

FOODRESEARCHLAB FACT SHEET



SHEET NUMBER 1

This factsheet on ancient cereals and grains is one among the series compiled by Guires Food Research Lab, providing clear-cut and scientifically proven information on important topics to its readers.

Grains Through Time: Exploring Ancient Cereals and Grains

Introduction

The market for [ancient grains](#), expected to reach \$457.35 million globally in 2022, is where **EVERYTHING OLD** is fresh again. Market Data Forecast projects that by 2027, it will have grown at a compound annual growth rate (CAGR) of 35.5% to reach \$6.3 billion.

“The persistence of new product launches utilizing ancient grains is indicative of the grains' long-term viability” says Dr. Radhika Ganesan, R&D Director at Guires Food Research Lab.

What qualifies as ancient grain? Although the phrase "ancient grains" has been used by marketers to refer to anything from corn to wild rice, the Whole Grains Council defines ancient grains as those that have not changed much over the previous several centuries.

This definition leaves out contemporary wheat but includes heritage versions of common grains like black barley and older wheat variants like spelt.

Ancient grains contain types of wheat (Spelt, Khorasan wheat or Kamut, Einkorn and Emmer); green wheat, barley; wild rice, oats; sorghum; millets, and pseudocereals of teff, amaranth; buckwheat and quinoa. In certain references, freekeh and bulgur have been deemed as ancient grains although they are made out of ordinary wheat.

Nutritious Profile

Ancient whole grains are proven to reduce the incidence of cardiovascular risk factors, colon cancer and type 2 diabetes by several studies. Apart from that, it also contributes to enhanced digestion and good blood sugar control.

Because these cereals allow for a gradual release of energy after consumption, complex carbs are a useful source of energy in the diet.

Consumer's Favourite

Why Consumers Like Ancient Grains

- Exclusive texture and flavour
- Emotional connect to our history
- Gluten-free
- Nutritious and healthy

Top Ancient Grains Popular among Consumers

- | | |
|-------------|----------|
| 1)Wheat | 4)Sonora |
| 2)Chickpeas | 5)Teff |
| 3)Quinoa | |

Source: Ardent Mills



65%

of Americans (18-34) are willing to purchase a product with ancient grains in them

Source: Foodbusinessnews

Modern versus Ancient Grains

There is still debate concerning the similarities and differences between ancient and modern grains, particularly with regard to nutritional content and composition, and more precise research is required.

This is primarily due to a lack of thorough research, as many studies have not fully considered and determined the effects of plant genetics (g), environmental factors ϵ , and their interactions (g \times e) on the physicochemical properties of the grains, which impairs the accuracy of the findings.³

However, increasing the yield of modern grains reduces their protein content and other important elements, which can have a detrimental impact on the health benefits and technical qualities of the grains, including the bread-making quality. Ancient grains have better health advantages and are more resilient to biotic and abiotic challenges. They also frequently contain higher levels of protein, dietary fiber, bioactive chemicals, and antioxidant activity.⁴

Physiology of Wheat Grain

The pericarp, testa, and nuclear epidermis—which together make up around 8% of the grain—are fused outer layers that envelop the embryo and endosperm of the wheat grain, also known as a calyopsis.



Up to 90% of the grain is made up of endosperm, which differentiates into two tissues: an outer layer of aleurone cells that are rich in fiber, oil, protein, and minerals, and a center starchy endosperm that stores starch and gluten storage proteins.

Nutritional recommendations

The evidence for connections between [fiber and health](#) outcomes was evaluated by the Scientific Advisory Committee on Nutrition (SACN). It was discovered that frequent fiber ingestion lowers the risk of colon cancer, type 2 diabetes, and cardiovascular disease.

The average daily consumption of dietary fibre for adults in the UK is almost half of the recommended 30g, which varies according on age and gender.

Furthermore, there are particular guidelines for kids that are also not followed. It's also advised to replace starchy meals with wholemeal or wholegrain substitutes, especially refined goods like white bread and white rice. A useful visual aid for following the UK Government's recommendations for a nutritious, well-balanced diet is the Eat Well Guide.⁶



Glycaemic Index (GI)

Diets high in ancient wheat led to the downregulation of important regulatory genes involved in the metabolism of fat and glucose, which is equal to preventing or delaying the onset of diabetes.

Compared to wheat, rye and spelt produced a lower acute [glycaemic response](#).

A study showed due to a downregulation of important regulatory genes in the liver, the development and progression of diabetes in the ZDF rats may be less noticeable in the groups fed ancient grains (spelt, emmer, and einkorn) and rye compared to the wheat group after 9 weeks of intervention.⁷

Allergen and Intolerance Risks

Numerous negative reactions have been linked to wheat and can be categorized into three main groups: Allergies mediated by IgE, intolerances mediated by T cells, including celiac disease, and a variety of less specific diseases together referred to as “wheat (or gluten) sensitivity.

There is no evidence to support the widely held belief that intensive agriculture has increased the amount of gluten and harmful gluten peptides, which has subsequently increased the incidence of celiac disease.

Ancient grains, on the other hand, should be avoided if you have celiac disease because they also contain a considerable quantity of gluten.⁸



References

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