WINTER CEREALS CANADA GROWER

Incorporating Saskatchewan Winter Cereals Development Commission and Winter Cereals Manitoba Inc. News

ISSUE NO. 59 | FALL / WINTER 2016 | OFFICIAL NEWSLETTER OF WINTER CEREALS

WINTER WHEAT PHOTO CONTEST
COOL PHOTOS OF A COOL CROP!

First prize in our 2016 photo contest comes from the Swihart family of Consul, Saskatchewan. This photo was taken on July 28, 2016 by Mrs. Swihart as the family was combining Moats winter wheat. Shortly after the photo was taken the rain began and harvest stopped for the day.

A familiar sight to winter wheat producers is the view from the cab of the combine. This shot of another field of Moats winter wheat comes from Paul Thoroughgood. Taken on August 10th near Moose Jaw this photo earned 2nd place in our contest. This photo clearly shows the origin of the term "flatland farming".

Third place goes to Kim and Rodney Macknac of Cupar Sk. for this photo of a Winter Wheat crop to "moon" over".

Taken on June 20 while out crop checking under the full moon at their farm along the Qu'Appelle Valley in Saskatchewan.

Rodney advises that this is a field of Buteo winter wheat.

WINTER CEREALS MANITOBA MEETS WITH NEW CONSERVATIVE MINISTER OF AGRICULTURE

On August 2nd Doug Martin, Chair of Winter Cereals Manitoba Inc. and Jake Davidson, Executive Director travelled to the offices of the new Minister of Agriculture Ralph Eichler in the Manitoba Legislative building.

Included in the meeting was Deputy Minister Dori Gingera-Beauchemin, Thomas Gilbraith - Minister's Executive Assistant and Loni Scott - Assistant Deputy Minister of Agri-Industry Development and Advancement Division – Administration.

The purpose of the meeting was to familiarize the Minister and his staff with our history, research accomplishments, the trials and tribulations of a smaller acreage organization and the future aspirations of Winter Cereals Manitoba Inc.

The Minister indicated strong support and approval of our ability to manage what can be a highly variable income flow to fund a varied and technologically advanced research and international marketing program on behalf of Manitoba Winter Wheat Producers.

Minister Eichler indicated that Winter Cereals request to have our levy increased to $0.98 per tonne of wheat marketed as approved by the members at our 2016 Annual General Meeting will be approved by cabinet in time to ensure the new rate will be in effect at the start of the 2017/2018 crop year.

In This Issue

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STAFF ADDED TO WINTER WHEAT RESEARCH

The Government of Canada Green Jobs Initiative Internship funded through Agriculture and Agri-Food Canada (AAFC) awards funds to the University of Saskatchewan, Winter Wheat Research Project.

Mr. Philip C Boutin, M.Sc. (Chemistry) has joined the U of S Winter wheat Research project as a Research Technician intern from August 2016 to March 31, 2017. During his term, AAFC will contribute $14,600 towards half of Philip's remuneration. Philip will assist in the biochemical and molecular analyses during cold acclimation in winter wheat.

Honourable Mention goes to Mike Lane of Saanichton, BC for this photo showing the versatility of fall rye. This field was harvested and baled just outside of Victoria, BC on August 21, 2016. Just like on the prairies the geese are cleaning up anything that went over the combine.

SWCDC CALL FOR NOMINATIONS

The SWCDC has openings on the producer elected Board of Directors. Directors will be elected for a 3 year term ending at the annual General Meeting in January of 2020. SWCDC Directors participate in approximately 5 board meetings a year and contribute time to the SWCDC. Directors are called on to represent the SWCDC at conferences that impact the winter cereals industry. Expenses are reimbursed to Directors and a daily per diem remuneration is paid.

Registered growers interested in joining the Board can contact the SWCDC business office at 1-866-472-4611 for nomination forms. Nomination forms must be returned to the Returning Officer no later than 12:00 p.m. (noon) October 21, 2016.

Note: Only registered growers may vote, nominate or hold office.

A registered grower means any grower who has had a Saskatchewan Winter Cereals Development Commission check-off deducted since August 1, 2014. A registered grower is not eligible to be nominated as a director if he or she has requested or received a refund of the check-off since August 1, 2014.

An election (if required) will be held by mail ballot with election results announced at the Annual General Meeting in Saskatoon, Sk. on January 9, 2017.

October 21, 2016, Nominations Close at 12:00 p.m. (Noon) - November 18, 2016 Ballots mailed if necessary.

December 16, 2016, Last day for ballots to be received. - January 9, 2017, Results announced at SWCDC Annual General Meeting

The Larsen Report: Leaf rust in rye at Brandon, MB. Winter triticale double haploid nursery at Lethbridge.

Genomics strategies to improve field survival of winter cereals and stabilize yield

A collaborative research project between the U of S and AAFC, Lethbridge funded by NSERC (CRD and DG), WGRF, SWCDC, WCMI, AWC

Research Update

Monica Båga and Ravindra Chibbar, U of S

The main objective of the project is to identify genetic factors that will improve winter field survival in cereals such as wheat and barley, which have seen no increase in winter hardiness during the last decades. Much of our work is based on the hypothesis that winter field survival is governed by interactions between cold tolerance genes and genes controlling the developmental program of the plant. These interactions largely determine the efficiency of the cold acclimation process in the fall that leads to winter hardiness. To decipher the winter hardiness trait, we are studying the plants freezing tolerance under controlled conditions, winter survival in the field and analysing traits like final leaf number, anthesis date, prostrate growth habit, plant height, top internode elongation etc., which can be associated with winter survival.

During the last two years, field studies of a doubled haploid (DH) population of 108 lines (developed at AAFC Lethbridge), ~400 recombinant inbred lines (RILs) and 50 rye lines were done at three locations (Lethbridge, Vauxhall and Saskatoon) with differences in winter severity. The field-grown plants were also rated for some of the developmental traits. The 2015/15 trial in Saskatoon proved to be the best for selection of the most winter hardy DH, RILs and rye lines. In contrast, the mild 2015/16 winter at Saskatoon identified the most tender lines of the populations.

Most of the studies of developmental traits has been done in the greenhouse. A core set of ~600 RILSs were phenotyped in two experiments and a third trial will be completed in early 2017. The DH analyses will be complete in three experiments by Oct 2016, whereas a set of 96 rye lines have been studied in one replication so far. Genotyping by sequencing has been done for 92 of the DH lines and 96 rye accessions, and genotyping of 400 RILs is underway. The availability of phenotype and genotype data for the DH population has allowed us to identity some of the major genetic loci affecting the developmental traits studied.

Upon identification of a complete set of genetic regions/genes affecting developmental traits important for winter survival, markers for these loci can be used for selection of "Resilient Winter Wheat" lines. It is expected these lines will yield 20-40% more than spring wheat and be more sustainable and competitive than existing cultivars to the benefit of Canadian producers.

WINTER CEREALS MANITOBA INC • NOTICE OF ANNUAL GENERAL MEETING

The Annual General Meeting of Winter Cereals Manitoba Inc. will be held in Brandon, Manitoba on March 15, 2017 at the Agriculture Canada Research Station main floor meeting room.

If you are a producer of Winter Wheat or are considering adding Winter Wheat to your rotation you are invited to attend. If you have had a WCMI levy deducted in the past three years and have not requested a refund you are eligible to vote and hold office.

There will be presentations on all aspects of growing Winter Wheat and a lunch will be served.

FOR MORE INFORMATION OR TO REGISTER IN ADVANCE CONTACT
J. DAVIDSON, EXECUTIVE DIRECTOR 1-866-GRAIN-11 or jake@wcmi.info

WINTER CEREALS CANADA INC NOTICE OF ELECTION AND ANNUAL GENERAL MEETING

The Annual General Meeting of Winter Cereals Canada Inc. will be held in Brandon, Manitoba on March 15, 2017 at the Agriculture Canada Research Station. During the meeting elections may be held for several positions on the Winter Cereals Canada Inc. board of directors.

Winter Cereals Canada Inc. provides management services and co-ordinates the common interests of producer members of Winter Cereals Manitoba Inc. and the Saskatchewan Winter Cereals Development Commission. If you are interested in becoming involved with promotion and research pertaining to Winter Wheat in the provinces of Manitoba and Saskatchewan through participation on the Board of Directors please contact the Winter Cereals Canada Inc. office to learn more about this rewarding possibility. Directors participate in approximately 4 board meetings a year and contribute time to WCCI.

Potential Directors should be current members of either Winter Cereals Manitoba Inc. or the Saskatchewan Winter Cereals Development Commission. Directors are called on to represent WCCI at conferences and meetings that impact the winter wheat industry in Western Canada. Expenses are reimbursed to Directors.

FOR MORE INFORMATION CONTACT
J. DAVIDSON, EXECUTIVE DIRECTOR 1-866-GRAIN-11
jake@wintercerealscanada.org

NOTICE OF ANNUAL GENERAL MEETING SASKATCHEWAN WINTER CEREALS DEVELOPMENT COMMISSION

JANUARY 9, 2017

Saskatoon Inn Hotel & Conference Centre
2002 Airport Drive
Saskatoon, SK, Canada, S7L 6M4

REGISTRATION 8:30 AM

BUSINESS MEETING 9:00AM TO 10:00 AM

INDUSTRY INFORMATION SESSIONS 10:00 AM TO 12:30 PM

Hear about research being funded by the SWCDC to enhance the production of winter cereals and much, much more!

All producers are invited. Only producers who have paid the Winter Cereals levy since August 1, 2014 and not requested a refund are eligible to vote.

FOR MORE INFORMATION CONTACT
J. DAVIDSON, EXECUTIVE DIRECTOR
1-866-GRAIN-11
jake@swcdc.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.

THE LARSEN REPORT: FALL RYE AND WINTER TRITICALE BREEDING UPDATE FROM AAFC LETHBRIDGE:

It's been a busy, but successful field season for us in Lethbridge. I'd first like to acknowledge my staff and students which have made this happen. My lead technician Jordan Harvie has done a wonderful job collecting data and working ahead to make sure everything went smoothly. Proof of this is that we finished seeding September 27th this year. Previous years we were only beginning to seed at this time. It makes me think we need more land to put in more plots…she'll love that. I should also mention the excellent work done by Allison Bors who does most of the indoor plant work and students Jeff Hilliard, Karson Seeley and Nikki Furukawa.

Fall Rye: One of the challenges with fall rye breeding is the fact the crop is open-pollinated. How do you handle many populations at once while keeping isolation distances? It's a logistical nightmare. At Lethbridge we've come up with a strategy to try and whittle down which populations to focus on. What we do is put out early generation populations in the field as unreplicated plots and compare them to Hazlet, which is replicated throughout the test. The results have been remarkably consistent year over year showing that only a few populations combine high yield, test weight and high falling numbers. We'll focus on those populations and discard the rest. The selected populations go through a few generations of mass selections for plant type and grain quality before we put them in yield trial testing and release them to farmers.

We've been busy writing proposals to expand research in rye. SWCDC has been with us at each step supporting these proposals. We are specifically targeting diseases in rye that may be near (and not so dear) to your heart. Fusarium head blight (FHB) is a disease that we know very little about in rye. We don't know elementary things like variety reaction or optimum timing to spray fungicides. If funded, the FHB screening and fungicide timing work will be completed by Anita Brule-Babel's group at the U of Manitoba and I'll integrate that information into my breeding program to develop FHB resistant open pollinated varieties. As a part of this project, we'll also examine leaf and stem rust resistance in rye, so we know more about it. I noticed quite a bit of leaf rust on my crop tour this summer. I'm not sure of the economic impact of leaf rust in rye, but if there is resistant germplasm, why not make use of it so you folks as farmers don't have to worry about it. We've also submitted projects to look at agronomic practices to control ergot. The plan is to focus on seeding rates and seeding dates with the hypothesis that increasing the seeding rate will shorten the length of flowering and reduce the number of tillers, leading to pollen being released over a shorter period of time. We think this hay fever inducing avalanche of pollen could increase the competition for florets with ergot ascospores leading to higher levels of pollination and lower levels of ergot.

Finally, we are wrapping up our fall rye agronomy study where we examined open-pollinated and hybrid varieties under conventional and intensive management conditions. If you want the details, go to the Saskatchewan Winter Cereals Development Commission's AGM in January. I'll be there to give you the information.

Winter Triticale

I was fortunate to be able to travel to Hungary this spring to participate in the international triticale workshop. Our train ride to the conference gave us a good view of the crops they grow, which includes a lot of winter triticale and fall rye. My take home message from the meeting was that there are some real success stories out there which are relevant to western Canada.

1) Did you know that approximately 1.2 million acres of triticale is grown in the U.S.? Typically, winter triticale is seeded in the fall and taken off as a silage crop before silage corn is planted to create a double crop.
2) Similarly, in Mexico, the CIMMYT triticale breeding program had been closed due to lack of interest, but a shift to using the crop as a source of forage has led to the program being re-opened and now it is thriving.

With regards to our breeding program, we are targeting winter triticale varieties that combine both high grain and biomass yield. We are also working on extra early varieties to facilitate double cropping with barley, wheat, hemp and any other shorter season crop you might think of. The variation that we have found in the germplasm base is remarkable with regards to grain and biomass yield, test weight, height, winter survival, heading date and completely awnless lines.

Good news is that with the help of Mazen Aljarrah at Alberta Agriculture and Forestry, we've got the winter triticale registration trial back up and going again. I can promise you that there are phenomenal genetics coming your way, like nothing you've really seen before. It is common to see yield indexes that are 20 -50% higher than winter wheat, fall rye and existing winter triticale varieties. I am not lying when I say that we did not have bags big enough to handle the grain coming off some of our plots. All my techs could do was apologize and say "there was nothing we could do, the grain just kept pouring out". I had other programs asking if we were breeding bananas, due to size of the spikes. Pretty interesting and I can't wait to get producers opinions on the crop. We are deliberately benchmarking the crop against winter wheat (Pintail) and fall rye (Hazlet) so you will have good comparisons. We are also running biomass yield trials so that cattle producers have an idea about forage yields and quality. We regularly get dry biomass yields in the 18-22t/ha range which is higher than winter wheat, but similar to slightly higher than fall rye.

Finally, for your own resource, there are a lot of good researchers and extension people working on fall rye and winter triticale in Saskatchewan. Ask them about their research if you are in their area.

Chris Holzapfel- Indian Head Agricultural Research Foundation, Indian Head, SK (fall rye)
Stu Brandt-Northeast Agricultural Research Foundation, Melfort, SK (fall rye)
Lana Shaw- South East Research Farm, Redvers, SK (fall rye and winter triticale)
Joel Peru-Canada-Saskatchewan Irrigation Diversification Centre (CSIDC), Outlook, SK (fall rye)

The potential of winter triticale! Winter wheat spike (right) compared to a winter triticale spike (left) at Lethbridge AAFC.

AAFC-Lethbridge triticale researchers at the 9th International Triticale Symposium in Szeged, Hungary (Dr. H. Randhawa-spring triticale breeding, Dr. F. Eudes-triticale biotechnology, Dr. B. Beres-cereal agronomy, Dr. J. Larsen-winter triticale breeding

The Beres Report: Agronomy Notes from AAFC Lethbridge

Winter wheat research related to our current Growing Forward 2 project, "Greater Economic Returns and Enhanced Ecosystem Services through the Expansion of Winter Wheat Production in the Canadian Prairies", is entering its final field season as we wrap up planting of experiments this fall. The research focus includes the implications of planting dates, weed control, crop canopy management with plant growth regulators, opportunities for nitrogen stabilizers, and seed and in-crop fungicide treatments to control soil borne pathogens as well as stripe rust, a common production factor for winter wheat growers. Preliminary findings are being prepared and we have shared some with you already. We expect to be able to report on additional results at the AGM in January.

In my last report I also introduced the Wheat Initiative (WI) (www.wheatinitiative.org). In addition to representing Canada on the Research Committee, the Secretariat requested my help to contribute to the agronomy section of the Strategic Research Agenda. This followed with a request to establish an Expert Working Group for Agronomy that will be charged with developing a global assessment of agronomy research to identify knowledge gaps and to consolidate activities into a more cohesive effort. In addition to Dr. John Kirkegaard with the CSIRO in Canberra, AU, I invited Dr. Jerry Hatfield (ARS-USDA; Ames, Iowa) and scientists from the Arid Cereals group in the USA [Dr. Sanford Eigenbrode (Univ. of Idaho) and Dr. Bill Pan (Washington State)]. This summer, I was invited to author a book chapter on integrated wheat management for a WI sponsored book series. The timeline was a bit crazy but the opportunity served as a good exercise to begin thinking and writing about future directions for wheat agronomy in Canada.

What does this mean for winter wheat agronomy in Canada? It's time again to work with stakeholders through the fall/winter, but this time we will develop an EWG for Canada to facilitate the process. If we can get buy-in from wheat agronomy stakeholders, this EWG can serve as the framework that establishes national priorities that will also align with the strategic research agenda of the Wheat Initiative. The stakeholders within the framework can then use it to develop an industry-led agronomy proposal for submission to the Growing Forward III program. There may even be opportunity to broaden some proposed activities into a global effort. It's an exciting time for Agronomy!

WHEAT CLASES IN MANITOBA FOR 2016

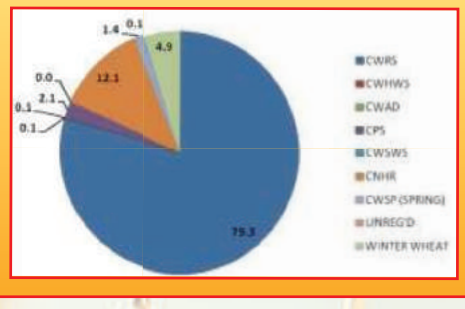
Pam de Rocquigny, Provincial Cereal Crops Specialist, Manitoba Agriculture

In 2016, there was approximately 2.8 million acres of wheat seeded in Manitoba, as reported by producers for AgriInsurance purposes (pedigree and organic production not included), down from 3.0 million acres in 2015.

The **Canada Western Red Spring (CWRS)** class remains the largest class of wheat grown in Manitoba. In 2016, 79.3% of provincial acreage devoted to wheat production is sown to CWRS varieties. This is down slightly from 86.0% in 2015.

The new wheat class **Canada Northern Hard Red (CNHR)** is the second largest class of wheat in Manitoba at 12.1% of the total wheat acreage. The class currently includes three varieties: Faller, Prosper and Elgin ND. This class of wheat grew as 7.8% of the total wheat acres were grown to those three varieties in 2015.

Winter wheat, which includes varieties belonging to the Canada Western Red Winter (CWRW) class, and the new Canada Western Special Purpose (CWSP) class, is the third largest category at 4.9% of total wheat acres, down from 5.3% in 2015. Keep in mind for winter wheat, the number of acres represents what was seeded in the previous fall and does not reflect the number of acres remaining after winter injury or winterkill.



Combined, CWRS, CNHR and winter wheat account for 96.3% of total wheat acres in Manitoba in 2016 (compared to 96.1% in 2015).

The remaining 3.7% of wheat acres in 2016 are comprised of the smaller classes of wheat, including Canada Western Hard White Spring (CWHWS), Canada Western Amber Durum (CWAD), Canada Western Special Purpose (CWSP - spring varieties only), Canada Western Soft White Spring (CWSWS), Canada Prairie Spring Red (CPSR) and unregistered spring wheat varieties. There was a substantial increase in CPSR acres – approximately 59,400 acres in 2016 compared to 3900 acres in 2015. However, the other smaller classes of wheat saw decreases in 2016 acreage from 2015.

VISIT WWW.WCMI.INFO AND WWW.SWCDC.INFO FOR ALL YOUR MANITOBA AND SASKATCHEWAN WINTER CEREALS NEWS

Winter Cereals Manitoba Inc. is proud to provide funding for the MCVET trials on behalf of Manitoba winter wheat producers and our members.