The Whole Grain Connection Newsletter
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#41

Whole grain inspiration from farmer-millers and a maltster

It's been an interesting time since the last newsletter in October 2022, for those of us who want to see progress with localized organic whole grain milling. I've heard from farmers like Terry Button, who has taken pride in growing, harvesting, cleaning, and stone milling grain crops for decades. At Ramona Farms, in Arizona, Terry Button and his wife Ramona have been the farmers since the 1970s. They grow organic *White Sonora* and *Pima Club* wheat… and chickpeas, all of which have been grown by the Pima people for more than 400 years. Terry Button and his wife Ramona also grow durum wheat and several varieties of flour-corn native to their region, as well as three varieties of Tepary beans, which have been passed down through Ramona's parents.

Honoré Farm and Mill, Capay Mills, Early Bird Farm and Mile High Mill all recently won grants from California Department of Agriculture. These grants are from the *California Farm to School program*, to supply schools with California grown organic whole grain flours and to provide whole grain education opportunities to school children in 2023/2024. This is a valuable step forward in financing localized organic whole grain flour supplies and education. Many thanks to all!

A recent study showed that "the healthy hunger free kids act of 2010" had a quick impact – kids now have a lower BMI on average. (JAMA February 13, 2023)

Bluebird Grain Farms in Northern Washington State was founded by Sam Lucy and his wife Brooke in 2004. where they grow all three hulled grains organically: einkorn, emmer and spelt, as well as rye and other wheat types. Their latest development is a brand-new grain handling facility that includes a whole grain flour mill – the grand opening was in November 2022. Bluebird Grain Farms contribute greatly to the supply of organic whole grains and fresh whole grain flours. Congratulations!

Ron Bokenfohr in Alberta, Canada reckons that the trucks sent to California to retrieve salad greens fruits and vegetables could economically carry their Canadian grown regenerative grain crops and fresh flour to California. The actual need would be for organic grains and whole wheat flour. In Canada the grain farms are usually large compared to California grain farms and we have a population such that we do need to import organic wheat to make up for the shortfall in California grown organic grain. Ron says they have the capacity to completely process their grain including sprouting (and malting) and stone milling. They also have a new Reynold's air-swept impact mill, capable of producing very finely ground whole grain flour in quantity, on demand, and therefore fresh.

Admiral Maltings in Alameda, California, is rising to the need for high quality freshly malted grains for the artisan brewer who would like to use California grown and malted grains. Along the way we asked founders Ron Silberstein and Curtis Davenport to malt some *Tibetan hull-less barley* grown at Pie Ranch on the California coast, for bakers of 100% whole grain breads. Ron and Curtis have plans to continue malting hull-less barley, since it is also appreciated by whiskey makers. Most barley malt for bread is made from hulled barley and although it is available as a flour for bakers, it makes more sense to have the hull-less type of barley malted for bread (see recipes at www.wholegrainconnection.org). An explanation follows: The husk on hulled barley malted for beer adheres to the bran. For baking, removal of the bran by pearling usually takes some bran with it. Thus, the barley malt prepared for bakers using a hulled barley is likely not quite whole grain. Instead, hull-less barley malt is clearly whole grain. In general hull-less barley is preferred for foods; it is naturally whole grain since it does not need pearling to remove the husk. Indeed, there is a resurgence of interest in hull-less barley simply because it is truly whole grain and because it contains healthful beta-glucan.

What do we really want our bread to be like?

The aroma and flavor of freshly baked bread gives universal pleasure. Crisp crustiness, a warm amber colored crust, and beautiful crust designs all win attraction. The ideal pizza has a crisp crust……. But none of this is played out for bread wrapped in plastic and purchased in a supermarket, where instead the requirement is squeezable softness, including a soft crust. Sliced sandwich bread wrapped in wax paper, accounted for 80% of bread consumed in the USA just 5 years after the sliced bread invention in 1928; it is tempting to think that this might still be so for the plastic wrapped modern versions. Also, I've seen a 3-4year old sitting in a cart at the farmer's market while parents were shopping, diligently pick out the soft crumb to eat from a piece of baguette. In outdoor café and restaurant lined Castro Street, in Mountain View where I live, I've noticed too that lunch time sandwiches are often chosen with soft slices of bread or large soft buns. There is much bread variety beyond the crusty artisan loaves, gorgeous and delicious as they are.

So far in the quest for pleasing with truly whole grain breads, it is the crusty artisan 100% whole grain loaf that has been perfected. But perhaps after all, a hidden fear among eaters advised to convert to truly whole grain bread, is the loss of soft texture and sweetness in bread. My investigation was further intensified by the perceived need for soft 100% whole grain sandwich buns and sandwich loaves for school children. It also seems to me that adults with good teeth are the lovers of high temperature baked crusty artisan loaves and that children and the elderly with less than a full set of strong teeth really prefer a soft and practically crustless bread.

Time to try my hand at soft 100% whole grain whole grain breads: Pain de Mie, soft sandwich loaves, soft sandwich and dinner buns, focaccia and more.

Surely methods already in use for achieving softness in refined flour bread could also be used to soften 100% whole wheat flour breads: Addition of milk, the preparation of a milk-porridge with a portion of the flour and the use of a closed baking pan that

essentially self-steams the bread are all contributing to soft Japanese milk bread. Brioche is made soft by the added milk and butter. Olive oil is added to make focaccia soft. Steaming is key for making soft Chinese steam buns. Modern soft sliced bread is made using specific enzymes. Refined sugar in larger amounts than needed to feed baker's yeast, contributes to softness as well as sweetness in refined wheat bread, but this is a relatively modern ingredient that lacks the accompanying health promoting nutrients of a whole plant food. Instead, old-fashioned soft texture with a hint of sweetness in bread can be achieved with the judicious use of enzyme-active malted grain and a sourdough leavening also containing malt; the malt enzymes contribute both softness and sweetness. The acidity produced by the lactic ferment in the sourdough halts the amylase enzyme activity before baking. All that's left to do is steam the bread for that ultimate softness.

The baking method is perhaps the most significant factor for determining whether the bread will be crusty or crustless. Plenty of steam in the oven and a low baking temperature give the softest loaves and buns.
Recipes to make soft whole wheat breads and buns (focaccia, soft sandwich buns and soft baguette) using steam, can be found on the recipe page
at: www.wholegrainconnection.org
For those who live only by crusty bread and roasted grain flavor, soft-crust bread can later be toasted or crusted by baking in a 400ºF oven for 20-30 minutes. Or the same formulations can instead be baked at a higher temperature (350 – 450ºF) from the start. By the way, the generous amount of malted barley in these whole grain breads makes the baked crust flavor marvelous.

Spelt is highly varied

Very rarely is spelt grain or flour sold to consumers with an identifying name. Yet we could all as bakers benefit from knowing about the name and

baking characteristics of the spelt supplied. The recipe for a short soft spelt baguette has been steam baked the same way many times just to prove consistency in the method. Of the three spelts that were easily available commercially, just one was an ideal baguette baking variety, with just the right degree of elasticity; it was not named by the supplier. The other two produced a similar rise, but the cuts did not open to the leaf pattern so essential to a baguette, because they lacked sufficient elasticity.
We need greater selectivity and transparency from farmers and millers who are selling spelt to bakers! The California Wheat Commission has a lab where baking characteristics can be determined for each variety. This soft baguette recipe provides a practical method for recognizing the differences between wheat varieties with respect to their elastic character.

Spelt is a very soft wheat that has been neglected by the refined flour millers because the grain is so soft, and therefore inefficiently milled by them to refined flour. The reality is that spelt is ideal for stone milling to whole wheat flour just because it is so soft. We need to make it known to seed suppliers and farmers that selecting good baking varieties of spelt to grow and sell, would be greatly appreciated for stone milling to flour for 100% whole wheat breads.

Front label declaration of whole grain content

How about up-front labelling of whole grain content in bread and other grain foods?
The recommended quantity of whole grains to eat each day is 96 grams (USDA Dietary Guidelines for an average adult).
Regardless of the formulation or name given to the bread, a customer could be given clear information as to how much whole grain is in a serving, and therefore how much that serving would contribute to the recommended total of 96 grams of whole grains each day.
If you think this is a good idea worth airing to the FDA and USDA, watch for opportunities for public comment. And if you are a baker, please consider providing this information (grams of whole grains per serving) on the front of the package or in artisan product descriptions on websites.

Parting thought

It's not enough to have a plant-food based diet, it needs to be a whole-plant-food based diet.