



**IAOM SEA – JAKARTA 2019**

# **THE JOURNEY OF WHEAT IN CANADA**

**ENSURING QUALITY AND QUANTITY OF YOUR AGRICULTURAL PRODUCTS**

**WHEN YOU NEED TO BE SURE**

**SGS**



- Wheat breeding
  - Improve on agronomy, disease resistance and flour quality
  - Improve bake performance and demand
  - Industry expectations are strict and therefore takes time.
- Committee of industry experts evaluate new lines
  - Meet or exceed current standards for the wheat class?
  - Consistent performance over multiple years and growing regions?
  - Experts from supply chain vote to recommend or object.
- Quality focuses are:
  - Physical wheat characteristics
  - Milling performance
  - Dough/Gluten Strength
  - End-use quality
- If variety is recommended to be registered, Canadian Grain Commission confirms quality meets the assigned class.

## WHEAT CLASSES IN CANADA

Wheat Class		% of wheat grown	Best for:
<b>CWRS</b>	CANADIAN WESTERN RED SPRING	68	Breads
<b>CWAD</b>	CANADIAN WESTERN AMBER DURUM	22	Pasta, couscous
<b>CPS</b>	CANADIAN PRAIRIE SPRING	4	Blending, flour yield
<b>CNHR</b>	CANADIAN NORTHERN HARD RED	2	Blending, cost?
<b>CWSWS</b>	CANADIAN WESTERN SOFT WHITE SPRING	2	Cakes, pastries
<b>CWRW</b>	CANADA WESTERN RED WINTER	1	Bread, steam buns
<b>CWSP</b>	CANADIAN WESTERN SPECIAL PURPOSE	1	High yielding
<b>CWHWS</b>	CANADIAN WESTERN HARD WHITE SPRING	-	"White" noodles, bread
<b>CWES</b>	CANADA WESTERN EXTRA STRONG	-	Blending





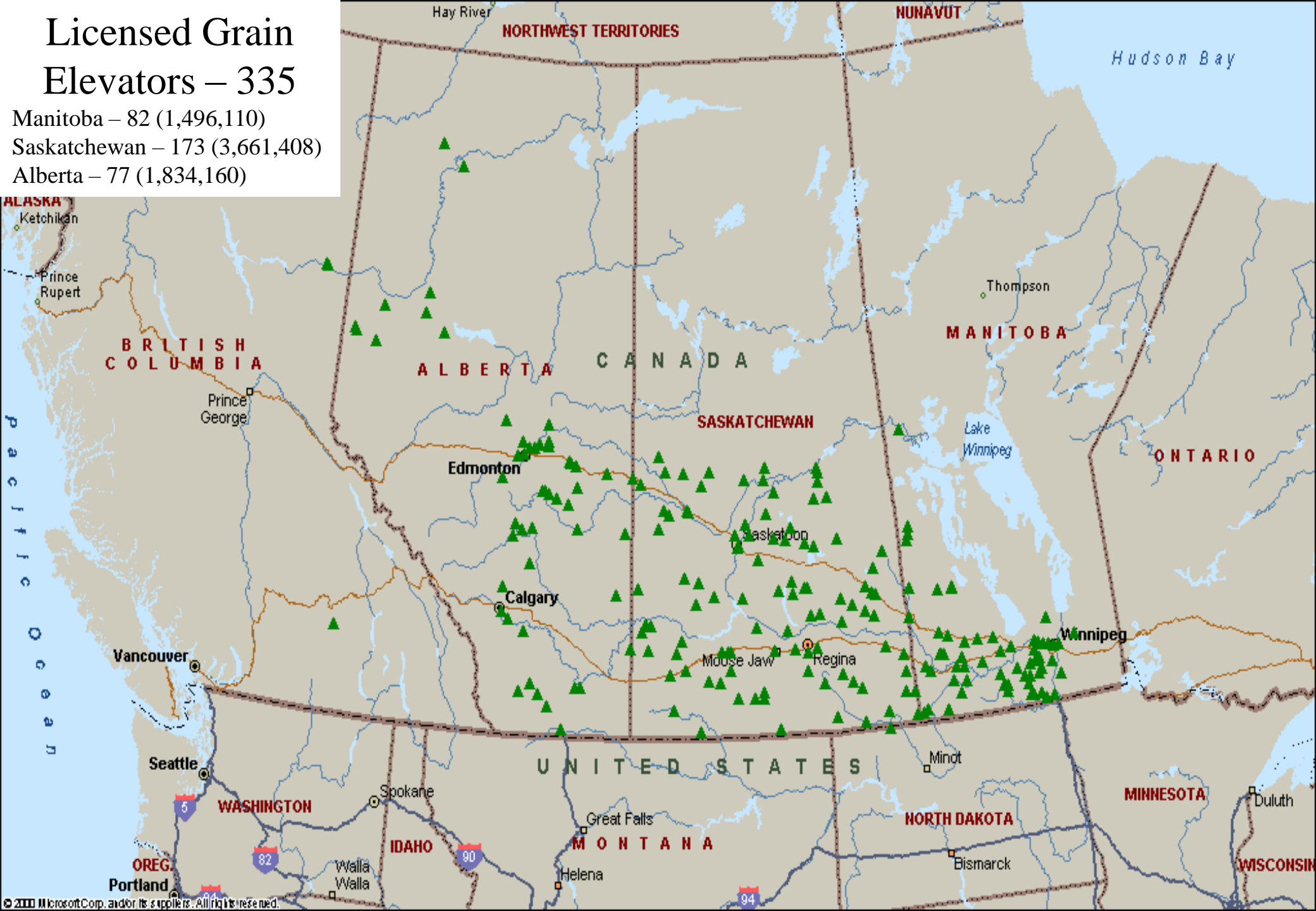
- Grain companies do new crop quality survey
  - What is quality change from last year?
  - What are differences regionally?
  - What can we assure for our customers?
- Wheat catchment area around each terminal assessed
  - Grade, quantity per grade, average protein content, disease, falling number, vomitoxin (DON)...
- Regional composites by grade and catchment formed for further quality assessment
  - Milling, flour physical properties, dough rheology, bake

# Licensed Grain Elevators – 335

Manitoba – 82 (1,496,110)


Saskatchewan – 173 (3,661,408)

Alberta – 77 (1,834,160)



- WHY DO THEY INVEST THIS TIME AND EFFORT?
  - To understand what is available for their market
  - How to efficiently fill orders to meet quality specifications
  - Plan how to manage any challenges caused by wheat quality (ie. segregaton, drying)
- TO LET CUSTOMERS KNOW WHAT THEY CAN PROVIDE CLIENTS AND MAINTAIN UNIFORMITY UNTIL NEXT CROP

# WHAT DO MILLERS EXPECT OF CANADIAN WHEAT?

- 
- A photograph of several golden wheat stalks with long awns, set against a clear blue sky. The wheat is in sharp focus in the foreground, with other stalks blurred in the background.
- #3 Quality
  - #2 Price
  - #1 Uniformity/Consistency
  
  - New crop quality survey is one way grain companies try to achieve quality expectation and uniformity
  - What else?
    - **SGS ASSISTS THE GRAIN COMPANIES**









- All cereals and oilseeds
- Submitted and sampled by SGS
- Inland and Ports
- Certified to Canadian and International Standards

## SGS CANADA PROVIDES HELP

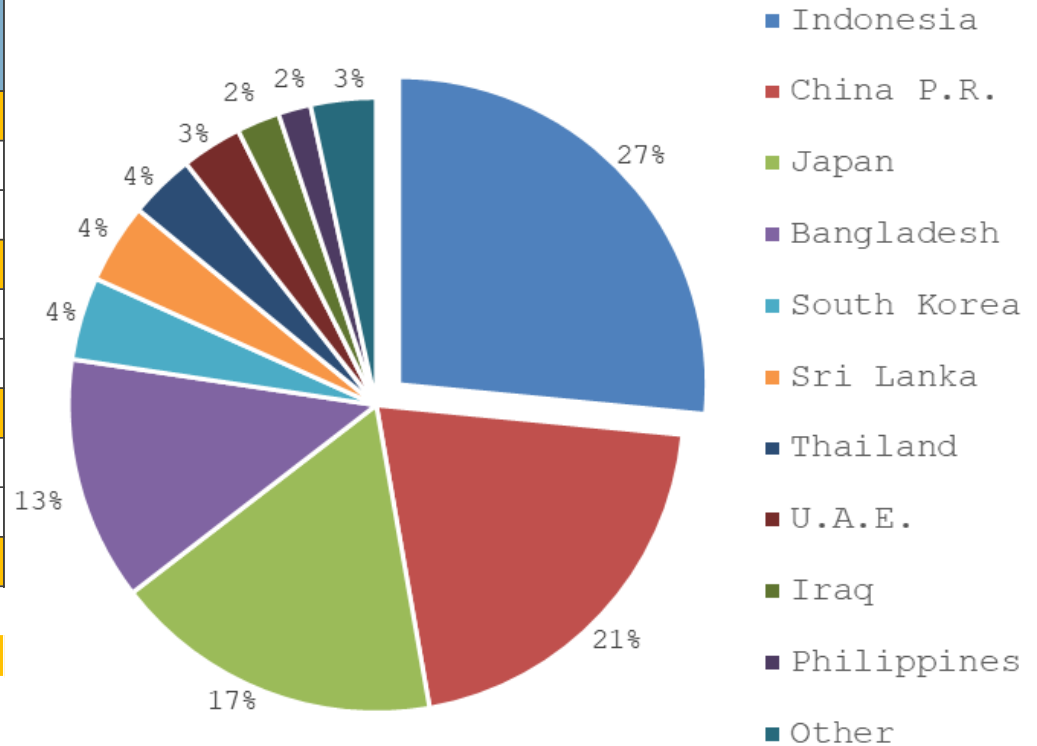
- Assess quality and assign a grade to harvest samples
- Grade at different logistical points
  - Loading inland
  - Unloading at port
  - Loading vessels
- Grade and test incrementally (every 2000 MT min.) and report Real Time to shipper.
- Upon completion of vessel, recheck all increments to ensure accuracy; form composite and examine to satisfy client expectation
- “Certify” cargo shipment as 3<sup>rd</sup> party; neutral party

# WHEAT SHIPMENTS TO ASIA

	2018 - 2019 Crop Year to Date (MMT)	2017 - 2018 Crop Year to Date (MMT)
Indonesia	2,427.6	1,694.9
China P.R.	1,892.7	1,065.5
Japan	1,585.0	1,537.7
Bangladesh	1,174.1	1,164.0
South Korea	399.0	140.6
Sri Lanka	384.3	442.4
Thailand	314.8	112.7
U.A.E.	291.9	285.4
Iraq	207.3	100.0
Philippines	156.7	335.1
Other	314.5	413.2
<b>SEA total</b>	<b>3,916.5</b>	<b>3,306.7</b>
<b>ASIA Total</b>	<b>9,147.9</b>	<b>7,291.5</b>

Total Wheat Exports 18,253.00  
 Wheat Exports to Asia 50.1%  
 Wheat Export to S.E.A 21.5%

2018 - 2019 Crop Year to Date Wheat to S.E.A



# SGS GRAINS ANALYTICAL TESTING LABORATORY



- The GATL is a result of a joint venture between SGS and the Grain Farmers of Ontario.
- Current services offered:
  - Grain and flour analysis:
    - Protein, falling number, gluten, starch damage...
  - Dough testing:
    - Farinograph, Alveograph, Extensograph, ...
  - Product Evaluation
    - Baking – bread, cookies
    - Noodles
  - Use industry approved testing methods
  - Ability to mill wheat samples into flour on a small scale but representative of large commercial mills.





- Wheat breeders:
  - Early generation varieties
- Farmers:
  - “How much is my crop worth?”
- Grain elevators:
  - New crop quality survey
  - Vessel composite analysis – milling and baking
- Flour mills:
  - New crop quality survey
  - Vessel composite analysis – milling and baking
- Bakeries:
  - Supplier verification of test results.

■ Different classes of wheat for different purposes:



- Soft Wheat flour – best for cakes, cookies, pie crusts, crackers.
- Hard Wheat Flour – best for breads, croissants
- Durum semolina – primarily for pasta
  
- Each class has unique traits; some better for certain products than others.
  - Differences between varieties in each class

# TESTS PER WHEAT CLASS



## Hard Wheat:

- Farinograph
- Extensograph
- Alveograph
- Starch Damage
- Wet Gluten and Gluten Index
- Bread baking

## Soft Wheat:

- Amylograph – viscosity
- Alveograph
- Solvent Retention Capacity
- Cookie bake test

## Durum:

- Alveograph
- Wet Gluten and Gluten Index
- Colour – brightness, yellowness, redness

• Industry puts more weight on certain tests depending on which class it is from – correlate better to end use quality; better to distinguish differences between samples

## WHY TEST VESSEL SHIPMENTS



- Awareness of quality variations between shipments
  - Demand from millers for gluten quality measurements of wheat is increasing worldwide
- Quality can vary between holds of a ship
- Prepare to adapt to variations
  - Segregate quality variations at receiving
  - Modify flour ingredients to adjust strength (ie. ascorbic acid)
  - Inform clients of necessary baking adjustments
- For shipments originating from Canada, results can be available well before ship arrives to destination port.
- Composites obtained for grading would be divided down for milling and baking analysis.



## NEW CROP UPDATE



- Harvest progress slow but still continuing – cool, wet weather
- 50% completed as of October 4, 2019
  - 27% # 1 CWRS
  - 46% # 2 CWRS
  - 15% # 3 CWRS
  - 12% CW FEED
- Main downgrading factors are sprouting and mildew
- Higher yield than forecasted; higher than 2018 crop
- Higher protein – approximately 13.5% average.
- The weather as harvest slowed was cool which tends to slow deterioration

# WHEAT AND FLOUR QUALITY



	Grade: No. 1 and 2	
	Year: 2019	2018
<b>CWRS QUALITY</b>		
<b>Wheat:</b>		
Protein, %	14.4	13.9
Falling Number, sec.	381	389
<b>Milling (Buhler Lab Mill):</b>		
Yield – total products basis, %	76.9	75.7
<b>Flour:</b>		
Protein (14% M.B.), %	13.7	13.2
Wet Gluten, %	38.1	36.8
Gluten Index	86.2	88.7
Ash (14% M.B.), %	0.53	0.45

## DOUGH RHEOLOGY AND BAKE TEST



Grade: Year:	No. 1 and 2	
	2019	2018
CWRS QUALITY		
<b>Farinograph:</b>		
Absorption, %	68	68.9
Dough Development Time, min.	7.3	7.8
Stability, min.	9.7	13.1
MTI, BU	31	22
<b>Alveograph:</b>		
P (height), mm	102	124
L (length), mm	120	109
P/L	0.86	1.1
W, 10 <sup>-4</sup> J,	401	451
<b>Extensograph, 45 min.</b>		
Maximum resistance (Rmax), BU	354	425
Extensibility (Length), mm	202	200
Area (cm <sup>2</sup> )	96	110
<b>Bake - Pup loaf:</b>		
Bake Loaf Volume, cm <sup>3</sup>	1038	1090
Bake Loaf Height, mm	107.4	118.4
Specific Volume, cm <sup>3</sup> /g	6.6	7.3


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WHEN YOU NEED TO BE SURE

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