Canadian Wheat Class Modernization

Prairie Grain Development Committee

Banff, February 26th, 2015

Canadian Grain Commission
Objective of proposal

Core principle:
- Canada’s wheat classes are a critical part of the grain quality assurance system
  - Proposal is an open, objective consultation with stakeholders

Rationale:
- changes made to the marketing of Canadian wheat in 2012
- increasing demands for more flexibility by stakeholders and customers

Objective: A modernized wheat class system which will:
- meet Canada’s wheat production and handling
- address processing and export needs
- Ensure a consistent quality profile in each class
Issues

- Gluten Strength:
  - In recent years, gluten strength in CWRS was below levels normally expected by end-use customers
  - Concerns continued from many end-use customers regarding the quality of CWRS class in 2013
  - Three varieties ~ 33% of the crop (2012) exhibited undesirable low gluten strength
- Potential for different classes of wheat to be marketed
- Seeded acres of unregistered wheat varieties (US) have increased but do not meet the current quality characteristics of Canadian wheat classes
Overview of Canada’s wheat class system

The CGC administers the *Canada Grain Act* and is mandated to:

- establish and maintain standards of quality for Canadian grains
- ensure dependable commodities are delivered to domestic and export markets

The wheat classes are established by the CGC:

- through consultation with end-users, breeders, marketers and other value chain stakeholders
- each class has its own set of performance parameters that are primarily based on functional characteristics to meet customers’ needs
Overview of Canada’s wheat class system

- The CGC links wheat classification to the CFIA variety registration process
- The CGC, via the Canada Grain Act, has the authority to designate a new or existing variety to a specific wheat class
- The CGC’s variety designation lists:
  - identify which varieties are eligible for each class
  - keep ineligible varieties from undermining quality of grain shipments - avoiding potential issues with end-users
  - reduce transaction costs and facilitate efficient trade & handling
  - are updated as new varieties are registered
Proposal to modernize wheat classes

The CGC is proposing the following:

- Resolve the quality parameters of the CWRS class
- Resolve the quality parameters of the CPSR class
- Develop a new Canada Western milling class
- Review the current western Canadian classes i.e.: CWES & CPSW
- Implement transition processes
- Add a Canada Eastern General Purpose (CEGP) class
Objective:

- protect CWRS quality and consistency and ensure new varieties meet requirements for milling performance, dough strength, protein quantity and end product quality.

Process:

- change current check varieties used by PRC-WRT to across all CWRS trials – Central, Western & Parkland
- propose Glenn, Teal, BW971 and Carberry as check varieties for the Central and Western Trials
- remove Unity and Lillian as quality checks
Resolve the quality parameters of the CWRS class

Process:

- candidates with gluten strength below Carberry will be removed from the CWRS class
- candidate cultivars with gluten strength above Glenn will be reassigned to another class
- recognize different Parkland growing conditions

<table>
<thead>
<tr>
<th>Gluten Strength</th>
<th>Western</th>
<th>Central</th>
<th>Park</th>
</tr>
</thead>
<tbody>
<tr>
<td>High maximum</td>
<td>Glenn</td>
<td>Glenn</td>
<td>Glenn</td>
</tr>
<tr>
<td>Teal</td>
<td>Teal</td>
<td>Teal</td>
<td>Teal</td>
</tr>
<tr>
<td>BW965</td>
<td>BW965</td>
<td>BW971</td>
<td>Splendor</td>
</tr>
<tr>
<td>BW971</td>
<td>BW971</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum level</td>
<td>Carberry</td>
<td>Carberry</td>
<td>PT772</td>
</tr>
</tbody>
</table>
Resolve the quality parameters of the CWRS class

**Process:**

- The CGC will:
  - continue to thoroughly examine the PRC’s quality data of cultivars recommended for registration
  - use this data for assigning class designation
  - review varieties presently classified as CWRS to ensure they still meet the end-use functionality
  - transition any existing varieties into a different class as appropriate

**Result:**

- Greater predictability and uniformity in the registration process and guarantee greater consistency within the CWRS class
Resolve the quality parameters of the CPSR class

Objective:
- Strengthen the quality and consistency of the CPSR class and ensure new varieties meet requirements for milling performance, dough strength, protein quantity and end product.

Process:
- **Replace** Glenn as check variety with **HY1902** (3rd year) as the high-end of gluten strength, good extensibility & correct protein
- Use AAC Foray (HY1610) as the medium-high gluten strength check and HY537 as the medium-low gluten check
- Maintain 5700PR as the minimum gluten strength check
- Remove lines below 5700PR gluten strength from the CPSR
Proposed new check varieties:

<table>
<thead>
<tr>
<th>Variety</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HY1902 Glenn</td>
<td>High RMax and good Ext. (not max. gluten strength)</td>
</tr>
<tr>
<td>AAC Foray</td>
<td>Moderate to high</td>
</tr>
<tr>
<td>HY537</td>
<td>Moderate to low</td>
</tr>
<tr>
<td>5700PR</td>
<td>Low end gluten strength</td>
</tr>
</tbody>
</table>

Process:
- The CGC will:
  - continue to thoroughly examine the quality data of cultivars recommended for registration
  - review all varieties classified as CPSR to ensure they still meet end-use functionality
  - transition any existing CPSR varieties below the benchmark into a different class as appropriate

Result:
- Class with lower protein than CWRS and higher gluten strength than the upper limit of the CWRS class, improve water absorption, maintain good extensibility
Develop a new Canada Western milling class

**Objective:**
- Develop a new western Canada milling wheat class to address changing customer requirements

**Process:**
- Implement Faller (a U.S. variety), Unity (current CWRS variety), and AC Foremost (current CPSR variety) as the initial check varieties

**Result:**
- Cultivars will have good milling quality and good water absorption, but lower gluten strength than both the CWRS and CPSR classes
- Protein content will span that of both CWRS and CPSR
Proposal’s New Milling Class

Current: Hard Red Spring Wheat Canada vs U.S.

Proposed: Hard Red Spring Wheat Canada vs U.S.

Gluten Strength

Strong

Weak

Low

High

Faller, Prosper

Protein Content

CPSR

CWES

CWRs

U.S. HRS

Harvest, Lillian, Unity, etc.

Gluten strength below Carberry

Glenn
Review the current western Canadian classes

Objective:

- Review the current wheat classes such as CWES and CPSW

Rationale:

- variety development and commercial production has diminished for CWES with no new lines
- the proposed CPSR quality model overlays the current CWES wheat class as:
  - fill the gap in higher gluten strength above CWRS
  - offers a lower protein content requirement
- variety development for CPSW has ceased and can be better served by CWHWS
Implement transition processes

Objective:

- Implement transition processes for managing and improving wheat class consistency
- The transition of varieties needs to be carefully managed

Two protocols will be implemented:

1. Review current varieties in each class to ensure appropriate placement on CGC’s Variety Designation Lists
2. Lines currently in variety trials which do not meet the quality of the current or new check varieties will be assessed
Ensure appropriate placement on CGC’s Variety Designation Lists

Process:

- If suspected a variety no longer meets current class quality objectives, a letter will be sent to the variety’s owner indicating that the CGC is proposing to move the variety into another class.

- Before movement can occur, the variety owner will have the option, at their expense, to grow their variety for two years at six sites across western Canada against the new class check varieties.

- CGC will conduct analysis, at its expense, of a composite of the variety and the appropriate checks from these sites and provide the data to the variety owner after each year.

- Following the completion of two data years against the new check varieties, CGC will determine if movement is still warranted.
Ensure appropriate placement on CGC’s Variety Designation Lists

Varieties in Current Quality Classes Designation

Varieties in General Purpose (no quality tests) Designation

Appropriate 2 year Check Evaluation

Change in Class Designation

Remain in Existing Class Designation
Implementation Strategy for In-Trial Lines

- Lines currently in variety trials which do not meet the quality of the current or new check varieties will be assessed.

- Candidate varieties 2014 (2nd & 3rd year lines) with acceptable quality, but weak gluten strength (2 years of extensograph) will be open for immediate movement to the New Milling Class.

- Owners can submit existing data alongside their third-year entry data within the new milling class trials.
Process:

- Candidate varieties with one year of trial data but poor extensograph data (all else acceptable) will be able to enter the next new Canada Western milling class trial.

- In the future, candidate varieties in the first or second year of trials that meet all required trial class parameters except gluten strength will be able to use this data to supplement subsequent new Canada Western milling class trials.
Proposal’s Implementation Strategy (cont’d)

- Years of Trial Data
  - Candidate Lines in Current Class Trials
    - Change in Class Trial Designation
    - Remain in Existing Class Trial Designation
Objective:

- ensure all registered varieties can be assigned a class and grade by regulation

Rationale:

- wheat varieties are currently being registered for use in eastern Canada but do not meet the requirements for existing eastern Canadian wheat classes.

Process:

- development of criteria for movement to a CEGP class will follow consultation with eastern stakeholders
Wheat Class Modernization Summary

- Open, consultative process with a 60 day response period ending April 20, 2015
- Implementation of any changes will be carefully managed
- Goals:
  - meet Canada’s wheat production and handling needs
  - address processing and export needs through greater class quality and consistency
  - maximize returns throughout the value chain by offering new alternatives
- Submit input via discussions@grainscanada.gc.ca or in writing to the: Wheat Class Review c/o CGC