

# Anti-Inflammatory & Antioxidant Properties

#### **Executive Summary**

Previous studies comparing Kamut® wheat and modern durum wheat products (published 2011 and 2012) reported the effects of diets of KAMUT® cereal and bread compared to modern durum wheat cereal and bread. In both studies. the KAMUT® diet had a significant increase in anti-oxidant capacity. Anti-inflammatory properties of ancient grains were also reported for the first time in these studies.

"Some people who have difficulty eating modern wheat find Kamut® wheat easier to consume." – Bob Quinn, Ph.D., organic farmer and Founder of Kamut International

# A third and final paper, published in Food Research

International (September 2014), reports findings that further explain the science behind why ancient Kamut® wheat can be enjoyed without difficulty by so many people with non-celiac wheat sensitivities who cannot eat modern wheat.

- Small intestine villi changes similar to those with celiac disease were noted in rats fed the modern wheat pasta, and not in rats fed the Kamut® pasta. Intestinal changes (meaning damage has occurred) are known to cause inflammation, affect nutrient absorption, and may take years to heal.1
- Significant gut microflora changes were noted in both modern wheat and Kamut® fed rats. Studies are beginning to understand the connection between gut bacteria and gluten digestion.<sup>2</sup>
- Results also confirmed the 2012 report findings that there is a level of antioxidant protection in diets with



Bob Quinn Spec Case Study from press release http://www.prweb.com/releases/2014/02/prweb11582798.htm

Kamut<sup>®</sup> Pasta Case Study 2014

## Challenges

Wheat products have been a key component of the human diet for centuries as they are a great source of vitamins, minerals and other nutrients important to maintaining good health.

However, in recent decades the majority of the wheat being consumed has been significantly altered. Modern breeding programs focus on increasing yields in the field and loaf volume in the bakery. These changes have also affected protein, gluten, starch and other components.

Conversely, ancient grains, such as KAMUT® Brand Khorasan Wheat have never been altered or modified, thus preserving significant nutritional and health benefits compared to modern wheat.

This final study, led by Alessandra Bordoni from the Department of Agri-Food Sciences and Technologies at the University of Bologna, Italy, investigated the difference in inflammation and oxidative stress resulting in rats fed a diet made from organic ancient KAMUT® Brand whole wheat pasta compared to a diet made from organic modern durum whole wheat pasta.

#### Results

Both pastas provided similar energy, fats and fiber, although the protein content was higher in KAMUT® pasta.

The rats fed ancient KAMUT® whole wheat pasta showed normal cell and tissue characteristics, while the rats fed modern durum whole wheat pasta showed inflammation in several tissues and organs.

This elevated inflammation in tissues and organs was also found in the modern whole wheat pasta control group which did not receive external stress agent treatment. This elevated inflammation could resemble the effects of nonceliac wheat sensitivities.

Non-celiac wheat sensitivities are generally less severe than celiac disease, where a person experiences similar symptoms although not testing positive. Symptoms resolve when gluten is removed from the diet. The KAMUT® pasta had almost 20 times more selenium, an antioxidant that protects living systems from oxidative damage and infection. It's suggested that the high content of specific antioxidant components in the KAMUT® pasta may have contributed to anti-inflammatory action as well as played a role in the prevention of oxidative stress.

At the same time, not only did the consumption of modern wheat in this study appear to offer less protection from oxidative stress, it also appeared to cause significant inflammation.

This means, that KAMUT® wheat offers higher nutritional content, could be effective in reducing metabolic risk factors and also offer protection against inflammation. At the time of this study, compounds in modern wheat which may be causing inflammation in living systems has not been identified.

"This is significant information that will shake up the dogma surrounding our current thinking about the consumption of wheat in general. As the gluten-free fad continues to grow, this study provides interesting information that will help us as .,we advance in to other areas of research on KAMUT® wheat, and ultimately offer new options to those who suffer from nonceliac wheat sensitivities." - Bob Quinn

### About Kamut® Brand Khorasan Wheat and Kamut International

Kamut® Brand Khorasan wheat is guaranteed to be certified organic and unhybridized, and is mainly grown in the North American regions of Montana, Alberta and Saskatchewan where the quality is consistently produced.

Kamut International owns the Kamut® trademark and manages Kamut® Brand Khorasan Wheat, assuring consumers the highest quality and purity when they see the Kamut® brand. Kamut International is also investing in research to expand the science behind Kamut's health benefits.

For information on Kamut® products and where to purchase, visit <u>http://www.kamut.com/en/product</u>.

The full paper can be found at: http://dx.doi.org/10.1016/j.foodres.2014.01.065

Sources:

<sup>1</sup>Celiac Disease Foundation <u>https://celiac.org/celiac-disease/understanding-celiac-disease-2/what-is-celiac-disease/</u> accessed November 18, 2016 <sup>2</sup>McMaster University. "Gut bacteria could tip balance in developing celiac disease or staying healthy: Gluten could be metabolized by bacteria." ScienceDaily. ScienceDaily, 24 August 2016.

www.sciencedaily.com/releases/2016/08/160824135312.htm, accessed November 18, 2016



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