

# GLABROUS CANARY SEED

## On the Cusp of Food Approval

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AGM  
Canaryseed Development Commission of Saskatchewan  
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**Regulatory  
Approval-  
Almost  
There  
2015**

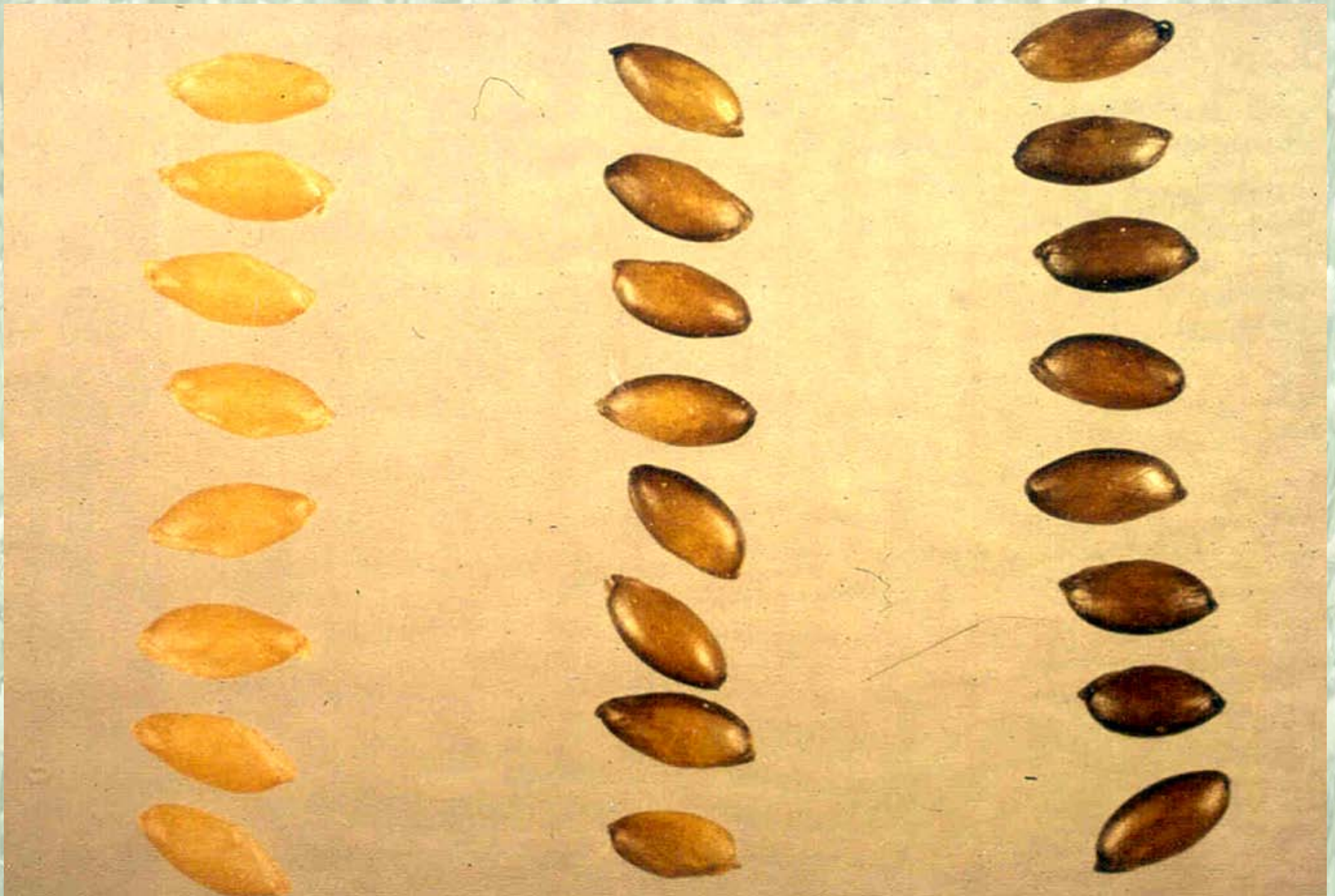


**Crop  
Breeding  
1990s**

# Current Regulatory Status

- Health Canada review as a novel food (new cereal grain)—GETTING CLOSER!
- Moving through the GRAS system in the United States
- Anticipated Approvals: 2015





**Canaryseed Groat Colour**

# Proximate Composition

Proximate Composition (% Dry Matter)	Brown Canaryseed groats	Yellow Canaryseed groats	Wheat (Hard Red)	Oats	Lentils
Protein (N x 6.25)	23.4	23.0	16.8	14.9	25.0
Crude Fat	6.2	6.1	2.5	3.1-11.6	1.1
Dietary Fibre	8.6	7.9	12.8	8.2	18-25
Starch	56.1	59	59.8	50-55	45
Ash	2.3	2.2	1.6	3.4	2.6



# Free Fatty Acids

Free Fatty Acid Composition (% of fat)	Brown Canaryseed groats	Yellow Canaryseed groats	Wheat (Hard Red)	Oats	Millet
Crude Fat	6.2	6.1	2.5	3.1-11.6	5.1
Palmitic (16:0)	13	12.6	17-24	15.26	20-22
Stearic (18:0)	1.4	1.49	1-2	1-3.9	6.1-10.1
Oleic (18:1)	34.1	32.7	8-21	26-41	17-28
Linoleic (18:2)	56.3	58.1	55-60	31-46	37-32
Linolenic (18:3)	2.4	2.11	3-5	0.9-2.1	2.2-4.2

# B Vitamins and Select Minerals

B Vitamins & Minerals (mg/100g)	Brown Canaryseed groats	Yellow canaryseed groats	Wheat (Hard Red)	Oats	Lentils
Thiamine (B1)	0.8	0.67	0.57	0.65	0.17
Riboflavin (B2)	0.11	0.09	0.12	0.11	0.08
Niacin (B3)	1.33	1.08	7.29	1.0	1.06
Pyridoxine (B6)	0.19	0.18	0.35	0.20	0.25
Folate	0.07-0.12	0.07-0.10	0.02-0.09	0.06-0.07	
Calcium	30.8	29.7	20	56.2	19.2
Magnesium	220	207	155	120	120
Iron	7.5	7.2	4.2	6.0	7.5
Zinc	3.4	2.9	3.2	3.9	4.0

# Antinutritional Factors

- Phytic acid is a little higher than other cereals and similar to peas, lentils and chickpeas
- Trypsin inhibitor and amylase inhibitors similar to other cereal grains
- Phenolics: higher TPC in cs (179-205mg/100g) compared to whole wheat meal (79-125 mg/100g)



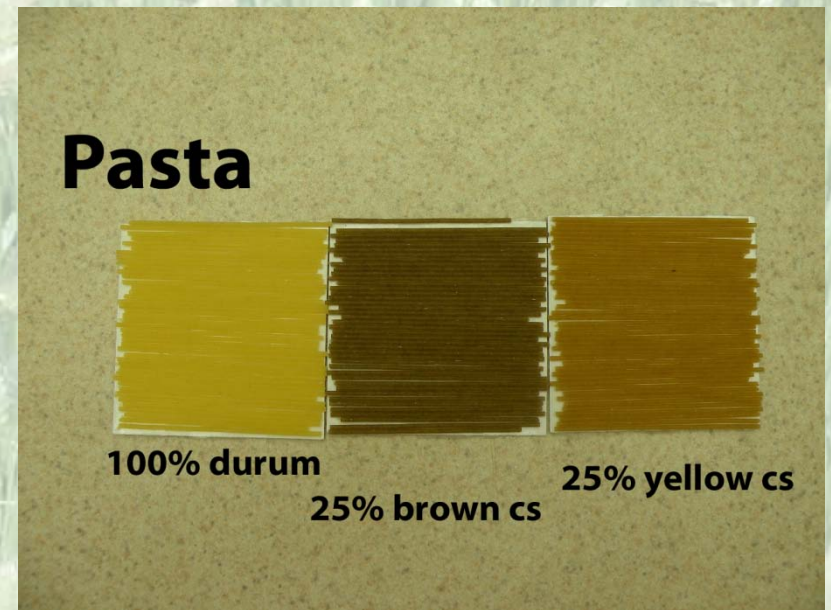
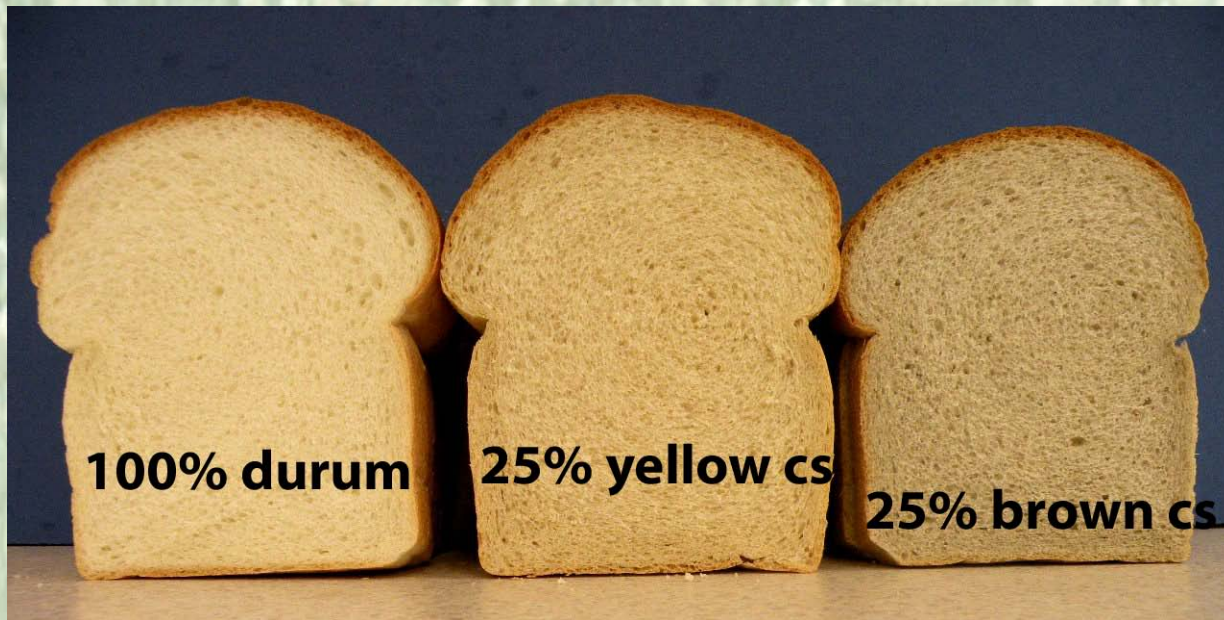
# Allergenicity

No cross reactivity between canaryseed and other major plant allergens (soya bean, mustard, tree nuts, peanuts, and sesame)

Surprising find--

Canaryseed is gluten-free







# Roasted Yellow CS Muffins



# Whole groat canaryseed “Snaps”





Hulled



Groats



Flakes



Yellow

Brown



# Gluten Free Products



**15%**

**20%**

**25%**

**Brown CS**



**15%**

**20%**

**25%**

**Yellow CS**

# Gluten Free Products



25% Brown CS + other starches



25% Brown CS only



25% Yellow CS + other starches



45% Yellow CS only



Funded by ADF

## New Projects 2014-2016

### Product Development

Flour Rheology

Extrusion

Starch  
Characterization  
for Industrial  
Uses

### Nutritional Benchmarking

4 Browns,  
6 Yellow

Protein, CHO, fat,  
vitamins, minerals,  
fatty acids, amino  
acids, phytate

# Next Steps

- Address concern regarding potential wheat allergenicity
- Approval of minor use crop protection products for canary seed as food use
- Canary seed designation within Crop Group 15



# The Future: Promotion of Canaryseed as Whole Grain

## True Cereals

- Wheat including spelt, emmer, farro, einkorn,
- Kamut, durums
- Rice, African rice
- Barley
- Corn (Maize, Popcorn)
- Rye
- Oats
- Canary Seed
- Job's Tears
- Fonio, Black Fonio,
- Asian Millet

## True Cereals

- Millets
- Sorghum
- Teff (tef)
- Triticale
- Wild rice



## Pseudocereals

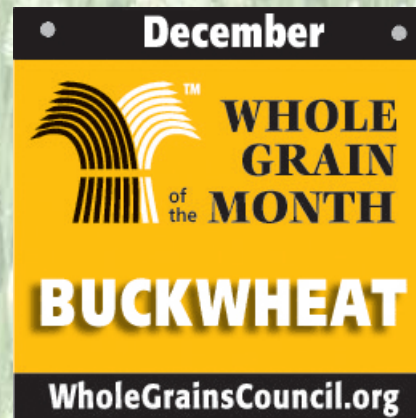
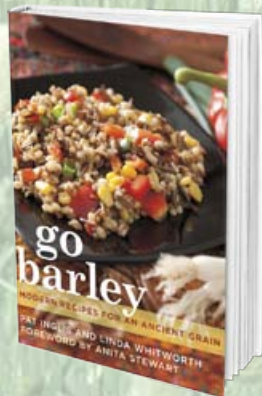
- Amaranth
- Buckwheat, Tartar Buckwheat



# The Future



- Marketing & Promotional Support for Food Use
  - Other Specialty Crop Commodity as Examples



Let's get cooking with  
**PULSES!**



# Funding Support

- 1) Canaryseed Development Commission of Saskatchewan (levy \$)
- 2) Agriculture and Agri-Food Canada's ACAAFS and CAAP programs
- 3) SK Ministry of Agriculture's Agriculture Development Fund (ADF)



# Contact & Questions

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A field of green, spiky cereal plants, likely Alpieste, under a cloudy sky. The plants are dense and have a distinct spiky appearance. The sky is filled with soft, white clouds, and the overall scene is bright and natural.

# ALPISTE

## A New Gluten –Free Cereal