



BACK TO BASICS

Meredith Hardie catches up with David Zilber, Scarborough native and the head of Noma's fermentation, for a primer on how to use one of the oldest foodways.

WALK DOWN ANY grocery aisle and you're bound to see the works of fermentation at play – from ketchup, king of condiments, to the wellness world's latest obsession, kombucha. Fermentation is incredibly diverse – it starts your sourdough and preserves ingredients way beyond their expiry date. Today, it's advanced from preservation to innovation.

In Copenhagen, there's a place that knows a thing or two about innovation and rarely needs an introduction. Noma, the two-Michelin-star restaurant and four-time world's best restaurant, incorporates fermentation into almost every dish. It's so important that they created a fermentation lab. At the helm is Canadian David Zilber who started cooking in Scarborough and is Noma's

current director of fermentation – turns out, transformation isn't just for pickles.

What is fermentation?

"Fermentation is the transformation of one ingredient into another with the help of microbes," says Zilber. Microbes are tiny living things that exist everywhere on earth. Some microbes are good like lactobacillus, a salt-loving bacteria that lives all around us, including on our skin. Then there are not-so-good microbes like the bacterium *clostridium botulinum* which is bad because, well, botulism.

"Rot is also the transformation at the hand of a microbe, so you need another agent in the process – you. The fermentor is

needed to make sure that the fermentation process happens as it should. When you take an active role, you can control what you end up with," Zilber says.

Is it safe?

"Picture a line outside a nightclub. Rot is a nightclub where everyone gets in: pathogens, all sorts of bacteria, amoebas. There's no one at the door and everything is causing chaos inside. Fermentation is the club that employs you as the bouncer and you're outside with a velvet rope deciding who gets to come in and who doesn't. When you let the right set of microbes into your club you end up with an amazing party," explains Zilber.



When the right microbes consume carbohydrates, they create alcohol and acids as byproducts, which extend the food's shelf life by killing off the bad guys that cause rot. It's why those pickles you forgot about at the back of your fridge last longer than the cucumber you just bought. But, those former cucumbers required a fermenter who added saltwater to the party and cut off the oxygen – the only time you'd want this at a party.

Where did fermentation come from?

"People have been fermenting since before they even realized they were practicing it. The Romans used to think alcoholic fermentation (when yeast transforms sugar into ethanol) was magic. The word ferment comes from the Latin word "fervere," meaning "to boil," like a fever, because they would see things bubbling without heat," says Zilber.

What food can be fermented?

Anything that has microbes (so, everything). Different microbes exist on different types of food which ferment in all kinds of ways, so separating the myriad of fermentation processes into neat categories can be limiting – it would be like saying all mammals are the same. However, there are a few familiar items you probably have in your kitchen right now.

PICKLES

When cucumbers are lacto-fermented in a brine (saltwater) they turn into pickles. Remember our friend lactobacillus? Well it lives on cucumbers' skin and when it consumes the vegetable's sugars it produces lactic acid which prevents unwanted microbes from growing and gives fermented pickles their distinctive tangy, sour taste. Other lacto-fermented foods include kimchi and yogurt.

BREAD

Alcoholic fermentation isn't just for booze. When yeast, single-celled fungi, chow down on dough's carbohydrates, they produce alcohol and carbon dioxide gas (the alcohol is evaporated during baking, womp womp). Other alcoholic fermented items include kombucha, wine and beer.

CHEESE

Brie, camembert and that stinkingly good blue cheese ferment from the fungi mould. Yup, mould isn't just something you panic-call a pro to remove from your apartment. The good kind of mould from the penicillin genus (you know, that life-saving antibiotic) has

family members that feast on the proteins and sugars in milk and grow on the rinds of certain cheese. This doesn't apply to fresh cheese like mozzarella – scrape off any mould there.

Can you ferment at home?

You don't need a lab to ferment, all you need to do is control your ferment's environment. This could be as simple as adding some saltwater and a lid to a jar of vegetables. The fermentation process gets more complicated with things like cheese that require a precise temperature, acidity level and a cheese babysitter who constantly checks that the right kind of mould is growing on it.

What are the benefits?

"When you ferment something, what you're actually doing is outsourcing the work of digestion to a microbe. The enzymes that microbes use for breakdown are very much akin to the ones that your body would produce to do that same job. If you're consuming something that's been pre-digested by another organism it actually has a higher nutritional value," Zilber explains.

Why is it important to Noma?

"It adds dimensions to the pantry of flavours that we have in Scandinavia. René Redzepi and the team at Noma work within a geographical box with ingredients that define the region. Fermentation allows a lot of control to bring acidity, umami, brightness and complexity to ingredients that don't have to be just what they are plucked from a field," Zilber says. "For me, there's this sense of wonder and creation. One of the things that brings me the greatest joy is seeing people make a ferment for the first time. It's extremely emboldening to see people do this stuff and nail it." f



WHERE TO GET IT

MONTGOMERY'S

996 Queen St. W.

Chef Guy Rawlings has created a menu featuring only seasonal, Canadian ingredients (even the salt is from our shores), so what happens in the winter? Fermentation, that's what. We'd be happy if the house-made sourdough bread with their rooftop herb butter was our entire meal, but only if there's enough room for entrées like the aged duck and mushroom ragu fettuccini. montgomerysrestaurant.com

Photography: Zarzamora, Medvedeva Oxana

MOTHER COCKTAIL BAR

874 Queen St. W.

Behind the mysterious wood-slat facade lies a craft cocktail bar unlike any other. The bartenders here are elite athletes of mixed drinks – their knowledge is extensive and their skills make the at-home cocktail connoisseur look like a baby with a wine opener. They're obsessed with incorporating fermentation into their food and drink menu with twists on classics like the salted negroni with lacto-fermented plums. motherdrinks.co

NORTHERN MAVERICK

115 Bathurst St.

You can't miss this massive craft brewery on the corner of King and Bathurst, not just because of its size but also for the high-quality brews and house charcuterie. Forget your standard boards, from now on we want a house-cured meat and Canadian cheese programme. With eight fermenters that hold up to 20 hectolitres of liquid gold, Northern Maverick can brew enough beer to pour half a million pints a year. northernmaverick.ca