New respect for old wheat

Reclaiming heritage varieties requires culinary as well as agricultural expertise

by Jennifer Scott

The Maritime Heritage Wheat Project began in 1998. Since then, a lot of grain has been grown and a lot of bread has been baked – though this still represents scarcely the thinnest slice of commercial wheat production. As we progress slowly toward reclaiming heritage varieties as a viable option for organic farmers in the region, we continue to learn at each step along the way.

The project was initially a collective effort involving the Canadian Heritage Wheat Project (CHWP), New Brunswick's Speerville Mill, the Maritime Certified Organic Growers, and the New Brunswick Department of Agriculture and Rural Development. We recognized that the demand for locally grown organic wheat exceeded the supply. The question was, how can we support organic growers in their efforts to grow bread wheat?

We thought we could find varieties that would be superior to Roblin, which was typically grown in the Maritimes at that time. We obtained a number of modern varieties favored by organic growers in similar climate regions, and some small quantities of heritage varieties from Sharon Rempel at the CHWP; from the Canadian Clonal Genebank; from hobby growers and from Agriculture Canada.

Acadia wheat being grown by Rob English of Jolly Farmers near Woodstock, New Brunswick. Acadia is one of five wheat varieties chosen for further evaluation by the Maritime Heritage Wheat Project.

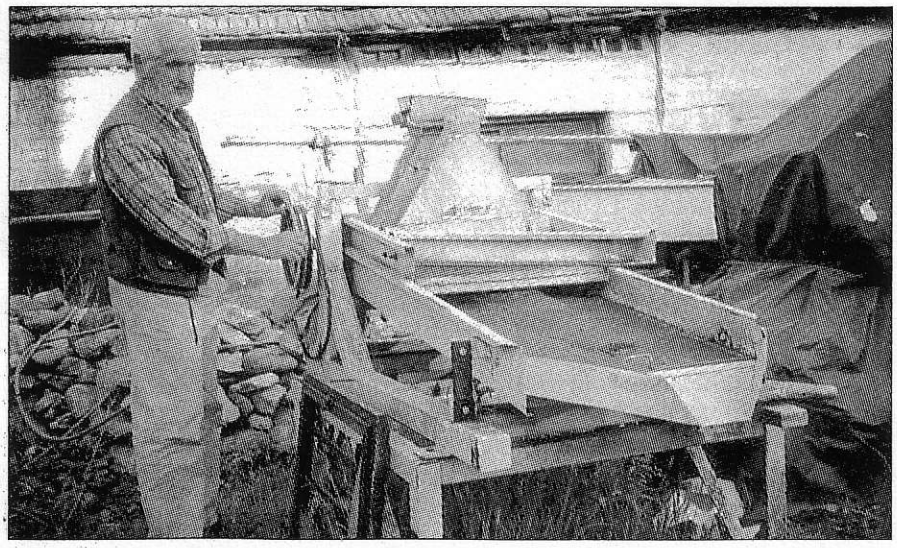
Our criterion for including a wheat in a trial was that it was recommended by someone – preferably an organic grower in a region similar to ours. It was enlightening to talk with Loic Dewardin, a grower who is part of a farmers' co-operative near Montreal. Farmers there are well ahead of us in terms of criteria for selection, milling, quality testing, and organizing the growers to supply the mills. He really opened our eyes.

Our evaluations showed little difference in yield between modern and heritage varieties. We chose five promising ones for further evaluation: Selkirk, Acadia, Red Fife, Pollett, and Coteau. Roblin was also kept for comparison. Some of the newer varieties, such as Barrie, were also promising.

Each variety was given to a farmer who would grow it and distribute seed on a volunteer basis. For example, Speerville Mill commercialized the Acadia variety, which did very well in 2002, though in 2003 its yield and quality were disappointing.

One of the biggest challenges of wheat cultivation is getting on the land early enough to plant, with the goal of getting the crop harvested before it gets too damp and cold in the fall, not to mention before the soil gets too soft from rain. Disease is another factor. We want to avoid fusarium in particular, but any fungal disease is a potential problem. Weed control usually factors into planting in spring and pre-plant cultivation in fall. Sometimes land has to be worked for a year prior to planting. Then finger weeding is quite effective for those who have the gear.

We found that location, agronomic



This is the gravity table Takis Litsas, a Greek eco-grower, uses to get material of a different specific gravity out of the wheat once it is harvested. This past April, Jennifer Scott visited Thessaloniki, Greece, to explain the Maritime Heritage Wheat Project to European groups doing similar work.

conditions and climate were the most significant factors in yield, regardless of variety, but we continued working with the different varieties of wheat for several reasons.

Each variety has different taste and physical characteristics. Hans Larssen, a Swedish researcher, has found that the longer the straw, the better the wheat tastes. So Red Fife, a tall variety, is supposed to taste exceptionally good.

All the varieties we chose to keep, with the exception of Selkirk, have produced good baking results, based on several years of testing. The heritage varieties may also offer agronomic advantages. For example, Dr. David Patriquin's work at Dalhousie University indicates that older varieties of wheat may be better able to compete in weedy conditions than newer varieties.

There is some discussion about the potential health or nutritional benefits of older varieties. It has been suggested that these varieties may offer some advantage to people who experience adverse reactions to conventional wheat, but this has to be investigated thoroughly.

Older varieties are also important for wheat-breeding efforts – the old-fashioned kind of breeding, not the transgenic kind where genetic material from another organism is inserted into the wheat. Through selection, a population of an older variety will gradually adapt to a new location, because of its genetic non-uniformity.

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At harvest, the farmer is selecting the individuals in the field that grow best at that site. After three or more years, the variety is supposed to have become more adapted. It "gets its feet," according to Sharon Rempel. The ability to take advantage of this useful trait is a good reason for farmers to save their own seed.

Since our initial evaluations, this project has had little or no funding. The work is now supported by the Helio-Trust, under the auspices of the Halifax-based Ecology Action Centre, and I am the part-time coordinator. The project is connected with the Slow Food movement, because Red Fife wheat is listed on Slow Food's Ark of Taste. (See "Slow Food" page 21.)

BAKERS

We also share information with an international network of people involved in the preservation and cultivation of heritage wheats. In December, 2002, I went to Wisconsin to meet with growers in the Midwest pursuing similar goals. This April I went to Thessa-

Optimistic about quality of 2004 harvest

Terrence Boyle is one of the growers participating in the Maritime heritage wheat trials. He and his brother, Ron, have about 500 acres of cultivated land under organic certification on their mixed farm near Antigonish, N.S. Having previously grown Walton, a modern Agriculture Canada variety, last year he planted Red Fife for the first time, using about 300 lbs of seed he obtained through the program.

"My initial interest was that it might perform better under organic conditions," he says.

From what he harvested on that trial plot of about two and a half acres, he had enough seed to plant 17 acres this year, and to give 300 lbs each to fellow growers Rob English, in Northampton, N.B., and John McLaughlan in Mount Stewart, P.E.I. This September, Boyle harvested about 20 tons of Red Fife.

"It wasn't a bad yield," he says. "We've had better, and we've had worse. But it's nice-looking wheat."

Damp weather late in the summer made for less-than-perfect grain harvesting conditions, adds Boyle, and combining Red Fife has brought its own challenges. "One drawback of heritage wheat is the stand is not uniform in height," he says, explaining that the higher seed heads tend to ripen faster. "It's kind of a learning process."

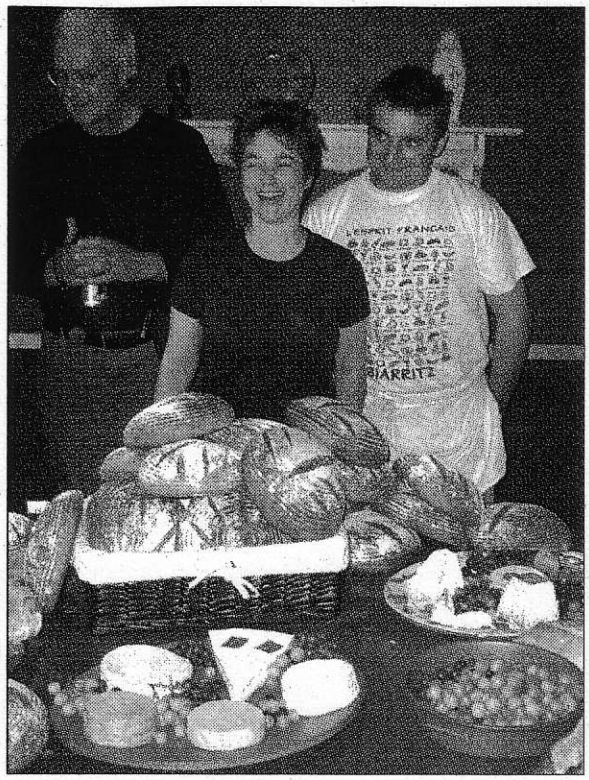
Nevertheless, he is optimistic about the prospects for growing heritage wheat commercially. With the 2004 crop now in the hands of millers, he's waiting for the most important assessment – from bakers who will be experimenting with the flour. ●

Terrance Boyle (left) and Ronald Boyle (right) stand in their field of Red Fife wheat. (Jennifer Scott photo)

loniki, Greece, to explain our project to European groups doing similar work. In October I will be joining farmers, millers, and bakers in Italy for the Terra Madre gathering put on by Slow Food Italy.

In British Columbia, a group has been working to develop infrastructure to grow heritage wheat on Vancouver Island. In Victoria, Cliff Leir of Wild Fire Bread and Pastry is very keen on using Red Fife in his artisanal sourdough breads. He visited the Maritimes in March, 2004, to lead a workshop on bread making with local yeasts and local bread wheats. (See "Baking with Cliff" page 22.) He also gave a talk at the ACORN (Atlantic Canadian Organic Regional Network) conference in Cornwall, P.E.I., to raise awareness of heritage wheat's potential.

It seems I am constantly learning new things from bakers. Cliff explained and demonstrated that it is possible to adjust the sourdough bread- making process to the wheat (within limits). This is a stunning revelation to me, because we have spent so much time and effort trying to adjust the wheat to a specified bread-making process. Adapting baking techniques can open up a wider range of wheat "acceptability," and thus make it more viable for the farmer.



Brian Kienapple (left), head of Slow Food Nova Scotia, joins Jeannine and Jean-Marc Riant, of Boulangerie la Vendéenne near Mahone Bay, N.S., at a tasting event this past May featuring bread made with Red Fife flour produced through the Maritime Heritage Wheat Project.

Nick Stam, known as Nick the Dutch Baker, in Moncton, was enthusiastic about the 2002 crop of Acadia because it had good loaf development. His Acadian clients also responded well to the name and the history of the wheat. Jean-Marc Riant, of Boulangerie la Vendéenne near Mahone Bay, N.S., told us he buys wheat that is lower in protein, because it is more suited to the artisanal baking process he uses. We hope to get bakers involved in testing for wheat quality, because laboratory bread wheat quality results

are not 100 percent reliable.

So what's in all this for farmers? Some of them want to try growing heritage wheat simply for the sake of experimenting. For others, perhaps it is their interest in the history of certain varieties. We have provided a small honorarium to the first farmers who took on producing the wheat, but we only have funding to do this for one more year, then the wheat has to stand on its own commercially if it is to survive.

We're not sure whether the niche market for specialty wheat is actually growing. This is what we are trying to develop, but we don't want it to be a fad. We want it to provide some stability and reliability for the growers – in terms of both agronomics and markets.

I hope there will be a small premium for specialty wheat. If not, I hope it at least yields well – and tests well – so the producers can get a reasonable return.

(Jennifer Scott lives in Hants County, N.S. She is part-time coordinator for the HelioTrust, a wing of the Halifax-based Ecology Action Centre which is supporting heritage grain research and trials in the Maritimes.) •

Slow Food

The Slow Food movement started in Italy in 1986, in response to the opening of a McDonald's restaurant in Rome's Piazza di Spanga. Now it has a membership of more than 60,000 people in 45 countries. As an alternative to fast food culture, the group promotes ecological gastronomy, working to preserve regional and artisinal cuisine and endangered livestock breeds and crop varieties. The Ark of Taste is an international Slow Food project that catalogs and publicizes these traditions and products.

In 2003 Red Fife wheat became the first Canadian contribution to the Ark. This variety was developed in the mid-19th century, and it played an important role in the breeding of commercial wheats. Since then the Canadienne cow and the Montréal melon have been listed as well.

For information, write to Brian Kienapple, Slow Food Nova Scotia, 38 Avondale Rd., RR2 Newport, N.S. B0N 2A0, phone 902-757-1865 or email slowfoodns@hotmail.com. •

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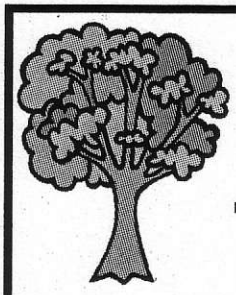

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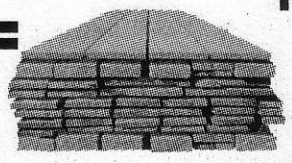

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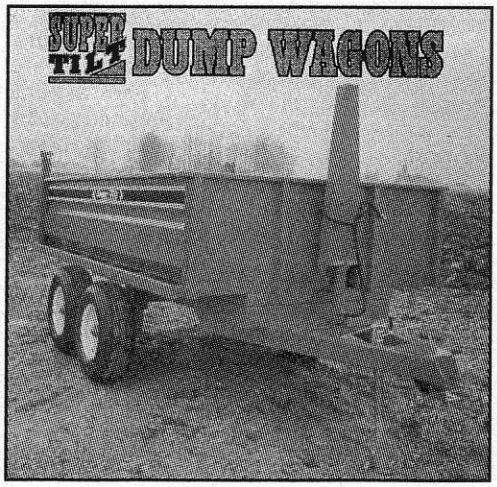

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Baking with Cliff

Ruth Lapp conducted an informal interview with Cliff Leir, of Wild Fire Bread and Pastry in Victoria, B.C., on March 25, 2004, at Red Fox Farm in Hants County, N.S. As he prepared for the following day's baking demonstration, he repeatedly sniffed a bowl of starter that was loosely covered with plastic wrap.

RL: Can you tell me why you're smelling that?

CL: Oh, you can tell a lot about your starter just from the aroma. Just as far as smelling the balance of yeast and acid. You want to have a lot of yeast activity without an overwhelming amount of acid. And then within the acid there's a balance of acetic acid and lactic acid.

RL: So, tell me what's in this bowl here?

CL: It's a bubbly batter that's flour and water and yeast and lacti-bacilli . . . . The lacti-bacilli are breaking down the starches into sugars, and the yeast is breaking down those sugars into carbon dioxide and alcohol, but then there's all sorts of subtle flavoring components that come out of the whole process.

RL: So where did this particular bunch of stuff come from?

CL: (Laughs) Well, this particular bunch of stuff came from Orlando. I was just down at the Bread Bakers Guild Conference, and was looking for a little bit of starter culture, which I didn't bring from home. And so they were holding the National Baking Competition there, and I asked around . . . . They were at the point of baking all their bread . . . . They had started at four in the morning, which is probably when they were dealing with all their starter cultures, and so they brought me into the back and said we could rummage around through the garbage and see what we could find. And so we went through, and, you know, it was just flour and sugar and chunks of dough and stuff, so I dug around through all that and found a chunk of goo that smelled good and started feeding it flour and water . . . and . . . (sniffs again) . . . I think it smells good.

RL: So will you be explaining tomorrow how, say, I could start that myself?

CL: Yeah, actually we've got another little bowl of goo on the other side of the counter. I spoke with Jen (Scott), I called her yesterday and got her to put just some flour and water together. That's how it all starts. Wheat itself, like grapes and all these other fruits, it has yeast that grows on the outside of it, and you can't really see it, but it's there. And it's also in our environment around us. And this is how bread first started, you know, 6,000 years ago, is someone just had some grain sitting in a bowl, and it picks up that wild yeast and starts fermenting. It's like it was meant to be.

RL: Is it the yeast that breaks down the . . .

CL: Yeah, it's the combination of the yeast and the bacteria. It breaks it down, eventually producing carbon dioxide and alcohol . . . . The alcohol burns off during the baking process, and the carbon dioxide is what gets trapped by the gluten structure and leavens our dough.

* * * *

CL: We're going to mix how many doughs? There's one with Acadia wheat from here, the 2002 crop. I think that Jennifer said that we're going to be able to make a batch with the 2003 crop, which supposedly wasn't any good. So I'm interested to see what it's like. That's part of what this is whole experiment is, just seeing what we can do with grains which according to standard evaluation are not any good, but a lot of times with artisan bread you can still make great bread.

RL: And what do you mean by the grains aren't any good? Like is it the protein?

CL: That, I think, was the determining factor. One of the millers that was using it decided that wasn't going to work. And a lot of times for standard bread production it wouldn't work. But sometimes you can play around with it . . . . You know, there's a tradition throughout time, whatever crop came in, you had to work with it, and make the best bread that you could . . . . Like with wine making, every year it's a little different. Some years it's better, and some years it's worse. But you can usually make a decent wine. And likewise with grain here. We're fermenting them, and maybe it will be good, or maybe it will be bad. Maybe this year we'll just play around with it and make a different kind of bread.

* * * *

CL: I'm going to refresh this culture in the original bowl now . . . for the bread making for tomorrow. . . . Depending on how stiff you make your starter culture, and at what temperature you ferment it, you'll get flavors coming out at different balances of lactic acid and acetic acid. Acetic acid's got a much sharper sour taste . . . whereas lactic acid's got a softer kind of creamier flavor. Like what you find in yogurt . . . . I'm going to make a fairly liquid starter – equal parts flour and water – which favors more lactic acid. . . . It's great working with well water. There's no chlorine, which will inhibit yeast activity. Back at home we use spring water. But it's a little cold here coming out of the tap . . . so I'm going to heat it up a little bit, just to room temperature.

RL: So what's this here that you've got?

CL: This is Red Fife flour, milled and sifted back in the bakery in Victoria. It's got the bran and the germ taken out.

RL: And you're adding this now to the starter?

CL: Yup.

RL: So this is called feeding the starter.

CL: That's right.

RL: And now you're pouring a little of that water in there . . . mixing it up by hand, literally.

CL: Till you get a nice even consistency. . . . This is a little stiffer than normal, which is probably just due to the flour. Every flour is a little bit different.

RL: So how would you describe that consistency, what we've got there in the bowl?

CL: I guess it's kind of a medium consistency. It's not terribly stiff, and it's not terribly liquid. It's not stiff enough to be bread dough, and it's thicker than pancake batter. . . . It's just right.

RL: And you've put some plastic on top of the little bowl there to keep it from drying out.

CL: That's right, you don't want a crust form on top. . . . Stick it next to the wood stove to keep it warm.

* * * *

RL: So Cliff, when did you learn to bake?

CL: Well, right from the beginning I was working in this anarchist bookshop in the basement of this army surplus store. And this old Scottish anarchist came in, talking about community bake ovens, and the role of bread and bake ovens in neighborhoods and communities as far as bringing people together and as a strong social component. And he wanted me to build a brick oven in my driveway. . . . I thought that it was really cool, but at the time I was moving around all the time, and it was impossible. He went off to the interior of B.C. and built some ovens there, and then about two years later he came back, and at that point I was living in a house that I was kind of stable in, and had a big garden, and was kind of into various fermented foods . . . so I said I would give it a shot. . . . And so I started building the oven. It took the whole summer, and then at the end of the summer I started baking in it, and over the winter I totally fell in love with it, and any time I went anywhere I talked to bakers, and read every book I could get my hands on.

RL: Were there any books in particular that inspired you? Or techniques?

CL: Well, the techniques of working with wild yeast and kind of longer-fermented hand-formed loaves. There's a whole movement of artisan bread baking that's been . . . kind of started up in the States, based on European traditions. And its been going for maybe 15 years . . . . So it was really inspiring hearing these people working in a similar way and paying a lot of attention to the crafting of bread, and it just went from there.

* * * *

RL: So with the Red Fife flour now, what are the characteristics of that that make it something that you really enjoy working with?

CL: Ah, well I guess there's a few things. Flavor is a big one. Its good-tasting wheat. The Wheat Board doesn't consider flavor in any of its evaluation, which is just so absurd – that you would have food as one of our major commodities, as something that we all eat, but it isn't even considered in their criteria. But there's all sorts of other things. The cultural aspects to it, the history of it. The people growing heritage wheats. . . . But it also has very nice baking qualities.

RL: Which are what?

CL: Gluten strength and development. Hydration tolerance. Proofing tolerance . . . . So when it proofs, how big it can get, and how easy it is to handle at that point. Those are just kind of a few basic things.

RL: When did you start working with Red Fife?

CL: I guess in the late spring of 2003. So it hasn't been that long. There hasn't been that much available up to this point. So I'm still just learning about it and trying different doughs with it, seeing how it does under different conditions. . . . But initially I found great results. ●

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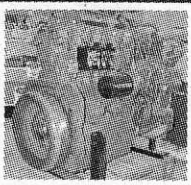
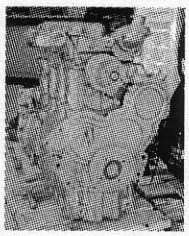

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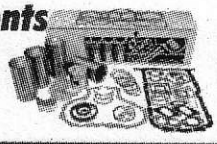

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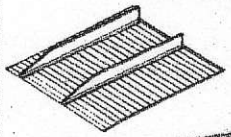


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