



Canadian Grain  
Commission

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des grains



# Wheat Class Modernization: Changes to Wheat Varietal Classification and Implications to Canadian Stakeholders

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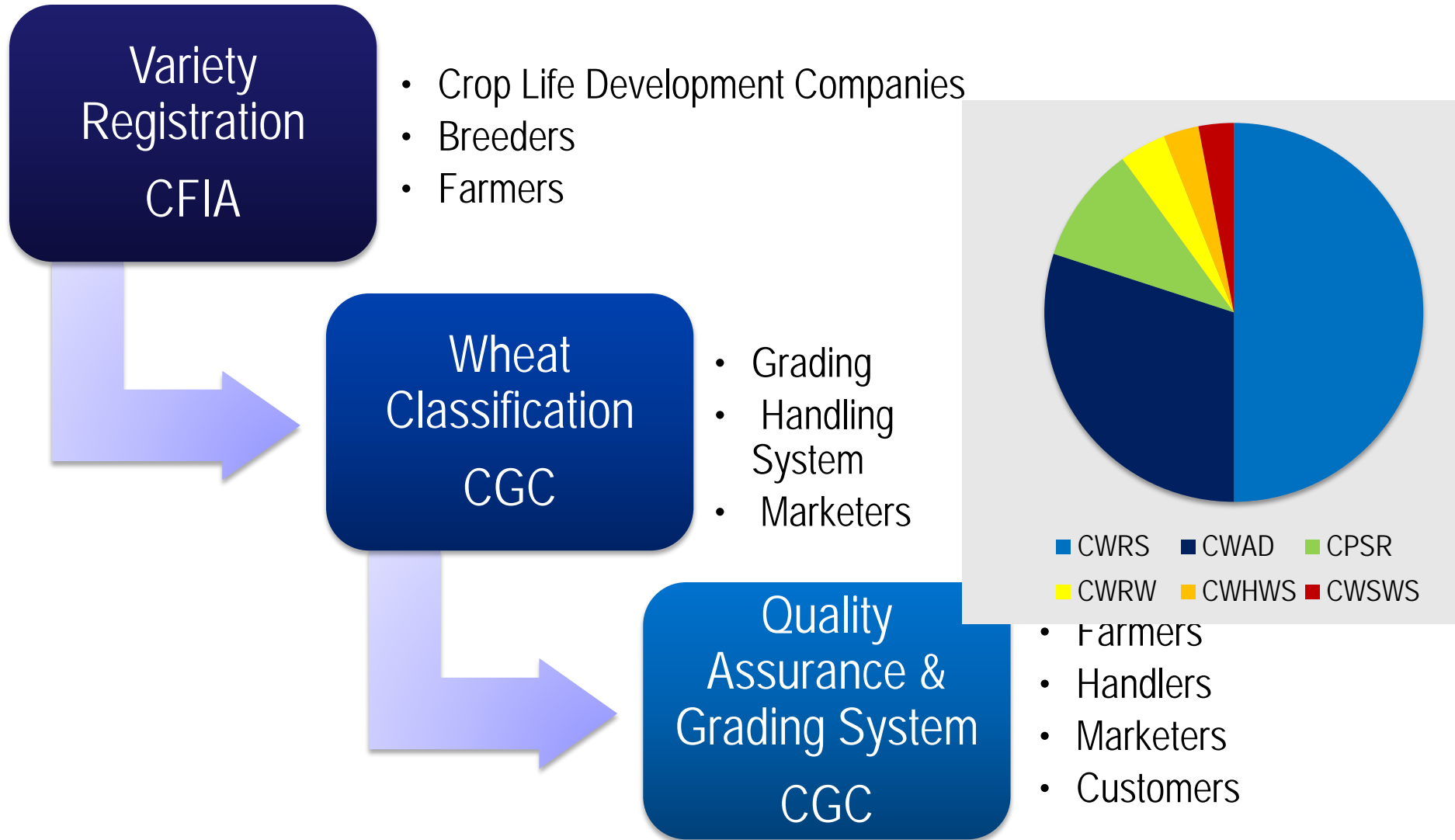
Canadian Grain Commission, Grain Research Laboratory  
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Canada 

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# Canada's Comprehensive Foundation for Quality

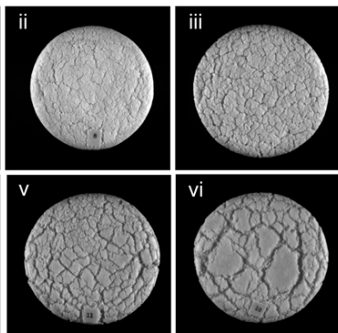




# PRC: Wheat Rye & Triticale Quality Evaluation



- CWRS
- Quality check varieties (3-4) for comparison, multiple sites
- Parameters reviewed:
  - Wheat protein, Test weight, Falling Number
  - Flour protein & Flour Yield
  - Amylograph Viscosity, Flour Ash, Flour colour
  - Farinograph Gluten Strength
  - Extensograph Gluten Strength
  - Bread making by CSP method
  - Noodle making quality



# Timelines for Registration of a Wheat Variety

Votes by the 25 quality experts' on a quality of a new variety helps CGC determine its' proper class

Agronomy Evaluation Team  
Disease Evaluation Team  
Quality Evaluation Team



# Background for Modernization Proposal

- The Canadian Grain Commission (CGC) has the authority:
  - to designate a new or existing variety to a specific wheat class
- The role of the CGC's variety designation lists:
  - identify which varieties are eligible for each class
  - keep ineligible varieties from undermining quality of grain shipments
  - reduce transaction costs and facilitate efficient trade & handling
  - are updated as new varieties are registered

# Background for Modernization Proposal

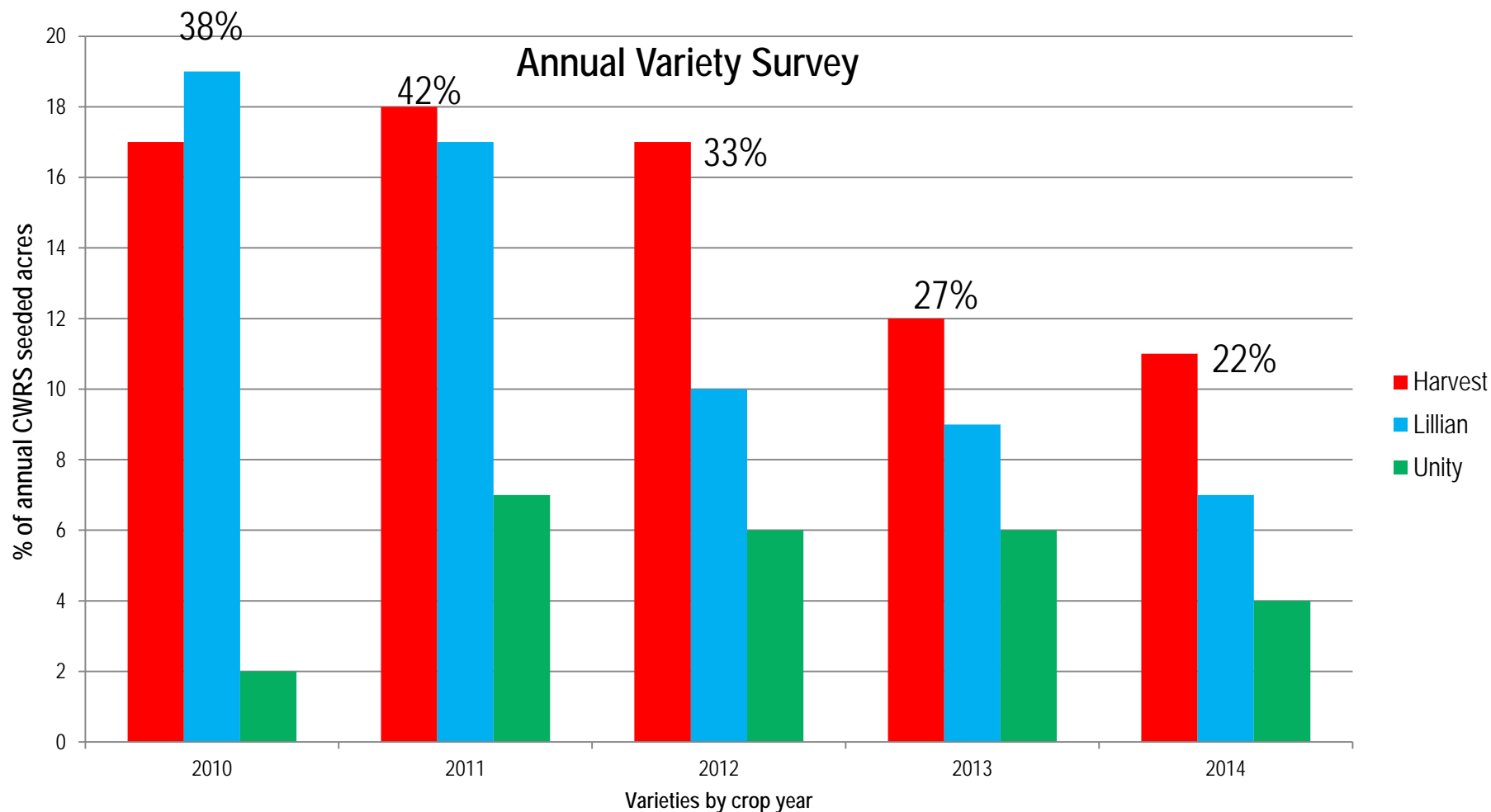
- Customer concerns related to gluten strength has increased in last few years –initially thought to be an environmental issue
- Gluten strength is a function of wheat's glutenin and gliadin proteins and is key to bakery processing, crumb structure and gas retention in a loaf



- Not all Canadian wheat varieties have the same protein components:  
Quality of protein just as critical as Quantity

# Seeded Acres

High number of acres grown of 3 specific varieties in CWRS class





# Background for Modernization Proposal

- Potential for different classes of wheat to be marketed as producers desire yield potential of unregistered varieties.
- Historically varieties have not been reviewed once assigned to a specific class on the Variety Designation List
- The PRC-WRT continually adjusts the check varieties for benchmarking various quality attributes thereby providing a mechanism for future change.

# Objective of the Modernization Proposal

## Core principle:

- Canada's wheat classes are a critical part of the total grain quality assurance system

- **Rationale:**

- provide a more consistent and balanced functionality
- increasing demands for more flexibility by stakeholders and customers both domestically and internationally

- **Objective:**

A modernized wheat class system which will:

- meet Canada's wheat production and handling needs
- address processing and export needs
- ensure a consistent quality profile in each class

# Proposal to Modernize Wheat Classes

- **The CGC proposed the following:**
  - Resolve the quality parameters of the CWRS and CPSR classes
  - Develop a new Canada Western milling class
  - Implement transition processes

# Resolve the Quality Parameters of the CWRS 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:

- PRC-WRT\* changed the current check varieties used for registration in all CWRS trials – Central, Western & Parkland to ensure consistency.
- proposed *Glenn* and *Carberry* as “boundary” check varieties for the Central and Western Trials
- removed *Unity* and *Lillian* as quality checks

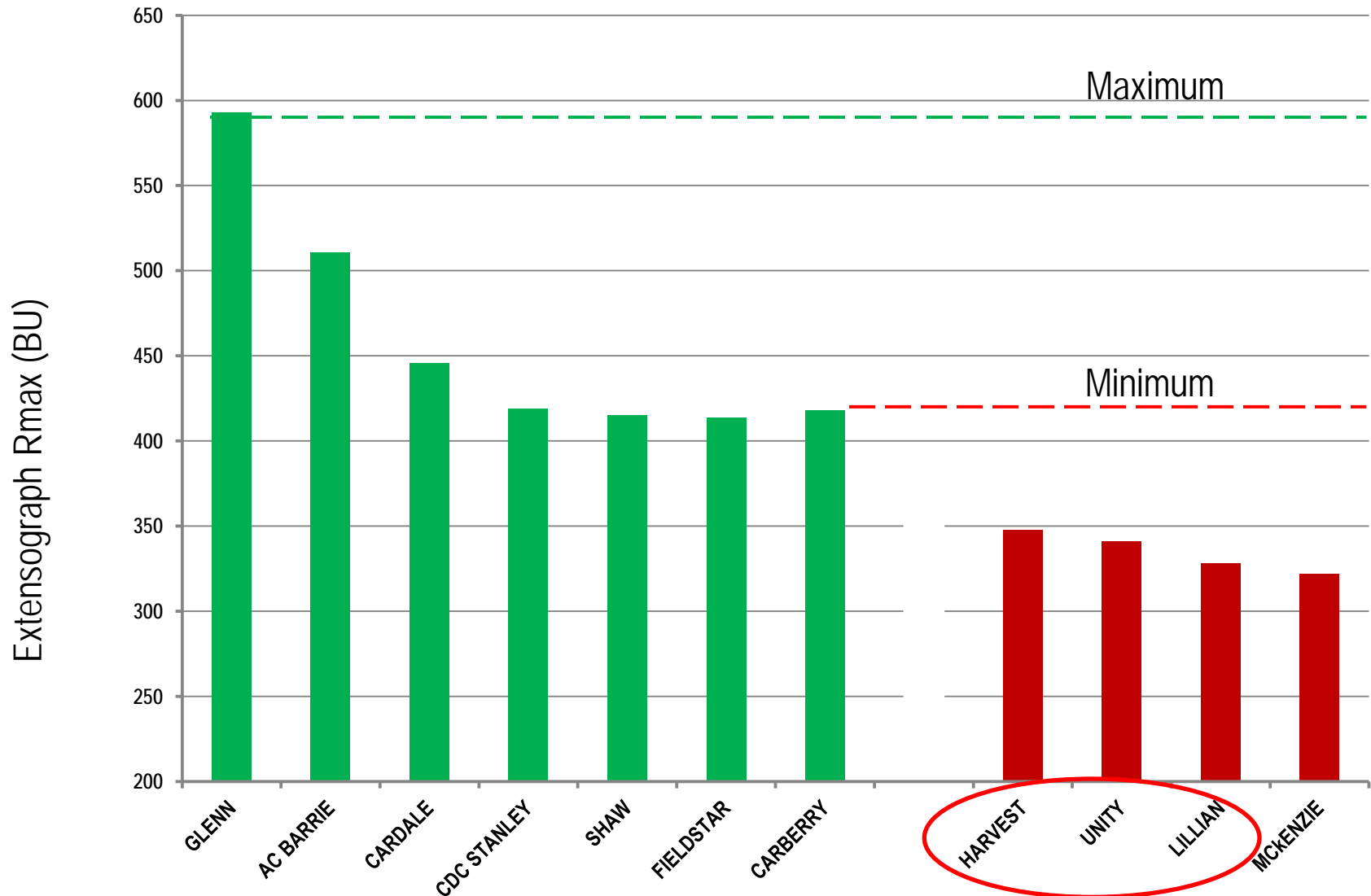
\*Prairie Recommending Committee Wheat Rye & Triticale

# Quality Parameters of the CWRS Class

- Candidates with gluten strength below Carberry will be removed from the CWRS class
- Candidate cultivars with gluten strength above Glenn will be re-assigned to another class
- Recognized different Parkland growing conditions

| Gluten Strength | Western  | Central  | Park              |
|-----------------|----------|----------|-------------------|
| High Maximum    | Glenn    | Glenn    | Glenn             |
| Medium Level    | BW965    | BW965    | PT472             |
| Minimum Level   | Carberry | Carberry | Splendor<br>PT772 |

# Extensograph Rmax (BU) for CWRS Varieties Grown in the *Eastern* Prairies - 2014 Harvest



# 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(ed) 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, water absorption and end products.

## Process:

- Glenn as check variety as the approximate high-end of gluten strength, good extensibility
- Use AAC Foray 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 class



# Quality Parameters for the CPSR Class

Proposed new check varieties:

| Gluten Strength  | Variety   |
|------------------|-----------|
| High             | Glenn     |
| Moderate to high | AAC Foray |
| Moderate to low  | HY 537    |
| Minimum level    | 5700PR    |

## 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

# Propose : Develop a New Canada Western Milling Class

## Objective:

- Develop a new western Canada milling wheat class to address changing customer requirements and farmers' desire to grow unregistered varieties

## Process:

- Implemented *Faller*, *Unity*, and *Conquer* as the initial check varieties (2015)

## 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 a broad range

# Interim Wheat Class

- Additional Wheat class for 2015 / 16
  - Eligible varieties are *Faller, Prosper & Elgin ND*
  - Temporary

# Implement Variety Transition Processes

## Objective:

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

## Process:

Two protocols have been implemented:

1. Reviewed current varieties in each class to ensure appropriate placement on CGC's Variety Designation Lists with owner notification as appropriate
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 a variety no longer met **new** class quality objectives, a letter was sent to the owner indicating that the CGC is moving the variety to another class.
- Owner notification of a variety for which there was insufficient data to make a decision will require evaluation prior to any decision.
- Owner will grow their variety for **2 years** at **6 sites** across western Canada against the **new** class check varieties.
- CGC will conduct analysis and provide the data to the variety owner after each year.
- After two years CGC will determine if movement is warranted.
- Varieties which were in the General Purpose class for which appropriate quality data is available will be reviewed and placed in Canada Northern Hard Red class if they meet the quality objectives of the class (to be decided)

## Varieties Designated to Another Class

| CWRS        | Represents 20% of current acreage | in 2015  |          |
|-------------|-----------------------------------|----------|----------|
| AC Cora     | Alvena                            | Harvest  | Neepawa  |
| AC Abbey    | Alikat                            | Kane     | Park     |
| AC Eatonia  | CDC Makwa                         | Katepwa  | Pasqua   |
| AC Majestic | CDC Osler                         | Leader   | Pembina  |
| AC Michael  | Columbus                          | Lillian  | Thatcher |
| AC Minto    | Conway                            | McKenzie | Unity    |
|             |                                   |          | 5603HR   |
| CPSR        |                                   |          |          |
| AC Foremost | AC Taber                          | Conquer  | Oslo     |

Varieties will be designated to another class as of Aug 1, 2018- will impact spring 2018 seeding intentions

# Consultation Feedback to Proposal

- Took place from Feb. 20 – April 20, 2015
- Received 45 written submissions (representing 150 orgs)
  - Producer and commodity organizations
  - Seed growers and seed companies
  - Plant breeders
  - Grain handlers and marketers
  - Government departments
  - Domestic and international end users

# Wheat Class Review (Consultation)

- Strong support to protect quality, consistency and end use performance of CWRS and CPSR
- Main focus was review of the CWRS and CPSR classes for parameters
  - Identify varieties that are critical to move quickly
  - Identify varieties that may require further testing
- Transition and implementation period
  - Carefully managed, clear procedure to be communicated to entire wheat value chain



# Consultation Feedback

- New wheat class
  - Cautioned not to make a decision until further information on potential markets, value and grades
  - Six month extension until market scan is/was completed and reviewed

# Next Steps Completed



- Evaluated varieties to ensure they meet the new quality characteristics for their class ✓
- Identified critical varieties to be moved where we had existing information ✓
- Identified varieties and notified owners where further testing is required ✓
- Created an interim wheat class for three varieties that have received interim registration (Faller, Prosper and Elgin ND) ✓
- Grading schedule for interim class to be developed prior to Aug 1, 2015 ✓

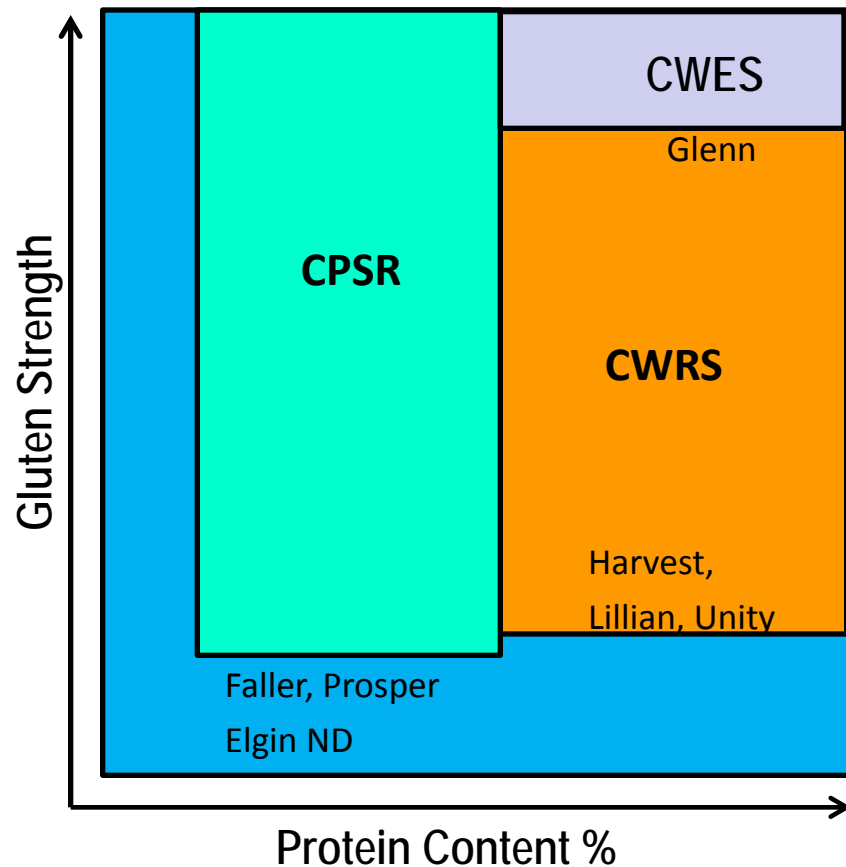
# Western Wheat Classes & Grades

## Today and August 1, 2016

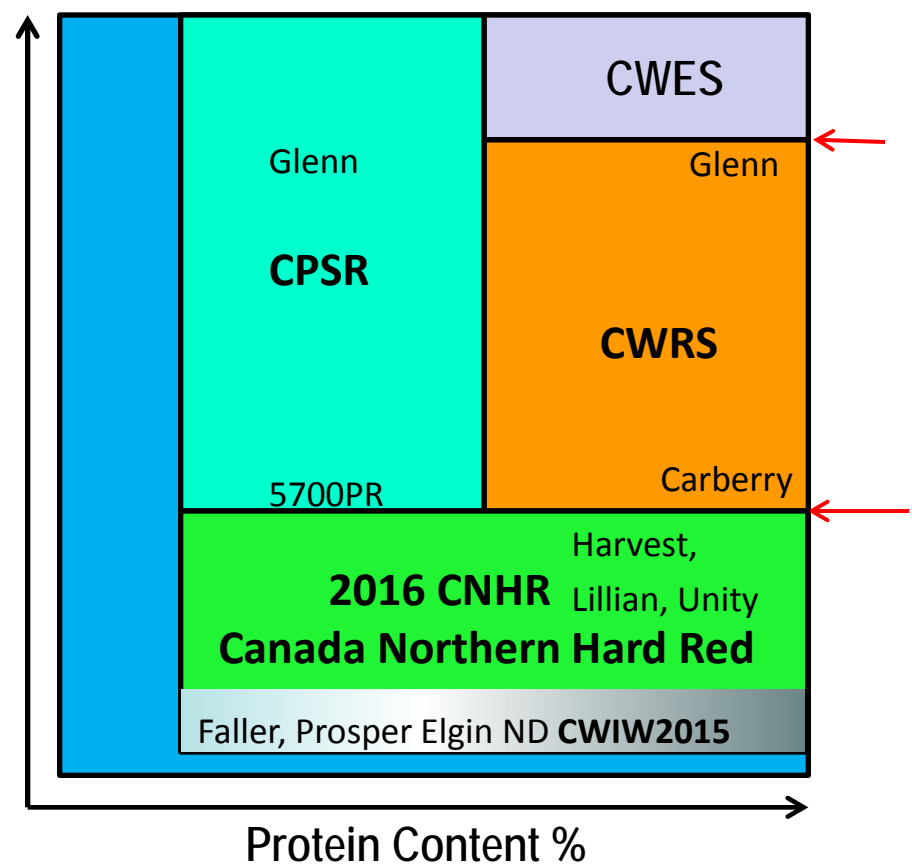
| CWAD | CWRS    | CWHWS   | CWRW    | CWSWS   | CPSR    | CPSW    | CWES    | CWF                             | CWGP                       | CWIW    |
|------|---------|---------|---------|---------|---------|---------|---------|---------------------------------|----------------------------|---------|
| 1    | 1       | 1       | 1       | 1       | 1       | 1       | 1       |                                 | 1                          | 1       |
| 2    | 2       | 2       | 2       | 2       | 2       | 2       | 2       |                                 | 2                          | 2       |
| 3    | 3       | 3       | 3       | 3       | CW Feed | CW Feed | CW Feed |                                 |                            | 3       |
| 4    | CW Feed | CW Feed | CW Feed | CW Feed |         |         |         |                                 |                            | CW Feed |
| 5    |         |         |         |         |         |         |         | Removed Aug. 1, 2016            |                            |         |
| CWAD | CWRS    | CWHWS   | CWRW    | CWSWS   | CPSR    | CPSW    | CWES    | CWSP *                          | CNHR **                    |         |
| 1    | 1       | 1       | 1       | 1       | 1       | 1       | 1       | 1                               | 1                          |         |
| 2    | 2       | 2       | 2       | 2       | 2       | 2       | 2       | 2                               | 2                          |         |
| 3    | 3       | 3       | 3       | 3       | CW Feed | CW Feed | CW Feed |                                 | 3                          |         |
| 4    | CW Feed | CW Feed | CW Feed | CW Feed |         |         |         |                                 | CW Feed                    |         |
| 5    |         |         |         |         |         |         |         | *Canada Western Special Purpose | **Canada Northern Hard Red |         |

# Existing Class Profile (Gluten Strength vs Protein)

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



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



*Note: U.S. HRS in blue, chart for illustration purposes only*

# Steps Remaining



- Implement Canada Northern Hard Red class and Canada Western Special Purpose classes effective Aug.1, 2016 with accompanying grade schedules.
- Proceed with transition process for varieties effective Aug.1, 2018
- General Purpose class eliminated (Aug.1,2016) however its varieties will now enter the Special Purpose class where no quality parameters are specified
- Canada Feed class will be eliminated (Aug.1,2016)
- Interim wheat class will be eliminated (Aug.1,2016)
- Continue ongoing consultations and discussions with value-chain stakeholders by communicating clear information and procedures to the entire domestic and international wheat value chain.

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