



The First Grains

Einkorn, emmer, and spelt are early predecessors of modern wheat and some of the many ancient grains gaining popularity with consumers and chefs.

These ancient wheats are higher in many vitamins and minerals than modern wheat. They bring a delicious range of flavors to baked goods. However, some recipes must be modified to account for their lower gluten strength. Emmer and einkorn are also cooked as whole grains, called "farro" and added to soups and salads, or eaten as a porridge.

In general, einkorn, emmer, and spelt are higher in protein, and therefore gluten, than modern wheat. However, there is a significant difference in the gluten functionality and digestibility between grains. Gluten consists of the proteins glutenin and gliadin and it is the ratio and interaction of these two proteins that affect digestibility and baking characteristics of grains.

Some people with gluten sensitivity can eat these grains with little or no adverse effects. Current research shows that "ancient wheat varieties have shown convincing beneficial effects on various parameters linked to cardio-metabolic diseases". More specifically, "the consumption of ancient wheat products ameliorate pro-inflammatory/anti-oxidant parameters, as well as glycemic and lipid status".*

Unlike modern wheat, these grains are not free-threshing. The grain does not come out of the hull at harvest and thus requires an extra processing step. They also yield less in the field and are more likely to lodge (fall over). Both the lower yield and additional processing costs contribute to the higher prices paid by consumers.

*Dinu, M., A. Whittaker, G. Pagliai, S. Benedettelli, and F. Sofi. 2018. Ancient wheat species and human health: biochemical and clinical implications. J. Nut. Biochem. 52: 1-9.

Flour and retail grain:

Wyoming Heritage Grains
www.wyomingheritagegrains.com
307-271-6455
Ralston, Wyoming

Malt and wholesale grain:

Wyoming First Grains Project
www.neolithicbrand.com
307-766-6205
Tom Foulke - University of Wyoming



Wyoming Grown Ancient Grains





Einkorn

Einkorn (*Triticum monococcum*) was one of the first cereal grains domesticated and grown for food in Mesopotamia. It was widely cultivated throughout the Near East, Mediterranean region, southwestern Europe, and the Balkans during the Neolithic and early Bronze Ages. Einkorn is a diploid wheat which means it has only two sets of chromosomes, compared to modern wheat which has six sets of chromosomes.

Einkorn is higher in protein, fat, phosphorus, potassium, riboflavin, and beta-carotene than modern wheat. However, it has lower gluten strength. Adapting yeasted bread recipes to work with einkorn flour requires some creativity and skill but the benefits are worth the effort! Some people with gluten sensitivity find that they can digest einkorn without issue.

We recommend einkorn for quick breads, pizza, pancakes, and cookies. Increase liquid by 15-25% when substituting einkorn for modern wheat flour in recipes.



Emmer

Emmer (*Triticum dicoccoides*) is an early ancestor of modern wheat that was first domesticated about 12,000 years ago in the Levant, an area that now includes Turkey and Syria. Emmer is a tetraploid wheat which means it has four sets of chromosomes.

Like its close relative durum wheat, emmer is high in protein. It is known for its rich, nutty flavor. Some people with gluten sensitivity find that they can digest emmer without issue.

In 1915, Worland, Wyoming was home to the Emmer Products Company that processed and sold "emmer breakfast foods" made from locally grown grain.

We recommend emmer for sourdough bread, quick breads, pancakes, pizza, and pasta. Increase liquid by 15-25% when substituting emmer for wheat flour in recipes.



Spelt

Spelt (*Triticum spelta*) is an ancestor of modern wheat that is still commonly used for bread and malting in Europe. Like modern wheat, spelt has six sets of chromosomes, making it a hexaploid. As a result it is more widely adapted to a range of growing conditions and has been the subject of more crop breeding and cultivar selection work than the other early wheats.

Spelt and emmer production in the U.S. peaked in the early 1900s at close to 600,000 acres. Some people with minor gluten sensitivity find that they can still tolerate spelt. Spelt is known for its slightly sweet and nutty flavor compared to modern wheat.

We recommend spelt for whole grain breads and cookies.