

2002

ANNUAL REPORT TO
PRODUCER INVESTORS



Farmer funded, farmer directed.



Building the next generation of producer research investment

Chairman's Report on farmer funded progress in 2002, from Hughenden, Alta., producer Dr. Keith Degenhardt.

The number one objective for Western Grains Research Foundation (WGRF) is to support the role of western Canadian grain producers as investors in crop research. Part of this is getting farmers to think, not just as commodity producers or business operators, but as informed investors in the future of their crops and their industry.



- Dr. Keith Degenhardt

That's why throughout this *Annual Report* and in other WGRF communications, the term "investors" is used frequently. Farmers are major investors in wheat and barley breeding research through the Wheat Check-off Fund and Barley Check-off Fund, and in a broad range of crops research through the

Endowment Fund - all of which in 2002 represented a total investment of \$4.6 million. Each of these funds is directed by WGRF's producer Board, representing 17 diverse agricultural organizations.

As the "farmer funded, farmer directed" slogan suggests, this organization works only with the ongoing support of producer investors. This *Annual Report* is just one tool developed to give producers a direct report on their investment. It provides an overview of key business activities in 2002, 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 any time from the WGRF Web site, www.westerngrains.com, or directly from the WGRF office.

Key 2002 activity

Overall, 2002 was a year of significant activity for WGRF. Here are some key developments.

Check-off-funded varieties gaining acreage Prairie-wide. They've started churning out of the long-term breeding pipeline over the past couple of years, and are beginning to show up at full force in the field. In fact, the most recent Canadian Wheat Board variety survey shows the first wheat and barley varieties supported in part by the Check-off are becoming widely grown and several are among the acreage leaders in different classes. This is an important milestone - producers have seen their long-term Check-off investment through to the payoff stage. Developing a new cereal variety can take seven to 13 years and steady funding support is needed at every stage of the process.

Endowment Fund backs key crop research projects. Crop researchers continue to talk about this Fund as one of their most well-liked funding sources. It's not hard to see why - a broad range of research projects are eligible, and the funding is often awarded to projects important to producers that might not otherwise be funded. The Fund is a small one in the big world of research and it's vulnerable to fluctuating interest rates and markets, which have reduced the dollars generated in recent years. But there's no doubt the Endowment Fund has filled a considerable niche - over 200 crop research projects have been completed with its support since 1983.

New tax credit available to Check-off investors. This is a big development, and one the Foundation and other farmer-funded research organizations have worked toward for a long time. The Scientific Research and Experimental Development tax credit, which has been available to other industries that invest in research and development, is now available to producers for their Check-off Fund investment. The extension of this federal tax credit to farmers was announced by the federal government in 2002 and eligibility begins with the 2001 tax year. Details on how to claim the credit are available on the WGRF Web site or by contacting the Foundation office.

Preparations underway for new long-term breeding agreements. The time for round two of Check-off funding is fast approaching. The Wheat Check-off and Barley Check-off Funds are currently allocated to breeding institutions, based on 10-year funding agreements. But these agreements, which outline everything from the percentage of the Check-off an institution receives to breeding targets and accountability measures, expire at the end of 2004. The Foundation has started the process of developing new funding agreements, to begin in 2005.

Royalties re-invested in Fusarium research, other complementary projects. With more Check-off supported varieties in the field, WGRF is getting a share of royalties on seed sales. The Board has funneled these dollars - over \$360,000 received since 1998 - back into further wheat and barley research. It's important to note the royalty system was in place before the Check-off Funds existed and operates completely independently. The Foundation 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.

In-depth reports strengthen communications activity. If it affects wheat and barley breeding in Western Canada, chances are it's been covered by WGRF's communications effort. Through news releases, the *Industry Report* newsletter, the WGRF Web site and several other information tools, WGRF has developed arguably the most extensive overview of information on wheat and barley breeding in Western Canada. This past year, WGRF also continued to sponsor several in-depth reports to help producers get a big picture view of the trends and issues affecting their research investment. The *2003 Wheat Breeding Report: "Canada in the Big Picture,"* the *2003 Barley Breeding Report: "Portfolio for Progress,"* and other regular reports are available through the Web site or directly from the Foundation office.

Contact us

WGRF welcomes producer comments, questions and suggestions on these or any other topics related to the direction of farmer-funded research, at any time. The WGRF Executive and the 17 WGRF producer Board members are available through the WGRF office, by phone, fax, or email.

Western Grains Research Foundation 2002 Board of Directors

- **Chairman, Dr. Keith Degenhardt***, Wild Rose Agricultural Producers, Hughenden, Alberta
- **Vice-Chairman, Bill Toews***, Keystone Agricultural Producers, Kane, Manitoba
- **Rob Pettinger**, Agricore United, Elgin, Manitoba
- **Dr. Steve Morgan Jones**, Agriculture and Agri-Food Canada, Lethbridge, Alberta
- **Peter Pepneck***, Alberta Soft Wheat Producers Commission, Vauxhaull, Alberta
- **Brian Otto**, Alberta Winter Wheat Commission, Warner, Alberta
- **Maurice Fines**, B.C. Grain Producers Association, Fort St. John, British Columbia
- **John McKee**, Canadian Canola Growers Association, Stirling, Alberta
- **Lorne Hamblin***, Canadian Seed Growers Association, Morris, Manitoba
- **John Clair**, Canadian Wheat Board, Radisson, Saskatchewan
- **Dave Sefton***, Saskatchewan Flax Development Commission, Broadview, Saskatchewan
- **Ray DeMong**, National Farmers Union, Cudworth, Saskatchewan
- **Michael Kirylchuk**, 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
- **Lorence Peterson****, Executive Director

*Executive Members

**Non-voting Executive Member

Principles of managing WGRF business

Executive Director's Report, from Lorence Peterson at the WGRF office in Saskatoon.

Western Grains Research Foundation has become the largest grains research funding organization for farmers in Western Canada, allocating between \$4 and \$5 million annually through the Wheat Check-off Fund, the Barley Check-off Fund and the Endowment Fund.

Once funding direction is set by the WGRF Board, the workload shifts to managing the funds to best meet the goals of the organization. Questions from WGRF's producer investors typically revolve around the specific challenges of managing research funds for consistent,



- Lorence Peterson

long-term benefits. Here are a few of the core principles that guide how WGRF's research funds are managed:

Drive progress through long-term planning. This is a fact of life in research. Breeding one new variety can take seven to 13 years. Consistent funding is required

and any shifts in breeding targets must be gradual to avoid wasting years of progress. WGRF tackles this challenge by tapping the collective wisdom of grain industry experts - farmers, scientists and marketers on the front line of the grain industry.

The annual research funding generated by the Wheat and Barley Check-off Funds is currently allocated based on 10-year agreements with breeding institutions that 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 final payments to producers. By piggybacking on 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 started the review process toward new breeding agreements to begin in 2005. Producer input is part of this process and all final decisions are made by the WGRF Board.

Maintain a realistic business strategy. The WGRF Endowment Fund provided significant research funding when interest rates were high, but with today's low interest rates and fluctuating commodity markets, that is no longer the case. The WGRF Board is aware of this business challenge and committed to dealing with producer funds in the most appropriate manner.

Provide open access to information. Informed producer investors are crucial to long-term success. An overview of the Foundation's extensive communications effort is featured on the next page of this *Annual Report*.

Key financial and other details on managing the business of WGRF are also documented in appropriate sections. 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.

Progress and perspectives for producer research investors

WGRF delivers regular updates on farmer-funded research and activity.

This 2002 Annual Report is just one component of a broad WGRF communications program ensuring key information reaches producer research investors.

All communications are targeted to WGRF member organizations, media, extension, the research community and others directly involved in providing information to producers. Information is anchored on the WGRF Web site, www.westerngrains.com and most materials are also available on request from the WGRF office.

Here's an overview of the WGRF communication tools and a sampling of topics covered over the past year.

Web site: www.westerngrains.com

Wheat and Barley Check-off Breeding Progress. Extensive information on the Check-off funded breeding network: players, progress, activity and issues.

Endowment Fund Research Reports. Comprehensive, updated reports on the more than 200 crop research projects supported by the Endowment Fund since 1983.

About Us. Complete background on WGRF, the largest grains research funding organization for farmers in Western Canada.

Industry Report newsletter

Farmer-funded breeding enters a new generation. Two-part series on today's Wheat/Barley Check-off funded breeding network - the players, how they contribute and the role of producer investment - as WGRF sets the stage for a new round of long-term funding.

The New World of Crop Germplasm. Gives farmers a closer look at key issues in germplasm that will ultimately affect Canada's success in everything from research and production to the global market.

National Fusarium Workshop. Takes producers inside the Canadian Workshop on Fusarium Head Blight in Ottawa, the nation's top scientific meeting on the most serious disease of wheat and barley.

More information, any time

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

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News and information releases

Research progress. "Fusarium screening reveals brighter horizon for Prairie wheat growers," "New malt barley varieties star field performers," "DNA mapping study to boost Canada's market edge." These and other research articles delivered regularly throughout the year.

Business activity. "Royalties generate new WGRF funding for wheat and barley research," "Advisory Committees review wheat, barley breeding progress." Two of several regular updates on WGRF activity.

Producer feedback, opportunities. "Producer feedback welcome on Wheat and Barley Check-off funding agreements," "New information for farmers on claiming research tax credit." These and other important updates for producers.

Grain Matters insert

Investor's Report: Wheat and Barley Check-off Fund. A four page, broadsheet briefing for producers on key activity of their Check-off investment. Delivered in the CWB *Grain Matters* publication, which is distributed to the CWB producer list.

Special Reports

2002 PRRCG Report: "New Generation Takes Hold." 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.

New 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.

New 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.

The Wheat Check-off Fund

Our Business

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

It 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 in 2002

New tax credit for Wheat Check-off

investment. The federal government announced that producers can receive the Scientific Research and Experimental Development tax credit. For 2001, a total of 41 percent of the Wheat Check-off was eligible for this tax credit. In 2002 and future tax years, WGRF expects the eligible percent to be much higher.

Wheat review process to anchor new funding agreements. WGRF has started the review process toward developing new long-term Check-off funding agreements with breeding institutions. Current agreements - which outline funding allocations, breeding targets and accountability measures - expire at the end of 2004.

Chart: funding activity and trends

The chart to the right shows funding activity in 2002 and how it compared to previous years.

1 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. Potential Check-off was reduced in 2000/01, in part due to drought conditions in parts of the Prairie.

2 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.

3 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. Because breeding programs require long-term, consistent funding, this Reserve Fund was set up as a safeguard against major fluctuations in the market that could affect the ability to fund. In early years, larger annual allocations to the Reserve Fund were made to build up the reserve to a level that will provide consistent Check-off investment in breeding, in years of low marketings.

4 To wheat breeding. WGRF allocates Check-off funding to wheat breeding programs across Western Canada, based on long-term funding agreements with breeding institutions. These agreements outline breeding targets and other specifics of how the funds are to be used. A major priority for WGRF is to keep allocations to wheat breeding consistent. It's important to note that WGRF has approved the emergency use of Check-off funding - specifically, \$87,000 annually from 2001 to 2003 - to support a Fusarium Head Blight (FHB) screening nursery operated by the University of Manitoba in Carman, Man.

5 Opt-out percent. This figure is a 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. This option was set up to maintain producer choice while keeping administrative costs low in comparison to other options such as mailing rebate cheques. The number of producers opting out has consistently remained around 5 percent, showing strong, consistent support from well over 90 percent of eligible producers.

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Farmers invested \$3.4 million in breeding programs for new wheat varieties in 2002.

6 Year-end Reserve Fund. The Reserve Fund is 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 collections. Check-off funding is added to the Research Fund based on these guidelines: 12.5 percent is added when the Reserve is between \$2.4 and \$4.8 million; 25 percent is added when Reserve is below \$2.4 million. Even when nothing is added, the interest generated is substantial. The Reserve Fund leaves WGRF well positioned to offset drought-affected lower Check-off volume for 2001/02.

7 Royalties received. As part of its funding agreements with breeding institutions, WGRF receives a share of the royalties generated by Check-off funded varieties. With most farmer-supported wheat lines still in the development pipeline, royalties are only now beginning to become a factor. 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 at the institutions that develop the royalty-generating varieties. Over \$226,000 in wheat royalties were received and re-invested in 2002.

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 Reserve (\$ Thousands)	To Wheat Breeding* (\$)	Opt-out Percent	Year-end Reserve (\$)	Royalties Received (\$)
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	—
1998	96-97	4,728	4,205	1,000	3,025,960	4.27	4,853,181	9,835

* includes royalties from column 7

The Wheat Check-off Fund

Our progress

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. A look at key funding activity in 2002 and an updated list of the new varieties that have resulted over the long-term.

Funding in 2002

WGRF made several funding investments:

- to wheat breeding programs: \$3.35 million
- to additional wheat breeding through re-investment of royalties: \$226,943

By breeding institution

Five wheat breeding institutions received funding:

- 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)

By wheat class

Funding was allocated based on these class priorities:

- 30% CWRS and new CWHW
- 20% CWAD
- 13% CPSR
- 13% CPSW
- 13% CWES
- 10% CWRW
- 1% CWSWS

New wheat varieties

Because developing a new wheat variety can take from seven to 13 years, most new lines supported by the Check-off Fund are only now emerging from the breeding pipeline, and will continue to surface over the coming years. Check-off supported wheat varieties are listed by year of registration.

2002

- **Lovitt (PT205)**. CWRS. An early maturing, leaf rust resistant AC Barrie-type with pre-harvest sprouting resistance. AAFC Swift Current

2001

- **Harvest (BW259)**. CWRS. Yield approximately six percent higher than AC Barrie, one day earlier maturing, protein content similar to Neepawa. AAFC Winnipeg.
- **CDC Rama**. CWES. Yield and maturity similar to Glenlea, much higher protein content and improved disease resistance. U of S CDC.
- **CDC Buteo (S96-33)**. CWRW. Yield similar to CDC Osprey, shorter straw than CDC Kestrel, similar lodging resistance. U of S CDC.
- **McClintok (UM5089)**. CWRW. Yields similar to CDC Kestrel, with shorter straw and improved lodging resistance. U of M.

2000

- **AC Superb**. CWRS. High-yielding semi-dwarf. AAFC Winnipeg.
- **Kanata (BW263)**. CWHW. Supported for interim registration and market evaluation. AAFC Winnipeg.
- **Snowbird (BW264)**. CWHW. Supported for interim registration and market evaluation. AAFC Winnipeg.
- **AC 2000**. CPSW. Improved milling properties and gluten strength compared to AC Karma and AC Vista. Supported for interim registration. AAFC Swift Current.
- **HY639**. CPSR. Increased protein content, adapted to eastern prairies. AAFC Winnipeg.

1999

- **CDC Bounty**. CWRS. U of S CDC.
- **AC Napoleon**. CWAD. AAFC Winnipeg.
- **AC Glenavon**. CWES. AAFC Winnipeg.
- **CDC Raptor**. CWRW. U of S CDC.
- **Alikat**. CWRS. U of A.

und... Continued

1998

- **CDC Falcon.** CWRW. U of S CDC.
- **AC Corrine.** CWES. AAFC Winnipeg.
- **AC Bellatrix.** CWRW. AAFC Lethbridge.
- **AC Abbey.** CWRS. AAFC Swift Current.

1997

- **AC Intrepid.** CWRS. AAFC Swift Current.
- **AC Avonlea.** CWAD. AAFC Swift Current.
- **AC Tempest.** CWRW. AAFC Lethbridge.
- **Laser.** CWES. U of A.

1996

- **AC Splendor.** CWRS. AAFC Winnipeg.
- **AC Elsa.** CWRS. AAFC Swift Current.
- **AC Cadillac.** CWRS. AAFC Swift Current.
- **AC Crystal.** CPSR. AAFC Swift Current.
- **AC Vista.** CPSW. AAFC Swift Current.
- **AC Morse.** CWAD. AAFC Winnipeg.

* Note: Alberta CWSWS did not come under the Check-off until 2001.

2002 Wheat Check-off Fund Advisory Committee

This committee - comprised of representatives from the research community, industry and producer members from the WGRF Board - reviews breeding programs and makes recommendations to the Board on research funding priorities.

- **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

More information in 2003 Wheat Breeding Report

This in-depth, easy-to-read report on wheat breeding in Western Canada covers all the key progress, trends and issues, and is available free-of-charge to producers. To access the 2003 Wheat Breeding Report - "Canada in the Big Picture," visit the WGRF Web site, www.westerngrains.com, the Meristem Land and Science Web site, www.meristem.com, or contact the WGRF office.



The Barley Check-off Fund

Our Business

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

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 in 2002

New producer tax credit for Barley Check-off support. The Scientific Research and Experimental Development tax credit is now available to producer research investors. For 2001, a total of 61 percent of the Barley Check-off was eligible for this tax credit. For 2002 and future tax years, WGRF expects the eligible percent to be much higher.

Barley review process to drive new funding agreements. WGRF has started the review process toward developing new long-term Check-off funding agreements with breeding institutions. Current agreements - which outline funding allocations, breeding targets and accountability measures - expire at the end of 2004.

Chart: funding activity and trends

The chart to the right shows funding activity in 2002 and how it compared to previous years.

1 Potential Check-off before opt-out. The potential Check-off dollars represented by CWB barley deliveries in Saskatchewan and Manitoba (with no producer opt outs) are indicated by this figure. (Alberta barley is not included in the WGRF Barley Check-off; it is covered by a separate Alberta Barley Commission provincial check-off.) 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 amount of feed barley handled outside CWB. Potential Check-off was reduced in 2000/01 in part due to drought conditions.

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. Because breeding programs require long-term, consistent funding, this Reserve Fund was set-up as safeguard against major fluctuations in the market that can affect the ability to fund. In early years, larger annual allocations to the Reserve Fund were made to build up the fund to a level that will provide consistent Check-off investment in breeding, in years of low marketings. WGRF drew on the Reserve Fund to shore up Check-off funding in 1999 and 2000.

4 To barley breeding. Allocating Check-off funding to barley breeding programs in Manitoba and Saskatchewan is the core of WGRF's role. This is done based on long-term funding agreements with the breeding institutions, which outline breeding targets and other specifics of how the funds are to be used. A major priority for WGRF is to keep allocations to barley breeding consistent.

5 Opt-out percent. This figure is a 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 will not have the Check-off deducted from their CWB final payments. This option was set up to maintain producer choice while keeping administrative costs low in comparison to other options such as providing refund cheques. The opt-out level has consistently remained around 5 percent of producers, showing strong, consistent support from well over 90 percent of eligible producers.

Producers invested \$642,000 in breeding programs for new barley varieties in 2002.

6 Year end Reserve Fund. The Reserve Fund is a valuable back-up resource when annual grain marketings are low. Check-off funding is added to the Reserve Fund based on these guidelines - 12.5 percent added when reserve is between \$550,000 and \$1.1 million; 25 percent added when reserve is below \$550,000. The current Reserve level is at its highest peak, leaving WGRF well positioned to offset drought-affected lower Check-off volume for 2001/02.

7 Royalties received. WGRF receives a share of the royalties generated by Check-off funded varieties, as part of its funding agreements with breeding institutions. With most farmer-supported barley lines still in the development pipeline, royalties are only now beginning to become a significant factor. The WGRF Board has re-invested these royalty funds into further barley breeding research at the institutions that develop the royalty-generating varieties. A total of \$8,665 in barley royalties were received and re-invested in 2002.

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 Reserve (\$ Thousands)	To Barley Breeding* (\$)	Opt-out Percent	Year-end Reserve (\$)	Royalties Received (\$)
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	–
1998	96-97	1,239	1,133	445	631,080	4.27	1,139,404	–

* includes royalties from column 7

The Barley Check-off Fund

Our progress

Producers' annual Barley Check-off Fund investment has supported in part more than 15 new varieties of barley since the Fund began in 1993/94. A look at key funding activity in 2002 and an updated list of the new varieties that have resulted over the long-term.

Funding in 2002

WGRF made several funding investments:

- to barley breeding programs: \$642,000
- to additional barley breeding through re-investment of royalties: \$8,665

By breeding institution

Two barley breeding institutions received funding:

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

By barley type

Funding was allocated based on these priorities:

- 40% Two-row Malting
- 21% Two-row Feed
- 24% Hulless Feed
- 10% Hulless Food
- 5% Six-row Feed

New barley varieties

Developing a new barley variety can take over 10 years. This means most new lines supported by the Check-off Fund are only now emerging from the breeding pipeline, and will continue to surface over the coming years. Check-off supported barley varieties are listed by year of registration.

2002

- **Calder (TR 262)**. Two-row malt. Particularly well adapted to Manitoba and Saskatchewan. High yielding. Resistance to loose smut, moderate resistance to surface-borne smuts and FHB. AAFC Brandon.
- **CDC Trey (TR 359)**. Two-row feed. High yielding for eastern prairie. Very strong straw, early maturity and very high test weight - higher than CDC Dolly. Best spot blotch resistance available, but susceptible to FHB. U of S CDC.

2001

- **Newdale**. Two-row malt. Outyields Harrington by 24 percent across all soil zones. Shorter and stronger straw than Harrington. Moderate resistance to spot blotch. AAFC Brandon.

2000

- **CDC Helgason**. Two-row feed. High yielding, heavy, plump, good disease resistance for eastern prairies. U of S CDC.
- **CDC Select**. Two-row malt. High yielding. Good kernel weight. Resistance to lodging, net blotch and stem rust. U of S CDC.
- **AC Ranger**. Six-row forage. High yield and quality, high grain yield potential, good disease resistance, straw strength, well adapted to Canadian prairies. AAFC Brandon.

1999

- **CDC Alamo**. Two-row specialty waxy hulless. U of S CDC.
- **CDC McGwire**. Two-row hulless. U of S CDC.
- **CDC Speedy**. Two-row hulless. U of S CDC.
- **CDC Bold**. Two-row hulled feed. U of S CDC.
- **CDC Copeland**. Two-row malt. U of S CDC.
- **AC Bountiful**. Two-row malt. AAFC Brandon.

1998

- **CDC Freedom**. Two-row hulless. U of S CDC.
- **AC Bacon**. Six-row hulless. AAFC Brandon.

1997

- **CDC Gainer**. Two-row hulless. U of S CDC.

1996

- **CDC Fleet**. Two-row feed. U of S CDC.
- **CDC Unity**. Two-row malt. U of S CDC.
- **AC Rosser**. Six-row feed. AAFC Brandon.
- **AC Hawkeye**. Six-row hulless feed. AAFC Brandon.

und... Continued

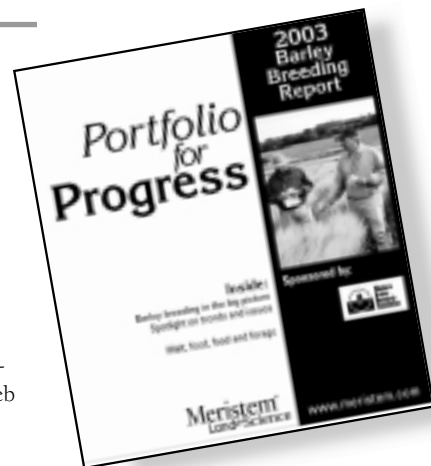
2002 Barley Check-off Fund Advisory Committee

This committee - comprised of representatives from the research community, industry and producer members from the WGRF Board - reviews breeding programs and makes recommendations to the Board on research funding priorities.

- **Chair, Alanna Hermanson**, Standard, Alta., WGRF Board
- **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
- **Dr. Michael Edney**, Winnipeg, Man., Grain Research Laboratory, Canadian Grain Commission
- **Dr. Brian Rossnagel**, Saskatoon, Sask., University of Saskatchewan
- **Dr. Erin Armstrong**, Brewing and Malting Barley Research Institute

More information in 2003 Barley Breeding Report

This report on barley breeding in Western Canada hits all the highlights - from key trends and issues to breeding progress and type-by-type updates. The 2003 Barley Breeding Report - "Portfolio for progress" provides big picture perspective in an easy-to-read form and is available free-of-charge to producers. To access, visit the WGRF Web site, www.westerngrains.com, the Meristem Land and Science Web site, www.meristem.com, or contact the WGRF office.



The Endowment Fund

Our Business

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 grain industry.

Over 200 projects supported

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 \$17.5 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.

Endowment funding is granted by the WGRF Board, based on the recommendations of the Endowment Fund Advisory Committee, comprised of WGRF producer Board members and researchers.

Low interest rates bring funding challenge

Lower interest rates have cut the Endowment Fund's capacity in recent years. At its peak, the Fund generated approximately \$1 million annually, but in 2002 operating investment income was down to \$519,434. The Foundation has monitored interest rate fluctuations and forecasts to guide Fund management and allocation decisions.

Our Progress

In 2002, four new projects were approved for a total of \$357,756 in Endowment funding. The following is an overview of these new projects and how they add to diverse list of Endowment Fund projects recently completed and ongoing.

New projects approved to begin in 2003

Biocontrol beetle targets cabbage root maggot in canola. A European parasitic beetle, *Aleochara bipustulata*, may represent a solution to a pest problem that in some years costs Prairie canola producers \$100 million. This project will investigate the potential of this beetle - a natural enemy of the cabbage root maggot - to provide a more effective option than cultural control methods and insecticide application that have proven ineffective.

• **Project 2003-01:** "Biological control of cabbage root maggots in canola with parasitic beetles," Dr. Neil Holliday, Dept. of Entomology, University of Manitoba. Endowment Funding: \$72,000 total over three years.

Food coatings from field peas to broaden market opportunities. Safer food with a longer shelf life is the target of this new project, which investigates the potential of developing bioactive edible films and coatings from yellow field peas. Nearly all current production is used for animal feed, but the project could open new opportunities for pea products that protect food from disease and spoilage.

• **Project 2003-02:** "Developing bioactive edible films and coatings from yellow field peas to improve food quality and safety," Dr. Jung Han, Dept of Food Science, University of Manitoba. Endowment Funding: \$112,500 total over three years.

Tolerance to Fusarium Head Blight (FHB) toxins in barley. The project - originally supported in 2000 and now extended - aims to develop a system to rapidly identify barley lines with tolerance to FHB and advance them in breeding programs. Specifically, researchers are developing a protocol for innovative evaluation and screening for FHB resistance in the laboratory. They also plan to use related "in vitro" technology to develop recombinant barley lines that carry this resistance.

• **Project 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. Endowment funding: \$99,000 total over three years.

Using mating signals to battle wheat midge. Pheromones are the natural chemicals given off by insects that act as mating signals. Spraying the air with pheromones can confuse insects and disrupt mating patterns. This project seeks to develop pheromone-based control options for the orange wheat blossom midge that are cost effective and compatible with other control tactics. Wheat midge has become the key insect pest on wheat in Manitoba and Saskatchewan, in some years causing up to \$100 million in damage and resulting in widespread insecticide applications.

• **Project 2003-04:** "Development of pheromone-based control for the orange wheat blossom midge," Dr. Gerhard Gries, Simon Fraser University. Endowment funding: \$74,256 total over three years.



Producer fund invested \$633,605 in a broad range of crops research in 2002.

Projects completed in 2002

2000-01. New quality criteria for developing high quality food oat. Dr. Nancy Ames, AAFC Winnipeg

2000-02. Development of wheat with new sources of FHB and BYDV resistance. Dr. George Fedak, AAFC Winnipeg

2000-04. Advanced tillage systems for the Parkland. Dr. Byron Irvine, AAFC Brandon

2000-05. Application of plant tissue culture to improvement of tolerance to Fusarium Head Blight toxins in barley. Dr. William Legge, AAFC Brandon

2000-06. Hard white spring wheat for Western Canada: The effects of genotype and environment on quality. Dr. Odean Lukow, AAFC Winnipeg

2000-07. Nitrogen, phosphorus and KCl fertilizer management for oat. Dr. Ramona Mohr, AAFC Brandon

2000-08. Agronomic and greenhouse gas comparison of different nitrogen fertilizer management practices. Dr. Jeffery Shoenau, U of S

Projects ongoing

	2003	2004
2001-01 Creation of a food market niche for Canadian barley. Dr. Nancy Ames, AAFC Winnipeg	35,000	
2001-03 Population studies on <i>Ascochyta rabiei</i> on chickpea crops in Saskatchewan. Dr. Sabine Banniza, U of S CDC	37,035	
2001-04 Identification and characterization of novel stem rust resistance genes in oats. Dr. Thomas Fetch, AAFC Winnipeg	38,500	
2001-05 Protecting resistance genes and parasites to provide sustainable control of wheat midge in spring wheat. Dr. Robert Lamb, AAFC Winnipeg	30,000	
2001-06 Improving the quality and profitability of durum wheat through nitrogen and disease management. Dr. William May, AAFC Indian Head	35,000	
2001-07 Identifying genome regions in wheat responsible for increased yield. Dr. Daryl Somers, AAFC Winnipeg	29,000	
2001-08 Biological control of Fusarium Head Blight- a powerful potential tool for disease management. Dr Andy Tekauz, AAFC Winnipeg	36,000	
2002-01 Assembling the best chickpea canopy strategy for different production zones. Dr. Rosalind A. Ball, U of S	28,545	26,955
2002-02 Helping field pea producers against <i>Mycosphaerella</i> 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 P. Lafond, AAFC Indian Head	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
Totals	\$434,780	\$183,005

The Endowment Fund... *Continued*

2002 Endowment Fund Research 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.

- **Bill Toews**, Kane, Man., WGRF Board, Committee Chair
- **Dr. Keith Degenhardt**, Hughenden, Alta., WGRF Board (ex officio)
- **Michael Kirylchuk**, Lac la Biche, 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
- **Brian Otto**, Warner, Alta., WGRF Board

Endowment Fund Research Reports on the Web

WGRF has produced Research Reports on the more than 200 projects that have received Endowment Fund support. The reports are easy-to-scan summaries of the key points on each project - the researchers, the funding, the challenge and the results. All are available on the Web site, www.westerngrains.com.



More information

Many producers contact the Foundation directly with questions or comments. This farmer contact is encouraged. Western Grains Research Foundation
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Phone: (306) 975-0060 Fax: (306) 975-0316
Web: www.westerngrains.com Email: info@westerngrains.com

