

Spelt or common wheat? Their diversity of nutritional components prevents identification of which species is healthier

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Image of one of the experiments. Credit: University of Cordoba

After comparing 90 varieties of spelt with 9 varieties of modern, common wheat, a study by the UCO concluded that the marked heterogeneity characterizing the nutritional compounds of the different varieties makes it impossible to state that one species is healthier than the other

Faced with the question "What is healthier, spelt or common [wheat](#)?" one is very likely to hear "spelt." However, this idea, now well rooted in the public's imagination, is not supported by solid scientific evidence.

Spelt (*Triticum aestivum*ssp. *spelta*) is part of what has been termed "ancient wheat;" that is, is a type of wheat that was important in the past, but was replaced by local varieties of common wheat, at first, and later by modern cultivars with better agronomic yields.

Given its resurgence, despite the lack of evidence of its greater healthy potential, a team at the University of Cordoba analyzed the genetic variability of several components of the grain, related to nutritional quality (fibers such as arabinoxylans, micronutrients like zinc and iron, [protein content](#) and phytic acid) in a set of varieties of spelt and common wheat.

"It is very difficult to answer such a complex question, since in these two species (spelt and common wheat) there are many different varieties with different properties. In addition, it would be necessary to define what is 'healthy,' since in areas of South Asia where there is a zinc deficit grains containing more zinc would be healthier, while in western areas without this deficiency it would be better for it to contain more antioxidants or fiber."

"Also, to provide a definitive answer, these studies would have to be complemented by [clinical trials](#)," explained Carlos Guzmán, a researcher at the University of Cordoba's Department of Genetics who scholar

participated in this study characterizing and comparing species of spelt vs. common wheat.

This paper does not provide a simple yes or no to the question. What the research team did is to characterize the nutritional components of a significant number of Spanish varieties: 90 spelt and 9 wheat, compared to studies in which only 1 or 2 varieties of each species were considered. Their conclusions were far from definitive. After the analysis, it is clear that "it is neither accurate nor true to say that spelt is healthier than common wheat, due to the great genetic variability in important components for health in both species," the researcher said.

For example, the study data indicates that, in terms of fiber content, modern, common wheat generally contains the greatest amount of grain. "Another question is the product's final fiber content which will also depend on the processing of the grain and what type of flour is made with it (refined vs. whole grain.)"

Addressing other parameters, the researcher highlighted that for micronutrients such as iron and zinc "spelt, in general, has a higher concentration of these than modern wheat, but it also has more phytic acid, which makes the micronutrients less assimilable by the body, although that same phytic acid is a powerful antioxidant, and more beneficial in that regard."

In search of exceptional genotypes to advance genetic improvement

Although the study makes it clear that none of the varieties analyzed is the 'winner' in terms of being healthier because they combine all the properties, it identifies which ones are better in each case, opening the door to developing healthier wheats using those that are better thanks to

certain characteristics.

For example, in this characterization they have identified a variety of spelt that is extraordinary for its exceptionally large grain, "which opens the door to using it in breeding programs to create wheat with larger grains, and [genetic studies](#) to understand why this plant's grain is genetically larger, since normally the larger the grain, the higher the crop yield," Carlos Guzmán explained.

This type of study, in addition to debunking certain inaccuracies that may confuse consumers, increases our knowledge of the different varieties of wheat, paving the way for future studies that might resolve different nutritional and agronomic problems.

The study is published in the *Journal of Agricultural and Food Chemistry*.

More information: Ana Belén Huertas-García et al, Genetic Variability for Grain Components Related to Nutritional Quality in Spelt and Common Wheat, *Journal of Agricultural and Food Chemistry* (2023). [DOI: 10.1021/acs.jafc.3c02365](https://doi.org/10.1021/acs.jafc.3c02365)

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