

New whole grain data. Who educates Millers & Bakers? Enzyme Active Malt

Whole Grain Connection Newsletter

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New data on whole grains

[New data](#) in the form of a chart, compiled from Global Health Metrics research published in The Lancet last year, show that replacing refined grains with whole grains globally could reduce the burden of chronic disease more than any other change.

Who educates millers and bakers about flour?

A new on-line company in California, selling groceries to be delivered to your front door, recently sent out a very elaborate brochure. Their statement, “We are doubling down on our commitment to local farmers and food makers ... “. To my horror they include a national brand of flour that is not local, not whole grain and does not even contain the compensating vitamins needed to replace some of the deficiencies of vitamins and minerals in refined flour. This flour was touted as “an essential for every baker”. I have to say that I was incensed! I tried to think of constructive ways to deal with this, yet again. Since the early 1990s refined flours under the guise of the “organic” label have been allowed to omit the replacement vitamins removed during the refinement. This replacement of some vitamins and minerals, has been part of an [internationally mandated](#) effort to compensate for these deficiencies, since the 1940s.

Many times, I have been dismissed from milling and baking premises and once vigorously shouted off! when I have pointed out this terrible deficiency in organic refined rice flour and organic refined wheat flours particularly. I have also approached organic organizations to no avail. The truth is that the organic people who wished to remove all additives from refined flour did not do their homework; otherwise they would have realized that the omission of the essential B-vitamins would lead to deficiency diseases, especially among those eating refined flour products as the base of a poor diet. My latest effort in trying to remedy this public health hazard has been to write a letter for distribution to millers and bakers as well as eaters, addressed “to whom it may concern”. [Here it is](#) for you to read and distribute as you see fit.

Enzyme Active Malt – a necessary ingredient for bread

Whole grain wheat flour contains only 2% simple sugars at most, and this is not enough to sustain yeasts and bacteria during the leavening of bread.

(Baker’s yeast alone is generally used with a considerable amount of added sugar, with the expectation of a fast rise produced from the fermenting sugar, rather than sugar released from the flour.)

However, when wheat grains are moistened and allowed to sprout, after approximately 24 hours they generate ever increasing amounts of enzymes including the enzyme amylase, or diastase as it is sometimes called, which releases simple sugars from the abundant starch in wheat flour. In practice if the sprouting is allowed to continue for 3-4 days, the sprouts becomes very rich in amylase, as well as all the related enzymes. Careful drying of these sprouts preserves the enzymes. The product, which is usually ground into flour is referred to as *enzyme active malt flour* or *diastatic malt flour*.

Whole grain flour from sound grain, made into a dough with water will not develop enough sugar producing enzymes within the usual time-frame for making bread. Also, when wheat is grown through a dry summer, which is the ideal, the grains are exceedingly low in enzyme activity at harvest. In contrast, in regions where summer rains are experienced the grains in the head may be moist for days at a time and they develop considerable enzyme activity. Excessive moisture on the grain before harvest can produce too much enzyme activity such that the grain components lose their dough making potential as the various components are degraded by the enzyme excess. We have become accustomed to the producers of refined flour testing wheat flour for enzyme activity, and if necessary adding the right amount of enzyme active malt to make the flour suitable for

fermentation to bread. You will notice that practically all refined flours contain added *malt*, even "organic" refined flours. As an aside, this addition of malt does not compensate for the vitamins and minerals removed during the refinement process.

Somehow many whole grain bread bakers do not realize how useful this enzyme active malt can be, especially in a sourdough fermentation using 100% whole wheat flour. When using California grown wheat, the inherent enzyme activity in the whole grain flour is generally very low indeed. So personally, I always add enzyme active malt to my formulations, at the rate of 1% with respect to the flour. However, it is wise to test various amounts of this enzyme active malt to discover the best addition to your flour to optimize your product. The range might be 0.25 – 1.00% with respect to the flour.

Oddly this enzyme active malt is rarely sold in grocery stores where it might be an obvious accompaniment on the shelves with whole wheat flour. [Briess Malt](#), in Wisconsin may well be the main supplier to the entire country; and they sell it wholesale in 50 pound bags. For the home baker using it at the rate of even 1% in their flour, this is an impossible amount to buy. For example, Bobs Red Mill does not have it listed and King Arthur flour supplies diastatic malt that has been mixed with an unknown amount of refined flour. Most enzyme active malts produced during a standard 3-4 day sprouting cycle have approximately the same enzyme activity, so that the amounts to use with a given whole wheat flour are fairly consistent.

However, it is easy to [make your own enzyme active malt flour](#) enough for a 6-month supply.

Note that so called "sprouted wheat flour" is something else again. In this case the grain is sprouted for only a short time, perhaps 24 hours or less during a moistening step. During this time, very little enzyme activity develops. The grains are then dried ready for milling into flour. These flours are not touted as enzyme active, and are not suitable for use in small amounts as a source of enzymes for whole wheat flour bread-making.