



1997 1998 1999 2000 2001 2002 **2003** 2004 2005 2006 2007 2008 2009

ANNUAL REPORT TO PRODUCER INVESTORS



Farmer funded, farmer directed.

NEW VARIETIES, REAL PROGRESS, NEW PLANS

Chairman's Report on farmer funded progress in 2003, from Hughenden, Alta., producer Dr. Keith Degenhardt.

Competitiveness is the number one issue facing western Canadian grain producers and their industry. It's also the number one focus of Western Grains Research Foundation (WGRF), as this organization prepares its three farmer research funds for the future.

What qualities will our wheat and barley varieties need to succeed in world markets 10 years from now? What are the top priorities to keep up with changing disease and pest pressures? How can we best take advantage of new crop knowledge and technology? These are just some of the questions farmer research investors need to be asking as they look to the future of the three research funds administered by WGRF – the Wheat Check-off Fund, the Barley Check-off Fund and the Endowment Fund.



Through these funds, western Canadian producers have grown with farmers around

the world to become major players in crop research funding, and this funding has resulted in real benefits. In Canada, over 50 new wheat and barley varieties and more than 200 innovative research projects have been supported with WGRF funding.

At the same time, there's a lot of work to be done to get the most out of this initial investment and to build a strong second generation of progress. WGRF is currently updating its investment strategy, including research targets, for all three funds, as the basis for a new round of long-term funding.

If you're a crop producer in Western Canada, we invite you to consider the role of these research funds in keeping Canada competitive as you review the research progress and business activity detailed in this *Annual Report*. It provides an overview of key developments in 2003, including the fundamentals of how the funding is collected, managed and invested in

research progress. More in-depth information on all topics covered here is available to producers anytime from the WGRF Web site, www.westerngrains.com, or directly from the WGRF office.

KEY 2003 ACTIVITY

The purpose of WGRF is a simple one – to support the role of western Canadian grain producers as investors in crop research. Here's a look at some of the key WGRF activities in 2003.

Check-off investment progress. The Wheat and Barley Check-off Funds began in the 1993/94 crop year to strengthen wheat and barley breeding programs. Since then, farmer funding through the Check-off has supported in part over 30 new varieties of wheat and over 20 new varieties of barley. Yield potential in these crops is up 10 to 15 percent, varieties have gained multiple resistance to major diseases and pests, and new grain classes have seen major developments.

Developing new long-term agreements. The Check-off Funds are currently allocated to breeding institutions based on 10-year funding agreements, which expire at the end of 2004. WGRF has completed a review process and is working with breeding institutions to develop new long-term agreements, to begin in 2005.

Endowment Fund investment progress. The Endowment Fund was initiated in 1983 to support crops research important to the western Canadian grains industry. Since then, this fund has supported in part over 200 projects, which have produced a broad range of crops knowledge and technology. Two new projects – a database tool to improve wheat breeding, and a management strategy to lower herbicide requirements – were approved for funding in 2003.

At its peak, the Endowment Fund has provided around \$700,000 to \$1 million annually to research projects, but today lower interest rates are generating less money for the Fund. To keep using these funds efficiently, WGRF has initiated the process of updating the Endowment Fund investment strategy.

Farmer tax credit for research investment. The Scientific Research and Experimental Development tax credit continues to be available to

WGRF IS WESTERN CANADA'S LARGEST FARMER FUNDED GRAINS RESEARCH FUNDING ORGANIZATION, INVESTING \$4 TO \$5 MILLION ANNUALLY. FARMERS GET RESULTS IN THE FORM OF SUPERIOR NEW WHEAT AND BARLEY VARIETIES, AND A RANGE OF NEW KNOWLEDGE AND TECHNOLOGY TO IMPROVE PRODUCTION AND SUPPORT CANADA'S COMPETITIVENESS.



producers for the portion of their Check-off Fund contribution that is invested in research. This is a big development that WGRF, other farmer funded research organizations and Agriculture and Agri-Food Canada have worked toward for a long time. Details on how to claim the tax credit are available on both the WGRF Web site, www.westerngrains.com, and the Canada Customs & Revenue Agency's Web site at www.ccr-aadrc.gc.ca/sred/. Producers can also contact the Foundation office for information.

Royalties re-invested in research. As more Check-off supported varieties enter commercial channels, WGRF receives a portion of royalties based on its agreements with breeding institutions. This recognizes the investment farmers have made in a variety's market success and signals the major equity stake farmers are gaining in the genetics of wheat and barley. The Board has funnelled these dollars - over \$818,000 received since 1998 - back into further wheat and barley research.

INFORMATION FOR PRODUCERS.

This *Annual Report*, is just one of several tools developed to give producers a direct report on their investment. See an overview of the broad range of reports available, on the back page of this report.

CONTACT US

As WGRF's "farmer funded, farmer directed" slogan implies, this organization only works with the ongoing support of producer investors. We welcome your questions, comments or suggestions at any time.

WESTERN GRAINS RESEARCH FOUNDATION 2003 BOARD OF DIRECTORS

Chairman, Dr. Keith Degenhardt*, Wild Rose Agricultural Producers, Hughenden, Alberta

Vice-Chairman, Peter Pepneck*, Alberta Soft Wheat Producers Commission, Vauxhall, Alberta

Rob Pettinger, Agricore United, Elgin, Manitoba

Dr. Steve Morgan Jones, Agriculture and Agri-Food Canada, Lethbridge, Alberta

Brian Otto, Alberta Winter Wheat Commission, Warner, Alberta

Maurice Fines, B.C. Grain Producers Association, Fort St. John, British Columbia

Wayne Bacon, Canadian Canola Growers Association, Kinistino, Saskatchewan

Lorne Hamblin*, Canadian Seed Growers Association, Morris, Manitoba

Allen Oberg, Canadian Wheat Board, Forestburg, Alberta

Bill Toews*, Keystone Agricultural Producers, Kane, Manitoba

Dave Sefton*, Saskatchewan Flax Development Commission, Broadview, Saskatchewan

Ray DeMong, National Farmers Union, Cudworth, Saskatchewan

Michael Kirylichuk, Prairie Oat Growers Association, Lac la Biche, Alberta

Murray Purcell, Saskatchewan Wheat Pool, Saskatoon, Saskatchewan

Alanna Hermanson, Western Barley Growers Association, Standard, Alberta

Lee Erickson, Western Canadian Wheat Growers Association, Donalda, Alberta

Don Hundebly, Western Pulse Growers Association, Wetaskiwin, Alberta

Lanette Kuchenski**, Executive Director

*Executive Members

**Non-voting Executive Member



MANAGING WGRF BUSINESS ACTIVITY

Executive Director's Report, from Lanette Kuchenski at the WGRF office in Saskatoon.

When farmers helped set up Western Grains Research Foundation more than 20 years ago, they did so with a clear management philosophy. Funds must be administered with a clear focus, a transparency of operation and open communication with investors on results and issues.

Today, this business management philosophy has never been more important. There are high expectations in the management of public funds. Equally important, producers want performance from their investment.

In the most basic sense, WGRF management efforts in 2003 were broken into two areas of focus. First, carry out day-to-day management effectively. Second, ensure the organization has effective long-range plans to build a research base into the future.

Most years, the focus is on day-to-day management, but this past year, long-range planning was a much larger part of the effort.

CORE MANAGEMENT PRINCIPLES

WGRF's ongoing management strategy is based on several core principles.



Drive progress through long-term planning. Funding research effectively and seeing it through to the payoff stage is a long-term process. To be successful, research targets must be based on long-term forecasting and funding commitments must be in place to provide consistent support throughout the entire process.

This is particularly important for Check-off funded breeding research, since breeding one new cereal variety from initial cross to finish can take seven to 13 years. Funding can't be turned off and on during that period without disrupting the entire process. This is why WGRF Check-off funding is allocated based on long-term agreements. They have been developed using the collective wisdom of grain industry experts – including farmers, scientists and marketers on the front line of the grain industry – which outline funding allocations, targets and priorities.

Focus on funding research, not administration. The purpose of WGRF is to fund research. This is a major reason why the

Wheat and Barley Check-offs were set up to be deducted from Canadian Wheat Board (CWB) final payments to producers. By using the CWB structure already in place, WGRF can keep its overhead low and ensure as many dollars as possible are allocated to research. WGRF's total administrative costs are kept to the accepted industry standard of less than 10 percent of the Foundation's total budget.

Leverage dollars for high mileage research. An obvious key to fund management is investing in areas that generate the greatest return. This is one reason why WGRF has supported existing research programs, rather than endure the cost and management of setting up its own. By leveraging infrastructure and other resources already in place, farmer funding becomes "high mileage" dollars that go directly to added research capacity. As a result, farmer dollars generate far more research than they ever could on their own. In keeping with this approach, the Foundation also constantly looks for ways of allocating dollars that are most likely to generate matching grants or other additional funding sources. In recent years, over 80 percent of farmer Check-off Funds have been matched by outside sources.

Accountable funding through progress reports, reviews.

There are several provisions for accountability in each of the funds, and farmers are on the front line of the entire process. The Check-off Funds are case in point. Currently, 10-year agreements outline specifically how the Funds are to be used by breeding institutions. Annual progress reports from the researchers are submitted to the Foundation. And as an added safeguard, an independent mid-term review ensured targets were on track and determined whether changes were needed for the remaining five years. The Foundation has also pursued a review process as a basis for new breeding agreements to begin in 2005.

Maintain a realistic business strategy. The Endowment Fund is a good example of how the WGRF Board is applying this principle. While the Endowment Fund has typically provided around \$700,000 annually to research projects, today's lower interest rates have resulted in less money generated for the fund. To continue making the most effective use of the fund, WGRF has initiated the process of updating the Endowment Fund strategy.

Provide open access to operational, fiscal information.

Key financial information and other details on managing the business of WGRF are also documented in appropriate sections of this *Annual Report*. In the interest of keeping costs low, full financial statements are provided to WGRF member organizations. However, these statements are also available to



any western Canadian crop producer on request from the WGRF office. WGRF also welcomes producer comments, questions and suggestions anytime.

Support farmers' role as informed research investors.

Since WGRF is funded and directed by producers, supporting farmers' role as informed investors in research is crucial to long-term success. This is something farmers felt strongly about when the Check-off Funds were established and, as a result, WGRF has pursued a strong communications effort.

PREPARING FOR A NEW GENERATION OF FUNDING

WGRF is preparing for a new generation of long-term research funding.

With current Check-off funding agreements set to expire at the end of 2004, WGRF has pursued a strategic planning process to guide the development of new long-term breeding agreements for the Wheat and Barley Check-off Funds to begin in 2005.

To anchor this process, WGRF selected two independent Review Teams - one for wheat and one for barley - with a broad base of experience, to evaluate current breeding agreements and provide analysis on potential adjustments. This feedback was considered by the WGRF Board and its Check-off Advisory Committees in their own planning processes, and comments from individual crop producers have also been encouraged and welcomed for consideration.

The WGRF Board is now working with breeding institutions to develop draft agreements to be presented at its fall 2004 meeting, leaving adequate time for adjustments before implementation at the beginning of 2005.

Preparations for long-term funding have also been made for the Endowment Fund. While the Fund has, at its peak, generated \$700,000 to \$1 million in annual interest, this level has dropped off in recent years as a result of lower interest rates. WGRF, with input from its Endowment Fund Advisory Committee and from individual producers, is re-evaluating its funding approach, to ensure the best use of funds in this investment climate.

PRODUCER FEEDBACK WELCOMED

Since all WGRF Funds are made up of producer dollars, WGRF welcomes feedback from individual crop producers in Western Canada as part of its ongoing fund management process. For specific feedback related to new Check-off funding agreements and re-evaluating the Endowment Fund funding strategy, producer comment forms are available on the WGRF Web site, www.westerngrains.com. Direct comments to WGRF Board members and the WGRF office are also welcome anytime by e-mail, phone or fax.

NEW WGRF EXECUTIVE DIRECTOR

Lorence Peterson, long-time Executive Director of WGRF, retired in 2003 after presiding over an important period of establishment for the organization. The WGRF Board extends its thanks and best wishes to Peterson, while welcoming Lanette Kuchenski as its new Executive Director.

"Lanette brings strong administrative and management skills to WGRF," says Dr. Keith Degenhardt, WGRF Chair. "She also has solid experience in industry and direct involvement in the research and producer communities."

Kuchenski was raised on a family grain farm north of Winnipeg and graduated from the University of Manitoba's Human Ecology program with a major in Food and Nutrition Science. She has served the past four years as Executive Director of the Saskatchewan Canola Growers Association.



THE WHEAT CHECK-OFF FUND

FARMERS INVESTED \$3,526,825 IN BREEDING PROGRAMS FOR NEW WHEAT VARIETIES IN 2003.

FUNDING OVERVIEW

The Wheat Check-off Fund is the largest producer-supported fund for wheat breeding research in Western Canada.

The Fund is based on an annual check-off of \$0.20/tonne, deducted from Canadian Wheat Board final payments to producers. The Fund has generated over \$3 million annually for wheat breeding research. This has doubled the activity of breeding programs and resulted in many new wheat varieties for producers - ones with higher yields, improved quality, greater disease resistance and other valuable traits.

The Check-off began in the 1993/94 crop year, set up by Bill C-50, an Act of Parliament, which also named Western Grains Research Foundation to administer the Wheat Check-off Fund and set provisions for opt out.

KEY DEVELOPMENTS

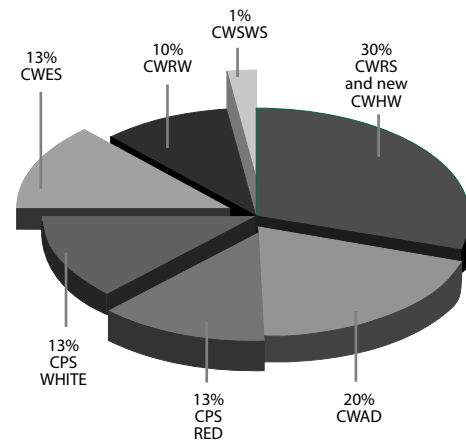
The Check-off funds are currently allocated to breeding institutions based on 10-year funding agreements, which expire at the end of 2004. WGRF has completed a review process and is working with breeding institutions to develop new long-term agreements to begin in 2005.

Producers are now eligible to earn a tax credit on the dollars they invest in research through the Wheat Check-off Fund. Details are available on www.westerngrains.com.

BREEDING PROGRAMS FUNDED

- 73.5% Agriculture and Agri-Food Canada (AAFC)
- 20.8% University of Saskatchewan, Crop Development Centre (U of S CDC)
- 1.9% University of Manitoba (U of M)
- 1.9% University of Alberta (U of A)
- 1.9% Alberta Agriculture, Food and Rural Development (AAFRD)

WHEAT CLASSES FUNDED



NEW VARIETIES

Producers' annual Wheat Check-off Fund investment has supported in part more than 30 new varieties of wheat since the Fund began in 1993/94. See complete, updated list beginning on page 8.

MANAGEMENT AND ACCOUNTABILITY

The Wheat Check-off Fund is funded and directed by producers, and feedback from individual wheat producers in Western Canada is welcome at all times as part of the WGRF Board's decision-making process. Long-term agreements outline specifically how the Funds are to be used by breeding institutions. Annual progress reports from the researchers are submitted to the WGRF Board, and regular reviews are conducted as a basis for long-term planning and adjustments.

WGRF Board decisions are based on the advice of a Wheat Advisory Committee, comprised of Foundation Board members and representatives from research, marketing and industry.



WHEAT ADVISORY COMMITTEE

Chair, Bill Toews, Kane, Man., WGRF Board

Dr. Keith Degenhardt, Hughenden, Alta., WGRF Board
Chair (*ex officio*)

Lee Erickson, Donalda, Alta., WGRF Board

Maurice Fines, Fort St. John, B.C., WGRF Board

Peter Pepneck, Vauxhall, Alta., WGRF Board

Gordon Flaten, Winnipeg, Man., Canadian Wheat Board

Wilfred Harder, Lowe Farm, Man., Canadian Wheat Board,
Board of Directors

Dr. Pierre Hucl, Saskatoon, Sask., University of
Saskatchewan

Dr. Ken Preston, Winnipeg, Man., Grain Research
Laboratory, Canadian Grain Commission

Dr. Ron DePauw, Swift Current, Sask., AAFC

WHEAT CHECK-OFF FUND ACTIVITY

The chart below shows funding activity in 2003 and how it compared to recent years. The following are notes on how to read each section of the chart.

- Potential Check-off before opt out.** This figure indicates the volume of CWB wheat deliveries and the potential Check-off dollars they represent. The mechanism of collecting the Check-off from CWB final payments to producers is efficient and allows WGRF to keep administrative costs low. However, it does not capture the growing volume of domestic feed wheat handled outside CWB.
- Received by WGRF.** Dollars collected from wheat producers participating in the Check-off are received by WGRF from CWB. The WGRF Board then annually approves the amount that will be allocated to wheat breeding programs. The Check-off level, the amount needed for breeding consistency, administrative costs and Reserve Fund levels all factor into the Board decision.
- To/From Reserve Fund.** The figure here shows the amount of annual Check-off funding added to or withdrawn from the Wheat Check-off Reserve Fund, which was set up as a safeguard against major fluctuations in the market. In early years, larger annual allocations were made to build up the reserve.
- To wheat breeding.** WGRF allocates Check-off funding to wheat breeding programs, based on long-term funding agreements that include breeding targets and other specifics. Year-to-year funding consistency is a major priority.
- Opt-out percent.** Rough estimate of the percentage of eligible producers who choose not to support wheat breeding research through the Check-off. Producers who complete a specific annual opt-out procedure by the August 31 deadline each year will not have the Check-off deducted from their CWB final payments.

WHEAT CHECK-OFF FUND ACTIVITY AND TRENDS

		1	2	3	4	5	6	7
Calendar Year	Crop Year	Potential Check-off (\$ Thousands)	Received by WGRF (\$ Thousands)	To/From Reserve (\$ Thousands)	To Wheat Breeding* (\$)	Opt-out Percent	Year-end Reserve (\$)	Royalties Received (\$)
2003	01-02	3,315	2,879	–	3,526,825	5.79	6,656,163	246,372
2002	00-01	3,525	3,109	–	3,337,681	5.03	6,312,326	231,468
2001	99-00	4,081	3,592	–	3,197,506	5.23	5,955,219	71,220
2000	98-99	3,483	3,040	–	3,050,098	5.84	5,624,656	32,321
1999	97-98	3,828	3,328	100	3,013,300	5.63	5,276,133	–

- Year-end Reserve Fund.** Used to supplement the Check-off when annual grain marketings are low. When the Reserve Fund drops below \$4.8 million, dollars are added from that year's Check-off, based on specific guidelines.

- Royalties received.** As part of funding agreements with breeding institutions, WGRF receives a share of the royalties generated by Check-off funded varieties. The major jump in this figure

shows that farmer-supported wheat varieties are becoming widely used. WGRF has re-invested these royalty funds into further wheat breeding research.



THE WHEAT CHECK-OFF FUND

CONTINUED...

INVESTMENT PAYBACK: NEW WHEAT VARIETIES

Producers' annual Wheat Check-off Fund investment has supported in part more than 25 new varieties of wheat since the Fund began in 1993/94.

Because developing a new wheat variety can take from seven to 13 years, most new lines supported by the Wheat Check-off Fund are only now emerging from the breeding pipeline, and will continue to surface over the coming years. The following is a class-by-class listing of registered varieties that have been supported in part by the Wheat Check-off Fund. Years listed indicate year of registration.

CANADA WESTERN RED SPRING

Lillian. (2003). Touted as a successor to AC Abbey, a sawfly-resistant wheat of choice. Key advantage is higher grain yield and protein potential with good disease resistance. Maturity similar to checks. Taller and weaker straw than the semi-dwarf AC Abbey. AAFC Swift Current.

Lovitt. (2002). An early maturing, leaf rust resistant AC Barrie-type with pre-harvest sprouting resistance. AAFC Swift Current

Harvest. (2001). Higher yielding, improved sprouting resistance, one day earlier maturing, protein content similar to Neepawa. AAFC Winnipeg.

Superb. (2000). High-yielding semi-dwarf. AAFC Winnipeg.

CDC Bounty. (1999). High yield potential and higher protein percentage than Neepawa. U of S CDC.

Alikat. (1999). Adapted to acidic soils and agronomically similar to Neepawa. U of A.

AC Abbey. (1998). First semi-dwarf, solid stemmed wheat in this class. AAFC Swift Current.

AC Intrepid. (1997). High yield, early maturity, strong straw and very large kernels. AAFC Swift Current.

AC Splendor. (1996). Very early maturity, very high protein and very good leaf rust resistance. AAFC Winnipeg.

AC Elsa. (1996). Higher yield than AC Barrie, with high protein, and improved leaf spot resistance. AAFC Swift Current.

AC Cadillac. (1996). High yield, high protein, large kernels, very high test weight, very good bunt and loose smut resistance and improved leaf spot resistance. Not as susceptible to FHB. AAFC Swift Current.

CANADA WESTERN HARD WHITE

Kanata. (2000). CWRS-style white wheat supported for interim registration and market evaluation. AAFC Winnipeg.

Snowbird. (2000). CWRS-style white wheat supported for interim registration and market evaluation. AAFC Winnipeg.

CANADA WESTERN AMBER DURUM

AC Napoleon. (1999). Features low cadmium accumulation. In the Black Soil Zone had a higher yield than AC Avonlea and Kyle and stronger gluten than AC Avonlea, but lower protein and test weight than AC Avonlea. AAFC Winnipeg.

AC Avonlea. (1997). High yield, high protein, shorter and stronger straw than Kyle, with improved yellow colour and good cooking quality. AAFC Swift Current.

AC Morse. (1996). Improvements to yield, quality and gluten strength. Concerns with leaf diseases, but short stature gives it potential for eastern Prairie. AAFC Winnipeg.

CANADA PRAIRIE SPRING WHEAT

AC 2000. (2000). White-seeded. Improved milling properties and gluten strength compared to AC Karma and AC Vista. Supported for interim registration. AAFC Swift Current.

HY639. (2000). Red-seeded. Increased protein content, adapted to eastern Prairies. AAFC Winnipeg.

AC Crystal. (1996). Red-seeded. Much stronger gluten combined with good performance characteristics. AAFC Swift Current.



CANADA WESTERN EXTRA STRONG

CDC Rama. (2002). Yield and maturity similar to Glenlea, much higher protein content and improved disease resistance. U of S CDC.

AC Glenavon. (1999). Featuring several improvements, including slightly higher yield, earlier maturity and improved test weight compared to Glenlea. AAFC Winnipeg.

AC Corrine. (1998). Superior sprouting resistance to Glenlea. AAFC Winnipeg.

Laser. (1997). Higher yielding than Wildcat. U of A.

CANADA WESTERN RED WINTER

CDC Buteo. (2002). Yield similar to CDC Osprey, shorter straw than CDC Kestrel, similar lodging resistance. U of S CDC.

CDC Raptor. (1999). High-yielding, winter hardy, strong straw, short stature semi-dwarf with superior stem and leaf rust resistance. U of S CDC.

CDC Falcon. (1998). First winter wheat for Western Canada with leaf and stem rust resistance. U of S CDC.

AC Bellatrix. (1998). First winter wheat for Western Canada with common bunt resistance. AAFC Lethbridge.

AC Tempest. (1997). Replacement for the southern Alberta variety AC Readymade, which corrects the low flour yield problem of that variety. Has stronger straw, high protein and moderate bunt resistance. AAFC Lethbridge.

MORE ON THE WEB

Extensive information on progress toward new wheat varieties and other aspects of the Wheat Check-off Fund is available at www.westerngrains.com.

Key feature:

Wheat Breeding Report. Now updated for 2004, the *Wheat Breeding Report, "Canada in the Big Picture,"* was produced by *Meristem Land and Science* and sponsored in part by Western Grains Research Foundation, in the interest of informed producer investors in wheat breeding research. The report looks at key trends and issues in wheat breeding, the latest breeding highlights and class-by-class breakdowns of progress. It also includes a short course on how Western Canada develops wheat varieties.

GENERAL WHEAT BREEDING TARGETS

Yield. 15 percent higher for hard red spring, 10 percent higher for others, while maintaining protein.

Quality. Increase marketability, improve protein content and processing traits.

Disease. Improve disease resistance.

Maturity. Develop earlier-maturing varieties for northern areas.

Adaptation. Develop special needs for diverse production conditions.

Profitability. Increase grade protection and water-use efficiency, reduce harvesting and residue management costs.



THE BARLEY CHECK-OFF FUND

PRODUCERS INVESTED \$723,291 IN BREEDING PROGRAMS FOR NEW BARLEY VARIETIES IN 2003.

FUNDING OVERVIEW

The Barley Check-off Fund is a major producer-supported fund for barley breeding research in Western Canada.

The Fund is based on an annual check-off of \$0.40/tonne, deducted from Canadian Wheat Board final payments to producers in Saskatchewan and Manitoba (Alberta barley is an exception, covered by a separate barley check-off administered by the Alberta Barley Commission.) The Fund has generated over \$600,000 annually for barley breeding research. As a result, barley breeding programs have doubled their capacity and produced many new barley varieties for growers, featuring everything from higher yield potential and greater disease resistance to superior quality.

The Check-off was set up by Bill C-50, an Act of Parliament, and began in the 1993-94 crop year. The Act also named Western Grains Research Foundation to administer the Barley Check-off Fund and set provisions for opt out.

KEY DEVELOPMENTS

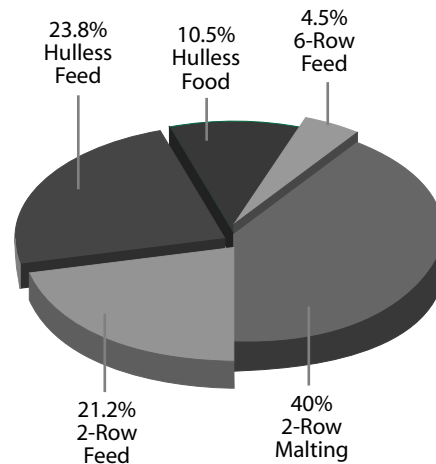
Barley Check-off funds are currently allocated to breeding institutions based on 10-year funding agreements, which expire at the end of 2004. WGRF has completed a review process and is working with breeding institutions to develop new long-term agreements, to begin in 2005.

Producers are now eligible to earn a tax credit on the dollars they invest in research through the Barley Check-off Fund. Details are available at www.westerngrains.com.

BREEDING PROGRAMS FUNDED

- 57% University of Saskatchewan Crop Development Centre (U of S CDC)
- 43% Agriculture and Agri-Food Canada, Brandon Research Centre (AAFC)

BARLEY CLASSES FUNDED



NEW VARIETIES

Farmers' annual Barley Check-off Fund investment has supported in part more than 20 new varieties of barley since the Fund began in 1993/94. See complete, updated list on page 12.

MANAGEMENT AND ACCOUNTABILITY

The Barley Check-off Fund is funded and directed by producers, and feedback from individual barley producers in Western Canada is welcome at all times as part of the WGRF Board's decision-making process. Long-term agreements outline specifically how the funds are to be used by breeding institutions. Annual progress reports from the researchers are submitted to the WGRF Board, and regular reviews are conducted as a basis for long-term planning and adjustments.

WGRF Board decisions are based on the advice of a Barley Advisory Committee, comprised of Foundation Board members and representatives from research, marketing and industry.



BARLEY CHECK-OFF FUND ACTIVITY

The chart below shows funding activity in 2003 and how it compared to recent years. The following are notes on how to read each section of the chart.

BARLEY ADVISORY COMMITTEE

- Alanna Hermanson, Standard, Alta., WGRF Board, Committee Chair
- Dr. Keith Degenhardt, Hughenden, Alta., WGRF Board Chair (*ex officio*)
- Lorne Hamblin, Morris, Man., WGRF Board
- Don Hundebly, Wetaskiwin, Alta., WGRF Board
- Michael Kirylichuk, Lac la Biche, Alta., WGRF Board
- James Chateney, Red Deer, Alta., Canadian Wheat Board, Board of Directors
- Mike Brophy, Winnipeg, Man., Canadian Wheat Board
- Dr. Bill Legge, Brandon, Man., AAFC Brandon Research Centre
- Dr. Michael Edney, Winnipeg, Man., Grain Research Laboratory, Canadian Grain Commission
- Dr. Brian Rosnagel, Saskatoon, Sask., University of Saskatchewan
- Dr. Erin Armstrong, President and CEO, Brewing and Malting Barley Research Institute

1. Potential Check-off before opt out. This figure indicates the volume of CWB barley deliveries and the potential Check-off dollars they represent. The mechanism of collecting the Check-off from CWB final payments to producers is efficient and allows WGRF to keep administrative costs low. However, it does not capture the large volume of domestic feed barley handled outside CWB.

2. Received by WGRF. Dollars collected from barley producers participating in the Check-off are received by WGRF from CWB. The WGRF Board then annually approves the amount that will be allocated to barley breeding programs. The Check-off level, the amount needed for breeding consistency, administrative costs and Reserve Fund levels all factor into the Board decision.

3. To/From Reserve Fund. The figure here shows the amount of annual Check-off funding added to or withdrawn from the Barley Check-off Reserve Fund, which was set-up as a safeguard against major fluctuations in the market. In early years, larger annual allocations were made to build up the reserve.

4. To barley breeding. WGRF allocates Check-off funding to barley breeding programs, based on long-term funding agreements that include breeding targets and other specifics. Year-to-year funding consistency is a major priority.

5. Opt-out percent. Rough estimate of the percentage of eligible producers who choose not to support barley breeding research through the Check-off. Producers who complete a specific annual opt-out procedure by the August 31 deadline each year will not have the Check-off deducted from their CWB final payments.

6. Year-end Reserve Fund. Used to supplement the Check-off when annual grain marketings are low. When the Reserve Fund drops

below \$1.1 million, dollars are added from that year's Check-off based on specific guidelines.

7. Royalties received. As part of funding agreements with breeding institutions, WGRF receives a share of the royalties generated by Check-off funded varieties. The rise in this figure shows that farmer-supported barley varieties are becoming widely used. WGRF has re-invested these royalty funds into further barley breeding research.

BARLEY CHECK-OFF FUND ACTIVITY AND TRENDS

		1	2	3	4	5	6	7
Calendar Year	Crop Year	Potential Check-off (\$ Thousands)	Received by WGRF (\$ Thousands)	To/From Reserve (\$ Thousands)	To Barley Breeding* (\$)	Opt-out Percent	Year-end Reserve (\$)	Royalties Received (\$)
2003	01-02	629	536	-	723,291	5.79	1,546,363	9,000
2002	00-01	760	653	-	646,049	5.03	1,463,671	8,665
2001	99-00	824	715	-	636,363	5.21	1,378,118	1,924
2000	98-99	592	506	-125	632,563	5.84	1,300,962	902
1999	97-98	663	575	-115	630,598	5.63	1,340,380	-



THE BARLEY CHECK-OFF FUND

CONTINUED...

INVESTMENT PAYBACK: NEW BARLEY VARIETIES

Farmers' annual Barley Check-off Fund investment has supported in part more than 20 new varieties of barley since the Fund began in 1993/94.

Developing a new barley variety can take from seven to 15 years. As a result, most new lines supported by the Barley Check-off Fund are only now emerging from the breeding pipeline, and will continue to surface over the coming years. The following is a type-by-type listing of registered varieties that have been supported in part by the Barley Check-off Fund. Years listed indicate year of registration.

FEED AND FORAGE

Rivers. (2003). Two-row hulled. Early maturing with moderate yields for the eastern Prairies. Excellent combination of disease resistance. AAFC Brandon.

CDC Trey. (2002). Two-row hulled. High yielding for the eastern Prairies. Very strong straw, early maturity and very high test weight - higher than CDC Dolly. U of S CDC.

CDC Helgason. (2000). Two-row hulled. High-yielding, heavy and plump, with disease resistance for the eastern Prairies. U of S CDC.

AC Ranger. (2000). Six-row forage. High grain yield potential, good disease resistance for the eastern Prairies and straw strength. AAFC Brandon.

CDC McGwire. (1999). Two-row hulless. Features combination of good yield, threshability and disease resistance for Western Canada. U of S CDC.

CDC Speedy. (1999). Two-row hulless. Features very early maturity for delayed seeding situations. U of S CDC.

CDC Bold. (1999). Two-row semi-dwarf hulled. Improved quality, straw strength. U of S CDC.

CDC Freedom. (1998). Two-row hulless. Improved threshability, straw strength and net blotch and FHB resistance. U of S CDC.

AC Bacon. (1998). Six-row hulless. High yield potential and good disease resistance package. AAFC Brandon.

CDC Gainer. (1997). Two-row hulless. Low beta-glucan and good straw strength. U of S CDC.

CDC Fleet. (1996). Two-row hulled. Early maturity, good grain quality and strong straw. U of S CDC.

AC Rosser. (1996). Six-row feed barley with good yield and disease resistance. AAFC Brandon.

AC Hawkeye. (1996). Six-row hulless feed barley with good plumpness. Threshability and yield. AAFC Brandon.

MALTING AND BREWING

Calder. (2002). Two-row, particularly well adapted to Saskatchewan. High yielding. Resistance to loose smut, moderate resistance to stem rust, net blotch, surface-borne smuts and FHB. AAFC Brandon.

Newdale. (2001). Two-row, outyields Harrington by 24 percent across all soil zones. Shorter and stronger straw than Harrington. Moderate resistance to spot blotch. AAFC Brandon.

CDC Select. (2000). Two-row malting barley with 11 percent high yield potential than Harrington across the Prairies, and with quality tailored to North American brewers. Good kernel weight, plumpness, resistance to lodging, net blotch and stem rust.

CDC Copeland. (1999). Two-row featuring high yield, good plumpness, test weight and maturity. A unique malting quality profile. Moderate net blotch and stem rust resistance. U of S CDC.

AC Bountiful. (1999). Two-row with high yield, good resistance to the smuts, moderate resistance to net blotch and FHB, and malting quality similar to Harrington. AAFC Brandon.

FOOD POTENTIAL

CDC Fibar. (2003). Two-row waxy hulless targeted at food markets. Features nearly 100 percent amylopectin starch, high levels of beta-glucan and acid extract viscosity. U of S CDC.

CDC Rattan. (2003). Two-row waxy hulless. Features high test weight and several improvements over CDC Candle, particularly in agronomic performance, disease resistance, levels of beta-glucan and acid extract viscosity. Waxy type with 95 percent amylopectin starch. U of S CDC.

CDC Alamo. (1999). Two-row specialty waxy hulless barley, with pure amylopectin starch. U of S CDC.



GENERAL BARLEY BREEDING TARGETS

Yield. Five percent higher for two-row malt, 10 percent for other major types.

Quality. Increase marketability, improve protein content and processing traits.

Disease. Improve disease resistance. Particularly to smut, scald, blotch and rust.

Maturity. Five days earlier than checks in two-row, 10 days earlier in six-row.

Adaptation. Develop special needs for diverse production conditions.

Profitability. Increase grade protection and water-use efficiency, reduce harvesting and residue management costs.

MORE ON THE WEB

Extensive information on progress toward new barley varieties and other aspects of the Barley Check-off Fund is available at www.westerngrains.com.

Key feature:

Barley Breeding Report. Now updated for 2004, the *Barley Breeding Report*, "Portfolio for Progress," was produced by

Meristem Land and Science and sponsored by Western Grains Research Foundation, in the interest of informed producer investors in barley breeding research.

The report provides producers with an in-depth look at the latest progress, trends and issues shaping the future of western Canadian barley. It features the latest breeding highlights, class-by-class updates and a short course on how Western Canada develops new barley varieties.

THE ENDOWMENT FUND

PRODUCER FUND INVESTED \$534,780 IN A BROAD RANGE OF CROPS RESEARCH IN 2003.

FUNDING OVERVIEW

The Endowment Fund began in 1983 with \$9 million in producer dollars turned over by the federal government from the discontinued Prairie Farm Assistance Act, a forerunner of today's crop insurance program.

Each year, WGRF allocates the Fund's annual interest to crop research projects that benefit the western grains industry. The Endowment Fund is relatively small compared to today's mega research funds, but its long-term production has been formidable. The Fund has provided over \$18 million to over 200 crop research projects since its inception and has filled an important niche, often supporting research that wouldn't otherwise receive adequate funding.

KEY DEVELOPMENTS

Lower interest rates have cut the Endowment Fund's capacity in recent years. To accommodate this, WGRF for 2003 opted to narrow its criteria for new projects approved to two specific research areas – innovation and Integrated Crop Management.

FARMERS' INVESTMENT

Two new projects were approved for funding in 2003, adding to the more than 200 projects funded since 1983. See updated list of new and ongoing projects on next page.

MANAGEMENT AND ACCOUNTABILITY

The Endowment Fund was originated with producer funds and is directed by producers. Feedback from individual crop producers in Western Canada is welcome at all times as part of the WGRF Board's decision-making process. The WGRF producer Board reviews and approves all applications for research projects. Approved research applications outline specifically how the funds are to be used by researchers and regular progress reports from the researchers are submitted to the WGRF Board.

WGRF Board decisions are based on the advice of an Endowment Fund Advisory Committee, comprised of half Foundation members and half representatives from research, marketing and industry.



THE ENDOWMENT FUND

CONTINUED...

ADVISORY COMMITTEE

This committee, comprised of WGRF producer Board members, research and industry representatives, reviews Endowment Fund progress and research applications as a basis for advising the WGRF Board on funding decisions.

- Peter Pepneck, Vauxhall, Alta., WGRF Board, Committee Chair
- Dr. Keith Degenhardt, Hughenden, Alta., WGRF Board (*ex officio*)
- Michael Kirylchuk, Lac la Biche, Alta., WGRF Board
- Brian Otto, Warner, Alta., WGRF Board
- Dr. John Culley, Ottawa, Ont., AAFC
- Dr. Rachael Scarth, Winnipeg, Man., University of Manitoba
- Dr. Dean Spaner, Edmonton, Alta., University of Alberta

- Dr. Bryan Harvey, Saskatoon, Sask., University of Saskatchewan
- Mike McAvoy, Regina, Sask., Canada Committee on Crop Production Services

MORE ON THE WEB

A broad base of information on the Endowment Fund is available at www.westerngrains.com.

Key feature:

Research reports. Overview reports on the more than 200 projects supported by the Endowment Fund during its history. The reports are easy-to-scan summaries of the key points on each project: the researchers, the funding, the challenge and, for completed projects, the results.

INVESTMENT PAYBACK: KNOWLEDGE AND TECHNOLOGY

The Endowment Fund has invested over \$18 million in more than 200 crop research projects since 1983.

This has produced a vast resource of knowledge and technology to benefit the western grains industry. Many of the projects have represented leading-edge research to help the industry understand and deal with major production issues that directly impact producer pocketbooks.

The following is an overview of recent Endowment Fund investments, including new projects approved to begin receiving funding in 2004, those completed in 2003 and those receiving ongoing funding.

NEW PROJECTS APPROVED TO BEGIN IN 2004

Innovative database to boost delivery of superior wheat varieties. A new informatics-based data storage system will dramatically improve the efficiency and success of wheat breeding, delivering superior wheat varieties into the hands of farmers. The goal of the project is to create a database and related software that will enable breeders to calculate, based on genetic information, which breeding crosses have the best chance of success.

- Technical description: Project 2004-01; "Efficient, sustainable wheat improvement through genotyping and informatics resources," Dr. Daryl Somers, AAFC CRC Winnipeg. Endowment Funding: \$201,000 over three years.

Reducing herbicide application rates to control pests. Lower herbicide application rates will produce a weedy background that will reduce infestations of pests such as root maggots, diamondback moths and sclerotinia stem rot. The results will be improved environmental and economical sustainability. This project focuses on Integrated Crop Management, which involves taking a holistic approach to agriculture.

- Technical description: Project 2004-02; "Improving Integrated Crop Management by reducing herbicide application rates," Dr. Lloyd Dosdall, University of Alberta. Endowment Funding: \$135,000 over three years.

PROJECTS COMPLETED IN 2003

2001-01. Creation of food market niche for Canadian barley. Dr. Nancy Ames, AAFC Winnipeg.

2001-03. Population studies on *Ascochyta rabiei* on chickpea crops in Saskatchewan. Dr. Sabine Banniza, U of S CDC.



2001-04. Identification of characterization of novel stem rust resistance genes in oats. Dr. Thomas Fetch, AAFC Winnipeg.

2001-05. Protecting resistance genes and parasites to provide sustainable control of wheat midge in spring wheat. Dr. Robert Lamb, AAFC Winnipeg.

2001-06. Improving the quality and profitability of durum wheat through nitrogen and disease management. Dr. William May, AAFC Indian Head.

2001-07. Identifying genome regions in wheat responsible for increasing yield. Dr. Daryl Somers, AAFC Winnipeg.

2001-08. Biological control of Fusarium Head Blight – a powerful potential tool for disease management. Dr. Andy Tekauz, AAFC Winnipeg.

PROJECTS ONGOING		2004	2005
2002-01	Assembling the best chickpea canopy strategy for different production zones. Dr. Rosalind Ball, U of S	28,545	26,955
2002-02	Helping field pea producers against Mycosphaerella blight. Dr. Bob Conner, AAFC Morden	28,600	29,200
2002-03	Investigate the role of self-regenerating medic legume plants for late-season N-fixation and weed suppression. Dr. Martin Entz, U of M	30,000	30,000
2002-04	Developing canola with enhanced deterrence to flea beetle feeding. Dr. Margaret Gruber, AAFC Saskatoon	32,100	33,850
2002-05	Developing a DNA map of durum end-use quality traits. Dr. Ronald Knox, AAFC Swift Current	28,000	28,000
2002-06	Improving the efficiency of multi-factor, multi-location agronomic experiments. Dr. Guy Lafond, AAFC Indian Head	14,000	14,000
2002-07	Developing a quicker test to measure beta-glucan levels in cereal crops. Dr. Christof Rampitsch, AAFC Winnipeg	33,000	35,000
2003-01	Biological control of cabbage root maggots in canola with parasitic beetles. Dr. Neil Holliday, U of M	24,000	24,000
2003-02	Developing bioactive edible films and coatings from yellow field peas to improve food quality and safety. Dr. Jung Han, U of M.	38,000	37,000
2003-03	Application of plant tissue culture to improvement of tolerance to Fusarium Head Blight toxins in barley. Dr. William Legge, AAFC Brandon Research Centre	33,000	33,000
2003-04	Development of pheromone-based control for the orange wheat blossom midge. Dr. Gerhard Gries, Simon Fraser University.	24,752	24,752
TOTALS		313,997	315,757



INFORMATION FOR PRODUCER RESEARCH INVESTORS

WGRF produces a range of information updates and reports featuring the latest research progress, business developments and ideas and issues important to farmer research investors.

The following WGRF information tools are targeted to WGRF member organizations, media, extension, the research community and others directly involved in providing information to producers. Producers can also access them anytime on the WGRF Web site, www.westerngrains.com.

NEWS AND INFORMATION RELEASES

News and information releases are issued regularly to update the industry on WGRF activity. Typical releases cover three types of information: research progress, business activity and producer feedback opportunities.

WESTERN GRAINS RESEARCH MAGAZINE

Can barley compete with corn in the feedlot? How will new wheat varieties pay off in the field? Can Canada keep pace with Australia and other key competitors?

Ideas and issues surrounding these questions and others are the focus of *Western Grains Research Magazine*, a new WGRF communications tool introduced in 2003. Monthly editions present "Ideas and issues for farmer research investors," providing perspectives to help guide farmers in their role as major players in crops research funding.

INDUSTRY REPORT NEWSLETTER

The *Industry Report* newsletter is WGRF's signature report to the industry on business activity. Regular editions throughout the year provide a big picture look at WGRF funding activity, including analysis of the challenges, opportunities and issues faced by the organization. Special member editions that summarized key activity for the year were also produced for the member organizations of WGRF for use with member newsletters and annual meetings.

Example topics:

- New directions in durum
- Building a better feed barley for cattle
- Refueling stop in research funding progress

GRAIN MATTERS INSERT

In 2003, a special edition of the WGRF *Industry Report* newsletter was included as an insert in *Grain Matters*, the Canadian Wheat Board publication that is distributed to all producers on the CWB list.



SPECIAL REPORTS

WGRF sponsored the development of several independent special reports, delivered in 2003, in the interest of informed producer investors in crops research. New and updated 2004 versions of these reports are available through the WGRF Web site.

• 2003 Wheat Breeding Report: "Canada in the Big Picture."

This in-depth, easy-to-read report on wheat breeding in Western Canada covers all the key progress, trends and issues.

• 2003 Barley Breeding Report: "Portfolio for Progress."

From the big world of barley to key breeding developments that will affect grower incomes down the road, this report gives producers a broad overview of where barley breeding is taking the crop.

• 2003 PRRCG Report: "New Thinking for New Times."

Delivered from inside the Prairie Registration Recommending Committee for Grain (PRRCG) annual meeting in Winnipeg. Highlights of the key developments and a preview of the top crop lines recommended for registration.

ANNUAL REPORT

All the year's WGRF activity is summarized in the *Annual Report*, designed to provide producer research investors with an overview of directional and administrative activity and a report on research funding progress.

MORE INFORMATION

Many producers contact the Foundation directly with questions or comments. This direct farmer contact is encouraged.

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