Winter Looking Good For Winter Wheat

By Larry Durand – DUC Agrologist

Are you a typical winter cereal grower who often wonders in winter time, "What's going on down there?" Under that sometimes thick, sometimes thin, and sometimes nearly absent blanket of snow is where your winter cereal lies facing the weather elements. Not knowing how well it will survive the winter can result in anxiety among some producers.

Typically, a reasonably well-established winter wheat crop can withstand temperatures as low as -20 to -25 degrees C in the soil at crown depth. However, compromised conditions may cause winter damage at warmer temperatures. Differences in variety selection and management practices such as seeding depth, seeding date and fertility management can affect how well winter wheat plants will withstand the cold. Adequate stubble will encourage snow trapping and result in warmer soil temperatures, which can help compensate for instances when management practices have been compromised.

As in so many instances, technology and the Internet make checking soil temperatures easy.

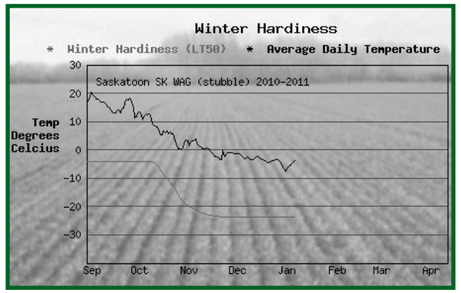
For a number of years, the University of Saskatchewan has put out a series of soil temperature monitoring probes, which measure soil temperature at winter wheat crown depth. This has been incorporated into a survival model, developed by Dr. Brian Fowler and Ken Greer of the U of S, which predicts whether a winter cereal crop will winterkill and, if so, how badly the winter damage will be.

Producers can use the U of S's "Management Impact Calculator" to assess how their variety choice and management practices will affect the survivability of their crop. The Impact Calculator screen shows a chart with a winter wheat crop background. The black line represents the soil temperature and the red line represents the temperature at which winter damage is expected to occur. If the black line dips below the red line, winter damage is predicted.

Over the last couple of years, newer technology and the work of a number of partners including the U of S, the Canadian Wheat Board, Western Ag Innovations and Ducks Unlimited Canada has resulted in an expanded number of locations of these probes and more reliable data. To access this, go to the Winter Wheat Production Manual website at www.usask.ca/agriculture/plantsci/winter_cereals/index.php and click on the area near the middle of the page, which reads "Click here for the Winter Survival Model."

Besides the U of S model, Manitoba producers can also access soil temperature data put out by Manitoba Agriculture, Food and Rural Initiatives (MAFRI). Similar to the U of S model, weather stations measure soil temperature, among other data, at various sites throughout Manitoba. This data is remotely uploaded onto the website for anyone to view. While this soil temperature information is not tied into a survival model, it still provides producers with a good sense of what may be occurring. This data can be found at http://tgs.gov.mb.ca/climate/CurrentConditions.aspx.

Thanks largely to improved seeding practices and direct-seeding equipment, winter damage to winter wheat is not near the issue it used to be. A quick review of all locations on both the U of S and MAFRI sites indicates that, so far this winter, the risk of winter injury is very low as soil temperatures are relatively warm.



Soil temperature (black line) and LT-50 temperature (red line). If soil temperature line drops below the LT-50 temperature, winter kill may be expected.

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DUC and Bayer Invest in U of S Winter Wheat Research

Ducks Unlimited Canada (DUC) and Bayer CropScience (BCS) announced recently that they will be providing funding to Dr. Brian Fowler at the University of Saskatchewan for winter wheat research in the amount of $200,000 per year over the next three years. DUC and BCS presented this information at the Saskatchewan Winter Cereals Development Commission AGM during the opening day of Crop Production Week.

Photo Courtesy K. Reimer

(L-R): Rick Istead, Executive Director, Alberta Winter Wheat Producers Commission, Dr. Brian Fowler, Professor, Department of Plant Sciences, College of Agriculture and Bioresources, University of Saskatchewan, Jake Davidson, Executive Director, Winter Cereals Canada, Dale Hicks, Chairman, Saskatchewan Winter Cereals Development Commission, and Doug Martin, Director, Winter Cereals Manitoba.

Dr. Fowler stands with representatives of the prairie winter cereals commissions accepting a recognition award for his outstanding contributions to the winter wheat industry. Dr. Fowler's winter cereals breeding program at the U of S is getting $200,000 per year for the next three years from DUC and Bayer CropScience for winter wheat cold hardiness research.

"This important funding shows DU Canada's continued support in finding new and improved winter wheat varieties on the Prairies," said Paul Thoroughgood, Regional Agrologist for DUC. "We have a very good working relationship with Dr. Fowler and have been actively funding his winter wheat research since the early 90's. It isn't often that you get to work with someone who is recognized as a world leader in their field. Dr. Fowler's area of expertise is cold hardiness research."

Dr. Fowler's varieties have occupied the majority of winter wheat acres on the Prairies for more than 10 years. He is currently in the process of winding down his plant breeding program, shifting his energies to understanding winter hardiness in cereals; particularly wheat.

"Improving our understanding of how plants adapt to cold and which genes are responsible will help future plant breeders develop more winter hardy varieties," said Dr. Brian Fowler, Professor, Department of Plant Sciences, College of Agriculture and Bioresources, University of Saskatchewan. "Ducks Unlimited Canada has been a long-term supporter of winter wheat research at the University of Saskatchewan and without their ongoing support the program would have ceased to exist long ago. This latest funding made possible through their partnership with Bayer CropScience allows us to build on the successes of previous research."

"Through the Winter Cereals: Sustainability in Action partnership, Ducks Unlimited Canada and Bayer CropScience also support winter wheat variety development at the Agriculture and Agri-Food Canada Research Centre in Lethbridge and at various universities in the northern United States," said Paul Thiel, Vice-President Innovation and Public Affairs for BCS. "Investing in winter wheat is part of our efforts to make food production more sustainable in Prairie Canada."

When recommended management practices are employed, the risk of winter kill on the Canadian Prairies is not much different than primary winter wheat growing areas of the United

Continued on bottom of pg 2

Alberta Winter Wheat Commission Celebrates 20 Years

By Kent Erickson (Chairman) & Rick Istead (Executive Director) of the AWWPC

In 2010, the Alberta Winter Wheat Producers Commission (AWWPC) celebrated its 20th anniversary. Such milestones are always a time to reflect on the past, take stock of the present and prepare for the future.

In doing so, we found that despite its time-saving, environmental sustainability and yield benefits, winter wheat continues to struggle to gain a foothold with Alberta producers. The crop's acreage in the province dipped to 170,000 acres in 2010 from an all-time high of 270,000 acres in 2008.

Although winter wheat is one of the fastest growing crops in Alberta, overall annual acres planted is still well below the one million acres the AWWPC set as a target for 2015. While farmers will consider winter wheat's many benefits (including the environmental benefits of providing a valuable habitat for migratory waterfowl), their ultimate decision comes down to economics.

We're working with a number of other agricultural organizations across Western Canada to create simple, but effective marketing programs that promote and solidify the economic value of winter wheat.

Meanwhile, our organization remains committed to delivering value back to the community. In December, we were pleased to announce a donation of 795 tonnes of winter wheat to the Canadian Foodgrains Bank.

The Foodgrains Bank is a partnership of Canadian churches and church-based agencies working to end hunger in developing countries. It has distributed more than 1.1 million tonnes of food to people in 78 countries since it was founded in 1983.

This year's contribution of winter wheat, worth an estimated $170,000, was made possible by the AWWPC and *Winter Cereals: Sustainability in Action*, a partnership between Ducks Unlimited Canada and Bayer CropScience, which jointly provided seed for the project. Other project contributors included: Cheadle Lions Club, Parkland Agri Services, Premium Ag, Geofarm Solutions Inc., DynAgra, DuPont Canada, Tiger-Sul, Calgary Stampede, Keroa Farming Co, Target Airspray, Jackson Agri and Flying T.

In 2009, 320 acres of donated cropland near Cheadle (a community 30 km east of Calgary) were planted with the donated seed. The crop was harvested with 14 combines and a team of volunteers in late September 2010.

Despite an unusually cool and damp growing season resulting in a late harvest, the average yield was an impressive 91 bushels/acre. The average winter wheat yield in Alberta in 2010 was 55 bushels/acre.

Alberta producers are proud to grow winter wheat for the Canadian Foodgrains Bank. It's our way of giving back. As a region that can produce food in great abundance, we feel a commitment to share it with the communities that can't.

Alberta Winter Wheat Producers Commission

Continued from pg 1

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States. However, non-winter wheat growers have said that winter survival is one of their main reasons for not growing winter wheat. By investing in Dr. Fowler's cold tolerance research at the University of Saskatchewan, DUC and BCS are hopeful that in the near future growers will have a variety of choices that will address this concern. This will allow more growers to realize the sustainability benefits of including winter wheat in their cropping systems.

Winter wheat offers many benefits when included in cropping systems:

Increased profitability – winter wheat has consistently been one of the top net income producers in the recent past;

Increased yield – winter wheat out yields spring wheat by up to 40 per cent;

Spreading the workload – complete a portion of seeding in the fall and start harvest earlier;

Manage inclement weather – winter wheat tolerates many weather extremes such as excessive moisture or drought conditions and often avoids poor late season harvest weather; and

Habitat for wildlife – waterfowl that nest in winter wheat are 24 times more productive than those who nest in spring-sown cereals.

For more information on winter wheat and the *Winter Cereals: Sustainability in Action* partnership, please visit wintercereals.ca.

Coping With Adversity…Finding Opportunity?

By Janine Paly – DUC Agrologist

The 2010 growing season was not kind to producers in many areas of the Canadian Prairies. Some producers, such as those in the Peace Region of Alberta, battled an extreme lack of precipitation, while many other regions were plagued with excess moisture.

Heavy rains drenched some parts of the Prairies in late May and early June. The excessive rainfall caused millions of acres to go unseeded, and the seeded acres experienced flooding to the point where many fields had to be re-seeded or sprayed out. The crops that did survive the spring moisture were prone to yellowing due to nitrogen leaching and denitrification.

Charles and Maurice Wildeman farm near Lanigan, Saskatchewan, where they received almost 27 inches of rainfall. Charles is thankful that they seeded winter wheat in the fall of 2009, as each field they seeded to winter wheat meant one less field to worry about in the spring. Although some of the lower areas in his winter wheat fields drowned out, Charles was still able to harvest most of his winter wheat crop.

"Incorporating winter wheat into our cropping rotation is a risk management tool," Charles said. "It's frustrating for those wanting to seed in spring, but can't; however, it's rather rewarding for those who were able to get a winter wheat crop seeded in the fall."

Charles is concerned about what the spring of 2011 might bring, as many fields in his area were still saturated this fall. Snow is starting to accumulate and there is growing concern that this spring may bring more unseeded acres. Charles and Maurice are thankful that they were able to seed over 700 acres of winter wheat in the fall of 2010 so they will already have some crop in the ground come springtime.

On the other side of the spectrum, producers from Alberta's Peace River area experienced a second consecutive year of drought. Paul Schoorlemmer of Rycroft, Alberta said a number of areas received a spring shower, but then never saw much accumulation during the summer. Paul was lucky this year – the Rycroft area received some rain, but he estimates that some areas of the Peace only received a half inch of moisture all summer. Due to the lack of precipitation, crops in the Peace yielded below average. Nevertheless, Paul's winter wheat out-yielded his spring wheat by 10 per cent as the crop managed to utilize the early spring snowmelt and spotty precipitation that took place throughout the growing season.

There is no doubt that seeding during harvest in September poses some challenges, especially in a year where crop maturity has been delayed and harvest is late. Both Charles and Paul emphasize the need to plan ahead when it comes to seeding winter wheat.

"Plan ahead. Growing winter wheat is not a discussion you make the day before. You need to have priorities and be particular in field selection, ensuring there is enough stubble for snow catch," Paul stressed.

In the summer of 2010, the prediction was that winter wheat acres could exceed record levels due to unseeded acres across the Prairies. As the summer progressed into fall, many of those unseeded acres were still saturated and seeding was nearly impossible. Despite the late harvest and wet conditions in the fall of 2010, producers across the Prairies took every opportunity they could to get their winter wheat into the ground. Statistics Canada estimated that 695,000 acres of winter wheat were seeded collectively in Alberta, Saskatchewan and Manitoba this past fall.

Although this is only a small increase over last year's acres, it is significant as many of these acres belong to first-time growers, proving there is a strong interest in growing winter wheat. And in the face of adversity, producers across the Prairies are recognizing the importance of this economically-beneficial crop.

For more winter wheat information, visit www.wintercereals.ca.

Photo courtesy of L. Durand

Charles Wildeman of Lanigan, SK tells other farmers of the benefits of winter wheat on their farm at a field tour.

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