



# TheWheatField

THE NEWSLETTER OF THE SASKATCHEWAN WHEAT DEVELOPMENT COMMISSION

JUNE 2016 EDITION

## Use the Sask Wheat FHB risk maps to assist with in-crop fusarium management

by Mitchell Japp, MSc, PAg  
Provincial Specialist, Cereal Crops

Fusarium head blight (FHB) is sneaky. By the time it visibly appears, it is too late to do anything about it. But it should not be ignored.

Producers with a good crop rotation and a variety with genetic resistance have a good start to managing FHB. Fungicides are used for in-crop FHB management.

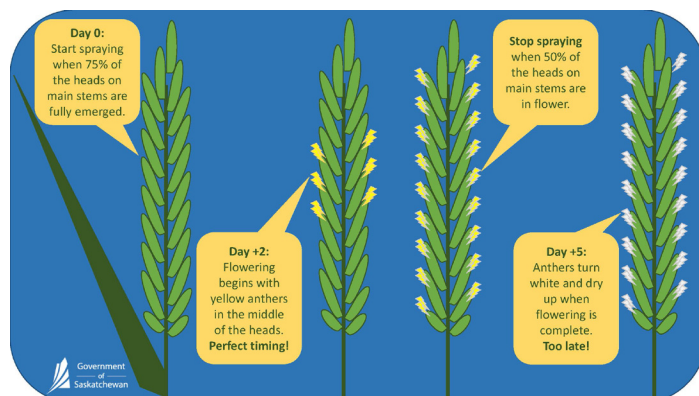
FHB is a mono-cyclic disease. Once the crop is infected, it is infected. No management prevents further infection. Symptoms do not appear until after infection. So, how should a producer decide to spray, and when?

FHB risk maps will once again be available on the Sask Wheat website starting in mid-June. The maps are based on a risk model that assesses the conditions that favour fusarium to determine the likelihood that infection may occur. Fusarium is favoured by warm, moist conditions; rain splash and wind can help move the spores into the upper canopy.

Weather is one factor, but crop staging is also important. Producers must know their heading date to use the risk maps. Wheat is most susceptible to fusarium when the florets are open, but infection can occur until the soft dough stage. The risk maps are updated daily, so producers need to follow the maps that correspond to their heading date.

The risk maps are not the only tool to assess risk. Producers should consider the history of fusarium in the area, the susceptible period of the crop, and the cost of fungicide versus savings. The Saskatchewan Ministry of Agriculture developed a risk assessment tool to help producers decide whether or not to spray for FHB.

Fungicide can be used for FHB suppression when 75 per cent of the heads on the main stems are fully emerged to when 50 per cent



of the heads on the main stems are in flower. Ideal timing is when there are yellow anthers in the middle of the head.

For more information:  
[www.saskatchewan.ca/business/agriculture-natural-resources-and-industry/agribusiness-farmers-and-ranchers/crops-and-irrigation/crop-protection/disease/fusarium-head-blight](http://www.saskatchewan.ca/business/agriculture-natural-resources-and-industry/agribusiness-farmers-and-ranchers/crops-and-irrigation/crop-protection/disease/fusarium-head-blight)

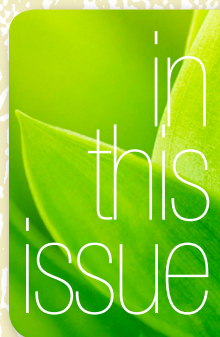
## Making the Grade 2016

Growers have expressed interest in understanding the grading system and degrading factors in Canada. The Canadian International Grains Institute (Cigi) will provide this workshop in cooperation with the Canadian Grain Commission (CGC) and Saskatchewan Wheat Development Commission. CGC staff will provide a grading demonstration for producers and discuss degrading factors. Cigi technical staff will demonstrate/explain impacts of degrading factors on end product quality and the quality requirements for Canadian wheat around the world.

**YORKTON**  
Date: July 20, 2016  
Time: 9:00 a.m. to 3:15 p.m.  
Venue: Gallagher Centre, National Bank Convention Place  
455 Broadway Street West  
Convention A and C

**SWIFT CURRENT**  
Date: July 22, 2016  
Time: 9:00 a.m. to 3:15 p.m.  
Venue: Kinetic Park, Palliser Pavilion  
1700 17 Ave SE  
Kinetic and Stampede Rooms

If you are interested in attending one of these workshops, please go to [www.saskwheatcommission.com](http://www.saskwheatcommission.com) for a registration link. Space is limited to 40 participants in each location.



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## CHAIR'S MESSAGE:

# Collaborating on varietal development and agronomy



I hope seeding has gone well for you.

As we wrap up seeding, I would like to take this opportunity to remind you to stay on top of diseases and pests by using resources such as the wheat midge map from the Saskatchewan Ministry of Agriculture and the fusarium head blight (FHB) risk map on the Sask Wheat website. The FHB risk map will be available starting in mid-June.

I also want to invite you to attend the Semi-Annual Meeting on June 15 at the Farm Progress Show in Regina. We will be featuring guest speakers Dean Dias from the Canadian International Grains Institute and Clark Brenzil from the Saskatchewan Ministry of Agriculture. This is also an opportunity to see your farmer checkoff dollars at work, to get to know your Sask Wheat Board of Directors, and to ask questions you have about our research program and advocacy efforts.

Wheat research in Canada has received a great deal of attention lately, with the number of projects receiving some scrutiny. The research funders, such as farmer-funded groups like the provincial wheat development commissions, the Western Grains Research Foundation (WGRF), and the Canadian Field Crop Research Alliance (CFCRA), have made it a priority to coordinate and fund research together. This includes working together on initiatives through the Canadian Wheat Alliance and the Canadian Triticum Applied Genomics (CTAG2) project involving advances in mapping the wheat genome.

Sask Wheat and the other provincial commissions have been active in seeking partnerships with both public and private entities to allow for greater producer involvement in research and variety development. Sask Wheat has entered into a partnership with SeCan and the University of Saskatchewan's Crop Development Centre (CDC) to develop the CDC durum breeding program. There is more about this project on page five.

Wheat research is complex and there are a large number of issues that wheat growers have to deal with. Fusarium is a particularly difficult pathogen that continues to cause significant quality problems and there are millions of research and development dollars devoted to it around the world.

We are making headway in creating fusarium resistance, with Cardale and other CWRS varieties having moderate resistance and with full resistance in AAC Tenacious VB, a CPS red variety. We are also making significant progress in the development of varieties with rust, sawfly and wheat midge resistance. Midge tolerant wheat has been a tremendous success and an excellent example of the research and breeding community working together through WGRF.

The need for more agronomic research is also an area of focus and is an important part of our funding priorities.

Sask Wheat is a part of the Western Canada Agronomic Research Capacity Initiative, which is being led by the WGRF to address the declining agronomy research capacity in Western Canada. This initiative is focusing on both human resources and equipment and infrastructure needs.

We're confident that research projects in agronomy and cropping systems, as well as more research in post-production, will increase with this collaborative effort. Gaps have been identified in these areas and Sask Wheat and our partners are working collectively to address these issues and support projects that come forward.

It is worth noting that three of the four graduate students who have received Sask Wheat scholarships in 2016 have an agronomic focus to their research. Sask Wheat is investing \$100,000 per year in graduate scholarships for University of Saskatchewan students,

(continued on page 4)



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## GENERAL MANAGER'S REPORT:

# Investments in wheat research – an evolving process



Since Sask Wheat was established in 2013, the mechanisms for Sask Wheat to participate in and shape the research direction for wheat have been put into place.

It became very apparent early in the mandate of the elected board that the economic competitiveness of wheat for farmers was the primary consideration – higher relative profitability per acre for wheat! This means development of

varieties with significantly higher yields and improved disease and pest resistance.

It also implies a focus on new and improved agronomics for wheat production, trying to give varieties the best chance for success in the field, and post-harvest management of production to preserve quality and protect against yield losses. These aims are all to be addressed while keeping an eye on the end-use quality attributes of wheat that we aim to sell on the international marketplace.

These goals are very consistent with the G-20 International Wheat Initiative Strategic Research Agenda: [www.wheatinitiative.org/strategy-documents/strategic-research-agenda](http://www.wheatinitiative.org/strategy-documents/strategic-research-agenda). The Canadian wheat research sector is very linked in with this international effort and some of our key Western Canadian wheat researchers helped draft the strategy.

Sask Wheat has now been through two complete cycles for research proposal intakes. We work very closely with the Agricultural Development Fund (ADF) of the Saskatchewan Ministry of Agriculture and all potential co-funders to review the wheat and agronomic research proposals submitted centrally

to ADF. These proposals are reviewed internally by our Research Committee with the help of external expert input to determine the potential benefit to Saskatchewan wheat producers. If there is joint interest in research efforts, the co-funders, such as the other wheat commissions, the WGRF, and others discuss how to make the research happen. Recommendations are then brought to the Board of Directors of Sask Wheat for consideration.

This past year allowed Sask Wheat many opportunities to participate in national research programs, such as those through Genome Canada and the Canadian Wheat Alliance. In addition, Sask Wheat has been able to focus on Saskatchewan specific research efforts, in particular, the durum wheat program at the CDC, working with SeCan and the CDC to ensure a robust and aggressive research program over the next 10 years to address yield, quality and disease resistance issues through varietal development.

At the current time, Sask Wheat has approved funding totalling \$5.7 million for 33 projects that will generate \$41.6 million of research effort. More research commitments have been made and we will report on these and post them on our website when contracts are finalized.

The path forward on our research efforts will involve more collaboration and cooperation across provincial boundaries and nationally. The eight wheat and barley commissions in Western Canada are still exploring how best to coordinate and collaborate on strategic research efforts. The level of cooperation among and between commissions has been exceptional and we believe we can accomplish more as we mature and develop additional mechanisms for communication and research investment. This will be a focus of our efforts over the coming year.

## Sask Wheat graduate scholarship recipients announced

The Saskatchewan Wheat Development Commission (Sask Wheat) and the University of Saskatchewan's College of Agriculture and Bioresources are proud to announce the first recipients of the Saskatchewan Wheat Development Commission Graduate Scholarships.

The four recipients are full-time graduate students in the Department of Plant Sciences at the University of Saskatchewan. The recipients were selected based on academic merit as well as the projected impact of their studies on the wheat industry. Their names, thesis topics and supervisors are:

- **Gursahib Singh (M.Sc.)** – Improved fusarium head blight management in durum wheat (Dr. Randy Kutcher)
- **Tatiana Vera-Ardila (M.Sc.)** – Timing of fungicide application and inheritance of resistance to stripe rust in spring wheat (Dr. Randy Kutcher)
- **Gurcharn Brar (Ph.D.)** – Integrating host resistance, bio-molecular imaging and fungicide tools for management of fusarium head blight in durum and spring wheat (Drs. Pierre Hucl and Randy Kutcher)

- **Xue Lin (Ph.D.)** – Genomic analysis and mapping of the wheat genome (Dr. Curtis Pozniak)

"We're excited to provide financial support to these students and we are pleased to see the topics of their research," says Bill Gehl, Sask Wheat Chair. "We believe it's important to not only provide more money to research wheat diseases such as fusarium head blight and stripe rust, but also to build the capacity of our key research institutions, especially in the area of agronomic research."

Sask Wheat is committed to providing \$100,000 annually towards graduate scholarships to the College of Agriculture and Bioresources to meet changing needs within the agricultural industry. Sask Wheat's funding will support and sustain profitable wheat production through improved agronomics and new breeding tools. Sask Wheat is also providing \$10,000 annually towards undergraduate scholarships for the College of Agriculture and Bioresources.

# Wheat genome sequencing soon to be **released** across the globe

by Dallas Carpenter

Wheat accounts for over 20 per cent of all calories consumed in the world. The rising global population is demanding a sustainable and secure source of wheat, pressuring major wheat exporting countries like Canada to be at the cutting edge of varietal development.

Variety development across the world took a major leap forward in early 2016 when, at the annual Plant and Animal Genome Conference, it was announced that a Canadian-led team had sequenced 90 per cent of the highly-complex genome for bread wheat.

This breakthrough in genomic sequencing was accomplished, in part, through the Canadian Triticum Applied Genomics (CTAG2) project, which is co-led by plant scientist Curtis Pozniak of the University of Saskatchewan's Crop Development Centre.

Wheat researchers across the globe will now have a resource that will allow them to better identify genes responsible for adaptation, pest resistance, stress response and improved yield.

"Think of the sequence as the blueprint," explains Pozniak. "So now we can see the genes and we can see the genomic structure. What we need to be able to do now is associate each of those genes with phenotypes that are important in the field. That's really where the hard work begins."

With the blueprint in place years earlier than anticipated, researchers and breeders will begin work linking genotype and phenotype. Phenotype is the observable characteristics of the plant that result from the interaction between the genotype and the environment.

Pozniak is quick to emphasize that while sequencing the genome strengthens the foundation of varietal development and provides an important tool for breeders to improve selection efficiency, it is only the first step in a complex process.

"What we're looking at with any kind of genomic resource is being able to improve the efficiency of selection in the long run," he says. "If you can identify and understand the package of genes that result in a phenotype that has economic value, then it is quite easy to track in the breeding program as we're trying to improve other traits such as yield."

Since the announcement in January, Pozniak and his team of researchers have been working diligently to ensure the entire genome of the test variety, *Chinese Spring*, is mapped completely and accurately before taking the next step.

## **Chair's Message** from page 2

which will increase the research capacity of the U of S and Western Canada. There is more information about this on our website.

I hope to see many of you at our Semi-Annual Meeting on June 15 at the Farm Progress Show. Please contact me or the Sask Wheat office if you have any questions or concerns leading up to the meeting.



Curtis Pozniak

image courtesy University of Saskatchewan College of Agriculture and Bioresources

"The intent is to release the sequence into the public domain for breeders and researchers to use however they see fit," he says. "That will happen in the next few weeks and months as we finish up some quality control on the data. We don't want to release any data that could lead anyone astray. So we're checking and double-checking that the data is fine and then we will make the data available on a website for anyone to download."

The CTAG2 project, which includes researchers from the University of Regina, the University of Guelph, the National Research Council and Agriculture and Agri-Food Canada, received funding from the Saskatchewan Wheat Development Commission, the Alberta Wheat Commission, the Manitoba Wheat and Barley Growers Association, and the Western Grains Research Foundation, along with several other organizations. It is part of a larger collaboration involving researchers in Canada and from across the globe, who have been collaborating as part of the International Wheat Genome Sequencing Consortium.

Pozniak says the excitement in the international crop research community about the release of the wheat sequence is unmistakable. Wheat researchers are now ready to put this tool to use in breeding varieties that will meet the needs of farmers and end users throughout the world.

"Completing the sequencing really allows us the opportunity to concentrate on how we can use the sequence, especially the biology and breeding behind it. Most of the effort was around generating the sequence and now we're at the stage where we can actually take it to the field and do biological research on wheat in a way that we haven't been able to do before."

## **Did you know?**

The wheat genome is over five times the size of the human genome, with 17 billion base pairs of genes.



# Durum variety development receives major investment

by Dallas Carpenter

When one thinks of the major crops grown in Saskatchewan, spring wheat, canola, and pulses like peas and lentils are typically what come to mind.

While not rivaling spring wheat and canola, durum continues to hold its own as a major crop in the province, with growers striving to meet the rising demand for pasta products throughout the world.

To assist growers in meeting export demand and maintaining a healthy profit from their durum crop, Sask Wheat along with SeCan have entered into a partnership that will see the two organizations invest up to \$3.5 million over ten years in the University of Saskatchewan's Crop Development Centre (CDC) Durum Breeding Program.

This funding will give the CDC a boost in their development of new durum varieties. Durum is unique from spring wheat and poses production and end-use quality challenges. The breeding of durum varieties with resistance to common pests and diseases, notably fusarium head blight (FHB), has been slow because of the genetic complexity of the trait.

Through its world-leading program for Canada Western Amber Durum (CWAD), the CDC will use the investment from Sask Wheat and SeCan to further enhance previous research and development activities. According to CDC Managing Director Kofi Agblor, this new funding in durum breeding is one that will soon pay dividends to producers and benefit end users.

"Developing new varieties is a long-term expensive endeavour that requires investment from several sources," he says. "We are now on the cusp of developing new varieties of durum that will provide value to both our growers and their customers. This investment by producers will build on the tremendous work already done and should expedite the release of new cultivars."

Saskatchewan is a world leader in the production of durum. Of the 5.75 million acres grown in Canada in 2015, it is

estimated that over 85 per-cent of the durum crop came from Saskatchewan.

To keep durum competitive with other crops, it is not only critical to address the quality issues presented by FHB, wheat midge and sawfly, but also to improve yields. While much of the focus of the CDC's durum program is devoted to finding resistance to FHB and pests, a key component of it will be devoted to improving yields.

"Obviously, we want to use these incremental funds to develop our yield-testing capacity, particularly in the durum growing region and Regina Plains," says Curtis Pozniak, a professor with the University of Saskatchewan's College of Agriculture and Bioresources, and wheat breeder and geneticist with the CDC.

"This will support early evaluation and selection of materials for yield potential, standability, and time to maturity. These are all important factors that are already a priority in our breeding program, but with these incremental funds, we will do a better job of selecting for these earlier in the program."

The Sask Wheat and SeCan investment will also be used to improve the use of genomic-assisted breeding in the durum program. As Pozniak explains, the CDC is a leader in the application of genomic technologies to wheat breeding, which will benefit the efforts to develop new durum varieties.

"We plan to use some of these funds to increase our capacity for molecular marker analysis, in particular for disease resistance, as well as genes for the control of sawfly and wheat midge.

"We're confident that this investment will lead to higher-yielding cultivars and end-use quality factors that are important to our export markets."

The first of the new durum varieties, which will likely have improved pest tolerance, are expected to be released by the CDC in 2017.

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## Sask Wheat needs to hear from producers about the WCD transition

Currently, the Western Canadian Deduction (WCD) check-off for wheat is \$0.48 per tonne – \$0.30 goes to the Western Grains Research Foundation (WGRF) to support research efforts while \$0.15 goes to the Canadian International Grains Institute (Cigi) for market development. The remaining \$0.03 is used for administrative expenses. The Sask Wheat check off is \$0.52 per tonne; so collectively wheat growers pay an even \$1.00 per tonne towards these efforts.

The WCD is scheduled to sunset on July 31, 2017. In order to continue the work it currently supports, a decision has to be made to continue to collect this check-off.

Sask Wheat and the other provincial wheat and barley commissions are preparing to assume the responsibilities supported by the

WCD and to move to a single check-off to increase efficiencies and effectiveness with no increase in overall deductions.

The transition to a single check-off will require an industry discussion regarding how each provincial wheat commission will assume the responsibility and capacity to fund the important ongoing work in research and market development.

After consulting with producers, Sask Wheat will present a resolution to producers at the 2017 AGM for a single, unified wheat levy of no more than \$1.00 per tonne in Saskatchewan.

Please go to our website, [saskwheatcommission.com](http://saskwheatcommission.com), to give us your opinion about the WCD transition on our WCD feedback form. You may also email us at [info@saskwheatcommission.com](mailto:info@saskwheatcommission.com)

# Be ready for wheat midge **this growing season**

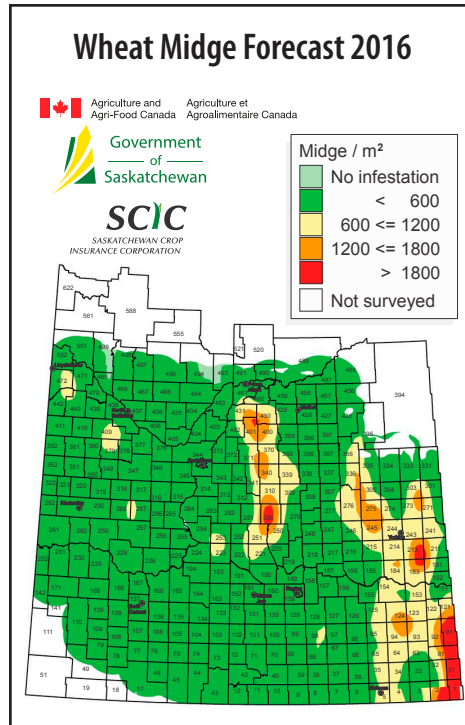
by Scott Hartley, P.Ag.

Provincial Specialist - Insect and Vertebrate Pests, Saskatchewan Ministry of Agriculture

The 2016 Wheat Midge Forecast map indicates high risk for wheat midge infestations, primarily in eastern Saskatchewan. Most notably in the southeast, an area of high risk extends north, into the east central region of the province. Pockets of moderate to high risk were also identified in the area extending from south of Prince Albert and north of Rural Municipalities 250 and 251.

In Saskatchewan, dry conditions in the spring and early summer in 2015 in many areas affected wheat midge emergence. Dry conditions and late emergence of adult wheat midge may not coincide with susceptible stages of wheat crops. Many of the drier areas in 2015 indicate lower risk from this pest for 2016. If precipitation in an area is less than 25 mm prior to the end of May, wheat midge development will be affected again resulting in delayed emergence of the insect.

Areas of infestation indicating over 600 wheat midge per square metre on the



wheat midge map may still result in significant damage and yield loss, especially if environmental conditions are favourable for wheat midge. In areas indicating levels greater than 1,200 midge per square metre, producers planning to grow conventional spring wheat as part of their crop rotation are advised to include the cost of insecticide application in their 2016 budget.

To determine midge populations and, if necessary, timing of an insecticide application, growers are urged to monitor conventional wheat fields during the susceptible period (when the wheat head becomes visible as the boot splits until mid-flowering (anthesis)). Regular field scouting on multiple nights in succession is important to understand wheat midge population changes in a particular field. Temperature and wind conditions significantly influence egg-laying by the adult female midge. High temperatures and high winds tend to reduce activity of egg-laying female midge.

## Grain entrapment is on the rise – **keep yourself and others safe**

by Miranda Dziaduck MPH, Canadian Centre for Health and Safety in Agriculture

In comparison to historical data, recent data show an increasing trend in grain asphyxiation. In 2015, six entrapment fatalities and at least two rescues were reported in Canada. Research has found that grain entrapment is the leading cause of death in connection with grain storage and that more than half of grain entrapments are fatal. Grain safety is paramount to prevent future grain entrapment incidents.

### Types of Grain Entrapment

There are four different types of grain entrapment: loading grain, unloading grain, collapse of grain bridge and avalanche of grain wall.

**Unloading grain** moves in a downward and inward funnel motion that causes a suction-like action. The pull of the grain can cause individuals to become covered to their knees within three to four seconds and completely engulfed within 20 seconds.



**Loading grain** can also pose a serious risk. For instance, a combine can empty its tank (210 bushels) in less than two minutes. This flow rate could cover a person in seconds.

A grain bridge is a hardened layer of spoiled grain with a hollow pocket or cavity beneath. An individual may enter the grain storage area to break up the crust, adding weight that causes the crust to



cave in. The **collapse of the grain bridge** may result in the victim falling into the hollow area below and being buried by grain.

Spoiled grain can also stick to the sides of a bin, creating a wall of grain, which is exposed by unloading. An individual may enter the bin to break up the wall to remove the rest of the grain, leading to an **avalanche of the grain wall** that buries the individual.



### Grain Handling Safety

The safest approach is to not enter grain storage or grain transport vehicles when loading or unloading grain. If it is absolutely necessary to enter a grain bin or grain truck, make sure to take safety precautions:

- Do not work alone;
- Develop a plan in case of emergency;
- Always make sure that the grain handling equipment is shut down and locked out before entering;
- Use a shovel or pole to break up grain crust from outside grain transport vehicle or bin; and;
- Wear personal protective equipment.

For more information:

Visit the Agricultural Health and Safety Network website at <http://aghealth.usask.ca>



# State of weed resistance in **Western Canada and future outlook**

by Hugh J Beckie, PAg

Agriculture and Agri-Food Canada (AAFC), Saskatoon, Saskatchewan

Canada ranks third behind the U.S. and Australia in the number of herbicide-resistant (HR) weed biotypes. Since 1975 in Canada (when Hoe-Grass was introduced), there have been on average 1.5 new biotypes per year. The total number of biotypes in Canada is over 60, equally split between Western and Eastern Canada. There are 23, 20, and 22 HR biotypes in Alberta, Saskatchewan, and Manitoba, respectively.

The 2014/2015 Saskatchewan weed survey (2,242 fields) ranked the top 10 most abundant weeds:

- 10) dandelion;
- 9) narrow-leaved hawk's beard;
- 8) lamb's-quarters;
- 7) cleavers;
- 6) spiny annual sow-thistle;
- 5) Canada thistle;
- 4) volunteer canola;
- 3) wild buckwheat;
- 2) wild oat; and
- 1) green foxtail.

All of the annual weeds have a number of HR biotypes across the prairies. The top 3 weeds have remained in the top 3 for nearly 50 years, despite all the new herbicides introduced in the 1970s and 1980s (Gp 1 and Gp 2s). The three weeds that have moved up the ranking the most since the last survey in 2003 are spiny annual sow-thistle (34th to 6th place), narrow-leaved hawk's beard (20th to 9th place), and cleavers (14th to 7th place).

AAFC has conducted HR weed surveys since the mid-1990s. Since the baseline surveys (2001-2003) where 10.9 M acres were found infested with HR weed biotypes, we now estimate that over 50% of cultivated land on the prairies (38 M acres) has an HR weed. This will need to be verified with a new round of HR weed surveys: Saskatchewan in 2014/15, Manitoba in 2016, and Alberta in 2017.

The estimated cost to producers ranges from \$1.1 to 1.5 billion dollars annually in terms of increased herbicide use and decreased yield and quality. About 75% of cases (2007-09 surveys) are wild oat (Gps 1, 2, and/or 8), which is our most economically important weed. There are also a number of Group 2 broadleaves, such as cleavers, wild mustard, and shepherd's purse.

In Canada, there are four glyphosate-resistant (GR) weeds. In Western Canada, kochia is the only GR weed confirmed to date. We currently estimate over 100 cases across the prairies, usually associated with chem-fallow, but also found in wheat, canola, soybean, and lentil fields. The last prairie surveys of GR kochia were 2012-2013. We plan to conduct the next round of GR kochia surveys beginning in Alberta in 2017, Manitoba in 2018, and

Saskatchewan in 2019. In 2015, we confirmed another HR weed – Gp 2 + 4 (dicamba, fluroxypyr)-resistant kochia in a wheat field in southern Saskatchewan (see photo). Soon, we can expect kochia with 3-way resistance: Gps 2+4+9.

So what do I recommend to producers to delay or manage resistance in their weed populations? My top 10 best management practices (BMPs) are:

- 10) sound record-keeping, including keeping track of weed populations in your fields over time using GPS;
- 9) strategic tillage;
- 8) field and site-specific weed management (e.g., patch management),
- 7) weed sanitation – preventing weed immigration and dispersal within fields;
- 6) in-crop wheat-selective vs. non-selective herbicide rotation – to manage metabolic resistance in grass weeds selected by wheat-selective herbicides (so if a herbicide is registered in wheat, it can select for metabolic resistance in wild oats that uses the same enzyme system to break down herbicides);
- 5) herbicide group rotation – avoid back-to-back in-crop Gp 1 or 2 products;
- 4) herbicide mixtures/sequences – pre, in-crop, post-harvest;
- 3) pre- and post-herbicide scouting (I am thinking of drones!),
- 2) competitive crops and practices that promote competitiveness – fast ground cover; and
- 1) crop rotation diversity.





# Sask Wheat Semi-Annual Meeting

All Saskatchewan wheat producers are invited to attend Sask Wheat's 2016 Semi-Annual Meeting:

- **8:00 AM Wednesday June 15, 2016** (during Farm Progress Show)  
Salon A, Queensbury Convention Centre, Evraz Place (1700 Elphinstone Street) Regina

All registered attendees will have access to:

- Levy payers' breakfast
- Free Farm Progress Show admission for the day
- Information and agronomy sessions
- Opportunities to interact with Sask Wheat staff and Board

Meeting agenda:

- **8:00-8:30 AM** – Breakfast
- **8:30-9:10 AM** – **Herbicide resistance, weed control strategies and what producers can expect this growing season**  
*Clark Brenzil P.Ag, Provincial Specialist Weed Control, Crops and Irrigation Branch, Saskatchewan Ministry of Agriculture*
- **9:10-9:30 AM** – **What does the Canadian International Grains Institute (Cigi) do for farmers?**  
*Dean Dias, Director, Value Chain Relations, Canadian International Grains Institute*
- **9:30-10:30 AM** – Sask Wheat updates & open forum discussion/networking  
*Bill Gehl, Board Chair & Harvey Brooks, General Manager*

**There is no cost to attend this event, but pre-registration is required.**

To register, please visit [saskwheatcommission.com](http://saskwheatcommission.com), phone 306-653-7932, or email [info@saskwheatcommission.com](mailto:info@saskwheatcommission.com)



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