

# Access to Safer GF Foods

## CCA releases project highlights for enhancing access to Canadian sources of certified gluten-free grains and testing protocols



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A gluten-free diet is central to the management of celiac disease. During the processes of growth, harvest, and manufacturing, non-gluten containing grains (NGCG) may become contaminated with gluten containing grains.

Accurate testing for gluten is a critical tool to support the necessary preventive controls at the manufacturing level to verify and validate that they are being delivered as designed and that they work. However, there are many unanswered questions regarding the optimal testing of these grains to ensure that they contain less than 20 ppm gluten and are safe for consumption by individuals requiring a gluten-free diet. Over the past three years, with funding from **Agriculture and Agri-Food Canada** through the **Growing Forward 2 Program**, the **Canadian Celiac Association (CCA)** secured industry experts, Allergen Control Group and Environex to conduct a stakeholder consultation and study examining optimal ways of detecting gluten in NGCG.

The results are summarized below and will help guide industry as standards related to optimal testing of these grains are developed. These principles are now being applied to the Gluten-Free Certification Program (GFCP) and will be formally embedded as GFCP Version 3 which will be in effect as of August 2019. The ultimate result will be the development of food products that will be accurately tested to ensure they are safe for the gluten-free consumer.

## Conclusions from Studies

This study looked at how sample preparation and sampling methods can reduce variability when testing gluten in non-gluten containing grains (NGCG) including oats, pulses and oilseeds (flax and hemp).

### These are the conclusions:

- 1 The ELISA test (R5) used in this study is reliable and is not an important factor in the variability in the test results.
- 2 At concentrations around 20 ppm gluten, there was no relationship between gluten concentration in the non-gluten containing grains and cereal contamination determined by visual inspection.
- 3 The method of sampling and preparing the grain for testing is a highly important step in the protocol. Inappropriate sampling and sample preparation can lead to large differences in end results between similar samples.
- 4 With regards to the grain preparation step, grinding a larger grain sample at the start (e.g. 1200 g vs 50 g) prior to preparing smaller aliquots for testing generates more reliable results. When grinding samples, the aim is to produce particles that are as small as possible. This will be more challenging for the high lipid content grains such as hemp. The sample should be ground fine enough that 75% of the sample could pass through a 20-mesh sieve. A one-gram test portion is suggested for all grains. The results of this study were published in *Cereal Chemistry* 2018; 95:811-821.

## Additional materials developed

- Best practice decision tree, sampling guides and white paper on gluten detection are available on the Canadian Celiac Association (CCA) website at [www.celiac.ca/AAFC](http://www.celiac.ca/AAFC)

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