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Alberta *is* Barley Country.

This province grows more barley than any other province, and Alberta's output typically accounts for half of Canada's annual crop. Barley production for feed, malt, and food is an important economic activity in Alberta.

See *Barley Country* at www.albertabarley.com

Barley Country is published quarterly by the Alberta Barley Commission to inform producers of new technology and developments affecting barley production and to promote new markets for Alberta barley growers. Opinions expressed in any article(s) are the opinions of the author and may or may not reflect the official position of the Alberta Barley Commission.

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General Manager's Message

I am pleased to join the Alberta Barley Commission. Since my first day on the job, Nov. 16, 2005, I have been enjoying refreshing my memory with all of the acronyms we use in agriculture, ALIDF, ACIDF, AARI, APF, AFC, AVAC, AVEC, AAFRD, AAFC and those are just a few of the A's!

I have been asked to make a short report and to introduce myself and my role in the Alberta Barley Commission. My wife Erin and I have two children, our son Brenwyn is 11 and our daughter Rhiannon is 8. My wife is a teacher (Drama, English and a Masters in Adult Education – second language acquisition). The kids keep her on the go with swim club, music (guitar, piano, hand-bells, band, choir), safety patrols, dance etc. etc.

I am originally from Manitoba, since arriving in Alberta in 1979 and except for two stints in Japan (with the Alberta Government for 4-½ years in Tokyo) have lived in Alberta. My educational background is Ag Econ and my experience is mostly around value adding agricultural raw commodities to make higher-value end products. I will bring that focus to the Commission and our research, product development, market development and producer programs in an effort to provide more dollars to Alberta barley producers.



Mike Leslie

My first 30 days were hectic ones with a late November trip to Ottawa to discuss grain issues around Food Safety, Importation of ag chemicals from the US, rail car ownership, risk management and the WTO talks amongst other things. I also attended the AGM of the Grain Growers of Canada and participated in Canada Grains Council meetings. That was followed by the Alberta Barley Commission (ABC) AGM held in Banff on December 8th and 9th. The AGM was a success in judging the evaluation forms with 88% rating it good or excellent, ditto the bear-pit session with a 86% good or excellent approval rating.

Motions and resolutions coming forward from the delegates had excellent discussion and were placed before a vote.

The motion to support the corn countervail was defeated, while those present indicated they wished to send a message to the US that their trade support was harming Canadian producers they did not wish to establish another trade distorting duty that might harm Canadian barley customers such as feedlots, distilleries or ethanol operations.



Clif Foster

A motion to seek a "one voice for all" Alberta Farm Organization was narrowly defeated in a close count. ABC will

continue to seek to cooperate and collaborate with other Alberta and national organizations in and around agriculture to put forward a unified message for our membership.

Two motions with recommendations for improving the AFSC insurance programs were approved and the Board will be meeting with AFSC in the new year to review the recommendations and other suggestions to make the program work better for Alberta farmers.

Motions to increase consumer and producer education programs were both approved and new programs are under discussion on how best to provide this messaging. We will be working along with other groups who have similar issues and opportunities such as the canola, wheat and special crop organizations.

Motions to recommend changes to the CWB voting structure and with regard to the recent Shochu barley sale to Japan were both carried and I will be following up on them in the new year as well.

Guest speaker Mr. Len Penner, president of Cargill Limited, brought messages of opportunity and a call for change to address that opportunity. Mr. Brant Randles, president and CEO of Louis Dreyfus Canada, presented on some of the barriers in logistics, transportation and marketing systems and suggested how, as an industry, we might work towards improvements in those systems.

The AGM was followed by a spirited discussion on the WTO and its relationship to farm income and the future of agriculture in Canada. A panel of our guest speakers and delegates was ably chaired by Mr. Darcy Willis of AAFRD.



Chair Doug Robertson, left and Clif Foster

The event was capped off with a formal dinner and entertainment. Mr. Clif Foster was celebrated and a presentation from Chair Doug Robertson on behalf of the Board, Delegates and Organization was made at that time.

All in all a busy first month. I am looking forward to meeting with all of the stakeholders who are interested in, and can make a contribution to, the barley sector and by working together seek to place more dollars in the pockets of Alberta barley producers.

Best of the season!

Mike



Round Table Discussions

Is there a different way to look at malt barley production?

George W. Clayton and John T. O'Donovan, AAFC – Lacombe and Beaverlodge

The CWB intends to increase malting barley selections by one million tonnes (Western Producer July 15, 2004). Currently, 20% of the malting barley in western Canada is selected for malting each year. Therefore, demand for malt barley quality needs to be increased by 5-10%. The CWB also emphasised the importance of higher plant densities (> 200 plants/m²) to achieve more even head and kernel sizes. Will producers need to change their production practices to meet this demand? Our literature search indicated that there is little information on the effects of agronomic factors on malting barley seed quality and uniformity. In western Canada, Therrien et al. (1994) showed that malt quality was affected more by genetic and environmental factors than fertilizer management. A recent study in the U.K. found that seed uniformity can have a substantial impact on malt quality and can be affected by seeding rate, nitrogen, variety and other management factors (Wade and Froment 2003) suggesting that farmers can improve malt quality through manipulation of these factors. The way barley was treated in the field was the main factor influencing the homogeneity of the malt.

AAFC researchers in collaboration with the Canadian Grain Commission, Alberta Agriculture, Food and Rural Development and the Applied Research Association at Westlock GRO have designed a research project to determine if there is a better way to buy malt barley. Organizations like ABC and Rahr Malting have committed in principle financial support for this project. Further

support from other organizations is required to complete the whole project. This will be the first project ever conducted under western Canadian conditions that will relate a plethora of agronomic factors including tillage, seeding date, crop variety and seeding and nitrogen rates, as well as herbicide and fungicide rates to barley seed quality characteristics (kernel colour and hardness; relationships between homogeneity, plumpness and protein) that are deemed crucial for the acceptance of barley for malt. Homogeneity (a measure of grain uniformity) is of increasing interest to maltsters, who have to produce homogeneous malt, but there is virtually no information available for western Canada on the effect of management practices on this trait. This will be the first project of its kind to attempt to fine tune the various agronomic practices to achieve an appropriate combination of plumpness, protein and seed uniformity for acceptable malt quality and to relate agronomic practices directly to the quality of the malt. The project will be unique in its investigation of the link between agronomic practices and the malting process with two different malting varieties, AC Metcalfe which processes relatively quickly with high levels of enzymes and CDC Copeland which processes somewhat slower and with less enzyme development.

The objectives of this project include:

- To develop and evaluate improved management systems for current

Continued on Page 5

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Region 5 Report

I have been a director for five years and have one year left. I have been involved in Agriculture Policy, mainly safety nets, for a little over 20 years with the Western Barley Growers Association. Being on the Commission and on two committees which both are involved in the Field Crop Development Centre (FCDC) Lacombe has given me a broader perspective on Agriculture Policy.



Ed Armstrong

Research as to varieties and agronomics is an area one tends to overlook or takes for granted when lobbying Government on Agriculture Policy Issues. However, this area of research is very critical to the profitability and sustainability of production agriculture. Integrated Crop Management shows that crop rotation, types of varieties grown, seeding rate, fertilizer and chemical rates, when put in the right mix can increase a farmer's bottom line. I have also found that research and value added/market development is somewhat disjointed. I have come to the conclusion that this has to be a package deal with all the people, primary farmer to end user, at the table and committed to the process. By operating in this manner, a value chain would include the primary farmer and he would extract a portion of the value created. Without this type of research structure, the primary farmer will be left out, with everyone else up the value chain on a cost plus basis. Therefore, my conclusion is, that unless there is a strong variety/agronomic research program as part of the research/value added/market development package, the primary farmer will not receive the real benefits gained, and the value added sector will not reach its full potential.



Christmas Cards

Instead of sending Christmas cards this year, the Alberta Barley Commission has made a contribution to the Food Bank.

*Have an
excellent
holiday season.*

The Alberta Barley Commission

Welcome New Delegates

We would like to introduce and welcome the newly elected Delegates to the Alberta Barley Commission.

A Big Thank You to our Annual Meeting Sponsors

The Alberta Barley Commission held its 14th Annual Meeting and Banquet at the Banff Park Lodge in December.

We would like to thank our sponsors for their generous support in helping to make the AGM a success.



*Linden
Agri-Center Ltd.*



Jeff Nielsen

Jeff Nielsen was elected as a director of United Grain Growers in 1999. He continued in this capacity until the merger with Agricore in 2001 and was subsequently elected as a director of Agricore United in February 2005, and currently sits on the Agricultural Policy, Risk Review and Member and Community Relations Committees.

Jeff obtained a diploma in Agriculture Technology from Lethbridge Community College in 1987. Jeff is currently enrolled in the

Directors College, a program of the Conference Board of Canada and McMaster University's Michael G. DeGroot School of Business to provide comprehensive professional director development leading to an accredited designation for corporate directors, Chartered Director (C. Dir.).

Jeff is currently a director and vice president of the Western Barley Growers Association.

Jeff is also a representative of the Cereals Grain Round Table (barley sub group), an organization which works in conjunction with Agriculture and Agrifood Canada to

improve producer earnings and products for the end use of cereal grains.

Jeff operates a mixed grain farm near Olds, Alberta.

Murray Marsh farms in Mountain View County near Carstairs with his wife, Debbie and their two daughters, Carlie (13) and Erin (10). They have a 175 head cow/calf operation and 1,500 acres of annual crop; wheat, barley, canola, peas and forages. Family involvement on the farm is an important part of their life and work.

Murray has served on the Alberta Pulse Growers Commission, Zone 2 as a director for nine years and has met many interesting and talented producers throughout the province.

Murray is pleased to serve as a delegate in Region 2 and is open to hearing from producers and other stakeholders in his region about issues of concern. Among the many issues of concern to him in agriculture today is the need to have an open, competitive marketplace for our supplies and inputs, as well as our saleable commodities. ♪



Murray Marsh

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Barley, A Rising Star on Aisle 11

By Bev Whitmore, BSc RD MBA

Rosie Schwartz, a dietitian and food writer reported on the 2005 Grocery Innovations Canada Exposition in Toronto in her November 1st column of the *National Post*. This expo gives you a preview of the new products poised to hit grocery shelves in the near future. Rosie states "Whole grains, fortified foods, ethnic eats and meal replacements were among the items that food manufacturers envision on the wish list of consumers." "For the first time, whole grains were a very high profile commodity at the show. Even the perennial favorite, pasta, which has been available in whole wheat, is now appearing in whole grain formats containing assorted varieties of grains including whole grain barley flour, whole rye flour, buckwheat flour and ground flaxseed." Rosie also states "Snack foods are getting into the whole grain act with products like Quaker's Crispy Mini introducing a version of ingredients like brown rice along with whole grain corn and barley flour. Reaping the potential nutritional perks of whole grains with their anti-cancer and heart health attributes is becoming less difficult as these products become more mainstream on store shelves."

Perhaps the stars are aligned for barley. The large food manufacturers are recognizing barley as a healthy ingredient, nutritional research continues to develop evidence on barley's health benefits and now the recent USDA announcement of the approval of a health claim for barley for the U.S. market will move us strongly from 2005, The Year of the Whole Grain to 2006, The Year of Opportunity for Barley!

This scenario sets up tremendous potential for barley which will be recognized only with continued efforts to position barley as a healthy and tasty ingredient in the minds of food manufacturers, health professionals, media and most of all consumers. Our work has just begun! ♪



Western Barley Growers Association 29th Annual Convention & Trade Fair

Barley 2006 – A "free" Commodity
February 15, 16 & 17, 2006

Coast Plaza Hotel & Conference Centre

1316 - 33 Street NE, Calgary, Alberta Canada T2A 6B6

Tel: (403) 248 8888 Fax (403) 248 0749 E-Mail: infor@calgaryplaza.com

You are invited to share in fellowship and open discussions. The Western Barley Growers Association (WBGA) has important information and we want to convey it to you on topics such as...

- New Markets for Barley
- New Uses for Barley
- Value-Added Maximization
- Barley the new BUZZ word in Health and Nutrition
- WTO - Trade Policy and Subsidies
- Research and Development
- Farm Legal & Financial Management
- AgClearing – agricultural commodity cash clearing facility

It will be a great time - building on past experience and success so we can go forward with determination and confidence – whatever it may bring. Barley 2006 – A "free" commodity?

For more information or to reserve your place at the Convention contact:

Western Barley Growers Association

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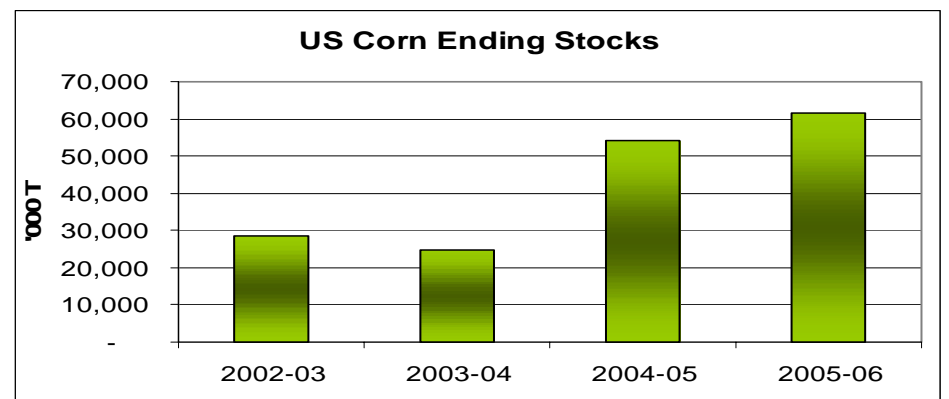
A strong voice for a vibrant, market responsive barley industry
in western Canada

Feed Barley Outlook

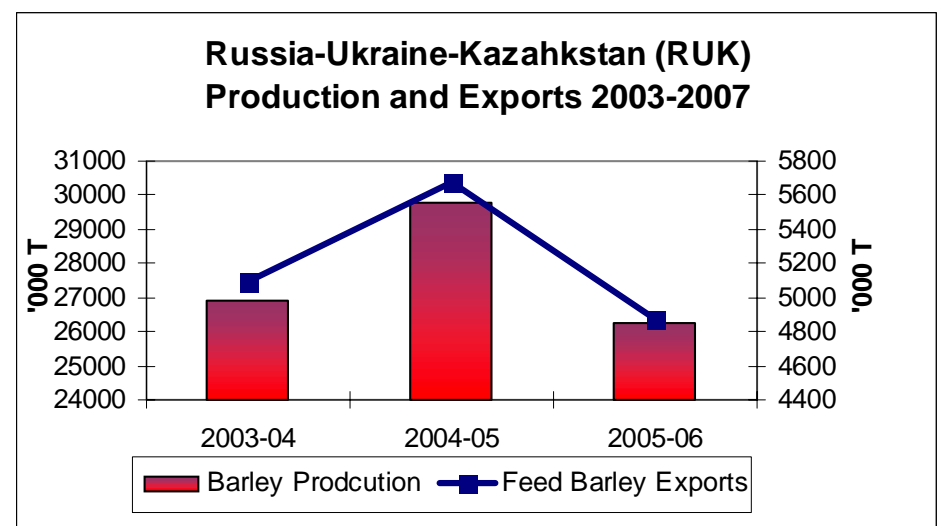
Neil Townsend, Market Analyst
Canadian Wheat Board

There are two significant markets for Western Canadian Feed Barley: the domestic feed market and the export feed market. For 2005-06, the domestic feed market should be relatively stable due to larger inventories of hogs and cattle and the partial opening of the United States (U.S.) border to Canadian beef and cattle. Western Canadian barley production in 2005-06 was 11.64 MT, a 650 KT decrease from 2004-05 but still over 1 MT above the 5-year average. For 2005-06, the PRO for Pool A was C\$126 and for Pool B C\$118 per tonne. Pool A is expected to reach about 900 KT, well ahead of last year's pace when only 29 KT was signed up in Pool A. In total, there has been 1.3 MT of export sales from 2004-05 Pool B and 2005-06 Pool A in the May 2005 to February 2006 shipping period.

The Canadian International Trade Tribunal has ruled that imports of corn have been injurious to the Canadian corn sector. Indications are that the resulting duty could be between C\$.50 and C\$1.57 per bushel. The wide range of the anticipated duty makes it difficult to project the net effect on imports of US corn and the movement of western feed wheat into eastern Canada. There is very little corn imported into western Canada and also very little likelihood of significant movement of Western feed barley into eastern Canada. However, a countervailing duty towards the higher range could encourage significant quantities of feed wheat to flow to eastern Canada and provide a positive effect on Lethbridge feed barley cash prices.



Despite the lower world corn prices and the weight of record US corn stocks on the market, export feed barley prices strengthened during the early part of the crop year in part due to moderating ocean freight. Steady barley demand from overseas markets such as Saudi Arabia and world production in 2005-06 was 134.2 MT, nearly 6 MT lower than the 5-year average resulted in upward pressure on the world feed barley price. However, the Australian harvest has just begun and the expectation is that they will have an exportable feed barley surplus of 3.5 MT. Russia and Ukraine had lower production in 2005-06 and overall their exports were down by 1 MT.



The EU is likely to continue to sell small amounts of barley from intervention stocks. Although the quantities are small, the continued intervention sales will weigh on Black Sea values for smaller sized cargoes. Thus overall, the export market does not show much upside through the end of this marketing year. However, the market has anticipated all of the above factors so there is no significant downside unless Australia manages to export more than 3.5 MT. A potential positive is a further deterioration in Black Sea winter crops reducing winter barley production and cash supply for spring inputs.

In conclusion, domestic feed barley prices are forecast to remain relatively stable with no major up or down movement until new crop. The one potential positive factor will be if the corn duty shifts large quantities of feed wheat to eastern Canada and results in greater demand pressure for western feed barley. We expect the export market may experience a price decline as Australian feed barley reaches the market. ♪

Is there a different way

Continued from Page 2

malt barley varieties that compare quality (plumpness and protein) and homogeneity (seed uniformity) for the processing requirements of maltsters.

- To determine the relative importance of the various agronomic factors in relation to barley seed quality factors and malt homogeneity following the micro-malt assessment process.
- To develop management practices that will support sustainable and environmentally friendly malt barley production systems based on sound principles of integrated crop management.

The benefits of conducting this project include a better malting barley quality and yield, more efficient use of inputs resulting in lower input costs, increased producer margins and a greater likelihood that Canada will continue to be competitive in an expanding global malting barley market. In addition there would be value to the barley industry in Canada by increasing the potential for more barley to be accepted for malting. An additional benefit includes support for the barley seed industry through increased demand for quality pedigree seed.

The overall benefits of the research investment includes 5% more selectable malting barley, increased seed and malt industry economic activity, increased margins by producers, and increased exports together with reduced fertilizer and pesticide use. A projected return on research investment indicates that for every dollar spent on the project, \$94.7 would be generated, a very high rate of return.

Therrien et al. 1994. Effect of fertilizer, genotype, and environmental factors on some malting quality characteristics in barley. *Can. J. Plant Sci.* 74: 545-547.

Wade, A. and Froment, M.A. 2003. Barley quality and grain size homogeneity for malting: Vol. 1. Agronomic effects on varieties. Final Report. ADAS Rosemaund, Preston Wynne, Hereford HR1 3PG, pp 66

Western Grains Research Foundation

The Western Grains Research Foundation has released a study showing wheat and barley research delivers a big bang for investment bucks. The new study has re-confirmed what many in agriculture have long known - crop development research delivers tremendous investment value to farmers and their industry.

The study was conducted to determine the return on investment to farmers who support variety development through the Wheat and Barley Check-off Fund, administered by Western Grains Research Foundation (WGRF). It found that every dollar invested in wheat development returns a minimum \$4 to the farmer and every dollar invested in barley returns a minimum \$12.

The barley figure is higher because there is less barley research, but both findings reveal a remarkably high return on investment, says Dr. Hartley Furtan, agricultural economist at the University of Saskatchewan. "These are clearly very strong returns. They re-confirm what previous studies have found, adding to the weight of evidence that crop development research delivers one of the highest and most consistent investment returns of any type of agricultural research."

According to the findings, the benefit/cost ratio for producers for the Wheat Check-off is estimated at 4.4:1, meaning that every dollar of Check-off invested generates \$4.40 of increased producer surplus for western Canadian wheat growers. For barley growers in Western Canada, the benefit/cost ratio is 12.4 to 1, meaning farmers get back \$12.40 for every dollar they invest.

Because it takes from six to 12 years to develop a new cereal crop variety, the benefits from WGRF Check-off investment are just now beginning to affect wheat and barley growers' returns, notes Furtan. "Based on our analysis, the bulk of the estimated returns to producers' Check-off invested thus far by WGRF will have been realized by producers within the next four to five years."

The study compared the cost of the Check-off paid by producers to the economic benefits generated by the Check-off investments that arise from improvements associated with new crop varieties. "We began by identifying those varieties developed with Check-off assistance that represent significant breakthroughs in genetic technology," says Furtan.

More information on the Return on Investment Study is available in the December edition of the WGRF Industry Report newsletter, available at www.westerngrains.com.

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Regional Yield Data: A New Look

Helm, Juskiw, Duggan and Chapman, Field Crop Development Centre, Lacombe

INTRODUCTION

Cereal variety yield comparisons are calculated from multi-year and multi-location data, statistically analyzed and then summarized on a geographic basis over years. So despite large differences in cereal production levels from year to year, the average of the high and low yield data is used. The results can be misleading when drought, soil fertility or heavy rainfall makes a site or year much different than what is normally expected. As well, the averaged data doesn't pick varieties that are best adapted to low or high management conditions. In reality not all fields on a farm are capable of the same level of production yet farmers are given the impression that in their geographic area, varieties will respond in accordance with the long-term average.

The new yield potential cereal data analyses of the regional variety tests is based on a program developed by Field Crop Development Centre called the FCDC Data Miner that allows the search of data bases across years and locations and has the power to present the summary of the data in either geographic zonal format or by yield level of the test that the selected varieties are in. It can compare yields to a check variety or the mean yield of the test. The presentation of data on a yield level of the test shows how varieties do under low yielding conditions and how varieties responded to yield inputs to give the best results under high yielding conditions. Another consideration is when an older variety that was used as the check variety changes, the comparisons are still relative but the percentage differences can change if the new check variety is higher yielding.

PRODUCTION AREAS IN ALBERTA

The Province of Alberta is traditional broken into Agro Climatic Zones (ACZ) by soil type, precipitation and length of growing season.

Areas 1, 2, 3 are Dry areas of brown to transitional black soils.

Area 4 is a deep black soil with high levels of precipitation.

Areas 5 and 6 are Black to grey wooded soils and short season.

Continued on Page 7



Symbols used: † Denotes variety may not be described in 2006; NS Denotes variety generally not suited for area; XX Denotes insufficient test data to describe; ⊕ Denotes variety protected by Plant Breeder's Rights; ◆ Denotes protection under Plant Breeder's Rights has been applied for; Numerical yield data followed by a star (e.g. 101*) denotes limited data.

Abbreviations used: Comp. Mat. = Comparative maturity in (+ or -) days from the check variety. Comp Prot. = Comparative protein in (+ or -) percent from the check variety. Te. Wt. = Test Weight (lb/bu) pounds per bushel. Multiply lb/bu by 1.25 to get kilograms per hectoliter. Kn. Wt. = Kernel weight (grams/1,000 kernels). Seed size; S = Small, M = Medium, M-L = Medium Large, L = Large. Ldg. = Lodging; Shat. = Shattering; EX = Excellent, VG = Very Good, G = Good, F = Fair, P = Poor, VP = Very Poor. Com. Rt. = Common Root rot; FL & Cov. Smut = False loose & covered smuts; Net Blt. = Net blotch. R = Resistant, I = Intermediate, S = Susceptible. Ht. cm = Height in centimeters. Sprout Toler. = Sprouting Tolerance; P = Poor, F = Fair, G = Good, Ex = Excellent. Leaf Spot; VG = Very Good, G = Good, F = Fair, P = Poor, VP = Very Poor. Toler. FHB = Fusarium Head Blight Tolerance; G = Good, F = Fair, P = Poor, VP = Very Poor, F+ = somewhat better than fair. Awn type: R=rough; S=smooth; and SS=semi-smooth.

BARLEY

					No. of Row	Awn Type	Mat Days	Te. Wt.	Kn. Wt.	Ht. cm	Resistance to:												
	Low	Medium	High	Very High							Ldg.	Loose Smut	Fl& Cov. Smut	Com. Rt. Rot	Scald	Net	Toler. FHB						
	%	%	%	%																			
GENERAL PURPOSE																							
CDC Dolly	100	104	103	98	2	R	1	53	49	75	F	S	R	I	I	S	F						
CDC Helgason ⊕	99	99	101	104	2	R	-1	52	46	76	G	R	R	I	S	I	P						
CDC Trey ⊕	99	98	99	99	2	R	-1	51	52	79	G	I	R	R	I	I	F						
McLeod ⊕	104	104	104	103	2	R	1	50	49	75	G	S	R	I	S	I	P						
Niobe ◆	101	99	103	101	2	R	-1	50	46	76	G	I	R	I	I	I	P						
Ponoka ◆	96	108	108	105	2	R	2	50	48	80	G	R	R	I	I	I	F						
Rivers ⊕	100	101	99	105	2	R	0	49	49	74	G	R	R	R	S	R	F						
Seebe	101	104	101	98	2	R	5	52	50	86	G	S	R	S	R	S	G						
XENA ⊕	107	111	110	111	2	SS	2	52	50	79	G	S	I	R	S	S	F						
AC Harper ⊕	99	100	105	101	6	SS	0	48	40	80	G	S	I	I	I	I	P						
AC Lacombe ⊕	105	104	106	103	6	S	-1	48	42	85	G	S	R	S	I	I	VP						
AC Ranger	108	111	106	105	6	S	1	49	43	75	F	XX	XX	XX	S	I	VP						
AC Rosser ⊕	109	108	106	107	6	S	1	48	41	82	F	S	R	I	S	I	VP						
Manny ◆	104	108	107	113	6	R	0	47	40	87	G	I	R	S	R	I	P						
Stander ⊕ †	101	100	104	102	6	SS	1	51	40	85	G	S	S	I	S	S	VP						
Trochu ⊕	106	108	108	115	6	S	0	49	41	79	G	S	R	R	I	I	P						
SEMI - DWARF																							
CDC Bold	109	104	106	106	2	R	0	53	48	73	G	S	R	I	I	S	VP						
CDC THOMPSON †	83	91	96	90*	2	R	-1	53	47	63	G	S	R	I	I	I	F						
CDC EARL †	99	100	103	103	6	R	0	47	36	73	EX	S	R	I	S	I	VP						
Kasota ⊕	95	98	99	101	6	R	-4	49	36	72	EX	S	R	I	R	I	VP						
Mahigan	93	99	102	104	6	SS	-3	50	35	73	EX	S	R	I	R	I	VP						
Vivar ⊕	107	110	108	115	6	R	0	49	44	74	VG	I	R	R	I	I	VP						
HULLESS																							
CDC McGwire ⊕	111	105	99	106*	2	R	2	61	40	79	EX	S	R	I	R	I	F						
AC Bacon	106	103	108	XX	6	S	0	57	37	85	F	S	I	I	I	S	G						
Falcon ⊕	85	89	91	89	6	S	-1	58	35	68	EX	S	R	I	I	I	VP						
Tyto ◆	89	86	85	93	6	S	0	55	39	73	EX	S	R	I	I	I	P						
MALTING																							
Harrington	98	96	93	90	2	R	98	50	44	78	F	S	S	I	S	S	G						
AC Bountiful	106	103	105	113*	2	R	1	52	47	86	G	R	R	I	S	I	F						
AC Metcalfe ⊕	102	102	101	100	2	R	1	52	46	82	F	R	I	I	S	I	F						
Calder ⊕	101	101	100	101	2	R	0	49	50	78	F	R	R	I	S	I	F						
CDC Copeland ⊕	101	103	103	102	2	R	1	50	48	83	F	S	I	I	S	I	F						
CDC Kendall ⊕	97	100	98	96	2	R	-1	52	45	78	F	S	S	I	S	I	F						
CDC Select ⊕	98	99	99	99	2	R	1	50	45	75	F	R	I	I	S	I	VP						
CDC STRATUS	101	104	102	95	2	R	0	52	46	78	G	I	I	I	S	I	F						
Merit ⊕	106	107	107	103	2	R	4	50	45	78	F	S	R	I	S	I	F						
Newdale ⊕	106	103	104	103*	2	R	0	52	46	72	F	S	R	R	S	I	F						
CDC Battleford ⊕	101	104	104	104	6	S	0	49	41	82	G	S	R	R	S	I	VP						
CDC Sisler ⊕	101	98	98	99	6	S	-1	49	36	93	P	S	S	I	S	S	F						
CDC Tisdale ⊕	100	104	104	101	6	S	-1	47	42	84	G	S	R	I	S	I	P						
CDC YORKTON ⊕	99	101	104	98	6	S	0	48	38	85	G	S	R	R	S	I	P						
Excel	102	100	99	99*	6	S	0	50	41	76	G	S	I	R	S	S	VP						
Lacey ◆	102	103	105	95	6	SS	-1	49	41	78	G	I	R	R	S	I	VP						
LEGACY ⊕	98	100	99	93	6	SS	-1	49	39	81	G	I	R	R	S	I	P						
Tradition ⊕	99	99	101	94	6	SS	-1	49	41	82	G	S	R	R	S	S	VP						

Remarks: Only systemic seed treatments will control loose smut in cultivars without resistance. Alberta now has races of the scald pathogen that are capable of attacking most of the varieties rated as resistant. Varieties with excellent straw strength respond to high levels of fertilizer with less lodging than other varieties. Numerical values for yield, maturity, test weight, kernel weight and height are strongly influenced by environmental conditions such as rainfall, soil fertility and temperature. Shattering is also strongly influenced by environmental conditions, but generally two rowed cultivars have good resistance, six rowed cultivars have fair resistance. The maturities are stated in days plus or minus the difference from Harrington. CDC Clyde (BT490), CONLON, Conrad, CDC Cowboy, and TR03661, insufficient data to describe. AC Ranger and CDC Cowboy are forage varieties. Calder, CDC Clyde, CDC Laurence, CDC Select, CDC Tisdale, CDC YORKTON, and Newdale - limited quantities being grown for market development and testing. CDC Laurence and CDC Speedy - not being tested. For recommendations from the Canadian Malting Barley Technical Centre, see appended table.

PRODUCTION ZONES IN ALBERTA

The presentation of data according to yield level of the trial has the advantage of comparing lines in low, medium, high and very high yielding environments.

Yield Class	Bushels per acre	Kg per ha
Low	< 60	< 4000
Medium	60 to 85	4000 to 6000
High	85 to 130	6000 to 8000
Very High	> 130	> 8000

This type of analysis shows the best varieties for low yielding environments as well as those varieties that respond well to higher yielding environments. As well it shows those varieties that have relatively good adaptation to all environments, but also consider the agronomic traits like lodging and disease resistance as these are important. So the management choice is yours, and then you can select the variety or varieties that best meet your management strategy.

If you look at growing malting barley in a drier area with yields in the 60 bushels / acre range with lower fertilizer inputs around 50 lbs. per acre of nitrogen higher yields are with AC Bountiful, but check with your malt market for their variety of choice. If you are growing feed barley with up to 100 lbs. of nitrogen either as fertilizer or manure with higher rainfall, and high to very high yield potential you can look at Vivar, Trochu or Manny that have disease resistance and good lodging ratings. ♪

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

21 CFR Part 101

[Docket No. 2004P-0512]

Food Labeling: Health Claims; Soluble Dietary Fiber From Certain Foods and Coronary Heart Disease

AGENCY: Food and Drug Administration, HHS.

ACTION: Interim final rule.

SUMMARY: The Food and Drug Administration (FDA) is amending the regulation authorizing a health claim on the relationship between oat beta-glucan soluble fiber and reduced risk of coronary heart disease (CHD). **The amendment adds barley as an additional eligible source of beta-glucan soluble fiber.** We (FDA) are taking this action in response to a petition that the National Barley Foods Council submitted. We have concluded, based on the totality of publicly available scientific evidence that, in addition to certain oat products, whole grain barley and certain dry milled barley grain products are appropriate sources of beta-glucan soluble fiber for the health claim.

DATES: This interim final rule is effective December 23, 2005.

Cash Flow Concerns

This spring is going to be an especially tough one for all farmers, especially with cash flow concerns, so to that end the Alberta Barley Commission had a meeting on January 9 with Alberta's Ag Minister, Hon. Doug Horner, to address this issue among others. Part of our discussion related to CAIS and Crop Insurance and getting these payments out in a more timely matter as well as simplifying CAIS, and he told us they were attempting to address these issues right now. He did relate a disturbing fact though, regarding CAIS. While farmers are complaining that they aren't getting their cheques from CAIS fast enough, as many as 50 percent of the 2004 Supplemental Information Forms that farmers have been requested to fill out in order to finish off their 2004 CAIS application so that they might qualify for a payout under the program, have not been turned in yet! I agree that CAIS is overly complicated, and most of us have had to engage accountants to get the applications done, but if we as farmers don't finish the Application Supplements, there is zero chance of getting a payout that might help get us through the next crop year.

Let's get this done now, and while you are at it, get your 2005 Application in as soon as you finish yearend.

There is also a 2005 CAIS Advance available, just two sheets of paper to fill out, fax in, and make a call to ensure there are no questions and you can collect this advance and use it towards spring input bills if you wish.

To access the forms go to www.albertabarley.com under Growers - Production - CAIS Interim Form. ♪

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Sustainable Malt Barley Production

Bill Chapman, Provincial Agronomist - Cereals
Field Crop Development Centre, AAFRD Barrhead, Alberta



To maximize your returns from malt barley you need to assess your production practices and farm resources to determine your opportunities to meet malt quality or produce more bushels of better quality feed or food barley. This past growing season you may have done everything right but late rains in August and early September caused chitting or sprouting, which eliminated any chance of malt acceptance. Some other key points include: local markets, level of malt acceptance in your area, which crops you grow in rotation, management abilities, facilities, equipment, and land base characteristics.

One of the new emerging opportunities is Identity Preserved and or Full Traceability Contracts with malting companies such as Rahr Malting Inc at Alix or Canada Malting at Calgary or their local elevators. These new contracts provide an excellent opportunity to capture premiums and get paid for your quality product. Work with the malting companies and growing suitable varieties is developing a Value Chain.

You can also capture additional revenues as handling costs can vary between processors and grain companies. The local market has a critical impact on what you grow and market because of freight costs. Some of the key opportunities you

will have will be changed based on market access and freight costs. The re-alignment and amalgamation in the grain industry has changed the delivery points and increased risk for some farmers selling to new markets or operations that have to be confirmed financially. The best new market opportunity is only feasible if you get paid for your product. To help you plan around these options consider pricing your product with on farm pickup when comparing return per tonne or bushel as this will include the calculation for freight.

But your malt barley first has to meet the malt quality standard to be accepted. The following list indicates the quality requirements from the Canadian Brewing and Malting Barley Research Institute. Malting barley will have the following characteristics:

- Pure lot of an acceptable variety
- High per cent germination and vigorous growth 95% or over (3 day test)
- Fully mature
- Free from disease
- Free from frost damage
- Not weathered or deeply stained
- Less than 5% peeled and broken kernels
- Free from heat damage
- 13.5% or lower is desirable
- Not artificially dried
- No desiccants
- Free of primary insects, large oil bearing seeds, ergot, treated seeds, smut and odour
- Plump kernels of uniform size

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- Low to moderate protein content - 10.5% to 13% dry basis

To improve your chances of malt selection you need to plant a recommended variety from the Canadian Malting Barley Technical Centre list, which is published on behalf of the member companies in the Seed Guide and Varieties of Cereals and Oilseeds Ag. Dex. 100/32.

Land selection is also important, soil with a clay-loam texture tends to hold more moisture and can help you through the lack of rainfall periods. Uniform fields are also important as low spots or wet areas will usually produce more immature grain or have quality problems.

The next major choice is two or six row. 91 % of the domestic market and 63 % of export markets are two-row varieties. Both markets have averaged approximately one million tonnes each, the total market is two million tones for Western Canada. The six-row export market has a higher percentage with 37% of six-row exported mainly to US malting companies like Anheuser Busch.

Some of the other key agronomic points are seeding certified, treated, malt varieties on lower fertility land, and keeping the nitrogen rates below 70 lbs per acre of actual N in central areas of the province with higher rainfall. You should add a balance of the other nutrients - phosphorous, potassium and sulfur to soil test levels as well to insure plumpness and maturity. One of the problems with acceptance is the higher protein levels found in drier areas of Alberta. This can limit your chances, so plant on weed free stubble of a crop like canola to reduce levels of available nitrogen, and reduce weeds and volunteer cereals as well. Some grain companies and processors also paid additional premiums for lower protein this year.

This year early seeding dates and seeding rates were critical to maintain an even plant stand at 25 to 28 plants per ft² in central and 18 to 22 plants per ft² in drier areas. This competitive stand will also mature more evenly as well and be more competitive with any later germinating weeds. Seed early, when soil temperatures are 4 to 6° C, into moist soil conditions at a depth of .75 to 1.5 inches, these conditions will provide a great start that can influence harvest earlier in August and maintain quality. The majority of successful malt growers all seeded their crop early in 2005.

We recommend you only apply registered pesticides and consider using a foliar fungicide in the moister areas to reduce leaf and head diseases. Timing is critical for the pest control so scout your fields.

Harvesting is a critical period to capture quality and maximize yields so I prefer to straight combine, or if you are swathing use 30% kernel moisture content as a starting point. You have to check your grain samples and watch carefully for peeling, as this will affect quality and acceptance. Use your combine manual to set cylinder speeds and check concave clearances. During a recent visit to a malting plant in Alberta I saw samples with very high peeling and cracking which caused the sample to be rejected and downgraded to feed. Always harvest and bin quality samples, if there are immature areas in the field, harvest and bin them separately and always keep separate bin samples to use for marketing.

Now you need to reassess your risk and chances of making malt barley and if your success rate is not one out of three you should focus on human consumption options or feed markets. One other option is custom growing silage for local intensive livestock operations.

Feed barley can also be a lucrative market as

you can produce better yields with the newer feed types with genetic resistance to leaf and head diseases. Some of these new lines are also dual purpose for silage and grain with good to excellent yields and lodging resistance. The development of semi-dwarf barley varieties has improved the straw strength and brought disease resistance to the industry. Unfortunately older six row varieties have not had the success of the plumper two row types like Xena, CDC Bold, and CDC Dolly and the more disease resistant lines like Seebe, as some of the six rows do not fill as uniform in drier conditions. Some of the newer six-row varieties such as Vivar and Manny have been selected for kernel plumpness and uniform shape and are an improvement over older six-row lines. Varieties such as Trochu also have a smooth awn and dual purpose uses for grain or silage.

In summary when you compare our input costs against our competition in the malt market we are at sustainable levels for inputs when we are direct seeding and matching fertility requirements to target yields. New contracts and proper management have proven to increase malt acceptance and better returns as long as the weather cooperates. ☺

Congratulations!

The Alberta Barley Commission would like to congratulate Karla R. Pare of Vermilion, Alberta as the fourth recipient of the *Alberta Barley Commission – Eugene Boyko Memorial Scholarship*.

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The Elephant in the Room

SUPPORTED BY: FIELD CROP DEVELOPMENT CENTRE, LACOMBE, ALTA

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As Canada targets a globally competitive research base, crop development for cereals may be like “the elephant in the room” – the powerful force that’s overlooked.

At a fundamental level, there is no secret what Canada is looking for in agriculture and agri-food research.

The critical mass – top minds, manpower and resources – to compete globally and fuel Canada’s economy. Strong value-added potential. Production systems that are economically, socially and environmentally sustainable. An industry the world can be proud of, and one it will buy from.

Research funders, decision-makers and stakeholders have wrestled with the best research designed to meet these demands. They like the novel, the value-added, the quick payoff. But in their fascination with the futuristic, they may risk overlooking the value of the more traditional.

Crop development research for cereal crops – such as wheat, barley and oats – is an example. Though often under the radar, this is one of Canada’s strongest and most essential areas of agricultural research capacity, with a national network built over decades. The crops it supports dominate production, fuel several multi-billion dollar industries and are a critical foundation to the emerging revolution in bio-potential.

Canada owes itself to ensure the value of crop development is not overlooked. This report recaps some of the key points to consider, from what crop research is really worth and how it delivers value, to what Canada’s competitors are doing and what the world wants from bio-progress. When these points are taken into account, the search for research excellence may lead to a not-too-distant destination.

WHAT’S CROP RESEARCH WORTH?

A range of independent studies show cereal crop development delivers one of the highest investment returns of any type of research.

In the high-stakes game of global trade in agri-products, the players hold relatively few cards that separate the winners from the losers. For Canada, one of its most powerful cards is crop development research.

This research is the factory that produces crop varieties farmers require and markets demand. And Canada has built a network that is a long-standing world leader.

It’s why Canadian grains are preferred by top markets around the world, and it’s why Canada’s competitors have ramped-up their own research bases.

It’s also one of the best investments going in agriculture. Even at a very basic and narrow level of assessing research investment value – dollars invested vs. direct returns in yield and disease improvements – a range of independent studies show a minimum 10-fold return on cereal development research.

And that rate of return is fast rising. Equipped with the latest tools in biotechnology and bioinformatics, Canadian researchers have slashed years off the crop development process. They’ve also cracked the genetic codes of key traits and flagged them with genetic markers – meaning faster, more sophisticated and more dramatic improvements.

CASE STUDY SHOWS 10-FOLD RETURN

In 2002, Alberta Agriculture Food and Rural Development (AAFRD) commissioned a study to examine the economic returns to feed barley breeding and disease resistance research at the Field Crop Development Centre (FCDC) in Lacombe.

The study was conducted by agricultural economist Dr. Joseph Nagy and assessed the period from 1974 to 2001. It found that while the total investment in research during this period was approximately \$8.6 million, the overall monetary benefit from that investment was \$109.4 million from 1983 to 2001 alone.

The internal rate of return was estimated at 29 percent, which Nagy reported is an excellent rate of return for an agricultural research and development program. The FCDC has since added significant staff and biotechnology resources to bolster the speed, power, efficiency and payoff of the research.

HOW RESEARCH DELIVERS VALUE

Canada has already built the base. Now it needs to leverage that into new opportunities.

Canada delivers over \$24 billion worth of agriculture and food products to more than 180 countries around the world every year.

Three big drivers of that are wheat production, barley production and livestock production, which account for a large portion of that total. Livestock production counts on barley and wheat as major feed sources and all three sectors of production depend heavily on crop development research to be successful.

ADDING VALUE TO CANADA’S HIGH-VOLUME CROPS

And this research has delivered. Take yield jumps for example. Crop development advances have ensured a steady rise in yield potential, to the point where today’s cereal varieties yield 10 to 20 percent higher than varieties did 10 years ago. That alone represents profits to the producer that far exceed the initial investment in this research. It also ensures supply to anchor the grains industry as a whole.

Disease resistance has also improved dramatically in that timeframe. Today’s varieties now have genetic resistance to many key diseases that previously required costly herbicide treatment or resulted in major production losses. That again would alone return far more than the initial research investment.

These are just two examples that are repeated many times over in other areas of genetic improvement, including: grade potential, pest resistance, time to maturity, straw stature and strength, drought tolerance, and several others.

DIVERSIFYING THE QUALITY PORTFOLIO FOR TOP MARKETS

For the cereals sector as a whole, crop development has strengthened and diversified the quality of these grains to bolster Canada’s competitiveness both at home and in key world markets.

Wheat and barley are leading examples. In wheat, white-seeded hard wheat has been added, which is preferred by several markets over Canada’s traditional red-seeded wheat. Gluten strength has been increased in durum wheat to position it for a greater share of higher quality, more lucrative markets. New classes of slightly lower protein wheat have been added to diversify options for milling wheat markets. And new winter wheat classes have been added to offer producers a new option for improved production flexibility and soil conservation.

In barley, new feed types have been developed that offer sophisticated tailoring to meet the nutritional needs of livestock, resulting in higher performing animals that produce less waste. A new generation of malting barley varieties has also been launched, which reflects widening international preferences and has renewed demand for Canadian barley to supply top malsters and brewers. At the same time, innovative “hulless” and specialty starch barleys have been developed to capitalize on expanding opportunities in human food, health and industrial markets.

This progress is mirrored in crop development for other important cereal crops, such as oats, flax, rye, and triticale.

DRIVING PROGRESS IN NEW ECONOMIC BATTLEFIELDS

Unquestionably, progress in variety development is a major driving force in Canada’s agriculture success, with an influence that is becoming more dramatic every year as science continues to rapidly advance.

Innovations in new crop varieties have caused flip-flops in the leadership positions of Canada and its competitors in many long-standing, multi-billion dollar markets, and at the same time have opened new opportunities that have become key economic battlegrounds of the future.

Crop-based bio-products, including health supplements, functional foods, nutraceuticals and alternative energy – these are just a few of the emerging opportunities anchored by today’s crop development progress.

WHAT ARE OUR COMPETITORS DOING?

With more than five times our investment, Australia is threatening to take our markets.

Canada’s major competitors in the grain trade have ramped-up their investment in crop development research, recognizing its critical and rapidly expanding importance to production and market success.

Australia, for example, Canada’s key rival in wheat and barley export markets, has increased its investment in crop development research for these crops to well over five times Canada’s current investment, through a system initiated by growers and coordinated by the Grains Research and Development Corporation (GRDC).

The U.S., Europe and other key players have also strengthened their efforts and are out-investing Canada.

Canada has managed to keep pace in terms of innovation, owing to its long history as a crop development leader with a wealth of expertise and well-established network. But this competitive capacity is limited without strong investment to bolster the network and nurture a new generation of scientists.

BIO-PROGRESS: WHAT THE WORLD WANTS

Canada is in a good position to capitalize on emerging opportunities, thanks to its crop development research base.

Crop development researchers are tailoring new cereal varieties to capitalize on expanding potential in many areas. Here are just a few examples.

Harvesting new health value from grains. Science has uncovered properties in grains that can enhance the health value of food products or be extracted for use in health supplements.

A leading example is barley. This grain contains higher levels of beta-

*I believe strongly
that there is no other
investment in
agriculture that even
comes close to the
return on investment
from crop
development research.*

- Dr. Hartley Furtan, Professor of Agricultural
Economics, University of Saskatchewan

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glucan, a type of fibre linked to reduced levels of blood cholesterol. Barley also contains several powerful antioxidants, most notably tocopherol, which is associated with reducing the risk of cancer. These properties already represent a rapidly growing sector of the emerging “nutraceuticals” market, a burgeoning market of the future expected to represent \$250 billion by the year 2020.

Tackling Kyoto with low-till crops. The greatest long-term value of Canadian cropland may not be what’s on top of the soil but what’s underneath. As initiatives such as the Kyoto Protocol take effect, industries that can reduce emissions of greenhouse gases can earn valuable credits. Because plants represent stored carbon, one of the best ways to do that in agriculture is by increasing the amount of organic matter that stays in the soil.

This means adopting practices that reduce tillage. Crop development researchers are helping spread the adoption of this trend by developing winter cereal crops, such as winter wheat, that are seeded in the fall and emerge early in the spring. Because these crops are seeded into the stubble of the harvested summer crop, they are a perfect fit for “zero-till” production systems.

Reducing livestock pollution with feedgrains. Some simply call it manure, but to crop development researchers it’s a lost opportunity. The more livestock feed that passes through the animal, the less that is captured to produce meat and milk.

That’s why researchers are taking a sophisticated approach to improving the feed value of common feedgrains such as barley. By tailoring the nutritional components of the feed to meet the digestibility and nutritional parameters of the animal, they can increase performance and reduce waste.

A leading example is low phytate (LP) barley now in development. LP barley is low in phytic acid – a form of phosphorus that is almost indigestible by monogastric livestock such as hogs and poultry, and typically ends up in manure. LP barley varieties contain the same amount of phosphorus, but in a form that is more available to the animal, improving feed efficiency and reducing phosphorus waste by 50 percent or more.

Boosting farm profits. Low commodity prices, tightening margins, unfair international subsidies, and stricter food safety and environmental regulations. These are just a few of the daunting challenges faced

by today’s Canadian farmers.

How to help them out is probably the question that crop development researchers spend the most time thinking about. This is because the crop varieties and production systems they develop have the most immediate direct impact on farmers - boosting yields and quality, reducing costs, and protecting the crop from agronomic and climatic challenges. Today this research has more power than ever to help the farmer meet intensifying demands and respond to shifting challenges.

Kick-starting potential in alternative fuels. Grain-based ethanol is just one example of the tremendous potential for crop-based bio-fuels. Not only can these fuels create valuable new markets for producers and industry, they can provide renewable, environmentally friendly options that reduce Canada’s reliance on foreign energy.

Researchers are working on crop varieties custom-made to get maximum energy value for fuel production, and this is just one example of the broad potential for crop-based bio-products. Today, 90 percent of fuels, chemicals and plastics are derived from oil and gas – a non-renewable resource with reserves shrinking every year. The International Energy Agency estimates the world will be at about 50 percent of its current oil and gas capacity by 2020, while energy needs are expected to double by 2050.

THE SEARCH FOR RESEARCH EXCELLENCE

Canada already has a strong anchor in its crop development network.

If Canada went shopping for research, it’s clear what it

would look for - a proven track record, high return on investment and a critical mass of expertise, partnerships and resources. Canada already has all of these today in its network of cereal crop development research.

PROVEN TRACK RECORD

A good example is the Field Crop Development Centre (FCDC) in Lacombe, a key Alberta link in this network. The FCDC, an institution of Alberta Agriculture, Food and Rural Development (AAFRD), has helped drive more than three decades of progress, supporting the growth of Alberta’s livestock industry and keeping the province’s crop producers competitive.

This has included producing more than 25 new crop varieties, including many that have become acreage leaders on the western Prairie and fueled livestock expansion through a consistent, high-quality feedgrain supply.

The Centre develops cereal crops through breeding, genetic, molecular, physiological and agronomic research. It emphasizes high quality feed, fodder and food crops, with strong programs in feed barley, winter wheat, triticale and malting barley.

CRITICAL MASS OF EXPERTISE

The FCDC team is multi-disciplinary, with all the ingredients to deliver a world-class program. Core research staff include:

Dr. Jim Helm, Barley Breeder/Head of Research

Dr. Patricia Juskiw, Barley Breeder/Crop Physiologist

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The Elephant in the Room

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Dr. Joseph Nyachiro, Barley Breeder
 Dr. Don Salmon, Triticale/Winter Wheat Breeder
 Dr. Kequan Xi, Cereal Pathologist
 Dr. Jennifer Zantinge, Molecular Biologist/Biotechnology
 Murray Hartman, Extension Agronomist
 Bill Chapman, Extension Agronomist
 David Dyson, Acting Unit Leader
 * Dr. Kelley Turkington, Barley Pathologist
 * Dr. George Clayton, Barley Agronomist

* Agriculture and Agri-Food Canada researchers who work directly with the FCDC on barley research, under the joint Alberta/Canada Barley Development Project

STRONG PARTNERSHIPS

The Centre has many partnerships domestically and internationally, but major direct research project collaborators include:

- Agriculture and Agri-Food Canada
- Alberta Barley Commission
- University of Saskatchewan, Crop Development Centre
- University of Alberta
- CIMMYT - the International Maize and Wheat Improvement Center
- Oregon State University
- Western Grains Research Foundation
- Private industry

HIGH RETURN ON INVESTMENT

In 2002, AAFRD commissioned a study to examine the economic returns to feed barley breeding and disease resistance research at the Centre for the period from 1974 to 2001. It found that while the total investment in research during this period was approximately \$8.6 million, the overall monetary benefit from that investment was \$109.4 million from 1983 to 2001 alone. That's a more than 10-fold return on investment.

EXPANDING OPPORTUNITIES

Today, the FCDC is working closely with partners in many emerging areas. Sophisticated measurements of feedgrain value. Functional foods and nutraceuticals. Health supplements. Livestock waste reduction through improved feedgrains. Diversification of low input crop options. These are just a few on the checklist.

LEARN MORE

The FCDC Web site includes further information on the Centre. Visit AAFRD's "Ropin' the Web" site, at www.ropintheweb.com, and enter Field Crop Development Centre in the search field.

The Field Crop Development Centre also welcomes comments and questions directly. Phone: (403) 782-8696

For that acknowledgement, please include the following wording at the beginning of the report:

See related articles on crop development issues and progress at www.meristem.com



Recommended Malting Barley Varieties 2006-07

These recommendations are based on the varieties expected to be selected by grain and malting companies for both domestic and export markets from the 2006 harvest. Seeding decisions should be based on agronomic considerations and feedback from your grain company representative, local elevator operators and malting companies. This list is published on behalf of the members of the CMBTC, and other companies that have provided their input. Varieties not listed are not recommended. The varieties are listed in descending order to the amount selected in 2005-06

Recommended Two-Row Barley Varieties

VARIETY	DOMESTIC	EXPORT	MARKET DEMAND
AC Metcalfe ₄	Established	Established	Stable, High Demand
CDC Kendall _{1,5}	Established	Growing	Increasing Demand
CDC Copeland ₄	Established	Growing	Increasing Demand
Harrington ₄	Established	Established	Stable, Demand
Stein ₁	Limited	Limited	Low Demand
Merit _{1,2,3,5}	Established	Limited	Low Demand

Newdale (TR258), Calder (TR262), and CDC Select (TR153) are not yet being grown for the commercial market. Production is limited to quantities required for testing and market development.

Recommended Six-Row Barley Varieties

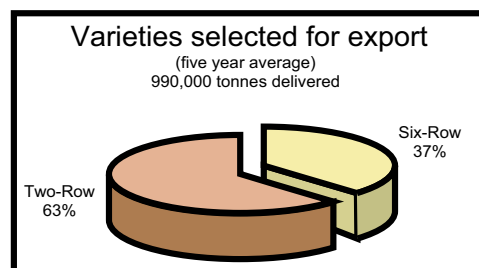
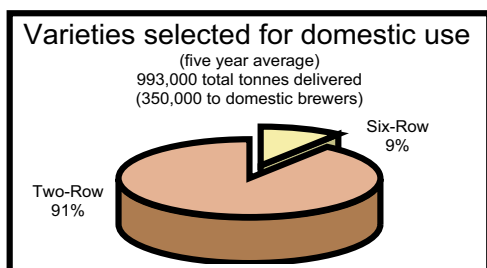
VARIETY	DOMESTIC	EXPORT	MARKET DEMAND
Legacy _{1,2,3,5}	Growing	Growing	Increasing Demand
Excel	Established	Established	Declining Demand
Tradition _{1,2,3}	Limited	Growing	Increasing Demand
Robust	No Market	Limited	Declining Demand
CDC Battleford ₄	Limited	No Market	Increasing Demand

CDC Tisdale (BT462), CDC Springside (BT478), CDC Clyde (BT490) and CDC Laurence (BT494) are not yet being grown for the commercial market. Production is limited to quantities required for testing and market development.

"Domestic" as used in this publication, means barley selected for domestic processing into malt to supply domestic brewers as well as for malt destined for export. "Export" is that malting barley designated for markets outside of Canada including the US, shipped as unmalted grain.

The CMBTC recommends the use of Certified seed to ensure varietal purity and to increase opportunity for selection.

The following companies have Pedigreed seed distribution rights for those varieties that are footnoted:
 1- (Agricore United); 2- (BARI-Canada); 3 - (FPS); 4 - (SeCan); 5 - (SWP).



CMBTC Members: A.C. Toepfer Canada, Agricore United, Busch Agricultural Resources-Canada, Canadian Wheat Board, Canadian Grain Commission, Canadian International Grains Institute, Cargill AgHorizons, James Richardson International, Parrish & Heimbecker, FarmPure Seeds, the Public Plant Breeders, Saskatchewan Wheat Pool Inc., Rahr Malting Canada, SeCan.

Questions? Call your selector, seed company, grain handling company or the Canadian Wheat Board, or contact the CMBTC at 204-984-4399 (cmbtc@cmbtc.com)

The Environmental Farm Plan Company can improve the bottom line

Government funds and improved input efficiency can be worth thousands of dollars.

Submitted by The Alberta Environmental Farm Plan Company

Brian and Barry Lemay figure it makes good business sense to tap into available government assistance programs and implement environmental improvements on their southern Alberta farm.

The brothers, who run a large barley, wheat, and canola cropping operation along with a beef feedlot near Trochu, say funding made available through the Canada-Alberta Farm Stewardship Program (CAFSP) has helped them adopt new technology faster.

“With the program covering 30 percent of the cost of a new GPS (global positioning system) and autosteer technology, it helped us make the decision to buy,” says Brian, who along with Barry, are third generation owner/operators of Lemay Land and Livestock Co.

The new John Deere AutoTrac system cost about \$20,000 with the CAFSP covering 30 percent of the bill. Their farm is eligible for a total of \$30,000 under the program, so they hope to apply remaining funds toward a new fuel storage system.

The double-walled storage tanks with capacity for more than 15,000 litres of diesel and gasoline are expected to cost about \$45,000. The tanks are mounted on a concrete pad.

With the Stewardship Program kicking in 30 percent of the cost up to \$15,000, it’s an opportunity they don’t want to pass up.

FUNDING ASSISTANCE

Financial assistance through CAFSP was made possible after the Lemays completed an Environmental Farm Plan. They were among some of the first producers in Alberta to participate in the voluntary planning process in early 2004.

The Lemay farm will not only receive up to \$30,000 in government assistance to help cover the cost of improvements, but they estimate improved crop input efficiencies will also save them several thousand dollars per year.

“When the government assistance program came along we decided we might as well make use of it,” says Barry. “The program is designed to

encourage producers to implement management and production changes that help protect the environment.”

The GPS and autosteer system, which can be used during fertilizer and field spraying operations as well as combining, will help improve input efficiency, while the new fuel storage system which uses more secure tanks and gets tanks off of the conventional raised stands, greatly reduces the risk of spills or leaks which could contaminate soil and water sources.

“It’s good for the environment and makes sense from a farm business perspective,” says Brian.

Lemay Land and Livestock Co. includes a 6,500-acre grain and oilseed cropping operation as well as a 5,000 head beef feedlot. Barley is their primary crop. They grow about 4,500 acres of feed barley mostly for their own use, along with 300 acres of barley silage. The balance of their cropped acres is in canola.

Completing an Environmental Farm Plan was a useful process, the Lemays agree. “It didn’t involve a lot of surprises since we’ve always used what we felt were good environmental practices,” says Brian. “But it does make you aware of your farming operation and think about how things are done. Our plan didn’t indicate a lot of changes, but it shows us where upgrades are needed.”

Along with a minimum till cropping system, the Lemays work with a crop consultant with a goal to keep current with all provincial regulations concerning manure management and handling. They have proper fertilizer storage facilities, they don’t store pesticides on the farm, and used chemical containers, waste oil and filters are disposed of at proper disposal facilities.

“Improved herbicide efficiency and fuel storage were two areas we did want to address,” says Barry. The farmers were already using one GPS system with field mapping for seeding and harvesting, but they wanted a second system that could be

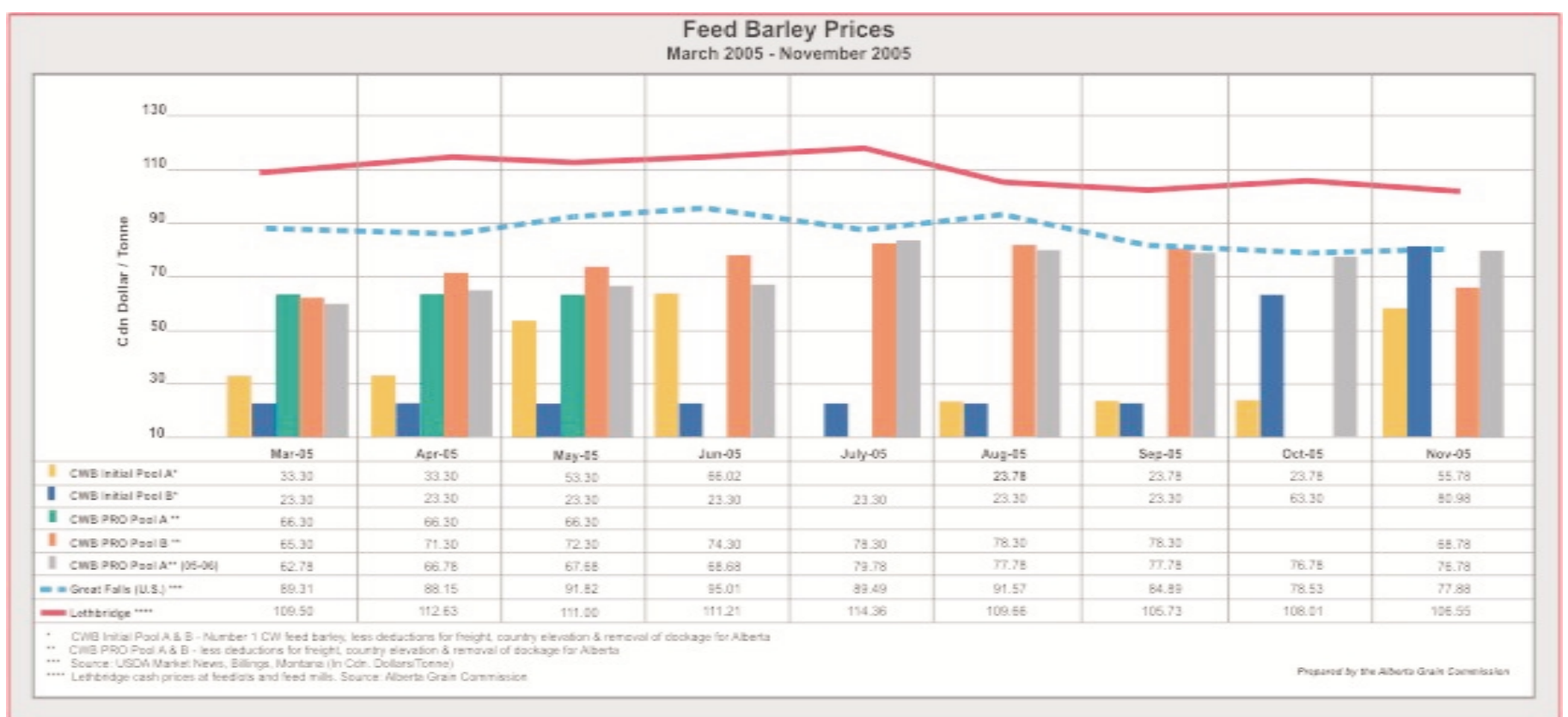
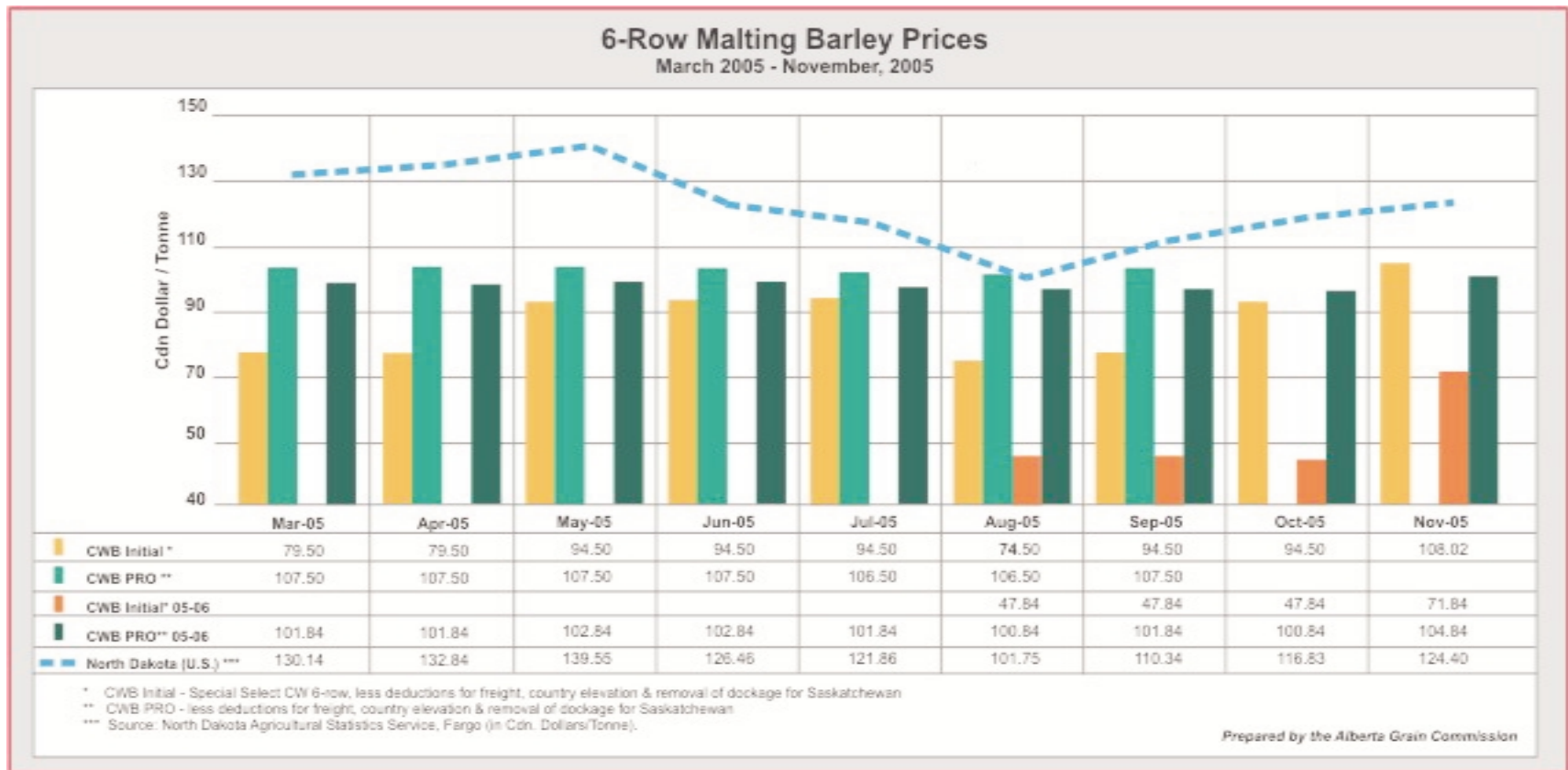
Continued on page 15



Barry, left, and Brian Lemay say equipping field sprayer with GPS technology will save them thousands of dollars in pesticides.

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BARLEY MARKET



Research Tax Credit Notification for 2005

Alberta's farmers have the opportunity to take advantage of a ruling by Canada Revenue Agency (CRA) that allows them to claim an Investment Tax Credit (ITC) on the portion of their checkoff dollars that is used to support research and development through producer groups.

The Alberta Barley Commission has determined that 19% of the total checkoffs received in 2005 are eligible for barley farmers to claim as an ITC. Farmers will need to keep receipts to substantiate checkoffs paid to the various producer organizations and keep in mind that, after receiving the allowable percentages from each group, only one tax return should be filed with CRA.

Of the 19%, individual farmers can claim 20% as an investment tax credit, while farmers whose operations are incorporated can claim 35%. For example, if a farmer contributed \$1,000 to the Alberta Barley Commission, \$190 would be eligible to earn a tax credit. If the farmer's operation is not incorporated, he or she can claim 20% of the \$190, which equals \$38. However, if the farmer's operation is incorporated, the company can claim 35% or \$66.50 as an investment tax credit.

The Investment Tax Credit can be used in the following ways:

- to offset federal tax owing in the current year;
- if no taxes are owing, a portion may be refunded to you in the current year if you are an individual (up to 40%) or all of the credit may be refunded if you are a corporation;
- it can be carried forward up to 10 years to offset federal tax;
- or it can be carried back up to 3 years to reduce federal tax paid in those years.

Farmers have up to 17 and a half months from the end of their fiscal year to apply for the credit, while Canadian-controlled, privately-held corporations have up to 18 months. Canada Revenue Agency has asked that farmers wait until they have heard from all producer groups before filing their income tax return. Individual farmers will claim the ITC using Form T2038IND and farm corporations will use Schedule T2SCH31. When filing your return, please indicate on the top of the form that the claim is related to checkoff contributions.

Application forms for 2005 will be available through a link on the Alberta Barley Commission website at www.albertabarley.com as soon as they are available from CRA. 🐾

The Environmental Farm Plan Company can improve the bottom line



The Lemays have equipped a tractor that pulls their 120-foot field sprayer with GPS technology to reduce spray overlap



Lemay combines have already been outfitted with GPS systems, now they can use the technology in the field sprayer as well.

Continued from page 13
used on a tractor for field spraying operations.

The equipment, available for the 2005-cropping season, has helped them reduce crop input costs by at least five percent or about \$30,000 over the season.

“We estimate we had about a five percent overlap in all our field operations,” says Brian. “With the GPS and autosteer technology, it’s now down to zero. We used a 120-foot pull-type sprayer this year and set the GPS for 120-foot spacing. We had no overlap and no misses.

“If you figure that fertilizer, fuel, seed and herbicides cost more than \$100 per acre and you can save five percent over 6,500 acres, that’s a considerable savings,” says Barry.

The Environmental Farm Plan (EFP) and the Canada-Alberta Farm Stewardship Program are two separate, but complementary programs. EFP services are delivered by the non-profit, farmer-managed Alberta Environmental Farm Plan Company (AEFP).

EFP PROCESS

“The objective of an environmental farm plan is to educate and raise producer awareness about environmental issues,” says Mike Slomp, Executive Director of AEFP, based in Edmonton. “It’s a free, voluntary and totally confidential process delivered to Alberta producers through a network of local

facilitators who are farmers themselves. The facilitators are assisted by a team of technical advisors who have varied backgrounds in crop, livestock and environmental management.

“The technical advisors explain the planning process at introductory workshops,” he explains. “Producers can complete their own plans at home on their own timetable and then participate in a second workshop to further discuss the plans or ask specific questions about the process.” Each participant is given a confidential code, which is the only identification that appears on the plan document.

Producers are urged to have completed plans reviewed by one of several three-member panels of producers known as peer-review committees. The panel members provide comments and recommendations on plans before returning them, along with a certificate, to producers.



Barry, seated, and Brian Lemay check over some of the details in their completed EFP.

“It’s that documentation producers need to qualify for funding from the Stewardship Program,” says Slomp.

CAFSP, which was introduced earlier this year, was designed to encourage producers to adopt environmental improvements on their farm and ranching operations. CAFSP funding covers 26 different categories ranging from improved cropping systems, to improved manure storage and handling systems, to improved riparian area management and wildlife habitat improvement. The program, which covers 30 or 50 percent of approved projects, provides up to \$30,000 per farm in cost-shared funding.

Two important points about CAFSP funding – producers need a completed and reviewed plan before they can apply and they must receive approval from CAFSP administration before making any purchases. The program is not retroactive.

“The whole process is a definitely a good thing for the farm,” says Brian Lemay. “There is more attention being paid to environmental issues, so as producers we need to pay more attention to what we are doing. It’s not something you do and then put on the shelf and forget. You have to make sure all employees are familiar with the plan and that everyone strives to do the best job they can.”

For more information on the Environmental Farm Plan process contact the Alberta Environmental Farm Plan Company in Edmonton toll-free at 1-866-844-2337 or visit the Web site at: www.albertaefp.com.

Spotlight on the Competition

Australian Wheat Board

Australia’s wheat industry has undergone considerable deregulation in the past 10 years. The Australian Wheat Board (AWB) has evolved from a government entity with single desk selling authority in both the domestic and export markets to a grower controlled corporation that operates in competition with other buyers and sellers in the domestic market.

The single desk remains for export wheat, however legislation provides for contestability allowing exporters other than the AWB to apply for export licenses through the Wheat Export Authority. On July 1, 1999, the AWB was privatized with its commercial functions transferred to AWB Ltd., a grower owned and controlled corporation.

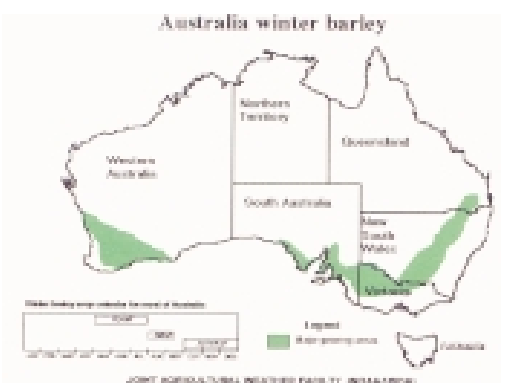
AWB Ltd is involved in the supply chain through its handling facilities, the Melbourne Port Terminal, a joint venture with Australian Bulk Alliance, and overseas investments including a 30 percent share in Egypt’s largest private mill, interests in Vietnamese and Chinese mills and a joint venture with a large Japanese cooperative. AWB Ltd, or its subsidiaries, markets and trades wheat, sorghum, barley and oilseeds to more than 40 countries and is the world’s second largest wheat exporter with 18 percent of global market share.

As of November 2004:

- AWB Ltd’s market capitalization was \$1.6 billion
- There were 26,161 Class A shareholders and 64,383 Class B shareholders. Institutional investors held 25.89% of Class B shares. Growers represented 73.2% of retail shareholders.
- AWB Ltd had 342 million Class B shares & Shareholder equity was \$1 billion

THE AUSTRALIAN BARLEY INDUSTRY

Australia has the second largest market share of global barley trade, after the EU – 20% on average. Australia’s key markets are China for malting barley and Japan and Saudi Arabia for feed barley. South Australia and Victoria produce about 50% of Australia’s barley. Approximately 90% of Western Australia’s production is destined for export. Approximately 32% of Australia’s barley is consumed domestically (10-year average).



The barley industry had been traditionally dominated by statutory marketing authorities (SMA’s). Each of the barley growing states – New South Wales, Victoria, Queensland, Western Australia and Southern Australia – used to have its own compulsory marketing authority with the sole legal right to buy barley, and often other coarse grains, from growers as well as the sole right to sell on the domestic and export markets.

Australia has started to move away from its largely state based and statutory barley industry with a single player dominating each link in a chain, to a national privately owned vertically integrated system. Export marketing has been deregulated in Victoria and Queensland. These two states account for about 25% of the Australian production. In 2003, Western Australia started to authorize exports of bulk feed barley outside the single desk. Domestic marketing has been deregulated under exemption or permit arrangements in those states with export monopolies.

The majority of export barley in Australia is marketed through four state level marketing agencies/companies – ABB Grain Ltd, AusBulk, Graincorp Operations Ltd, and Grain Pool Pty Ltd. Some of these companies evolved from government marketing boards while others were bulk handling companies that took on marketing to become more competitive in an increasingly deregulated environment.

Cookies in the Name of Science

Years ago AFNS nutritional science student Stephanie Moriartey would drive past fields of barley on her way home to Wetaskiwin, barely taking any notice of Alberta's third largest crop.

As an undergraduate in her final year of study, Moriartey can now rattle off its precise dietary composition and is able to call herself something of an expert, thanks to a research project that involved donning a hair net and arming herself with a mixing bowl and spatula to whip up protein-rich barley cookies.

Moriartey estimates she may have eaten well over 100 barley cookies in the name of science but being a big fan of food made this a not-too-difficult proposition. Studying under AFNS barley expert Dr. Feral Temelli, and Sandra Spence's graduate research project, Moriartey assisted with testing the protein-rich cookies.

"People love to eat cookies so if we can create something that is tasty and is able to deliver extra protein to those people who need it most, then that is a great thing to be working on," says Moriartey. The cookie, once perfected, could help meet the additional protein requirement of burn victims, cancer patients,



Sandra Spence (Fd Sci - MSc Graduate) and Stephanie Moriartey (NUFS Undergraduate)

vegetarians and people suffering from immune deficiency. "Taste is important for people who feel too ill or depressed to eat much," says Moriartey. 75% of Alberta's barley is presently fed to animals so researchers like Temelli and her research team are playing an important role in developing value-added products for barley. As part of the ongoing research program of Dr. Temelli on barley fractionation and utilization of barley fractions supported by Alberta Barley Commission and other funding partners, incorporation of protein-rich fraction into cookies as investigated by Spence and Moriartey, is just one example of the many opportunities awaiting barley.

Both Spence and Moriartey presented their work at the Institute of Food Technologists conference in New Orleans, in July 2005 and Moriartey won second place in the undergraduate research paper competition. ♡

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Department of Agriculture, Food & Nutritional Science Annual Report

Barley Spinach Bake

Serves 4-6

Great tasting dish - a favorite of everyone. This dish can be used as an entrée or a side dish. It is also vegetarian.

- 2 tsp (10ml) olive oil
- 1 large onion, finely chopped
- 4 cloves garlic, minced
- 1 cup (250ml) pearled barley**
- 3 1/2 cups (875ml) water
- 1/4 cup (50ml) tomato paste
- 1 tsp (5ml) chili powder
- 3/4 tsp (4ml) salt
- 12 cups (3000ml) spinach, shredded
- 1/2 cup (125ml) raisins
- 1/3 cup (75ml) slivered almonds, toasted

Preheat oven to 350°F. In nonstick Dutch oven or flameproof casserole, heat oil on low. Add onion and garlic. Cook, stirring frequently until onion is tender. Stir in barley and cook one minute, stirring to coat.

Add water, tomato paste, chili powder, and salt and bring to a boil. Cover. Bake in oven for 35 minutes. Stir in spinach and raisins; return pan to oven, re-cover, and cook 10-15 minutes or until barley is tender. Stir in almonds and serve.



For more barley recipes, check out the Commission's website at www.albertabarley.com.

*We are always looking for new, original recipes using barley.
If you have one,
we would love to hear from you at:*

Alberta Barley Commission

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