



Agri-News

September 15, 2008

The Effect of Rain and Frost on Crops

With recent wet weather and early frost in some areas of the province, producers are asking how this weather might affect grain quality.

“Usually, August and into September are some of the driest periods of the year in Alberta, which is important for harvest of annual crops,” says Dr. Ross McKenzie, agronomy research scientist with Alberta Agriculture and Rural Development, Lethbridge. “Wet weather, and especially extended damp weather, is not something that producers often have to deal with. Minor damp weather has minimal affect on cereal seed quality; however, if the damp weather continues, producers will begin to see some minor effects on seed, starting with a bleaching of the seed coat. This bleaching will affect seed coat colour and may result in some downgrading of seed grade. This minor bleaching doesn’t affect the quality of the seed, but does affect the appearance.”

If prolonged damp weather is experienced, there can be significant bleaching and weathering of the seed coat which will continue to further downgrade the grain. Prolonged damp weather at this time of year can also result in fungal growth and mildew damage, causing deterioration of the seed.

“The major concern with prolonged damp weather is the possibility for the seed to start sprouting,” says McKenzie. “If there is enough moisture within the seed to initiate germination, it activates the enzymes in the seed which then starts to release sugars from the starch and amino acids from the proteins. Sprouting leads to significant downgrading of the grain. Instead of having a top quality hard red spring wheat or durum, the crop could be downgraded to feed quality. In the case of malting barley, sprouting basically eliminates the grain from being suited for malting quality.”

Effect of rain on crops at harvest:

- Minor damp weather has minimal effect on seed quality

Continued damp weather:

- can result in some minor to significant bleaching of the seed coat of cereal crops
- this bleaching affects seed coat colour and may result in downgrading, but generally does not affect seed quality

Cont'd on page 2

This Week

<i>The Effect of Rain and Frost on Crops</i>	1
<i>Department's Strategic Refocus to Revitalize Alberta's Agriculture Industry</i>	2
<i>Sod Turning Event Marks the Beginning of a New Greenhouse Facility</i>	3
<i>Participate in the new Alberta Livestock and Meat Strategy</i>	4
<i>Management Forums for Agriculture Industry</i>	4
<i>Agri-News Briefs</i>	5

- Prolonged damp weather:
 - results in significant bleaching and weathering of the seed coat occurs which will downgrade grain quality
 - possible fungal growth will result in mildew damage
 - moisture may activate germination within the seed
- Pre-harvest sprouting of grain:
 - initiation of germination – activation of enzymes within the seed results in releasing sugars from starch and amino acids from protein
 - activation of enzymes changes conditions within the seed resulting in degrading of starch and, therefore, quality
 - is a very serious concern for hard red spring wheat for bread, durum wheat for pasta and barley for malt

“The early frost that was experienced in southern Alberta at the beginning of September was not severe,” says McKenzie.

“Minor frost does not really affect seed quality as long as the cereal grain is fully filled and the moisture content is at the 20 per cent range or less. At this stage, there should be no negative effect at all on the grain. There might be some frost injury on the bran (seed coat) if temperatures get colder or are prolonged.

“If the cereal grain moisture content is at the 25 to 30 per cent or higher, it may prevent the seed from germinating in the future, which would mean that the seed cannot be used for seeding next year. In this case, producers would need to have germination testing done on the seed to ensure that it hasn’t been damaged if it is to be used for seed next year.”

Fortunately, Alberta is past the late August window where an early frost can significantly damage most crops. When cereal grains are still filling, significant frost terminates grain fill, which means that the kernels will no longer fill, do not plump up but instead become shrunken. This affects yield, bushel weight and seed quality as starch and protein will be diminished.

“In terms of canola, if there is a prolonged frost of -3° C and the seed moisture content is still at 50 per cent, the frost will kill the seed,” says McKenzie. “Fortunately, most growers are beyond that stage. When moisture content in canola crops is at 35 per cent or less, frost will not kill the seed. A frost at this stage will cause only minor problems. The most significant problem is that frost can deactivate the enzymes that clear the green chlorophyll colour in the seed, which might be a concern for some growers.”

The effect of frost on crops at harvest depends on the severity (how cold it got overnight) and duration (how many hours) of the frost.

- For cereal crops - minor frost has minimal effect on seed quality:
 - if grain has fully filled and grain moisture content is less than 18 to 20 per cent - grain injury is minimal
 - some frost injury may be visible on the bran (seed coat)
 - if grain moisture that is greater than 25 to 30 per cent and significant frost occurs, the grain may appear normal but the seed may not germinate – so grain shouldn’t be used for seed for next year unless a germination test is done!
- If the grain is still filling, a significant frost will terminate grain filling – kernels will be shrunken, and yield and quality will be affected
- For canola:
 - -3° C will kill seeds at 50 per cent moisture content
 - at -3° C at 35 per cent moisture or less, canola may escape any seed injury
 - frost deactivates the enzymes in canola seed which clear the green chlorophyll colour in seed

For further details and for answers to questions, producers are advised to contact Alberta’s Ag-Info Centre, toll-free in the province at 310-FARM (3276).

*Contact: Dr. Ross McKenzie
403-381-5842*

Department’s strategic refocus to revitalize Alberta’s agriculture industry

The provincial department of Agriculture and Rural Development has strategically restructured its program and service delivery to better focus on key priorities that serve Albertans and the agriculture industry, and the changes will improve services for producers/

“When I announced the Alberta Livestock and Meat Strategy earlier this summer, I also asked for an internal department review to help the livestock industry with its transformation and revitalization,” said George Groeneveld, Minister of Agriculture and Rural Development. “This reorganization is necessary to support a successful transition of the livestock industry.”

Realignment within the department brings a renewed focus to services and expertise that support agriculture and food businesses and producers across the province. Thirteen hub offices in Fairview, Grande Prairie, Barrhead, Stony Plain,

Cont’d on page 3

Leduc, Camrose, Vermilion, Stettler, Red Deer, Olds, Airdrie, Brooks and Lethbridge, will deliver enhanced services with a focus on the business of agriculture. Work with the Agriculture Service Boards and respective municipalities will be enhanced through key contact staff members. The Irrigation and Farm Water Division will double the current number of farm water specialists. Thirty additional age verification staff will assist producers in age verifying their 2008 calf crop. Farm safety programs will be enhanced and department specialists will continue to be available to speak and deliver information to community groups.

“We are improving our support to all stakeholders, not only those in the livestock industry,” said Groeneveld. “Alberta’s agriculture industry needs to be able to access the depth of specialist knowledge, research and business development expertise that resides within the department. Providing supports to our agriculture partners across all components of the agriculture and food industry allows us to sustain the natural resource base of the industry and encourage the development of rural communities.”

Contact: *Alberta Ag Media Line*
780-422-1005

To call toll free within Alberta dial 310-0000.

Sod Turning Event Marks the Beginning of a New Greenhouse Facility

On September 3, 2008, Minister of Alberta Agriculture and Rural Development, George Groeneveld turned the sod to begin construction on a new greenhouse technology facility in Brooks.

“The \$16.5 million greenhouse research facility replaces the greenhouse previously on-site which was built in 1970,” says Henry Najda, branch head, food crops, Alberta Agriculture and Rural Development’s Crop Diversification Centre South, Brooks. “The age of the former greenhouse and the expanded needs of the greenhouse industry made it necessary to build a new, state-of-the-art facility. This new, very modern and leading-edge facility is a hybrid design of all of the best technology that is being used world-wide.”

The new facility has two parts:

- **a pre-commercial greenhouse** (about an acre in size) – will be an exact example of what commercial greenhouse growers are using. Experiments carried out in this part of the facility will be directly applicable to growers. Work there will deal with new technologies such as coverings, energy efficient practices, light emitting diode technology (LED), substrates, plant monitoring systems, and ways of computerizing greenhouse operations

- **a section of 10 small research greenhouses** – these smaller, high-end greenhouses will facilitate specialized experimental projects that will address industry concerns and will facilitate some of the field crop research conducted at the Centre

“This facility will certainly contribute to the success of Alberta’s greenhouse industry as we research the newest technologies and test them under Alberta conditions,” says Najda. “The project has been over two years in the design development and planning stage. In that time, the design team evaluated all of the factors that needed to be included. Just last year, Dr. Nick Savadov and Dr. Mohyuddin Mirza, two of Alberta’s greenhouse research scientists, went to Holland to attend the largest greenhouse show in the world. They paid particular attention to design idea and concepts, and many of those ideas have been incorporated into the design development of this structure.

“As well as taking the time to research the latest technology, Alberta’s greenhouse specialists have consulted with provincial commercial growers. During the planning phase of this project, all those involved have been taking care to make sure that the facility is practical and that it will meet growers’ needs now and in the future.”

The new facility is scheduled for completion in the fall of 2009. The industry has shown enthusiastic support for this new facility. The Crop Diversification Centre South has, for years, worked closely with members of the greenhouse industry, collaborating with Alberta greenhouse growers to keep the province up-to-date with the global industry.

The centre has often collaborated with many different factions of the industry in-province, throughout Canada and internationally on crop development and testing of substrates.

“This new expanded facility will, no doubt, enhance Alberta’s ability to attract large research projects and cooperative greenhouse projects,” says Najda.

Contact: *Henry Najda*
403-362-1346

NOTE: A photo is available online at
www.agriculture.alberta.ca/agrnews.

Photo: The sod turning which officially launched the new greenhouse facility project in Brooks (l to r) **John Knapp**, Deputy Minister of Alberta Agriculture and Rural Development, **Hon. George Groeneveld**, Minister of Alberta Agriculture and Rural Development, **Karen Kallen**, representing Monte Solberg, MP for Medicine Hat, **Arno Doerksen**, MLA Strathmore – Brooks, and **Robert Van Dam**, President, Alberta Greenhouse Growers Association

Participate in the new Alberta Livestock and Meat Strategy

Have your say.

Ask your questions.

Join us for breakfast.

The Government of Alberta has planned a series of free workshops throughout the province to give producers an overview of the new Alberta Livestock and Meat

Strategy. At these two hour sessions, you will be able to:

- Learn what you have to do to qualify for your AFRP II cheque in January 2009
- See how to age verify your herd and complete the new Premise Identification form
- Find out what the Alberta Livestock and Meat Agency is all about and how it affects you
- Ask questions about the Alberta Livestock and Meat Strategy

Attendance is free and includes breakfast (for those who pre-register). To register for the nearest workshop, or for more information, please call toll free at 1-800-387-6030.

Locations:

Peace River, September 22, 2008, 8:00 - 10:00 a.m.
Belle Petroleum Centre, 9403-94 Street

Bonnyville, September 24, 2008, 8:00 - 10:00 a.m.
Centennial Centre, VIP Suite, 4313-50 Ave

Red Deer, September 25, 2008, 8:00 - 10:00 a.m.
Red Deer Lodge, Wasaskoo A, 4311-49 Ave

Wainwright, September 26, 2008, 8:00 - 10:00 a.m.
Wainwright Golf and Country Club, 1505-2nd Street

Claresholm, September 29, 2008, 8:00 - 10:00 a.m.
The Bridges of Claresholm Golf Course, 349-39 Ave West

Brooks, September 30, 2008, 8:00 - 10:00 a.m.,
Heritage Inn, Banquet room D, 1239-2nd Street

Management Forums for Agriculture Industry

Companies in all sectors of the economy are facing extraordinary challenges. Increased costs, increased competition and a shortage of labour are major hurdles for industry in the province. There are many ways to respond to these challenges, such as productivity improvements that could include employment strategies, technology adoption and process improvements. In order to respond effectively, companies must create compelling customer value, world-class operating efficiency and a business environment that attracts and keeps the best people.

Alberta Agriculture and Rural Development and Alberta Finance and Enterprise, together with several other key sponsors are offering industry two one-day management forums. Donald Cooper, an international speaker on marketing, service and business excellence, will be delivering the forums.

The forums are being held in Edmonton on September 30, 2008, and in Calgary on October 2, 2008.

The forums are designed to help industry rethink, refocus and re-energize. Business owners and operators and management teams are encouraged to attend one of these forums to help Alberta businesses obtain better results and higher impact.

For more information or to register, visit the website www.manufacturinginnovation.ca or www.manufacturinginnovation.ca/_documents/AYB_invite.pdf.

*Contact: Kathy Bosse
New Venture Specialist*

*Alberta Agriculture and Rural Development
403-742-7543*

Agri-News Briefs

Tree Care and Pruning Workshops

Agriculture and Agri-Food Canada is offering two courses on arbour management. The courses, are of interest to anyone who cares for trees and, for certified arborists, each course is awarded 16 Certified Education Units. The courses are being held in Calgary at the University of Calgary.

- **High Angle Tree Removal** – October 7 and 8, 2008 – is intended to educate tree climbers and aerial lift operators about the legislation and safety requirements relating to working with a chainsaw off the ground. Tree spur climbing and positioning techniques are a significant part of this course. Basic aerial lift operation is reviewed for those participants who use and can bring their own aerial lift. Participants will be educated and trained on the physics and techniques of accurately notching, landing treetops, mismatch cutting and heavy side limb removal. Cost is \$595 plus GST.
- **Spar Pole Rigging** – October 9 and 10, 2008 – is designed to educate tree climbers and/or aerial lift operators in shock load, potential energy and reactive forces of rigging heavy wood where the rigging point is below the load. Basic training in specific techniques and tools for the rigging of wood, butt hitching, knot and hitch tying are major components of this course. Advantages and limitations of rope and hardware configurations are examined and analyzed in the course. This course involves hands on learning and coaching with instructors. Cost is \$595 plus GST.

A 10 per cent discount is being offered for attendees who register for both courses. Registration is required at least two weeks in advance for each program. Registration forms and a complete across Canada training schedule is available online at www.arborcanada.com, or call the Arbor Canada office toll-free at 1-877-268-8733.

Southern Alberta Conservation Association Conference

The 15th annual **Southern Ag Advantage Conference and Tradeshow**, organized by the Southern Alberta Conservation Association, is being held in Medicine Hat on December 2 and 3, 2008. Featured speaker at the conference is Dr. Wayne Lindwall with Agriculture and Agri-Food Canada (AAFC). Lindwall has worked in the study of soil degradation and erosion, problems that have become more acute as farm sizes continued to increase. An advocate of direct seeding, Lindwall will discuss conservation tillage in Canada in terms of soil quality, efficiency of water, nutrient use and reduced costs. The featured banquet speaker at the conference, Lanny MacDonald, former captain of Stanley Cup champion Calgary Flames, will speak on *History, Hockey and Leadership*. For further information on the conference, contact Chris Procyk, manager, Southern Alberta Conservation Association at 403-381-5118 or e-mail: chrisprocyk@hotmail.com.