

Q. I wanted to ask you about the gluten content of *Sonora* wheat. I've always said that it was low in gluten but the *Sonora* wheat profile on Slow Food USA's Ark of Taste says it is very glutenous! What is right?

A. The word "gluten" = wheat endosperm protein.

Similar proteins are also present in rye and barley endosperm. (Endosperm is the main part of the grain that is covered by bran and it is the endosperm that stores the starch and protein ready for the germ on the end of the grain when it sprouts.)

Wheat gluten forms the spongy network in raised wheat breads. Have you ever chewed a spoonful of clean wheat grain? If you chew and only swallow that which dissolves you will be left with a wad of "chewing gum"; this chewing gum is the gluten. When making bread, the successful methods enable the release of this protein from the starch matrix, so that it can coalesce and form the bread structure.

When wheat is grown under favorable conditions for the variety including fertile soil, then most wheat should have a protein value of 12%; and ideally around 15%.

Differences between baking and pasta use qualities are partly due to differences in gluten description and partly due to differences in starch description. There are at least three recognizable groups of end use character, mostly described by bakers in terms of gluten strength or character:

"Soft" wheat varieties like *Sonora* have a mellow gluten protein and perform well in pastry, and in bread styles such as slab pan breads, ciabatta, pocket breads, flour tortillas, pizza and crackers.

"Hard red " varieties like *Red Fife* and *Turkey Red*, perform well in tall pan breads, and open textured artisan breads and they have a strong gluten character that is of the type most familiar to bakers since it is so widely available in the form of refined flour.

"Durum" wheat has a mellow gluten rather like the *Sonora*, even though durum wheat is even harder as a grain than hard red wheat.

(Hardness is simply measured as a physical character of the grain. Generally it is approximately constant for each variety, but in off-seasons, hard varieties can present soft kernel grain and this usually means that the end use quality is compromised. Mottled grain or "yellow berry" is sometimes the visual manifestation of reduced protein, and softness after a poor growing season.)