

# WINTER CEREALS

CANADA 

Incorporating  and  News

# GROWER

ISSUE NO. 48

SPRING 2013

OFFICIAL NEWSLETTER OF WINTER CEREALS

## FALL RYE – IT DOES HAVE A PLACE!

### Fall Rye Improvement Through Breeding - The First Steps Towards Building Profit for Farmers from Fall Rye Production.

In talking with farmers, the most common comment about fall rye is that it is their highest margin crop and that they can sell it right off the back of their combine. Fall rye has tremendous potential to increase profitability of producers for several reasons:

- It expresses the highest levels of cold tolerance in cereals, making it a stable and dependable crop for producers.
- It has comparatively greater productivity under low input production systems or marginal growing areas.
- Compared to other cereal crops, prices for rye are higher and demand is expected to remain high due to tight supply.
- A large portion of the crop is exported to the United States and Japan, indicating that demand for the Canadian rye crop is global and there is potential for market expansion.

The points made above don't address the benefits of having rye in your crop rotation including weed control, soil conservation, improved soil organic matter or the flexibility to graze the biomass.

In western Canada, fall rye tends to be produced under relatively low cost, low input scenarios. For this reason, it is believed that for the foreseeable future, producers are likely to prefer open pollinated varieties, despite the exceptional yield and uniformity of recently developed European hybrids. In

talking to farmers and industry stakeholders, a number of improvements are needed to improve the competitiveness of Canadian fall rye in the marketplace. The breeding objectives mentioned below are just the beginning of efforts to improve fall rye for western Canada. Rye is truly an amazing crop with untapped potential and continued efforts will be made to address growers concerns through breeding and agronomy research with AAFC in Lethbridge.

#### 1) Improved Yield in Short Strawed Varieties

Hazlet, the most recent fall rye variety released by AAFC, represented a significant increase in yield (14% in Saskatchewan) compared to older varieties like Prima, AC Remington and AC Rifle. European fall rye hybrids show much higher yield, as much as 30% higher than Hazlet, partly due to the hybrid breeding system, but also due to a concentrated breeding effort. These hybrids show the yield potential of fall rye in the Prairies, so the future is bright for improvements in yield, especially in open pollinated varieties. In talking to fall rye growers, they want short varieties that can be direct combined. With shorter varieties, the potential exists to increase inputs and grain yield with less concern for lodging like there would be in tall varieties. AC Remington and AC Rifle were developed from crosses with non-adapted rye germplasm containing dwarfing genes. The dwarfing genes significantly reduced plant height and reduced lodging, however these varieties seem to have reduced yield potential. Breeding high yielding semi-dwarf or shorter non-dwarf varieties similar to Hazlet will be a major focus of the breeding effort

#### 2) Increased Falling Number

In general, Canadian fall rye varieties have relatively low falling numbers compared to open-pollinated varieties or hybrids developed elsewhere. In fact, the two year mean from the fall rye yield trials shows that the average falling number for Canadian fall rye varieties is 185 seconds compared to 285 seconds for hybrid rye varieties. Low falling numbers are accentuated when environmental conditions favour high levels of sprouting and alpha-amylase (enzyme that breaks down starch) activity. Fall rye hybrids tested in Canada regularly have falling numbers twice that of Canadian varieties, but this is not solely associated with hybrids. Open-pollinated fall rye varieties developed in Europe can exceed hybrid rye values making it possible to improve the Canadian germplasm base through crossing and selection for breeding populations with increased falling numbers. This will increase the stability of falling numbers across locations and should limit the influence of environmental factors on falling number significantly. Rye varieties with falling numbers above 200 seconds have the potential to expand markets for Canadian rye grain, especially into milling markets in Canada, the United States, and Asia.

#### 3) Decreased Incidence of Ergot

Canadian fall rye varieties, and open pollinated varieties in general, have low levels of ergot in comparison to varieties and hybrids sourced from other regions. However, until levels of ergot approach 0%, an effort must be made to lower levels of ergot.

*Jamie Larsen was hired by Agriculture and Agri-Food Canada in 2011 and is based in Lethbridge, Alberta. With the retirement of Dr. Grant McLeod, the fall rye breeding program was moved to Lethbridge to continue to provide improved open pollinated varieties for farmers through funding partly provided by the Saskatchewan Winter Cereals Development Commission. Please feel free to contact him with questions or ideas. He can be reached via e-mail [jamie.larsen@agr.gc.ca](mailto:jamie.larsen@agr.gc.ca), by phone 403-317-2159 or on twitter: @jamie\_larsen.*

### SWCDC TAKES AIM AT FALL RYE FALL RYE FOCUS AT 2013 AGM

The focus at the SWCDC 2013 Annual General Meeting shifted to Fall Rye with a feature presentation from DR. Stephan Bruins from KWS LOCHOW GMBH, headquartered in Germany. Dr. Bruins outlined the company's hybrid rye breeding and distribution programs throughout Europe.

Of particular interest was news that KWS LOCHOW GMBH currently has several rye production trials underway in North America and in particular in Western Canada. The company is intending to submit several varieties for Canadian registration within the next year.

During the SWCDC Meeting held during Crop Production week in January the SWCDC was pleased to announce that the commission has reached an agreement with Agriculture and Agri Food Canada to initially fund a three year Fall Rye breeding program under the direction of Dr. Jamie Larsen.

The project is called "Development of Agronomically Superior, Open Pollinated Fall Rye Varieties with Improved Falling Number".

The following outlines how each one of our rye improvement objectives will be addressed through Dr. Larsen's breeding project.

**Improved Yield:** Significant increases in grain yield in fall rye are expected through further breeding efforts. To achieve higher yields, breeding efforts will focus on elite x elite crosses of Canadian adapted fall rye lines and other well-adapted germplasm.

**Increased Falling Number:** In general, the variety Hazlet and other Canadian fall rye varieties have relatively low falling

numbers compared to varieties or hybrids developed elsewhere.

Literature reviews indicate that increased falling number is not specifically attributed to hybrids and high falling number has been selected in two open pollinated fall varieties 'Amilo' and 'Ponsi' that exceed hybrid values. Improvement of the Canadian germplasm base through crosses with these two lines will increase the falling numbers as well as the stability of falling numbers across locations. Since these lines are adapted to Northern Europe (Sweden and Poland, respectively) they are expected to have reasonable adaptation to Canadian conditions (winter survival, heading time and maturity) facilitating relatively straight forward development of improved rye populations. As mentioned earlier increased falling number has marketing potential in Canada and for export markets like the European Union, where minimum falling number for export of grain to EU is 100s (ECC 1998), and the United States where millers generally want falling numbers of 180s or higher.

**Decreased Incidence of Ergot:** Lowering ergot will be completed through routine selection of all breeding populations for higher head fertility and lower presence of ergot bodies in threshed field samples.

**Decreased or Optimum Plant Height:** AC Remington and AC Rifle were developed from crosses with rye germplasm containing dwarfing genes. This significantly reduced plant height and reduced lodging. These varieties seem to have reduced yield potential and further efforts to improve these varieties must be made through an elite x elite crossing program. There is some evidence in cereals that dwarfing genes are a disadvantage in droughty conditions. One alternative is to select for shorter plants of optimum height in non-dwarf germplasm. An example of this is Hazlet that does not have dwarfing genes, yet its plant height is reduced in comparison to Prima, Dakota and older Canadian rye varieties.

This approach may take a longer time to develop varieties; however, an increase in yield potential over dwarf varieties may be observed in certain conditions. Both approaches mentioned above, improvement of AC Remington and AC Rifle and selecting for shorter non-dwarf plants, will be used in the breeding strategy.



*Dr. Stephan Bruins from KWS LOCHOW GMBH explains the companies Rye breeding program to participants at the Saskatchewan Winter Cereals Development Commission AGM in Saskatoon*

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# CIGI- WORKING TO PROMOTE CWRW TO THE WORLD

A technical mission to Japan in May by the Canadian International Grains Institute will provide major Japanese milling companies with a detailed look at the qualities and end-product potential of some Canada Western Red Winter varieties. Esey Assefaw, Head of Asian Products and Extrusion Technology at Cigi says Japan is a quality conscious market and the mission is an ideal opportunity to demonstrate to key customers the applicability of the CWRW class in steamed bread, a high value product that is widely consumed in Asia.

"Winter wheat is very good for this particular product because of its ability to produce very white flour with low ash content," says Esey. "These qualities are important in the production of steamed bread where consumers are looking for a product that has a smooth, bright white surface."

The mission will also provide Cigi representatives with a better understanding of potential changes in wheat purchasing practices in Japan. Historically,

the Japanese government, through its Ministry of Agriculture, Forestry and Fisheries, has had the exclusive right to import wheat and distribute it to milling companies. Changes could mean that mills will be purchasing wheat directly which creates the opportunity to increase their knowledge of different Canadian wheat classes. "Millers in Japan are very familiar with CWRS and CWAD but they will have had limited exposure to other classes like CWRW," says Esey. "Through Cigi we can provide them with something that they can't get anywhere else and that's access to information about the quality and processing characteristics of particular varieties."

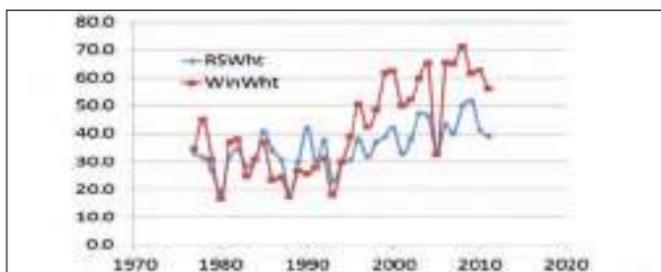
Evaluation of the CWRW varieties is expected to begin later in March. The varieties being assessed are either recently registered or about to be registered so the quantity available for testing is limited. Samples will be milled in Cigi's pilot mill and the flour will be used to process steamed bread. If sample sizes permit, they will also be evaluated for baking quality. "This work is all about

adding value to the wheat farmers are growing," says Esey. "As we demonstrate the applicability of CWRW and other classes in quality food products in a high value market like Japan that can lead to opportunities there and in other Asian countries which tend to take note of what is happening in the Japanese market."

The technical mission to Japan is one of a series of Cigi programs targeted for a wide range of customers and markets approved for this spring and early summer by two Cigi Program Advisory Committees, one composed of farmers and the other, exporters. For more information on Cigi activities please visit the Cigi web site at [www.cigi.ca/](http://www.cigi.ca/). The web site also includes the new crop data and hand-outs used during new crop seminars held last fall featured in the fall/winter 2012 issue of the Winter Cereals Canada newsletter. To access this material (which includes CWRW information) go to the technical publications section of the Cigi web site and click on wheat.

## WINTER WHEAT TIDBITS FROM THE MANITOBA AGRICULTURAL SERVICES CORPORATION

A comparison of average yield between CWRW and CWRS wheat in Manitoba 1978 - 2013



## Winter Wheat – Time to Look Again!

In recent times when farmers evaluated net profitability of various crops in their rotation wheat in general did not compare favourably. Canola, led by Invigor Hybrids, has been the consistent top performer for several years running. Times are a changing and winter wheat is leading the charge!

Experienced growers from across the prairies often say that winter wheat returns a much higher profit than other wheat alternatives in their rotation. With marketing changes and subsequent increased transparency for what wheat customers demand, winter wheat clearly demonstrated its value in 2012. Independent analysis conducted by Manitoba Agriculture, Food and Rural Initiatives and the Saskatchewan Ministry of Agriculture illustrated that winter wheat was the top net income earner in 2012.

### 2012 WINTER WHEAT VARIETY DESCRIPTIONS

Net Profit/Ac	Wheat	Durum Wheat	Winter Wheat	Malt Barley	Feed Barley	Oats	Corn	Invigor Canola	Nexera Canola
Eastern Manitoba	95.38	15.44	233.25	109.43	17.49	54.19	(25.28)	43.52	93.38
Western Manitoba	62.52	(3.50)	176.39	123.56	38.31	63.17	(119.65)	69.18	116.54
Saskatchewan Black Soil Zone	66.70	CPS 116.82	162.31	117.58	112.02	22.64	n/a	Canola 116.00	n/a

Price forecasts for the near future suggest there is opportunity for growers to realize strong returns for high yielding medium quality wheat. As growers develop their 2013 seeding plans winter wheat is certainly a crop that warrants strong consideration.

Data compiled and article written by Paul Thoroughgood, Regional Agrologist - Prairie Region. Ducks Unlimited Canada. For information on Ducks Unlimited winter wheat programs and agrology expertise contact Paul at 306.569.0424 or [p\\_thoroughgood@ducks.ca](mailto:p_thoroughgood@ducks.ca)

## HAVE YOUR SAY ON FALL RYE

To get a better idea of the needs of fall rye producers we would like to survey growers on where they are located, what varieties work in their regions and under what production practices. Input from growers will be incorporated into research projects where possible, in order to provide solutions for fall rye production issues.

Please respond to [Jamie.larsen@agr.gc.ca](mailto:Jamie.larsen@agr.gc.ca).

The Saskatchewan Winter Cereals Development Commission website is your home for winter wheat news in Saskatchewan • [www.swcdc.info](http://www.swcdc.info)

Rick Morgan, Manager of Business Development for the Canadian International Grains Institute In Winnipeg explains Cigi programs and future endeavours to participants at the Winter Cereals Manitoba Inc. Annual General Meeting in Portage la prairie. Cigi is participating with grain companies and farm organizations to educate millers around the globe about the superior quality of CWRW.



## EXECUTIVE DIRECTORS CORNER

Spring is just around the corner and both the Saskatchewan Winter Cereals Development Commission and Winter Cereals Manitoba Inc. have held successful annual general meetings. In Saskatchewan Fall Rye took the spotlight this year as the SWCDC announced a new research partnership with Dr. Jamie Larsen from AAFC Lethbridge. Dr. Stephan Bruins from KWS LOCHOW GMBH treated participants to a look at fall rye breeding and production in Europe. Dr. Rob Graf brought us up to date on SWCDC funded research while Elwin Hermanson from the CGC and Dr. Rex Newkirk from Cigi updated everyone on organizational changes under the new open market system.

In Manitoba participants were updated on the new MASC Winter Wheat program and presented with relevant statistics on the winter wheat crop in Manitoba by Doug Wilcox. Jim Smolik from the CGC and Rick Morgan from Cigi updated everyone on current issues within their organizations. The day concluded with a MAFRI presentation from Pamela de Rocquigny and Holly Derksen on varieties and disease issues within Manitoba.

Jake Davidson, P.Ag., PAS Executive Director

## Advertise in the Winter Cereals Grower

Winter Cereals Canada invites interested individuals and companies to advertise in the *Winter Cereals Grower*. 2012 rates listed.

8 1/2 x 11 .....	\$550.00
6 1/4 x 8 1/4 .....	\$385.00
4 1/4 x 5 1/2 .....	\$300.00
2 1/8 x 2 3/4 .....	\$150.00

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All advertising must be camera ready or suitable for scanning. Advertorial content is accepted at the standard rates. Unsolicited editorial materials will be accepted and published and / or edited at the discretion of the Editor.

Advertising and editorial content deadlines are March 1st, June 1st and September 15th.

Material should be submitted to:  
Winter Cereals Canada Inc.  
P.O. Box 689, Minnedosa, MB R0J 1E0  
1-866-472-4611 [jake@wintercerealscanada.org](mailto:jake@wintercerealscanada.org)

The Winter Cereals Manitoba website is your home for winter wheat news in Manitoba • [www.wcni.info](http://www.wcni.info)

If you no longer wish to receive the Winter Cereal Grower newsletter, please send us either an e-mail with your name and address or send us a note with your mailing label requesting that your name be removed from the mailing list.

# CWB OPEN FOR NEW CROP BUSINESS:

CWB has launched its line-up of 2013-14 programs, including some innovative Futures Choice pool contracts.

**Pooling for every season:** There are three pooling periods to choose from, which allows farmers to choose when they would like their grain priced and when they want to deliver. The Early Delivery Pool runs from August 2013 to January 2014, and features guaranteed early delivery by January 31, 2014. The Annual Pool runs the entire crop year. The six-month Winter Pool lets farmers capture next year's late season prices (February 2014 to July 2014). All pools are designed to remove the daily volatility of cash prices.

For farmers looking for more control over their return, the new Futures Choice pools are ideal. They offer many of the advantages of their traditional pool counterparts, plus farmers can book their own futures value. CWB will pool the basis during the associated pooling period (Early Delivery, Annual, or Winter), while farmers watch the futures market and price when they're ready.

Canada Western Red Winter wheat is eligible for all the pools, including the Futures Choice options. Pooling is a simple way to market, and provides the guarantee that producers will not end up with a lower than average price for the period. CWB's expert sales team uses decades of experience and strong customer relationships to market the pools at the best possible prices each day.

**Flexibility for farmers:** From sign-up to delivery, contract execution is also easy. Farmers can deal

directly with CWB's staff, speak to the grain-handling company, transact business online, or contact their Farm Business Representative for a local perspective on handling costs, premiums and delivery opportunities. Farmers have the flexibility to shop their contract around to CWB's grain-handling partners, amend their contracts at little or no cost, and arrange delivery directly with the handler. There are two reference grades for Canada Western Red Winter wheat; 2 CWRW or better, and 3 CWRW. Plus, all CWB pool

contracts come with Act of God provisions to cover production loss on unpriced tonnes.

The sign-up deadlines for CWB's 2013-14 pools are outlined below. To sign up, or for more information, visit [www.cwb.ca](http://www.cwb.ca) or call toll-free 1-800-275-4292.

## 2012 WINTER WHEAT VARIETY DESCRIPTIONS

Pools	Pooling period	Sign-up deadline	Guaranteed delivery by
Annual Pool	August 2013 to July 2014	October 31, 2013	July 31, 2014
Early Delivery Pool	August 2013 to January 2014	October 4, 2013	January 31, 2014
Winter Pool	February 2014 to July 2014	February 14, 2014	July 31, 2014
Futures Choice Pools	Basis pooling period	Sign-up deadline	Guaranteed delivery by
Futures Choice Annual Pool	August 2013 to July 2014	October 31, 2013	July 31, 2014
Futures Choice Early Delivery Pool	August 2013 to January 2014	October 4, 2013	January 31, 2014
Futures Choice Winter Pool	February 2014 to July 2014	February 14, 2014	July 31, 2014

## Plan for Success

Start the 2013-14 marketing year with a solid grain marketing plan.

When do you want to deliver? Do you enjoy following the markets every day? What is your risk tolerance? How will you manage grade risks?

No matter your answers, CWB has options to suit your business.

Sign up today! Call us at 1-800-275-4292  
Program details at [www.cwb.ca](http://www.cwb.ca)

## Deliver Early and Rest Easy

Get the benefits of pooling, but with guaranteed delivery by January 31 by signing up to the Early Delivery Pool or Futures Choice Early Delivery Pool.

## Price Your Own Futures

Get the **delivery flexibility** and **fair grade spreads** of pool contracts, while timing the market to capture futures price peaks with our Futures Choice pools.

When you're ready to deliver, **shop around for the best deal** on grades, deductions, premiums and overall customer service.

## 2013-14 programs for Winter Wheat, Spring Wheat, Durum, Malting Barley and Canola

### Pools:

Early Delivery Pool  
Annual Pool  
Winter Pool

### Futures Choice Pools:

Futures Choice Early Delivery Pool  
Futures Choice Annual Pool  
Futures Choice Winter Pool

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## Did Your Winter Wheat Survive? Assess it on Your Own or Attend a Clinic!

The fall of 2012 was dry in many areas of Manitoba resulting, in winter wheat germination and establishment ranging from very good to very poor. Acres that received timely precipitation were at the optimum growth stage of 3 leaf to one tiller heading into winter; however, other acres ranged in growth stages from only 1 leaf, to seeds germinated but no emergence, to no germination at all.

**Fall Crop Development Important:** The stage of crop development in the fall influences winter survival, but it can also impact yield potential, crop competitiveness and maturity. However, winter survival is also influenced by fall management practices, including variety selection, seeding date and depth, fertilizer placement and stubble conditions.

**Excellent Snow Cover & Soil Temperatures:** The good news is there was excellent snow cover over the winter of 2012/13, helping to insulate the winter wheat crop from cold temperatures. MAFRI's Ag-Weather Program does post soil temperature data from its weather stations; it is available at <http://tgs.gov.mb.ca/climate/>. Even if soil temperatures didn't

dip to levels where winter injury could have occurred, it will still be important for producers to assess winter wheat survival. Knowing if their crop survived and what plant stands are will assist producers in deciding to keep their fields and start applying inputs such as nitrogen in a timely manner to maximum crop competitiveness and yield potential.

**Assessing Winter Survival:** There are 3 common ways to assess winter survival.

**1. Sod Extraction Method** – A producer can extract several 'sods' from the field with a shovel (in 2013 will likely have to shovel snow away first). Warm up the sods inside while keeping the soil moist. In 5 to 7 days, assess the crowns for new root growth which indicates the plant has survived. When sampling, extract sods from average areas of the field and also from less than average areas, such as knolls, headlands where lower snow trapping usually occurs, and low spots where excess moisture and winter icing could have happened.

**2. Bag Test Method** – This method was developed by Ducks Unlimited in North Dakota and involves five easy steps: 1) Dig or chisel plants out of the soil without damaging the crown. 2) Rinse the soil off the crown and roots. 3) Using scissors, trim off the roots and leaves and all but one inch of the stem above the crown. Put the crowns in a Ziploc bag and puff some air into it before sealing. Keep at room temperature and observe every 2 days. Repeat the rinsing and air every 2 days. Plants that are alive will extend leaves and grow new white roots. If new growth is not observed after 6 days, consider the plant dead. A visual display of the bag test method is available at: . There is also a good YouTube® video illustrating this method at:

**3. The Wait for Spring Growth Method** - This method requires producers wait until the crop breaks dormancy and new root growth commences; this could take until mid-May in some years depending on spring weather conditions. However, this method does still require producers dig up plants within the field as brown, dried leaves do not necessarily indicate winter

injury, and green overwintering leaves are not a sure sign that the crop has survived.

To properly assess, dig up some plants, rinse the roots with water and examine the crown for the development of new white roots. If new roots are developing, and the crown appears white and healthy, the plant is likely in good condition.

However, producers should still scout their winter wheat fields as it has occurred where plants will green up and then slowly go 'backwards' and eventually die. There are enough nutrients in the crown to allow the plants to green up, but if winter injury occurred, it can cause vascular damage so that the nutrients that are left cannot move, or root rot diseases can move in and kill the plants.

Keep in mind the sod extraction method and the bag test allows producers to catch a sneak peek of winter survival in their fields. Producers will still have to wait until growth resumes in the spring to properly assess plant stands.

Optimum plant stands are 20 to 30 plants per square foot. However, winter wheat has a great ability to aggressively tiller, which can help compensate for lower plant densities.

### Attend a Clinic this Spring

If hands-on experience is wanted, take part in one of the "Winter Survival Assessment Clinics" scheduled this spring at various locations in Manitoba. MAFRI is hosting the clinics with sponsorship and technical support provided by Winter Cereals Manitoba Inc. and Ducks Unlimited. The clinics will involve in-field assessments of winter survival, stands and discussion of crop production, fertility, disease and weed management issues. Please check with your local Farm Production Advisor to see if a workshop is being planned for a field near you!

**Written by: Pam de Rocquigny, Provincial Cereal Crops Specialist, MAFRI, with information from John Heard, Crop Nutrition Specialist, MAFRI**

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# Cool Genes

The hot news is SeCan's cool genes for widely-adapted hard red winter wheat across the Prairies.

**NEW** **AC® Flourish**

**Canada Western Red Winter Wheat**

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