

The
WHOLE GRAIN CONNECTION

Aiming to enhance the desirability and availability of 100% whole grain breads, and other 100% whole grain products, preferably from organically and sustainably grown grains

Newsletter number 2, September 2000

The Conclusion of the Summer

One observation stands out above all others from this amazing summer of harvests, and that is that the most successful farms are the ones that somehow carry their product all the way to the customer.

The Farmers Markets and some kind of customer subscription are the connections that are allowing this to be, and this is wonderful for crops of fresh vegetables, and fresh fruits. But the link that would allow an even steadier, direct flow between farmer and customer, would be a good farm kitchen, where many of these things could be preserved for year round use or at least be converted to a table ready form. This applies to greens that are washed to near perfection before leaving the farm, fruits made into all kinds of preserves, concentrates and juices, nuts that are dried and packaged, milk that can be made into a cultured product, but especially it applies to wheat that could be made into 100% whole wheat flour, breads, pasta and other products. Actually a good farm kitchen or a bakery, is none other than a food processing plant, certified by the health inspectors, and meeting our own high ideals for cleanliness and efficiency.

Milling clean wheat berries to 100% whole grain flour is a simple one step process, with an electrically driven stone mill. Making rustic hearthbreads requires a clay or brick oven that is best built right there in the bakery. Firing that oven can be preferably with farm wood and prunings, or by gas or by electricity.

The smallest farms are at a disadvantage in being able to provide a good kitchen, but what if two or three farmers build a good kitchen together, or a whole valley of farmers

builds one. Imagine the local industry and employment that would result. Imagine the joy from those in the cities eating all their foods so directly and responsibly farm produced. Carrying this to a logical extension, the Farmers Market stands would become none other than shopping stores, or at least constantly stocked stands in a permanent, daily, covered Farmers Market.

California Wheat Commission and the *Whole Grain Connection* form a link

The California Wheat Commission is a non-profit trade organization for California wheat farmers. They have a staff of four under the directorship of Bonnie Fernandez, offices and a well equipped wheat testing laboratory in Woodland, all supported by a small percentage from the first sale of each member farmers' wheat. For many years the export of wheat was the main marketing activity, but more recently there has been a trend to also sell California wheat in California and the Western States. The California Wheat Commission works very closely with the California wheat breeding programs centered at UC Davis. As a result the wheat varieties chosen by the member farmers are usually those developed through UC Davis, under the leadership of Lee Jackson, and by independent Seed companies who have associated themselves with the UC Davis program. Each year there is a meeting of farmers, breeders, bakers and other users of California wheat and they present to each other their opinions of the current and new varieties of wheat that will be available. This year for the first time,

Monica Spiller will be part of that group and she will evaluate their latest wheat varieties for suitability for barm breads (naturally leavened whole wheat breads). In return there is interest on their part, in the *Whole Grain Connection* work of selecting landrace wheat varieties for organic farming, without irrigation, in California. We have already gratefully experienced a bonus from participating in this program, and that was help with our small scale harvesting from Tom Kearney, the Yolo County Farm advisor, associated with the University of California co-operative extension.

Labelling whole wheat bread matters!

Have you ever seen a bread labelled *100% Whole Wheat*? If you have never seen this label on a bread, then you may never have eaten a bread made entirely from whole wheat, including all the germ and all the bran together with the endosperm (white flour segment). Unless of course you make your own *100% Whole Wheat* bread. Even the few commercial bakers who make a truly whole wheat bread according to their ingredient list do not seem to use this label. Others do not use the *100% Whole Wheat* label because they are using gluten flour, which is really also a refined wheat flour. Yet *100% Whole Wheat* bread would be a choice bread, nutritionally far superior to any wheat bread containing refined wheat flour, refined gluten flour, or refined bran. Instead there is a selection of breads available in Supermarkets that are labelled *Whole Wheat*, which only need to contain a small percentage of whole wheat flour to justify the label.

But why does all this matter, after all if we care enough we read the ingredient label and decide whether or not this is the bread we would like to eat, and if we are desperate enough we make our own bread.

Recently however there have been two prestigious reports on cereal fiber, which of course includes wheat bread fiber, and its effect on disease prevention. These recent reports have suggested that cereal fiber is worthless as a protection against colon

cancer for example. This conclusion was drawn, despite many earlier studies that indicated that cereal fiber present in whole grains in particular, does protect. But consider this: How was it possible in America, for those nutritionists to assess the real amount and kind of dietary fiber contributed by breads, described by study subjects as *whole wheat*? And wouldn't the effect of purified wheat bran be quite different from the dietary fiber complex contributed by a *100% Whole Wheat* bread? Fortunately, for anyone who normally eats only 100% Whole Wheat bread, and the 100% whole grain versions of all other grain foods, some of the advantages are obvious on a daily basis: no constipation, and provided that we are exercising reasonably, no weight gain problem. We are inclined to trust the results from the many earlier studies, that whole grains do offer protection. But perhaps there is a qualifier, and that is that the whole grains should be organic, or at least grown and processed without pesticides. After all, it is in the germ and bran that pesticides would accumulate! The ultimate bread label then would be *100% Whole Organic Wheat Bread*.

Harvest Report

Heirloom wheat varieties harvested with antique combines, has been the theme of this year's harvest. These old combines are much smaller than most modern combines and so are appropriate for harvesting smaller areas of wheat. Small modern combines are available, but they are an investment that we have not yet made.

On June 25, Maack Farm in Marin county was the first to harvest and brought in their half acre of *Federation* wheat with a John Deere / Chalmers All-Crop combine from the 1950's. Alan Scott spotted the machine in Sebastopol, and bought it there and then. On the day of the harvest an old farm fire truck was set at the edge of the field and kept at the ready by Frank Maack, who was also chief mechanic, while nephew Charles Belford drove the tractor that hauled the combine round in a spiral towards the center of the field. It was a pretty smooth operation

except for one rather alarming glitch. After the first time around the field, everyone stopped for a breather and a necessary drink of water, and then Alan discovered that the crank handle for the combine motor was missing - how would we ever find it amid all those piles of straw? Fortunately Christian Connole, visiting from Australia, had the sharp eyes and good sense necessary to find it, within about fifteen minutes of the first moments of quiet panic.

Next came news from the farm in Santa Clara county, which shall be nameless to protect the beleaguered owner. They have beautifully restored equipment from the 1950's and much earlier, that promised an easy and efficient harvest. Because of their interest in wheat weaving they grew half an acre of a *black bearded durum* wheat from Italy, and especially to show off their threshing machine, they also grew half an acre of *Pacific Bluestem*. The first calamity came when hired help plus disking machine, disked all the black bearded durum wheat under, because he thought it was weed, when it was just 12 inches tall! The second strike of disaster was by local deer, presumably, but not proven to be the case! They ate the heads off all, literally all, the *Pacific Bluestem* wheat just as it was turning nicely from green to straw color. There's a lesson in this at least, and it is that beardless wheats are vulnerable to wild animals' hunger, and there was no deer fencing. The beard on bearded wheat varieties especially on the durum wheats, ironically, is very tough and barbed; no animals or birds will eat more than a trace of a bearded crop.

In mid July Monica Spiller began harvesting at Sally Fox's farm in Yolo county, with serrated sickle as the only equipment. The start was slow and everyone who watched declared it a dangerous and inefficient method, but with perseverance, a safe and reasonably speedy technique was developed. It really was possible to imagine that this method could be used by "everyone in the village, who would come out to help" and that in a week each person would have harvested enough wheat for their own use for a year. In five or six weeks they would have

harvested enough for the townspeople too, but hardly enough for modern cities full of people. It was a wonderful experience to go out into the field soon after dawn in beautiful coolness, to see the wild turkeys and pheasants strutting and flying away, to see the sun climb ever higher in the sky, and to stop working well before noon to avoid the searing heat of mid-day. Water and watermelon refreshments were never so welcome. During the early afternoon, lunch and a snooze under the shade of a huge old oak tree down by the river, gave renewed energy for an afternoon of threshing in the shade of the barn, and a second round of harvesting from late afternoon until sunset, and moonrise. Dinner was eaten out in the open by the light of a full moon. Seven wheat varieties were planted in about an acre: *Baart, Sonora, Mauri, Turkey, Tuscan, Hard Federation, and Wit Wilkoring*..... Eventually the harvest was completed by Tom Kearney from the University of California Co-operative Extension. Tom brought out a red Massey-Harris combine again dating from the 1950's, together with his mechanics Daniel and Aziz. Daniel was the expert, and Aziz an able agricultural engineering student. Keeping the combine running was quite a trick. Belts broke, spark plugs were replaced, screens cleaned and then removed altogether to keep the engine running coolly, and then at the end of the day there was a bang and seed began to pour out onto the field before ever reaching the elevated bagging platform.....but the harvest was finally completed and the losses were minimal in the end. Aziz was from Morocco and for lunch, by coincidence, Monica had brought some Moroccan style bread. So imagine the pleasure of finding that the bread was not only acceptable to a Moroccan, but that he had been searching without success, for just such a bread. The bread was made with a durum type of wheat similar to the *Mauri* variety just harvested, and was 100% whole wheat, and barm leavened. By July 29, the *Little Club* wheat was more than ready to be harvested at Ardenwood, a museum farm in Alameda county. The last of the weeds, and foreign wheat plants were

taken out by hand on the day before the harvest, so that the seed collected would be as purely *Little Club* as we could manage. The harvest was a show for the visitors that day, and the old Holt combine, from the 1920's, was a real show piece, quite reminiscent of a river boat with flag flying above the deck, and paddles controlling the wheat as it chugged up and down the field. The crew wore early 20th century workclothes and hats especially, and seemed more like decoration than the workers that they truly were. Ardenwood's farmer David Cook, skillfully pulled the combine around the field with a small antique tractor, which like the combine was brought out only at harvest time. The chief mechanic was Roy Ginnochio who also was the bag sewer sitting on the deck and sewing the 100 pound bags of grain as soon as they were filled. Roy's sewing speed was a bag per minute, and he had learned to do this as a twelve year old. Two baggers, and an adjuster for the header completed the crew. After the bags of grain were sewn, they were pushed into a shoot on the side of the combine, and then released onto the ground in a heap when the shoot was filled. This old Holt combine seemed to be tremendously efficient; the grain was well cleaned and no seed seemed to be lost in the field.

At Full Belly farm, in Yolo County, Dru Rivers has continued to grow Mauri wheat for inclusion in her flower bouquets.

Small amounts of several wheat varieties were grown elsewhere in the state. At California State University, Stanislaus, in Turlock, Ida Bowers is beginning a wheat research program, as part of their new Bio-agricultural program, and grew *Baart*, *Little Club*, *Pacific Bluestem* and *Federation* wheats. A sparse late planting allowed the weeds especially star thistle to take over. Still there was enough seed for continuation within her program. John Bayer on the border of Stanislaus and Merced counties grew small amounts of *Little Club*, *Baart* and *Mauri*, with the idea of expanding areas for these next year. Starter quantities of interesting wheat varieties obtained from the USDA Small Grains Collection, Aberdeen, Idaho were

grown at Hidden Villa, Santa Clara County, and at the Maack farm in Marin county. Varieties grown included emmer, durum, Spelt and turgidum, as well as Indian and Iranian *aestivum* wheat types. *Triticum aestivum* is the type of wheat most usually grown, and is the one with the greatest number of varieties available.

Outside of California in Moscow, Idaho, at one farm, starter quantities of several varieties were lost when ardent weeders, weeded out all the newly growing wheat too. A happier result came from Kevin Park, in Aberdeen, Idaho, who is increasing a Spelt variety and *White Australian* wheat, for use in areas where the winters are snowy and cold, but not so cold as in Canada for example.

Tall wheat and a useful observation

At Sally Fox's farm this year we had a beautiful stand of wheat. All seven varieties were upright and at least waist high, considerably taller than many of the modern wheats, but far from their maximum height which can often be shoulder high. We had planted in late December into dry ground and the rain did not come until mid January, so they were grown only from January effectively. At the other extreme, most of the *Federation* wheat grown on the Maack farm this year had lodged (bent over) because it had grown so tall. It had been planted in late November and the rainfall was quite adequate to ensure a lush growth. Combine harvesters can accommodate lodged wheat, but the disadvantage is that the wheat heads become vulnerable to insect and fungal infestation when they are not free standing. But we made a curious observation: Charles Belford had mown some of the wheat to create a path across the field so that we could enter, and weed out the mustard from among the wheat. He had mown the path in January, before the wheat had headed up, and in so doing he had set back the growth. It grew back strongly, but it was much shorter than the main crop, it stayed upright, without a hint of lodging, and it headed up later and stayed green longer. Is this the way

to control the problem of lodging, and to encourage heading up after the rains have passed, and the summer heat is beginning? Certainly we can perform the experiment quite easily, by choosing a time to mow a strip of planted wheat and make the comparisons. Sharing this information on lodging prevention, effect on weeds and on the protein content of the wheat, at the end of the harvest next year, will be very valuable for us all. When this idea was shared with several farmers, their immediate response was to remember that many wheat farmers used to allow grazing for a short time during the early wheat growth, and exactly this situation of mowing down the first growth of the wheat was achieved. If you would like to participate in this experiment for the 2001 crop, please let Monica Spiller know, telephone number: 650 941 8288.

Removing the husk from Spelt and Emmer

Spelt is a popular wheat among those who cannot tolerate other wheats in their diet, and so far relatively few farmers are growing it. The result is that it commands a premium at the present time. Unlike most other wheats, Spelt has the wheat berry enclosed in a tough husk from which it cannot be threshed, and equipment specially for removing the husk from spelt is almost impossible to find. The situation is similar to that for rice, but rice being widely grown, has had plenty of equipment designed to remove its husk. This equipment which has been designed to remove the husk from rice, can remove the husk from Spelt. Possibly it should be emphasized that removing the husk does not in any way polish either the rice or the Spelt, the bran remains intact and only the germ may be slightly damaged. It is interesting to note that, because the germ may be damaged when the husk is removed the spelt is always planted in the husk. Emmer wheat, the wheat of the ancient Egyptians and modern day Ethiopians, is like the Spelt in that the berry remains in the husk. Very little emmer wheat is grown for human use in North America, but it is grown in Tuscany in small amounts, and is known

as *farro*. Like the Spelt, the husk can be removed from emmer wheat using rice husking equipment.

Organizing the *Whole Grain Connection*

Just about everything towards establishing the organization of the *Whole Grain Connection* still remains to be done. However, bidding some time has the advantage of allowing us to choose carefully the actual business structure that will work for us.

Encouragement for slowness came from a tax consultant who said that non-profit organizations are not obliged to declare themselves to the IRS until income reaches \$25,000. However because we shall be selling seed, and because we have raised \$366 in contributions, we plan to soon be making the necessary applications.

The succinct statement of our goals will be very important, and the new statement at the start of this newsletter attempts to reflect the most fundamental reason for the existence of the *Whole Grain Connection*. In practice it seems that the *Whole Grain Connection* can be a non-profit public benefit organization, encouraging the formation of mutual benefit trade organizations among farmers, as well as researching and educating.

The *Whole Grain Connection*, Newsletter

Writer/ Editor: Monica Spiller
P O Box 696, Los Altos, CA 94023-0696
Telephone: 650 - 941 - 8288
FAX: 650 - 948 - 8540
e-mail: barmbaker@aol.com