



Western Grains Research Foundation
Annual Report 2010



An Overview of the Western Grains Research Foundation

Western Grains Research Foundation (WGRF) is a non-profit organization that is farmer funded and directed. With the goal of financing research that will directly benefit prairie farmers, the WGRF manages an Endowment Fund and the Wheat and Barley Check-off Funds.

Each of these three funds obtain and invest money in a distinct way. Check-off dollars are directed toward wheat and barley breeding research, developing improved varieties that are in demand, grow well in farmers' fields and increase profitability for wheat and barley producers.

The Endowment Fund supports research across all crop types, particularly projects with the most potential for farmer benefit. This fund provides long-term stability of crop research in Western Canada.

Chairman and Executive Director's Message

On behalf of WGRF, we would like to acknowledge and thank the crop producers of Western Canada who continually support the wheat and barley check-offs. Your willingness to invest in research is fundamental to the continued success of agriculture and public plant breeding in Western Canada. We strive to make sure that every dollar you entrust in a check-off fund or the WGRF Endowment Fund is invested in crop research that will generate strong returns for Western producers.

In 2010, WGRF took a number of positive steps forward, expanding the scope and volume of the research we support. Our wheat and barley check-offs continue to make us the largest farmer funded, cereal crop breeding research investor in Canada. For the past 17 years, the public breeding programs that we support have provided over one hundred of some of the most popular and widely adopted wheat and barley varieties. Through a new funding agreement structure, WGRF now has a five-year commitment to increase spending on variety development for wheat by 30% and barley by 12%.

We established the Directed Research Program (DRP) in 2010, financed by the WGRF Endowment Fund. This program allows WGRF to become more directive with the research we support: this past year we have worked with our member organizations, producer groups and other industry organizations across Western Canada to determine six important research priorities. We are confident that these six research areas will have a meaningful impact on producers. For instance, in 2010 we committed to invest \$3.8 million over five years to develop breeding tools that will get improved varieties to farmers' fields more quickly. This is just the beginning of what is possible through the DRP.

The mandate of the WGRF Endowment Fund is to support research across all crop types, particularly projects that will provide tangible benefits to farmers. This past year, we decided to invest \$1 million to the renewal of the controlled environment plant growth facility at the University of Saskatchewan. This project will provide returns for all producers in Western Canada for years to come.

We would like to thank our dedicated Board Members who commit their time to ensure farmers have a strong voice in establishing research priorities. We also thank the members of the various WGRF committees who make recommendations to the Board, as well as our great WGRF staff and our research partners for their significant contribution to the success of WGRF this past year.

Thank you for your continued support,



Keith Degenhardt, Chairman of the Board



Terry Scott, Acting Executive Director

The Year in Review

This was an exciting year for Western Grains Research Foundation, with changes that will have a positive impact on the agricultural landscape for years to come. Our Board and staff embrace these new developments; they are an opportunity to deepen our commitment to Western Canadian producers by funding important crop research.

The following are highlights from 2010. If you would like more information on any of these topics, please contact our office and we would be pleased to help.



Opt-out Numbers

The wheat and barley check-offs are used to support wheat and barley variety development. They are a mainstay of WGRF's revenue.

In 2010, producers continued to show strong support for the WGRF. For the last five years, producer opt-outs have been between 5 and 8%. Although producers can choose to opt-out of the check-offs, over 90% leave their money with WGRF to help fund future wheat and barley varieties.



Harvesting durum at Glenlea

Broadening the Check-off

WGRF is investigating broadening our research check-off to wheat and barley sold outside of the Canadian Wheat Board (CWB). Currently, we are stretching the check-off dollars on export grains to fund research for domestic industrial uses such as ethanol and the livestock industries. To adequately fund this specific plant breeding, we should be collecting a check-off on these uses.

WGRF met with government departments and agencies throughout 2010 to determine how we can work within current legislative frameworks to establish a regional check-off system for non-CWB wheat and barley. Through consultations, we have learned that each province has its own legislation, requiring a separate check-off agency in each province. These agencies could then hand off certain powers or funds to a regional body under national check-off legislation.

This initiative requires a considerable investment of time, energy and resources by WGRF to move forward. We will continue working within the current wheat and barley check-off model while we monitor other external factors that may provide the opportunity for WGRF to broaden our check-off collection mechanism in the future.

In 2010, farmers invested \$4.5 million in breeding programs for new wheat varieties

Wheat and Barley Research Work

In 2010, WGRF implemented new five year research agreements with Agriculture and Agri-Food Canada (AAFC) and Wheat Cluster and Barley Developing Innovative Agri-Products (DIAP). We also renewed research agreements with the three prairie universities--University of Saskatchewan, University of Manitoba, and the University of Alberta--as well as Alberta Agriculture and Rural Development (AARD).

Wheat and barley check-off dollars have been funding breeding research since the 1993/94 crop year. These research agreements provide a framework for farmer investment in wheat and barley breeding research. They feature funding allocations, breeding targets and other key provisions to get the most out of farmers' investment in variety development. WGRF has had a long-standing partnership with AAFC and the prairie universities: this funding support has aided the development of more than 100 wheat and barley varieties, which in turn have helped add hundreds of millions of dollars to producers' incomes.

Canadian Agri-Science Clusters Initiative

The WGRF-led Wheat Cluster proposal was approved by Agriculture and Agri-Food Canada in September. The new initiative is the Canadian Wheat Breeding Cluster, comprised of a \$6.2 million investment by the Government of Canada over the next three years, along with \$2.1 million in funding from WGRF.

Under the Wheat Cluster, AAFC and WGRF will fund additional wheat breeding research activities in a number of areas at AAFC and the three prairie universities.

Developing Innovative Agri-Products (DIAP) Barley Proposal

A WGRF-led Barley DIAP proposal was approved in 2010. The Barley DIAP has a number of industry collaborators, including the Canadian Wheat Board, the Alberta Barley Commission, the Brewing and Malting Barley Research Institute and Rahr Malting Canada Ltd. All of these organizations will contribute matching funding to support AAFC barley research in four areas: Breeding, Agronomy, Pathology and Value Added. The total investment in the Barley DIAP is \$3.8 million over three years, of which the Government of Canada is contributing \$2.8 million and the WGRF and its industry partners are contributing \$950,000.



Seed of the Year 2010



SEED OF THE YEAR
recognizing public seed research

AC® Metcalfe, a two-row malting barley variety, is the 2010 winner of Seed of the Year - West. Congratulations to Dr. Bill Legge and the research team at the AAFC Brandon Research Station who are responsible for AC® Metcalfe.

AC® Metcalfe received full registration in 1997, representing a significant advance in agronomic, disease resistance and quality traits in a two-row malting barley variety. This seed is used in multiple markets and is known for consistency, high enzyme levels, rapid throughput in the malthouse, and high levels of fermentable extract.

Maltsters and brewers throughout the world demand the quality of AC® Metcalfe for their products.

Seed of the Year is designed to recognize publicly-developed varieties that have made a significant contribution to the economy, agriculture and the Canadian public. Although the name, Seed of the Year, indicates a contribution in one particular year, the program also considers lifetime achievement and contribution. It is important to recognize the value of our public plant breeding programs and encourage new plant breeders into the industry.

The western award includes a scholarship for \$4000, awarded to a master's or PhD student in a plant breeding

or genetics program in a western Canadian university. The scholarship contributes to the education of a new generation of plant breeders. The Seed of the Year – West Committee awarded Silvia Barcellos Rosa with the 2010 scholarship. Silvia is a PhD candidate in the Plant Science Department at the University of Manitoba. Silvia's research involves the inheritance of leaf rust resistance from the Brazilian spring wheat line Toropi. Toropi may offer some resistance to stripe rust and the stem rust race Ug99 in the future.



2010 Seed of the Year winner Dr. Bill Legge

WGRF is very proud to be part of the Seed of the Year program. For more information on the program, or to nominate a candidate, please visit www.seedoftheyear.ca/west.

New midge tolerant wheat varieties became commercially available in the spring of 2010

Midge Tolerant Wheat Varieties

New midge tolerant wheat varieties became commercially available in 2010. These new varieties offer large savings for prairie wheat growers by reducing downgrading and yield losses caused by wheat midge. These varieties provide more flexibility in crop rotations and seeding dates, reducing the need for insecticides.

- AC® Unity VB | Distributed by: SeCan
- AC® Goodeve VB | Distributed by: Alliance Seed Corp.
- AC® Glencross VB | Distributed by: Faurshou Farms
- AC® Fieldstar VB | Distributed by: SeCan
- AC® Shaw VB | Distributed by: SeCan (Commercially Available Spring 2012)
- CDC® Utmost VB | Distributed by: FP Genetics (Commercially Available Spring 2012)
- AC® Conquer VB | Distributed by: Canterra Seeds (Commercially Available Spring 2012)
- AC® Vesper VB | Distributed by: SeCan (Commercially Available Spring 2012)

These spring wheat varieties have been developed by Canadian wheat breeders at Agriculture & Agri-Food Canada (AAFC) in Winnipeg and Swift Current, as well as the Crop Development Centre at the University of Saskatchewan. Funding for these projects comes from the WGRF check-off program, AAFC, CDC and variety distributors.

Interspersed Refuge System

Wheat midge is a devastating insect pest, costing farmers \$40.1 million in downgrading factors in 2006 alone. Midge tolerance originates from a single gene – Sm1. Using traditional plant breeding techniques, wheat breeders have moved this gene into varieties that also boast superior yield and agronomic traits.

Using midge tolerant varieties alone, however, carries the significant risk of building up virulent midge populations. Virulent midge carry a mutation which allows them to attack midge tolerant varieties. Virulent midge could break down midge tolerance within 10 years.

To prolong the life of midge tolerant varieties, the AAFC has created an interspersed refuge system. This distribution technique could extend the effective life of midge tolerance from an estimated 10 years to 90 years or longer. An interspersed refuge system means that the refuge variety is evenly distributed (inter-seeded) throughout the field.





This is the first time this type of blend is being applied to the commercial production of wheat.

Since farmers will be responsible for the stewardship of this refuge, there is a strong education component involved. For seed growers and retailers, an online midge tolerant wheat retailer training program is available. Upon successfully completing two quizzes, users will receive an automatically generated Midge Tolerant Wheat Authorized Retailer Number. Retailers must reference this number on their Midge Tolerant Wheat Retailer Agreement.

www.midgetolerantwheat.ca is an important and informative resource for farmers, seed growers and the media.

Federal Tax Credit for Farmers on Check-off Investments

The federal government provides an annual Scientific Research and Experimental Development (SR&ED) tax credit to producers, offering them money back on their check-off investments.

The tax credit percentages for producers who contributed to the WGRF Wheat and Barley Check-Offs in 2010 are **74% for wheat** and **69% for barley**.

More information about the SR&ED tax credit can be found on WGRF's website www.westerngrains.com.

WGRF Endowment Fund - Phytotron Renewal Project

In December, WGRF invested \$1 million in the Phytotron Renewal Project at the University of Saskatchewan. The Phytotron is an indispensable tool in plant and soil science research and teaching at the College of Agriculture and Bioresources. This controlled environment plant growth facility enables three full cycles of plant production in one year. Individual chamber environments can be controlled for temperature, light and humidity to determine how soils, plants, water, wind and pests interact under a variety of conditions.

The Phytotron is crucial to agriculture research. Pulses, wheat, oats, barley, flax, canary seed, plus all of the breeding programs at Crop Development Centre, rely on the Phytotron to advance their programs and develop improved varieties that grow well in farmers' fields and increase profitability for producers in Western Canada.



U of S President Peter MacKinnon (left) and WGRF Chairman Keith Degenhardt at the WGRF funding announcement December 13, 2010



WGRF Board of Directors, 2010

Our Board of Directors is comprised of 16 diverse individuals who provide well-rounded representation of the crop production sector in Western Canada. Made up of farmers and one non-voting representative from Agriculture and Agri-Food Canada, each member represents a different agricultural organization.

Dr. Keith Degenhardt, Chairman
Wild Rose Agricultural Producers

Don Dewar, Vice-Chair
Keystone Agricultural Producers

Greg Marshall
Agricultural Producers Association of Saskatchewan

Dr. Stephen Morgan Jones
Agriculture & Agri-Food Canada (non-voting)

Peter Pepneck
Alberta Soft Wheat Producers Commission

Martin Moore
BC Grain Producers Association

Wayne Bacon
Canadian Canola Growers Association

Larry Littman
Canadian Seed Growers Association

Cam Goff
Canadian Wheat Board (Producer Board Rep)

Bill Gehl
National Farmers Union

Bob Anderson
Prairie Oat Growers Association

Dave Sefton
Saskatchewan Flax Development Commission

Mel Stickland
Western Barley Growers Association

Gerrid Gust
Western Canadian Wheat Growers Association

Fred Grieg
Western Pulse Growers Association

Garth Butcher
Western Winter Cereal Producers





Wheat Check-off

Wheat Check-off Rate: \$0.30 per metric tonne (less than 1¢ per bushel)

Current Collection: The wheat check-off is collected on wheat sold through the Canadian Wheat Board in Manitoba, Saskatchewan, Alberta and the BC Peace region. Please note that WGRF is completely separate from the CWB. The CWB final producer payment system serves only as a cost effective collection mechanism for wheat and barley check-offs.

Check-off Funded Research: Check-off dollars fund variety development through public breeding programs across Western Canada. The majority of wheat varieties grown on farms today were developed thanks to farmer support through WGRF's check-off.

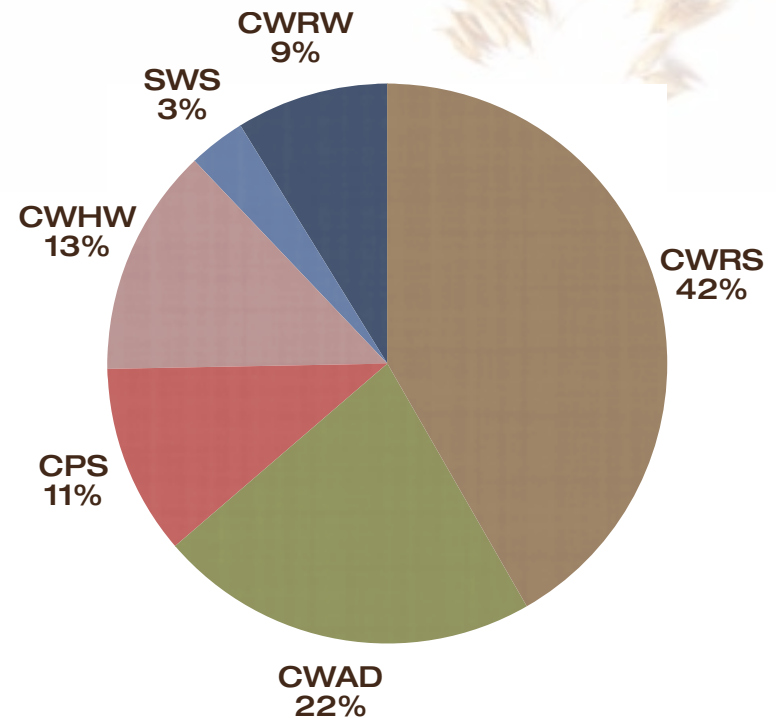
Supported Research Programs: WGRF invests in public wheat breeding programs through Agriculture and Agri-Food Canada, University of Saskatchewan, University of Alberta, University of Manitoba and Alberta Agriculture & Rural Development.

Annual Funding: Between \$4-5 million per year is invested in wheat breeding research. This money comes from primarily from producers. A small percentage comes from royalties from seed varieties, which WGRF reinvests into research.

Government Matching: Every check-off dollar invested in wheat breeding leverages up to twice as much in government research funding. WGRF works hard to leverage and maximize each farmer dollar.

Wheat Check-off Allocation

Wheat Funding Breakdown



2010 Wheat Technical Advisory Committee

For decisions on wheat research funding, the Board relies on guidance from the Wheat Technical Advisory Committee, comprised of representatives from research and industry as well as selected WGRF Board members. The committee raises key issues facing wheat production in Western Canada and identifies export sales factors and barriers to those in the industry.

Peter Pepneck

Farmer and WGRF Board representative, CHAIR

Dr. Ron DePauw Agriculture & Agri-Food Canada

Bill Woods Canadian Wheat Board, Board of Directors

Dr. Nancy Edwards

Grains Research Lab, Canadian Grain Commission

Dr. Pierre Hucl Crop Development Centre, U of S

Bill Gehl Farmer and WGRF Board representative

Martin Moore Farmer and WGRF Board representative

Jim Gowans Alberta Pork, Feed Industry

Graham Worden Canadian Wheat Board

Dr. Keith Degenhardt

Farmer and WGRF Board representative, Ex-officio

Wheat Varieties

Below is a list of the wheat varieties registered in 2010 and 2009. A full list of all the WGRF supported wheat varieties can be found at www.westerngrains.com

2010

Vesper (CWRS) Developed by: AAFC Winnipeg

Transcend (Durum) Developed by: AAFC Swift Current

Flourish (Winter Wheat) Developed by: AAFC Lethbridge

BW407 (CWRS) Developed by: AAFC Winnipeg

BW423 (CWRS) Developed by: Crop Development Centre

*Distribution agreements have not been finalized for all 2010 varieties. Please check the WGRF website for the latest variety information.

2009

Enterprise (Durum) Developed by: AAFC Swift Current,
Distributed by: Canterra

Carberry (CWRS) Developed by: AAFC Swift Current,
Distributed by: SeCan

Muchmore (CWRS) Developed by: AAFC Swift Current,
Distributed by: FarmPure Genetics

AC™ Shaw (CWRS) Developed by: AAFC Winnipeg,
Distributed by: SeCan



CDC Stanley (CWRS) Developed by: Crop Development Centre, Distributed by: Viterra

CDC Kernen (CWRS) Developed by: Crop Development Centre, Distributed by: Canterra

CDC Utmost (CWRS) Developed by: Crop Development Centre, Distributed by: FP Genetics

Conquer (CPSR) Developed by: AAFC Winnipeg, Distributed by: Canterra

CDC NRG003 (GP) Developed by: Crop Development Centre, Distributed by: Canterra



Barley Check-off

Barley Check-off Rate: \$0.50 per metric tonne (about 1¢ per bushel)

Current Collection: The Barley Check-off is collected on barley sold through the Canadian Wheat Board in Manitoba, Saskatchewan and the BC Peace region. Please note that WGRF is completely separate from the CWB. The CWB final producer payment system serves only as a cost effective collection mechanism for wheat and barley check-offs.

Check-off Funded Research: Check-off dollars fund barley variety development through public breeding programs mainly in Saskatchewan and Manitoba.

Supported Research Programs: WGRF supports barley breeding programs at Agriculture and Agri-Food

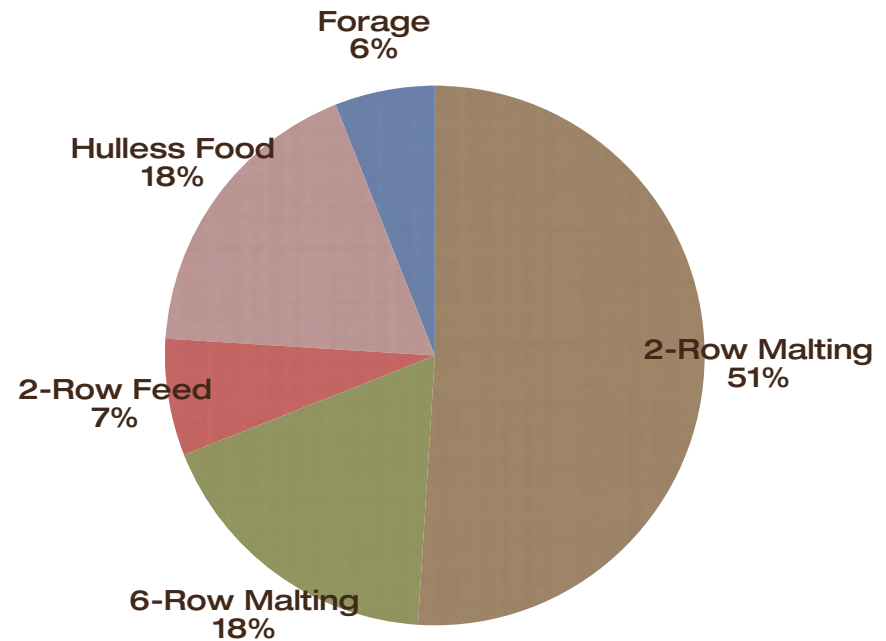
Canada in Brandon, MB, and the Crop Development Centre at the University of Saskatchewan in Saskatoon.

Annual Funding: Over \$600,000 per year is invested in barley breeding research, including check-off dollars from producers and, to a minor extent, royalties from certain varieties which WGRF reinvests into research.

Government Matching: Every check-off dollar invested in barley breeding leverages up to twice as much in government research funding. WGRF works hard to leverage and maximize each farmer dollar.

Barley Check-off Allocation

Barley Funding Breakdown





2010 Barley Technical Advisory Committee

Board decisions on barley research funding are guided by a Barley Technical Advisory Committee, comprised of representatives from the research and marketing community, as well as select WGRF Board members. This committee discusses the future of barley, identifies hurdles that prevent industry progress and suggests the best use of WGRF research dollars.

Wayne Bacon

Farmer and WGRF Board representative, CHAIR

Michael Brophy

The Brewing and Malting Barley Research Institute

Dr. Michael Edney

Grains Research Lab, Canadian Grain Commission

Jim Gowans Alberta Pork, Feed Industry

Dr. Bill Legge Agriculture & Agri-Food Canada

Dr. Yueshu Li

Canadian Malting Barley Technical Centre (CMBTC)

Doug Munro Canadian Wheat Board

Dr. Brian Rossnagel Crop Development Centre, U of S

Larry Littman Farmer and WGRF Board representative

Dave Sefton Farmer and WGRF Board representative

Mel Stickland Farmer and WGRF Board representative

Kyle Korneychuk

Canadian Wheat Board, Board of Directors

Dr. Keith Degenhardt

Farmer and WGRF Board representative, Ex-officio

Barley Varieties

Below is a list of the barley varieties registered in 2010 and 2009. A full list of WGRF supported barley varieties can be found at www.westerngrains.com

2010

CDC Kindersley Developed by: Crop Development Centre

Cerveza Developed by: AAFC Brandon

HB122 Developed by: AAFC Brandon

HB08305 Developed by: Crop Development Centre

*Distribution agreements have not been finalized for all 2010 varieties. Please check the WGRF website for the latest variety information.

2009

AC™ Major (Two-Row malting) Developed by: AAFC Brandon, Distributed by: Viterra

Taylor (Two-Row Hulless) Developed by: AAFC Brandon, Distributed by: Alliance Seed Corporation



2010 Endowment Fund Advisory Committee

Don Dewar

Farmer and WGRF Board representative, CHAIR

Dr. George Clayton Agriculture & Agri-Food Canada

Rick Holm University of Saskatchewan

Pam DeRocquigny

Manitoba Agriculture Food & Rural Initiatives (MAFRI)

Dr. Karin Wittenberg

Agricultural & Food Sciences Research, U of M

Dr. Dean Spaner Department of Agricultural,
Food and Nutritional Science, U of A

Mel Stickland Farmer and WGRF Board representative

Dave Sefton

Farmer and WGRF Board representative

Bob Anderson Farmer and WGRF Board representative

Jalil Abdul Saskatchewan Ministry of Agriculture

Rick Holm University of Saskatchewan

Earl Geddes Canadian International Grains Institute

Dr. Keith Degenhardt

Farmer and WGRF Board representative, Ex-officio

Dr. Ross McKenzie

Alberta Agriculture and Rural Development



WGRF Endowment Fund

The WGRF was created in 1981 by Western Canadian farm organizations and Agriculture Agri-Food Canada (AAFC) to administer the \$9 million in producer dollars transferred by the federal government from the discontinued Prairie Farm Emergency Fund. The Endowment Fund supports research across all crop types, providing long-term stability of crop research. To date, the Endowment Fund has supported a wealth of innovation across Western Canada, committing over \$26 million to almost 230 projects.

How the Endowment Fund Works: The principal of the Endowment Fund is invested and the interest earned is used to fund a wide variety of crop research, across all crop types. Organizing the fund this way ensures long-term, stable support of crop research in Western Canada.

Endowment Fund Advisory Committee: The Endowment Fund Advisory Committee (EFAC) is comprised of WGRF producer Board members and research and industry representatives. This committee reviews applications and makes funding recommendations to the Board. Approved research applications outline how the funds are to be used, as well as past research projects and their success. Researchers submit regular progress reports and final project reports to the WGRF Board.

A broad base of producer representation is a key strength of WGRF. Fifteen producer member organizations comprise the Board so all decisions made by WGRF have considered the best economic interests of producers.

Endowment Fund Allocation: Endowment Funds are allocated to crop research through two separate programs: the Directed Research Program (DRP) and the Letter of Intent Program (LOI).

Directed Research Program

In 2010, WGRF made a key change to the Endowment Fund Policy by adding the Directed Research Program (DRP). This new program allows WGRF to become more directive with the research we fund.

In March of 2010, the WGRF Endowment Fund Advisory Committee called upon producer groups, research institutions and other industry groups in Western Canada to submit broad research priorities for consideration. Over forty organizations responded. The committee reviewed and ranked the submitted research priorities. From these, six broad categories were selected as important research areas that will benefit western Canadian producers of all crops.

1) Breeding Tools

This area includes breeding methodology, processes, markers, genomics, and other topics that advance the tools available to breeders.

2) Post-Harvest Handling to Address Quality/Market Access

Several problems can arise postharvest which cause economic loss. This area will work to solve problems that diminish crop quality and create market access issues for producers.

3) New Crops and Crop Uses

Opportunities exist to discover new crops and find new uses for existing crops like bio-fuels, feed and health and

nutritional ingredients. This area will focus on these new opportunities.

4) Pest and Weather Surveillance

The area of pest and weather surveillance has many opportunities to enhance, fill gaps, and coordinate existing activities. Surveillance and monitoring include disease, insects, weeds, and the impact of weather.

5) Fusarium Head Blight (FHB)/DON/Mycotoxins

FHB is a research area that requires attention, including testing for FHB and DON and methods of control. This area is increasingly important as FHB continues to advance across the western grain belt.



6) Agronomy

Research support will include a whole farm approach to production and profitability, impacts of fertilizer use, crop sequencing, fungicide application, and seeding rates for different agro-ecological zones in Western Canada.

Progress to Date

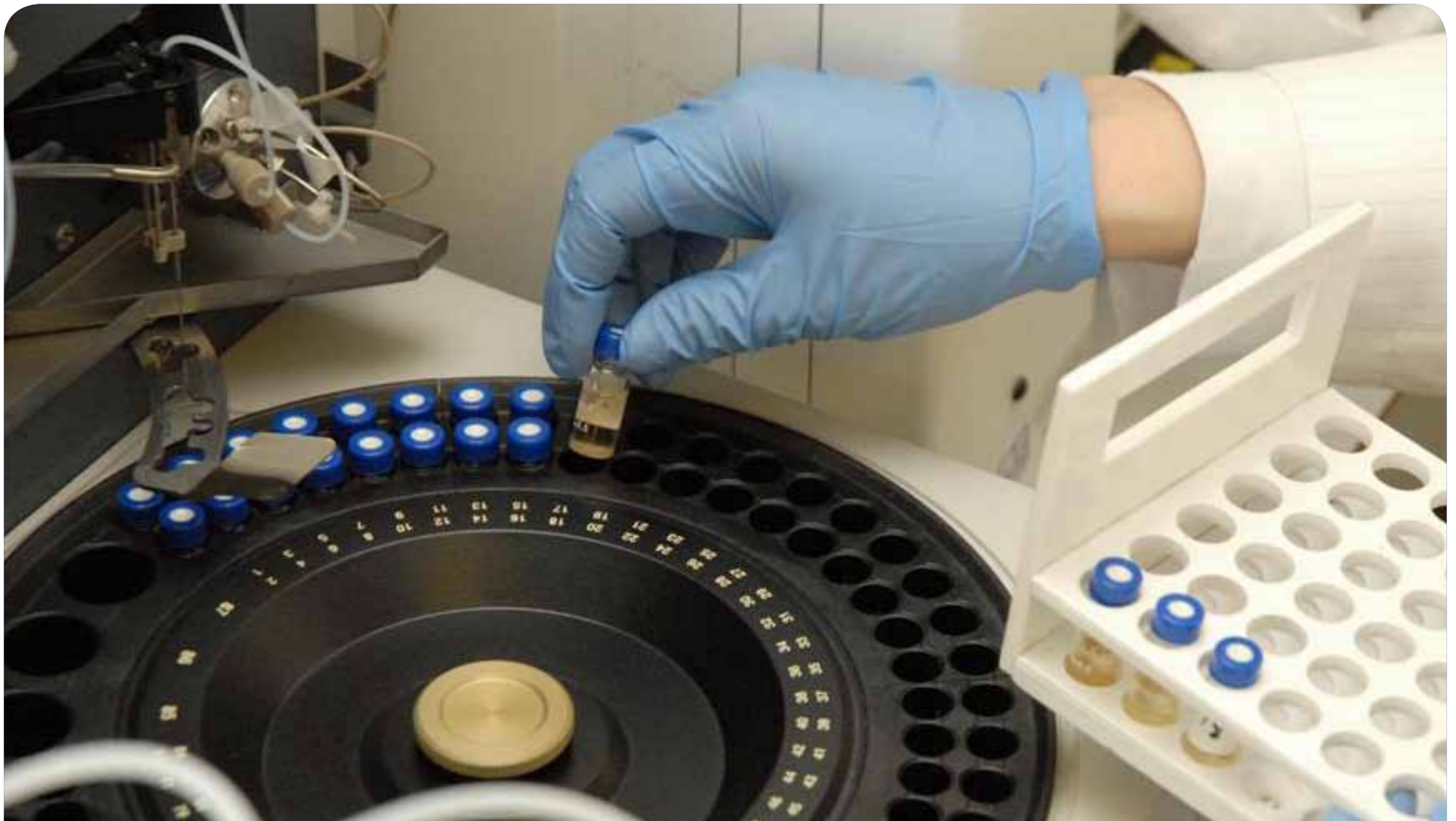
In 2010, WGRF invited Requests for Proposals for the first three of the six priority categories, and funding was allocated to a number of initiatives. The remaining three categories require preliminary investigation to identify the research that will best serve producers. These investigations are now underway.

Each year, WGRF plans to approve funding for five-year Directed Research Program projects worth at least \$500,000 per year. By 2015, we project that \$2.5 million will be spent annually on DRP projects.

WGRF will continually update information on the Directed Research Program as we move forward with the funding process. Please check the WGRF website www.westerngrains.com and click on the Endowment Fund tab for updates on the DRP.



WGRF Barley Technical Committee touring barley plots in Brandon



Letter of Intent Program

The WGRF Letter of Intent (LOI) Program has been funding crop research projects across Western Canada since 1981, providing over \$21 million in funding for over 200 projects. The amount spent on projects under the LOI application process will rise to about \$825,000 per year by 2012.



WGRF approved six new LOI research projects that will begin receiving funding in 2011:

1 | Increased Crop Performance through Wheat-Mycorrhizal Interaction

Lead Researcher: Dr. Danny Singh, AAFC-Swift Current

Total Funding: \$165,025 **Years:** 2011-2013

Goal: To produce nutrient use efficient wheat cultivars in order to reduce crop dependence on fertilizer, reduce farm input costs, and increase the value Canadian wheat.

2 | Hormonal Regulation of Pre-harvest Sprouting in Wheat

Lead Researcher: Dr. Belay Ayele, University of Manitoba

Total Funding: \$121,900 **Years:** 2011-2013

Goal: To identify genes controlling pre-harvest sprouting in wheat, and investigate the potential of molecular breeding approaches to accelerate incorporation and deployment of these genes into commercial wheat cultivars.

3 | Pea Yield Formation in Warming Temperatures

Lead Researcher:

Dr. Rosalind Bueckert, University of Saskatchewan

Total Funding: \$160,000 **Years:** 2011-2013

Goal: To look at nine varieties of pea, which cover Saskatchewan cultivars and potentially heat tolerant cultivars from Australia, and find out why pea has poor yield in warm summers on the prairies.

4 | Genetic Male Sterility Facilitated Recurrent Selection in Spring Wheat

Lead Researcher: Dr. Stephen Fox, AAFC-Winnipeg

Total Funding: \$136,000 **Years:** 2011-2013

Goal: To better exploit genetic variability and knowledge for simultaneous improvement of yield, end-use quality, pest resistance and adaptability of new varieties.

5 | Genetic Analysis of Transgenes in Flax Germplasm

Lead Researcher:

Dr. Helen Booker, University of Saskatchewan

Total Funding: \$147,145 **Years:** 2011-2013

Goal: To contribute to the design of accurate GM testing and help to restore export markets for Canadian flax exporters.

6 | Molecular characterization of Low Temperature Tolerance in Cereals

Lead Researcher:

Dr. Ravindra Chibbar, University of Saskatchewan

Total Funding: \$151,800 **Years:** 2011-2013

Goal: To study Canadian, Scandinavian and Russian wheat and rye germplasm with varying levels of cold hardiness. The most effective genes will be identified and be recommended for introgression into Canadian wheat germplasm to increase their low temperature tolerance and winter survival.

Railway Revenue Cap

The Canada Transportation Act governs Canadian railways, enforcing a railway freight revenue cap each year. In 2000, the federal government named WGRF as the organization to receive funds in excess of the cap, as well as penalties incurred. This money is transferred into WGRF's Endowment Fund.

2003-04 crop year

Canadian Pacific Railway (CPR) was ruled to have exceeded the revenue cap, WGRF retained a net amount of \$321,912.

2004-05 crop year

Canadian National Railway (CN) was ruled to have exceeded the revenue cap, WGRF retained a net amount of \$118,714.

2005-06 crop year

CPR and CN were both ruled to have exceeded the revenue cap and WGRF retained a net amount of \$3,202,484.

2006-07 crop year

CPR was ruled to have exceeded the revenue cap and WGRF retained a net amount of \$3,364,591.

2007-08 crop year*

CN and CPR were both ruled to have exceeded the revenue cap and WGRF retained a net amount of \$68,206,127.

2008-09 crop year

CN was ruled to have exceeded the revenue cap and WGRF retained a net of \$717,432.

2009-10 crop year

The Canadian Transportation Agency announced in December that revenues of CN and CPR did not exceed their respective revenue caps for movement of Western grain in the crop year 2009-2010.

* This is the largest amount that any railway has exceeded its revenue cap. These large overages reflect the actual cost incurred by CN and CPR for the maintenance of grain hopper cars, reducing the historical maintenance costs that were "embedded" in the revenue caps.



Financial Highlights

As a farmer funded and directed organization, WGRF is committed to transparency in all areas, including its financial position, operating results and cash flows. PricewaterhouseCoopers LLP annually audits WGRF's financial statements. The Financial Summary, as provided by management and included in this report, portrays the summarized financial position of the WGRF. It highlights the operating fund revenues, expenditures and net revenue over expenditures in each of the Endowment Operating Fund, Wheat Operating Fund and Barley Operating Fund over a period of five years. The audited financial statements have been reviewed and approved at the WGRF Annual Meeting.

Should you wish to obtain the complete set of financial statements for the year ending December 31, 2010, along with the auditor's report, please contact our office at (306) 975-0060.

These explanatory notes will aid your understanding of the Financial Summary. If you require more information, please contact us.

Under the heading Equity

The category **Capital** represents the original dollars that were transferred by the federal government from the discontinued emergency program under the Prairie Farm Assistance Act as an endowment. This was the base on which WGRF was founded.

Endowment shows the year-end balance of interest earned on the principal dollars listed under Capital, as well as income from the excess railway charges and penalties received under the federal railway revenue cap for prairie grains.

A full listing of revenue cap dollars paid to the WGRF is listed on page 22 of this report.

Wheat represents the wheat reserve or contingency, plus funds in the wheat operating account at year-end.

Barley represents the barley reserve or contingency, plus funds in the barley operating account at year-end.

Western Grains Research Foundation Financial Summary, December 31, 2010

| | 2010 | 2009 | 2008 | 2007 | 2006 |
|---------------------------------|--------------------|-------------------|-------------------|-------------------|-------------------|
| ASSETS | | | | | |
| Cash and other | 1,936,262 | 2,675,714 | 5,882,142 | 2,756,040 | 2,601,073 |
| Investments | 105,250,923 | 95,352,417 | 21,937,564 | 21,211,372 | 13,675,303 |
| | <u>107,187,185</u> | <u>98,028,131</u> | <u>27,819,706</u> | <u>23,967,412</u> | <u>16,276,376</u> |
| LIABILITIES | | | | | |
| Accounts & grants payable | 2,102,430 | 1,175,744 | 42,452 | 1,503,397 | 663,119 |
| EQUITY | | | | | |
| Capital | 9,066,972 | 9,066,972 | 9,066,972 | 9,066,972 | 9,066,972 |
| Endowment | 80,559,468 | 74,634,886 | 7,379,529 | 4,779,474 | 877,907 |
| Wheat | 13,521,907 | 11,575,191 | 10,221,842 | 7,598,373 | 4,930,753 |
| Barley | 1,936,408 | 1,575,338 | 1,108,911 | 1,019,196 | 737,625 |
| | | 96,852,387 | 27,777,254 | 22,464,015 | 15,613,257 |
| | <u>105,084,755</u> | <u>98,028,131</u> | <u>27,819,706</u> | <u>23,967,412</u> | <u>16,276,376</u> |
| ENDOWMENT FUND Operating | | | | | |
| Revenue | 5,412,026 | 65,616,719 | 3,854,733 | 4,227,504 | 907,251 |
| Expenditures | | | | | |
| Research funding | 489,467 | 334,352 | 193,177 | 197,689 | 261,350 |
| Donation | 1,000,000 | - | - | - | - |
| Operating | 140,262 | 108,382 | 68,064 | 58,053 | 62,540 |
| | <u>1,629,729</u> | <u>442,734</u> | <u>261,241</u> | <u>255,742</u> | <u>323,890</u> |
| Net | <u>3,782,297</u> | <u>65,173,985</u> | <u>3,593,492</u> | <u>3,971,762</u> | <u>583,361</u> |



| | 2010 | 2009 | 2008 | 2007 | 2006 |
|---------------------------------|------------|------------|------------|------------|-----------|
| WHEAT FUND Operating | | | | | |
| Revenue | 6,118,288 | 4,603,482 | 6,170,276 | 5,834,575 | 3,782,664 |
| Expenditures | | | | | |
| Research funding | 3,276,500 | 3,010,000 | 3,010,000 | 3,010,000 | 3,010,000 |
| Royalties | 425,527 | 67,839 | 486,786 | 327,619 | 210,337 |
| Operating | 844,081 | 532,099 | 431,437 | 283,824 | 298,182 |
| | 4,546,108 | 3,609,938 | 3,928,223 | 3,621,443 | 3,518,519 |
| Net | 1,572,180 | 993,544 | 2,242,053 | 2,213,132 | 264,145 |
| BARLEY FUND Operating | | | | | |
| Revenue | 1,251,568 | 1,017,654 | 759,946 | 940,985 | 648,301 |
| Expenditures | | | | | |
| Research funding | 788,674 | 450,000 | 601,810 | 609,600 | 606,661 |
| Royalties | 37,039 | 13,053 | 42,649 | 36,896 | 47,599 |
| Operating | 123,441 | 134,374 | 83,265 | 73,290 | 73,540 |
| | 949,154 | 597,427 | 727,724 | 719,786 | 727,800 |
| Net | 302,414 | 420,227 | 32,222 | 221,199 | (79,499) |
| COMBINED FUNDS Operating | | | | | |
| Revenue | 12,781,882 | 71,237,855 | 10,784,955 | 11,003,064 | 5,338,216 |
| Expenditures | | | | | |
| Research funding | 4,554,641 | 3,794,352 | 3,804,987 | 3,817,289 | 3,878,011 |
| Donation | 1,000,000 | - | - | - | - |
| Royalties | 462,566 | 80,892 | 529,435 | 364,515 | 257,936 |
| Operating | 1,107,784 | 774,855 | 582,766 | 415,167 | 434,262 |
| | 7,124,991 | 4,650,099 | 4,917,188 | 4,596,971 | 4,570,209 |
| Net | 5,656,891 | 66,587,756 | 5,867,767 | 6,406,093 | 768,007 |



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