Fermented Foods: Turning excess into product

By Josh Brokaw | Posted: Wednesday, January 13, 2016 9:47 am

Steps for creating a culture: First, place vegetables, fruit, or other live material in a bucket or barrel. Second, add water, maybe some salt. Wait for life to bubble up. If the life created isn't one to your taste, change the climate by a few degrees. Adjust until desired results are achieved, or throw the whole thing over and start anew with a fresh batch of little organisms. Cajole and threaten them until they create something more to your liking.

This process doubtless will lead to a mythology among the microbes doing the hard work of producing your pickles, your kombucha, sauerkraut, tofu, kefir, kim chi, and any other number of "fermented foods." To them, the humans who we credit for the work are capricious beings with the capability of making life flourish or falter in the barrel that is their universe.

"We're the demigods of this vast civilization, just messing with them to see what happens," says Anna McCown, self-described "pickle elf" for Crooked Carrot, one of several local makers of fermented food products.

Fermentation, like so many processes rediscovered as "foodie culture" has grown, has garnered attention from the national press over the past couple years; the style sections have written of bus-driving evangelists sharing their favorite bacteria on nationwide road trips, and Brooklynites begging their roommates to tolerate the pungency emitting from jars of kim chi under their beds. And the explosion in proponents of "probiotic" diets has also changed how many products with live cultures are marketed—bacteria, for so long something to be abhorred by hygienic Americans, are now featured by marketers, the presence of billions or trillions of the little things now proudly displayed on product packaging.

Here in Ithaca, it seems that even the most unusual of traditional food processes have been preserved in one pair of hands or another while the nation forgot how to do what grandma learned in her toddler days. Tom and Shelley MacDonald have produced fermented foods, largely from their own organically grown crops, since the early '70s. In their son's Ithaca house, they once found an autograph book from 1909; on one page, there was an inscription:

“Where were you when the lights went out? Down in the cellar eating sauerkraut.”

Given the local land’s bounty in these parts, if the lights ever do go out, if the system goes down, Ithacans might have to give up imported delicacies like grapefruit, olives, almonds, or avocados—anything Mother Jones’ Tom Philpott is guilt-tripping progressives about might not make it in on the trucks anymore. But we can reasonably hope there will still be plenty of pickles and sauerkraut, tofu and tempeh, kombucha and kefir to go around.

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The MacDonalds discovered they wanted to make pickles on a trip to New York City.

“We went to the famous [Gus’ pickle place] and tasted the pickles right on the street, and brought some back,” Tom said. “We thought ‘Oh, pickling, we can do that. We have cucumbers.’”

“And I was pregnant at the time,” Shelley added.

The couple had heard about fermentation from true believers during their time in Boston in the late ‘60s.

“Anything fermented was like magic,” Tom said. “So we knew it from a philosophical point of view—the idea we evolved from the ocean and crawled up onto the land and these salty, fermented foods are our connection back. We were very, very young listening to this and said ‘Oh that’s interesting.’ In those days you had to work hard to hear something different.”

Shelley and her girlfriends started making sauerkraut in 1975, and Tom eventually met the late Gary Redmond, founder of Regional Access, who MacDonald said was “the first person I ever met who liked [pickling] as well.”

When Joey Durgin of Ithaca Kombucha came from Philadelphia, New York to get a degree in exercise science at Ithaca College, he made a masseuse friend who introduced him to the fermented and carbonated tea drink.

“It was a perfect fit for me. It wasn’t too sweet, it had that tart and pungent vinegar kick to it,” Durgin said. “I felt a little bit uplifted—I wouldn’t say drunk, but there was a buzz element that made me feel at ease.”

The Crooked Carrot crew has its origins at Stick & Stone Farm on Trumansburg Road, where Silas Conroy and Johanna and Jesse Brown met and decided to start a community-supported kitchen as a business.

“The idea at first was to make ready-made dishes, that people with CSA shares could take home and they’d go with the produce—like aioli and bean dishes,” Jesse said. “But we were doing four different recipes in two weeks, which sometimes worked and sometimes it didn’t.”

Fermenting foods involves lots of experimentation as well, but unlike most kitchen adventures, the basic steps don’t boil down to heat and eat. If a historian ever writes a Decline and Fall of Pickle Barrel No. 49, Latin names will be as prominent as in Gibbon’s history of Rome, with Lactobacillus taking the

lead role. There are vast numbers of happenings inside the ferment caused by bacteria, and at many points the fermenter can do little more than watch the organisms do their thing.

“It was intimidating at first—I thought this was a very delicate, sensitive process,” Durgin said of his first brews. “But kombucha as a brewing process is very hardy. As long as you keep it covered with a rubber band, use a clean container and let the fermentation process get going, it’s difficult to mess up.” Interventions in the ferment do become necessary; largely the role is in saying to the microbes ‘You have gone far enough,’ often accomplished through refrigeration, which slows down their work to a standstill.

In kombucha brewing, the SCOBY—which stands for “symbiotic colony of bacteria and yeast”—will grow as long as it’s allowed, resulting eventually in a vinegar which isn’t much good for drinking and anyway has too much alcohol, up to about 3 percent, to sell in stores under current regulations. Sourdough, vinegar, and kefir all require similar cultures to the SCOBY, and all present their own management problems.

Pickles, which became a mass-produced and distributed food in the 20th century, are particularly difficult to get right, if one is determined to make the vegetable process itself without outside help.

“You have to work incredibly hard to get pickling cucumbers right,” said Tom MacDonald. “From the customer point of view, the pickle is what everyone knows, and they have the most ideas about what a pickle should taste like. You have to get the pH down with the lactic acid and hope that two or three of those microorganisms that get in sometimes don’t flourish.”

A cucumber, pickled whole, that has started going soft and sugary on the inside can present a minor danger to its overseer, according to Conroy.

“If a cucumber is overly sugary, it becomes an active yeast fermentation rather than a lactobacilli one and it will give off CO2 and fill up the center of the cucumber with gas,” Conroy said. “We call them floaters. They can get to a point where if you bite into it, they will blow up.”

For the most part, the pickling process requires only salt, sometimes in a brine solution.

“In the case of kimchi and sauerkraut, the vegetable is so juicy it’s basically just salt added,” Tom MacDonald said. “People are always asking us at festivals, do you add anything? Well, no, we don’t. The microorganisms in and on the skin of the cucumbers, Lactobacillus plantarum is quite willing to start working and growing and functions in a salty environment.”

The MacDonalds closed their business, went to California, then came back and decided to start making pickles and sauerkraut again.

“We decided we had to make some for ourselves,” Tom said. “But it’s hard to get a volume less than five gallons to come out how you want it. So we started making barrels again, we started trading it, and then people have nothing to give us but money. And we said, I guess we’re back in business again.”

There’s something of a Goldilocks zone for fermented products when it comes to production size. Quart jars aren’t the best way to ferment; according to Conroy, neither is at a fully industrial scale, which helps Crooked Carrot’s chances.

“It does make it a very viable business for us, because it can’t be scaled up that easily,” Conroy said. “We do 55 gallon drums, and you could get somewhat bigger, but not a ton.”

Contrast that, Conroy said, with competing with your average California organic tomato maker —“They’re combining tomatoes and dumping into a concrete moat.”

The Crooked Carrot crew has no moats in their recently-moved-into processing plant on South Hill, the former Oasis Dance Club. Two of the team can pack up a drum of product by hand in a day. Not all of their 20-ish products are made in drums, but they did make 30 drums of sauerkraut in 2015. Conroy estimated they fermented 15,000 pounds of cabbage and over 30,000 pounds of vegetables in total over the year, with all of those drawn from farms within a 30-mile radius around the city of Ithaca.

Part of the Crooked Carrot mission, Conroy says, is to “absorb farm excesses.”

“Any given year, we’re sourcing some crops that are going to do extremely well—we want to be there to catch those,” Conroy said. Their curtido, a pickled El Salvadoran salad, is made of tender summer cabbage, which hadn’t worked well in their autumn sauerkraut ferment.

Over the years, Shelley MacDonald said, they’ve turned some of their Amish neighbors onto fermentation—which they’ve found to be preferable to canning.

Durgin has a different model for using excess, with his barbecue and hot sauces made of what’s essentially a waste product, kombucha vinegar.

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Further experiments in fermented foods will surely keep coming from Ithaca’s fermented food makers. Durgin said he’s experimenting with flavoring kombucha drinks, as he prepares to launch the drink for sale later this year. Flavoring kombucha requires a secondary fermentation with juice in the bottle, and his favorites so far include guava and passionfruit.

A new sauerkraut with wild medicinals has proved popular for Crooked Carrot, and their spicy kim chi was rolled out after the white variety because they thought the latter might have a wider appeal.-- Contrary to national trends, none of the people interviewed here are putting the health benefits of fermented foods front and center in their packaging.

“It’s a pretty wide range what brings customers to us,” Brown said. “Some do say ‘I started eating them when I was five and they fixed every problem I had.’ Others care that they’re really tasty or unusual, or they care really strongly about local foods.”

“If you dig around, there are some really remarkable claims out there,” Durgin said, “but there is something to be said for us eating too clean. In poorer countries you don’t find so many autoimmune diseases. We’re not eating from gardens, and we’re not getting gut bacteria into our stomachs, and we’re taking antibiotics all the time.”

When the MacDonalds started growing and fermenting organic vegetables, they were well ahead of the current fascination with things microbial.

“We’ve always been interested in well-being and health. We’ve been organic farmers all our lives,”

Shelley MacDonald said. “It helps give a lot of energy for us to work hard; there are long days of farming and making this stuff.”

Working just as hard, in their limited universes, are the microbes.

“They’re a nice little food processing miracle,” Tom MacDonald said. •