater percentage of AAA carcasses. With a higher offering of AAA carcasses, a premium could be offered to both the feedlot and the producer, thus increasing overall profitability of the beef industry.

In addition to carcass trace-back, Basarab has been measuring net feed intake of calves during the post-weaning period. The overall objective is to have cattle use less feed to produce an acceptable beef product. By using new technology called the GrowSafe Systems developed in Airdrie, Alberta,

individual animal feed intake can be automatically measured and net feed intake determined. Net feed intake (NFI) is defined as the difference between an animal's actual feed intake and its expected feed requirements for maintenance and growth. Thus, it is the variation in feed intake that remains after the requirements for maintenance and growth have been removed.

NFI can be used to select cattle that are more feed efficient, without affecting body size and growth rate, or adversely affecting carcass characteristics, composition of live weight gain or distribution of fat deposits. Benefits from selecting for NFI are improved competitiveness, increased value of genetic stock through the generation of genetic merit values and potential reductions

in methane emissions and manure production by efficient cattle.

The work in understanding carcass quality traits and the impact of net feed intake that Basarab is undertaking will likely provide the framework for future Expected Progeny Differences (EPD) to be developed. Building on the initial findings, it will allow producers to make better decisions.

This research has proven both practical due to its immediate results to producers and it has long-term implications as better management tools are developed to forecast meat quality before it's even off the hoof.

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 per cent AAA.

Yearling heifer calves placed on pasture for 105 days and then on a finishing diet for 120 days resulted in carcasses that graded 35-40 per cent AAA.

▶ Alan Hall Leads the Team

Alan Hall brings expertise and experience to his new role as Director of AARI. He'll use both to further the collective priorities of AARI and its partners.

A man familiar to AARI, Alan Hall has served as both a partner to the Institute in his previous role at Alberta Agriculture, Food and Rural Development (AAFRD), and as a member of the AARI Board. As the Institute's new Director, Hall brings his long-term interests in research and collaboration.

Hall was born to Alberta agriculture. Growing up on a farm in the Barrhead area, he developed an appreciation for the importance of agriculture, and after a brief stint in the oil patch, he returned to his roots. Upon graduation from the University of Alberta in 1972 with a degree in Agricultural Economics and a Crop Science major, he began his work with the Alberta government as a District Agriculturist, serving at Morinville and Westlock. In 1983, he moved to AAFRD at Red Deer where he served as Regional Director for 15 years. Becoming Director of the Plant Industry Division in 1999, he provided overall leadership to AAFRD crop research, technology transfer, and industry development efforts.

Hall takes particular pride in his work to establish both a forage association and applied research association in Alberta. He fostered both groups by ensuring the department assisted them with funding and strategic input. Throughout the 1980s and 90s, he provided leadership to Alberta's agricultural and public land services in Central Alberta and also to several provincial initiatives. In the past year, as Research Director for AAFRD, he has led the development of Alberta's Agriculture Research and Innovation Strategic Framework, an undertaking fostered by AARI and partnered with AAFRD.

Hall has been involved with several community and industry organizations.



Alan Hall - Director of AARI

His board work includes the national boards of the Canadian Seed Growers' Association and Pulse Canada Research. In Alberta, he has served on the boards of the Alberta Crop Industry Development Fund and the Central Alberta Business Advisory Network (now the Central Alberta Economic Partnership). He joined the AARI Board in 2000, a logical move that allowed him to further the collaborative efforts of important players in agricultural research.

Hall is passionate about the difference research can make to economic development and the prosperity of the agriculture sectors. "Research makes a real difference to farmers, processors, and exporters," says Hall. In his new role, he will continue to champion the development and implementation of the Provincial Research and Innovation Strategy designed to create a

well-oiled machine that moves Alberta further into the forefront.

"All stakeholders, from industry, to funders, to researchers, to government, must actively support this process, and deliver in a highly collaborative fashion," he continues. "AARI's role is to provide leadership and coordination, along with our partners, in setting and achieving priorities. Of course, the most important priority of all is to grow profitable and sustainable agriculture, food, and bio-products industries in Alberta as a means for the province to remain competitive in the global market, expand our economy, and put jobs and profits back into rural communities and agriculturally-based businesses and farms."

"For Alberta to be successful in this endeavor," Hall adds, "We will have to seize new market opportunities in partnership with the health, forestry, energy, environment, manufacturing, and information technology sectors of our economy. We will also need to pull on all the levers of change." Research is important and a major contributor as an economic driver. However, this needs to be in sync and partnership with human resource development, business development, market development, and investment attraction so that efforts to progress are focused on those barriers and opportunities that will make the most difference.

Hall and his wife Sue have two grown children and a tomcat. He is an avid curler and a wannabe avid golfer – all in his spare time, of course.