

Module 1: Hydrothermal processing to promote micronutrient bioavailability in processed food products

Introduction to Nutritive Food Product Development -
Selecting Raw Materials (whole ancient grains)

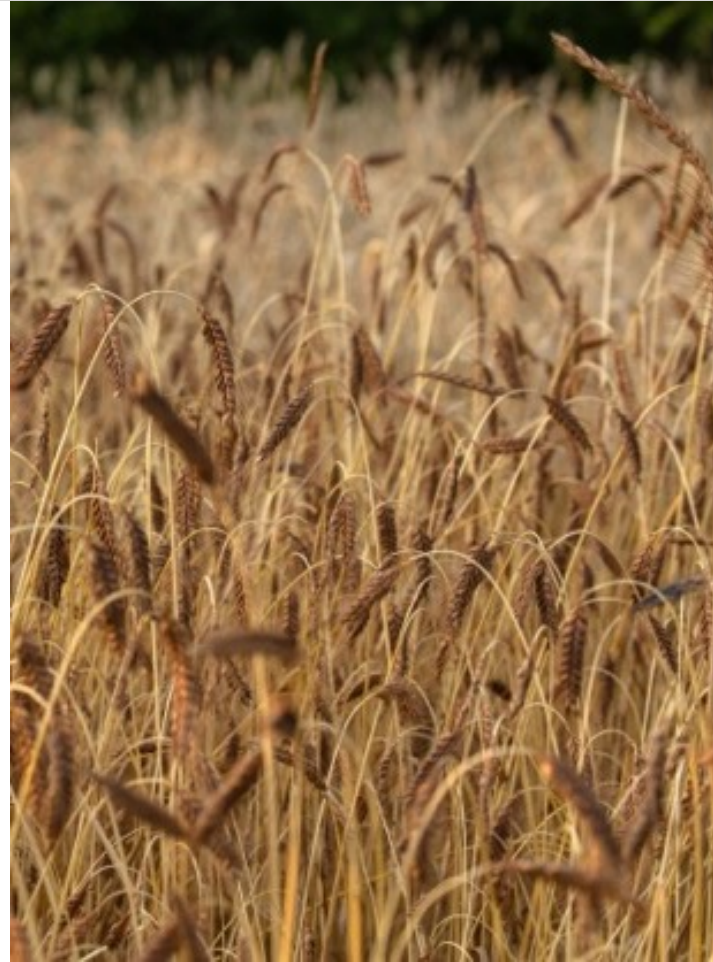


Annette Almgren— Founder Hidden in Grains
Senior Research Engineer
Senior Biomedical Scientist

Ancient grains

Ancient grains or cultivars are **old varieties** minimally changed by selective breeding over recent millennia, having great genetic potential for diversity.

Grains farmed today derive from seeds originated from wild grass species. These were gathered for several thousands of years before they were cultivated.



Ancient grains – a bit of history

About 13,000 years ago, in the Fertile Crescent, wild grass species selected and collected for thousands of years, were sown out and domesticated, becoming the premise to farming.

Later during the Neolithic period these ancient grains were brought to large parts of Europe and Asia.

At the same time, a large number of ancient grains like rice and millet were grown in Asia. The same happened with maize (corn) on the American continent, all in a wide variety of cultivars and colours.



Photo by Markus Winkler on Unsplash

Read more: Lost Crops of Africa, Volume I: Grains. Board on Science and Technology for International Development, National Research Council, NATIONAL ACADEMY PRESS. Washington, D.C.1996

Why using ancient grains?

Globally there is a need for staple foods, like grains and legumes, with high nutrient density. The majority of grains grown today have been developed during the last 50 years for high intensive farming.

Modern varieties provide high yields and high content of proteins and carbohydrates but relatively low content of vitamins and minerals.

A diet with low content of vitamins and minerals leads to **hidden hunger**.

Read more: Food in the Anthropocene: the EAT-Lancet Commission on healthy diets from sustainable food systems | VOLUME 393, ISSUE 10170, P447-492, FEBRUARY 02, 2019



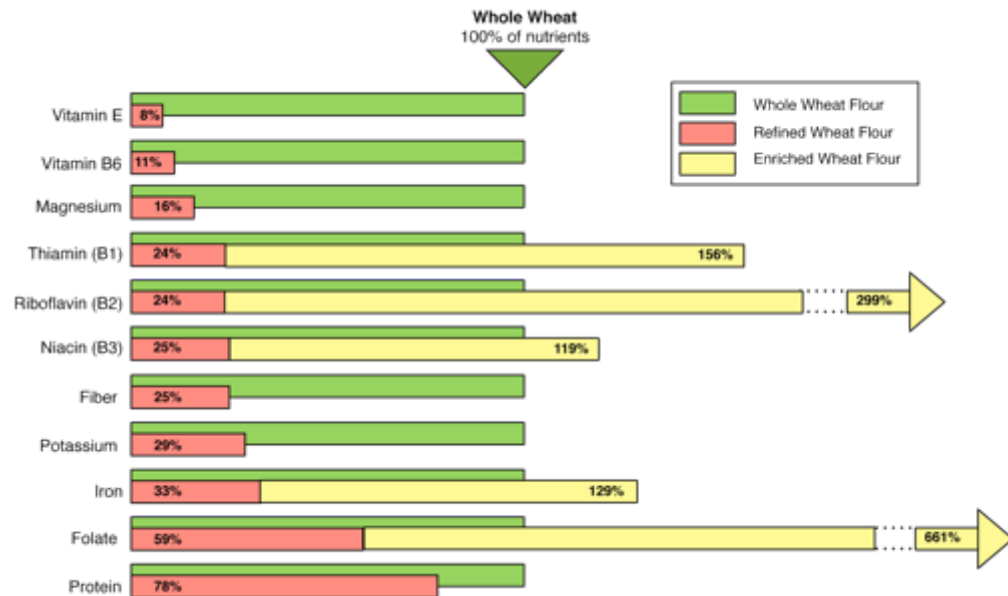
Photo by [Matt Benson](#) on [Unsplash](#)

Why using ancient grains?

Ancient grains are **nutrient dense** and an excellent choice to produce tasty, nutritive whole grain-based food products from local varieties.

Grains are amongst the most nutrient dense foods naturally available, but only if they are used as **whole grain**.

Unfortunately, most of the grains used today are heavily refined and have lost most of their minerals and vitamins.




Read more: <https://wholegrainscouncil.org/>

Why using ancient grains? - A benefit for farmers and the environment

Ancient grains have high genetic diversity. This genetic potential makes ancient grains **highly adaptable to changes** in the environment.

Ancient grains are **best grown without artificial fertilizers and pesticides**, resulting in farming contributing to a better environment.

Read more: [FAO Biodiversity for Food and Agriculture](#), 2019

A wide-angle photograph of a vast field of golden wheat. Scattered throughout the field are numerous red poppies, some in full bloom and others as buds. The background shows a distant treeline under a pale, hazy sky. The overall lighting is soft and warm, suggesting late afternoon or early morning.

Selecting ancient local varieties is the first step to produce nutritive food products.
Read more about how to process ancient grains for maximising micronutrients
availability in the next chapters of this training.