

# The Whole Grain Connection Newsletter #24

## Fall 2018

### Why can't they do this for us?

A sense of despair set in after returning from a visit in England where for a week I averted my gaze away from whole wheat. Back home again in California, I searched on-line for makers of stone mills: [Meadows Mills](#), [Jansen's Grist Mills](#) and [New American Stone Mills](#) did not even appear, yet these are the three millwrights making efficient stone mills that have granite stones that can be re-dressed and so kept in top notch condition. Others with composite stones such as the [Osttiroller](#) (actually mentioned in the Google search) and [Partisani](#) that I have seen in use, just do not grind finely enough after some time, and there is nothing that can be done but to replace the so called self-sharpening stones or keep the mills for grinding coarse cornmeal, and adding supplemental granite stone mills. I have no experience with the [Engsko](#) system, which also uses a cast synthetic stone. The owners of poorly maintained or faulty stone mills are sifting their disappointingly coarse flours, and fooling people into thinking that the sifted flour is still whole grain. In fact, the bran and germ are always preferentially sifted out and the sifted flour lacks its full quota of vitamins, minerals and fiber as a result. People can get very sick if deficient refined flour is eaten as a staple; hence the rejection of wheat flour by so many in the last decades, most likely resulting from organic refined flour, available since the 1990s, which is grossly deficient when not fortified or enriched with B-vitamins and minerals.

In any case more than one granite stone mill should be available in a milling enterprise. I suggest investing in mills with granite stones that can be optimized by re-dressing from time to time. The process is very manageable with [modern tools](#), and forethought as to how and where the mill can be taken apart for maintenance. ([www.trowandholden.com](http://www.trowandholden.com))

My apologies if a miller actually re-grinds and returns sifted off bran and germ to the flour, because then this is a 100% whole wheat flour. However, the beautiful efficiency and economy of single pass stone milling of dry grain is lost. Similarly, when the roller milling process is adapted for the production of whole wheat flour, the process is unnecessarily complex, potentially wasteful in energy and in many cases does not produce an optimal 100% whole wheat flour.

Why cannot the major millers, indeed all millers add efficient granite stone mills to produce whole wheat flour in one pass of dry wheat grain, and so provide fresh 100% whole grain flour locally for those of us who know its benefits? Why is the assumption made that we would rather eat white flour bread? Ask all those [100 million people](#) who are pre-diabetic and diabetic in the USA, whether they would rather eat 100% whole wheat breads (also made without refined sugar)?

Refined sugar is currently present in most bread because we also have the anomalous leavening system of “yeast with refined sugar”, which spoils the “unrefined carbohydrate” value of many commercial so called whole grain breads. Instead, the sourdough leavening system actually removes the most easily digestible carbohydrates and leaves behind a useful mix of nutrients, that does not produce a fast and high rise in blood sugar after a meal. The sourdough is also a source of pro-biotic microorganisms that thrive on the pre-biotic whole grains. The ideal bread is made with 100% whole wheat flour and a sourdough leavening. The chances are that you know someone who has been advised by their physician to choose foods without refined carbohydrates, as a means of improving their pre-diabetic or diabetic condition. It’s likely too that they cannot find whole grain breads that do not also contain refined flour and sugar. The solution for them is to know one of the wonderful [miller-bakers](#), who sell sourdough leavened 100% whole grain breads at the local farmers market, and local grocery stores. Or they have taken to milling their own 100% whole wheat flour at home with one of the latest [Mock mills](#) ([www.wolfgangmock.com](http://www.wolfgangmock.com)) and have learned how to make good whole wheat sourdough bread for themselves. See recipes at [www.wholegrainconnection.org](http://www.wholegrainconnection.org).

I’d say also that the big millers who can only use hard red wheat to efficiently produce refined white flour, have hoodwinked us into thinking that only hard red wheat can be used for bread and that if it’s whole wheat then it must be made with an excess of water. Both concepts are false, and it’s time to root out the truth.

First, the roller mills were specially designed to produce bran and germ-free flour from the hard red wheat that could best be produced in the Plains States of the USA and Canada. However, the roller mills can also be modified to produce bran and germ-free refined flour from softer grains such as soft wheats, spelt and rye, and very hard durum, but the output of refined endosperm flour is generally much less. Soft wheat and most other wheat types yield approximately 66% white flour from the original grain, in comparison with 76% of the original grain as white flour when hard red wheat is used. Hence the refined flour miller's preference for hard red wheat. In case you are wondering: the animal feed industry uses all that bran and germ that should instead be protecting human health!

Second, I now see that the general advice to use more water in whole wheat dough than would be expected for a refined flour bread, is counterproductive. Since 85% at the most of the whole grain flour consists of endosperm with bread-volume potential, we should be using correspondingly LESS water; say 85% of the amount used for an all white flour bread recipe. The whole wheat dough for a similar final texture will be stiffer, but the bread texture produced will be close to that for a refined flour loaf; the volume will be perhaps only 85% of the white flour bread and the color will be determined by the bran and germ. If you want

the white flour bread volume then more whole grain flour is needed as the basis. What's more the stiffer dough is forgiving to work with. Bran and germ do not need extra water. The exception to all this would be when a whole wheat ciabatta style bread is desired, in which case much greater skill is required to control the wet dough and produce the open texture that is characteristic of this style.

Really good 100% whole wheat breads can be made with all the original landrace wheat types. Soft wheat, spelt and durum wheat I've discovered, since waking up to using LESS water in the dough, produce lovely breads with their own character. It's ridiculous to believe that only hard red wheat can be used to make bread. Instead each original landrace wheat type produces a characteristic flavor and texture, appreciated for millennia prior to the introduction of the monopoly of roller milling the hard red wheat that was brought to the vast American Plains in the 1870s. Surely this vast grain production could instead be distributed as grain (instead of as refined flour) and stored locally as grain, ready for local stone milling to freshly whole wheat flour, for really good whole wheat breads. This alternative system is one that could provide us with the whole wheat flour and whole wheat products that are so desperately needed. Our food security as well as our health would be greatly improved. Meanwhile in desperation, we are working hard from the bottom up, to locally provide grain and freshly stone milled 100% whole wheat flour. Bravo! to those farmers, millers and bakers who understand just how important is this need and work to fulfill it.

By now I know of a miller who has converted some of their roller mills so that they can produce 100% whole grain flour without the excessive wetting (tempering) that is the norm. I ask why cannot all those millers with banks of roller mills add to their system banks of granite stone mills for the production of simple dry 100% whole wheat flour for the masses? Imagine the jobs making those mills that could result from doing just this! Imagine the change for the better in the health of the nation! Surely the investment would pay off handsomely.

### **The Modern Stone Mill**

Stone milling of grains is a very modern and sophisticated endeavor. Imagine the modern equipment that is used in quarries to quarry granite stone, transport it to building sites and create the varied and beautiful finished surfaces. Next you realize that granite stone for grinding grain, can be custom cut and finished exactly according to the specifications needed to do the job very well. In addition, stone sculpting tools are precision pneumatic hammers and grinders with diamond bits; they are powered with compressed air, and electric motors and perform very quickly.

Very often the baker or miller is already a skilled craftsman so that learning to use these tools to maintain the surface of millstones is no problem at all. In fact,

taking good care of a stone mill so that the whole grain flour produced is optimal at all times is a source of great satisfaction.

The mills might seem large and heavy, but here again effective modern jacks and cranes of the type well developed for car repair, can assist with the lifting and maneuvering needed to access the stones. Stone milling grains has been brought into the 21<sup>st</sup> century. There is still no other milling system available to produce 100% whole wheat flour so effectively and economically.

### **Seed for Landrace Wheat Varieties**

Landrace wheat grown in a climate and conditions matching their origin, are the most likely to give good agricultural results; diseases will be minimized. It's high time that we should re-learn the agricultural and culinary possibilities from these brilliantly adapted ready-made varieties, all of which can be stone ground to 100% whole wheat flour.

[The Whole Grain Connection](#) sells seed in farmer amounts; four 25-pound bags will seed somewhat more than an acre. Seeding rate should be less than for conventional wheat, because landrace plants are generally larger in both root and top structure and so need more space per plant. The Whole Grain Connection offers 12 landrace wheat varieties, including soft white, spelt, rivet, durum and emmer types best suited to the Mediterranean climate of the Western states. In all but the most arid regions, they can be grown without irrigation.

Because these varieties are landraces, they are non-proprietary and can be freely saved and grown forever.

Landrace varieties, with their larger soil building roots, are best grown in rotation within an organic system that includes legumes and animal grazing of the young wheat crop. Thus, soil building and animal pasturing add to the value of the wheat crop so that absolute yield is not considered to be the primary goal when growing these varieties. However, in a good year the yields can be very encouraging.

### **Notes on understanding sourdough starters**

Sourdough starters illustrate fermentation, and as many of you have discovered there are three phases during the sourdough starter fermentation that are similar whether you are making yogurt, beer or wine or whatever is fermented. Here are some basics for sourdough starters that are useful to know:

- A sourdough contains a mix of acid tolerant and compatible yeasts and lactic bacteria best fed with a nutrient rich batter of whole wheat or whole rye flour, some extra enzymes from malted or sprouted grains, and drinking water that is charcoal filtered to keep the calcium and magnesium salts, but remove anti-bacterial chemicals such as chlorine.
- Stirring the mixture brings oxygen in and favors yeast growth, whereas on standing the oxygen is depleted and lactic bacteria growth is favored

- Adding a *small* amount of the previous batch of mature starter to a *large* amount of batter, means that at first the microorganisms need a little time to adjust to the nutrient rich new batter (*adjustment or lag phase*), this is followed by rapid multiplication of the microorganisms in the excess of nutrients with copious gas evolution for quite a long time (*exponential phase*). This is followed by a dwindling evolution of gas and a thinning of the batter as the nutrients are used up by the huge number of microorganisms finally present (*saturation or stationary phase*). It's this relatively stable saturation phase that is desired in a mature sourdough starter so that it can be stored at 40°F (4°C) until needed to inoculate a bread dough directly or to generate a renewed supply of mature sourdough. The microorganisms will always be at approximately the same concentration each time a saturated starter is made in this way, which provides consistency to the whole process of sourdough bread-making. For best flavor and activity mature saturated starter stored cold is best used within a week, although it will still be lively for a month.
- For every 18°F (10°C) rise in temperature the fermentation will be 2-3 times faster. Thus, a starter might be matured in 24 hours or less at 86°F (30°C) but may take 3 days to reach saturation at 68°F (20°C). *Similarly bread dough might take just 3-5 hours to double in volume at 86°F (30°C) but can be left at 68°F (20°C) for up to 12 hours before it doubles.*
- When a small amount of saturated starter is added to make bread dough, the microorganisms start to go through the same three phases: short lag time and then a long exponential phase when gassing is at its best; the bread is generally baked long before the third stationary saturation phase is reached. Thus, there is the benefit of a long gassing time when a small amount of mature saturated sourdough starter is used to initiate fermentation in a bread dough.

### **Whole Soft Wheat English Cottage Loaf - low hydration dough**

The internet has provided us with a lot of fake news, so much in fact that we are at last questioning whether or not information is truthful. Well, we've had fake advice about whole grain baking since 1880 and it's time to get the story right and extract ourselves from the grip of commodity hard red wheat refined flour:

It is possible to bake bread with other kinds of wheat and what a nonsense to think that more water is needed to make a whole wheat dough than a refined wheat dough. We've missed a lot in the last 135 years by listening to such nonsense. Please check out this recipe for an English Cottage Loaf. It's made with wheat other than hard red wheat and the amount of water in the dough is lower than for a refined flour dough.