



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.

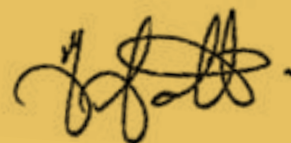
The mandate of the WGRF Endowment Fund is to support research across all crop types, particularly projects that will provide tangible benefits to farmers. This past year, we decided to invest \$1 million to the renewal of the controlled environment plant growth facility at the University of Saskatchewan. 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 malt house, 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](http://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](http://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](http://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.

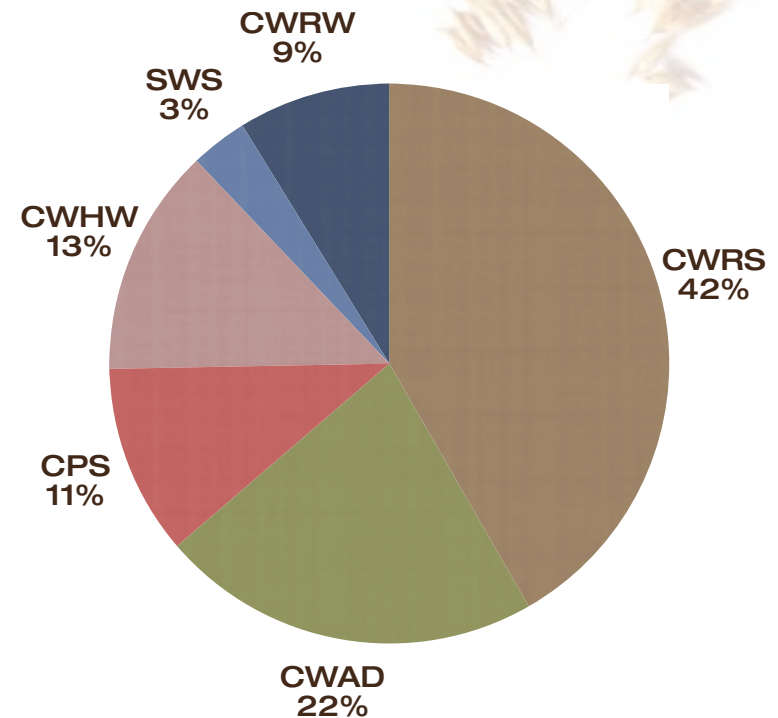
**Supported Research Programs:** WGRF invests in public wheat breeding programs through Agriculture and Agri-Food Canada, University of Saskatchewan, University of Alberta, University of Manitoba and Alberta Agriculture & Rural Development.

**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](http://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

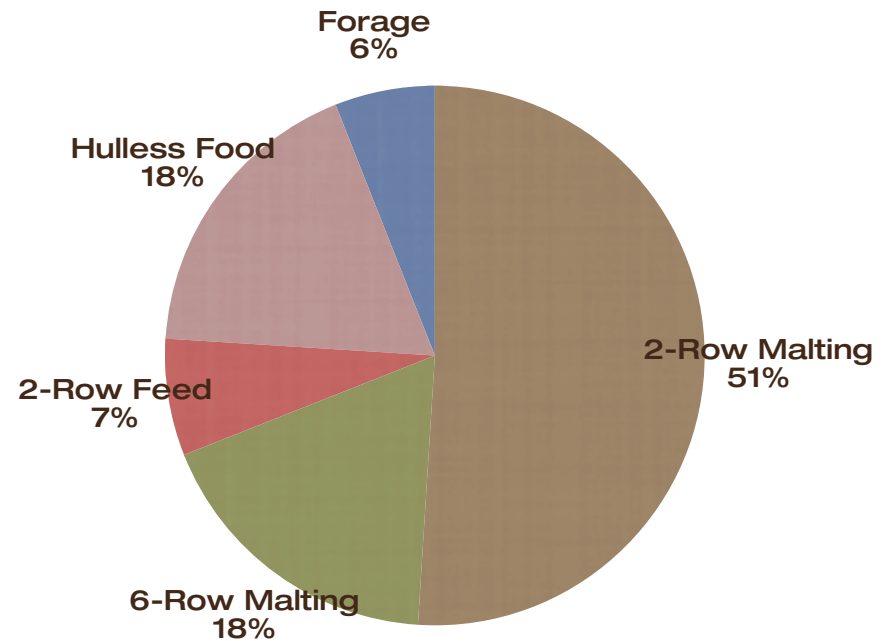
Canada in Brandon, MB, and the Crop Development Centre at the University of Saskatchewan in Saskatoon.

**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](http://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

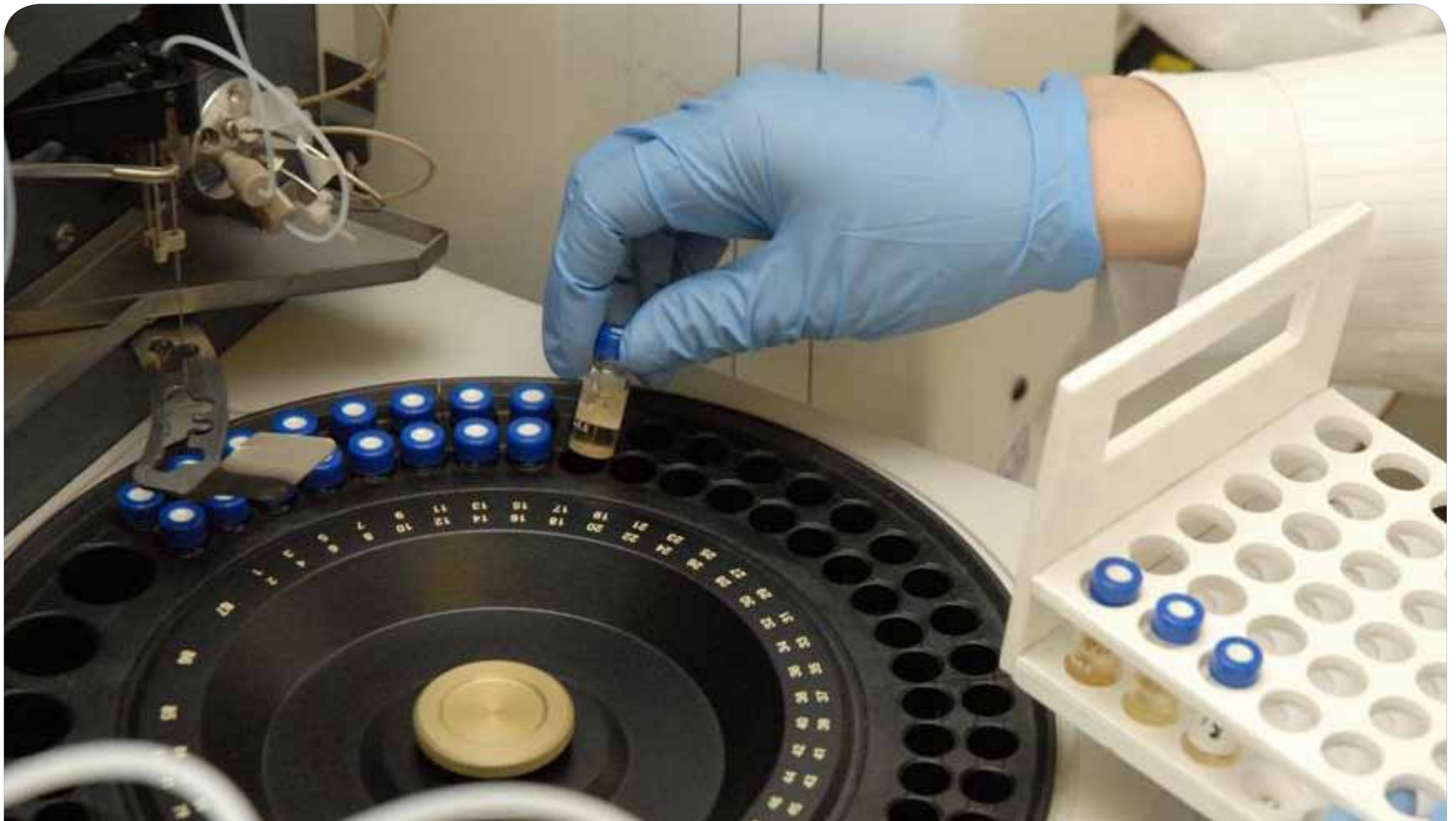
In 2010, WGRF invited Requests for Proposals for the first three of the six priority categories, and funding was allocated to a number of initiatives. The remaining three categories require preliminary investigation to identify the research that will best serve producers. These investigations are now 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](http://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
<b>ASSETS</b>					
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>
<b>LIABILITIES</b>					
Accounts & grants payable	<u>2,102,430</u>	<u>1,175,744</u>	<u>42,452</u>	<u>1,503,397</u>	<u>663,119</u>
<b>EQUITY</b>					
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
		<u>96,852,387</u>	<u>27,777,254</u>	<u>22,464,015</u>	<u>15,613,257</u>
	<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>
<b>ENDOWMENT FUND Operating</b>					
Revenue	<u>5,412,026</u>	<u>65,616,719</u>	<u>3,854,733</u>	<u>4,227,504</u>	<u>907,251</u>
<b>Expenditures</b>					
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
<b>WHEAT FUND Operating</b>					
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
<b>BARLEY FUND Operating</b>					
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)
<b>COMBINED FUNDS Operating</b>					
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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