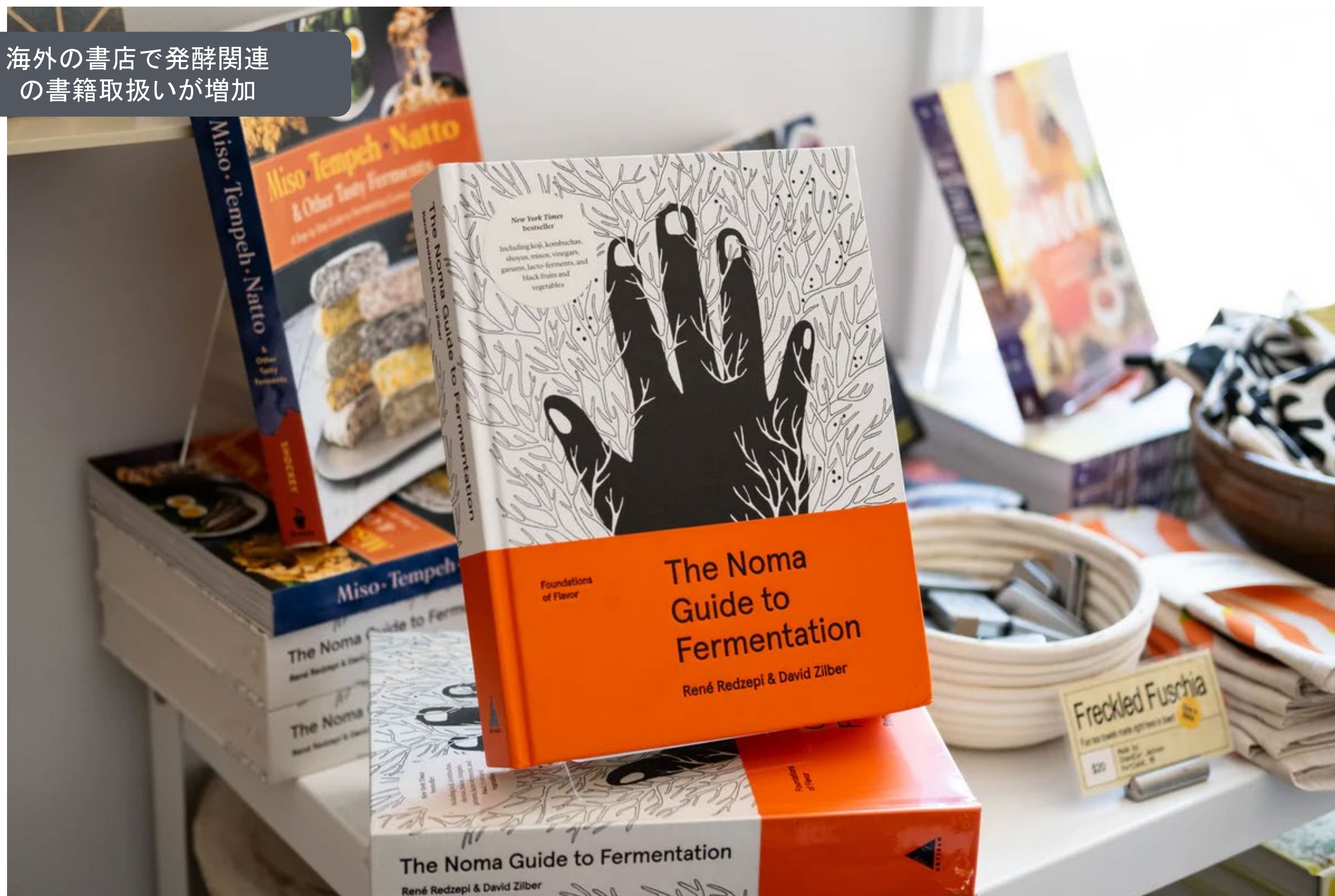


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What you'll learn

- Have a greater understanding and appreciation of fermented foods and their history, culture and science
- Have a deeper knowledge of beneficial microbes to preserve food and harmful microbes that can contaminate food
- Have examined the underlying chemistry and microbiology of different kinds of fermentation through hands-on experiments — and honed your skills in experimental design, data analysis, and interpretation
- Learned the scientific principles and application of instruments used for chemical and microbial characterization
- Explored the chemistry of flavor molecules including the physiology of flavor and the microbial reactions that produce flavor molecules and other metabolites

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Course description

What's living in your food? Many of the foods that we consume daily owe their distinct characteristics and flavors to microbes, specifically through a biochemical process of

DURATION 14 weeks long

TIME COMMITMENT 2 - 3 hours per week

PACE Self-paced

SUBJECT Science

DIFFICULTY Introductory

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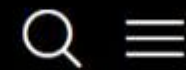
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海外の大学等でも発酵関連の講座
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Cornell **CALS**
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NEWS

Fermentation Farming Lab opens at Cornell AgriTech

2024 CHALLENGE AREAS

Over this weekend, 150 Cornell undergraduate and graduate students from diverse disciplinary backgrounds will develop a broad range of ideas and skills as they address these challenges in the hackathon's focal areas.

FERMENTATION



HONEY



DAIRY



FIBER



Post-Harvest
Food Waste



オンライン教育プログラムでも同様の傾向。写真はMaster Class。



FOOD

What Is Fermentation? Learn About the 3 Different Types of Fermentation and 6 Tips For Homemade Fermentation

Written by MasterClass

Last updated: Sep 29, 2021 • 6 min read

Humanity has been fermenting food since the Neolithic age, long before people understood the science behind the process. Today, following the scientific discoveries of French microbiologist Louis Pasteur, who showed that living organisms initiate fermentation, we know why fermentation not only makes food like sourdough bread, cheese, and wine taste better, but also helps to keep us alive.

世界で発酵が
注目されている理由は？

ガストロノミー

ウェルビーイング

サステイナビリティ

レストラン関連の記事でも発酵を切り口にしたものが増加。



This Tiny New SoMa Cafe Is a Temple to Fermented Food and Drink

Berkeley's Boochman Serves up hummus, yogurt, and, of course, kombucha

by Paolo Bicchieri | Jan 30, 2023, 10:30am PST



Boochman serves all sorts of fermented foods — and even repurposes would-be discarded remnants into soups and candies.
J. Numan Karabiyik

There's a new San Francisco go-to for all things fermented. From the same team behind Berkeley's **Boochman Kombucha** comes **Boochmania**, a temple to fermented foods and an outlet for kombucha makers. Diners can expect lentil miso burgers and rich hummus alongside myriad effervescent beverages at the restaurant and retail shop. Co-owner Numan Karabiyik says he and his brother, Mustafa Karabiyik, are both excited and scared about coming to the city. "The Bay Area, especially San Francisco, has been famous for more than 100 years for good food," Karabiyik says. "On top of that, there are a lot of great and historic foods, too. The competition is quite large, and the stakes are super high."

For those unfamiliar, Boochman launched in 2018 at farmers' markets in the East Bay. It was just a year later that the brothers were able to move into a brewery space for wholesale distribution; that's where they decided to experiment with food pairings. Those lentil patties with miso on house-made buns became big sellers right off the bat. "We got quite a few followers," Karabiyik says. "But then we got hit by COVID, and we focused on only kombucha." The taproom launch was in the rearview by the time restaurants could open up again, and the team was neck-deep in fulfilling a new product: canned kombucha orders. As sales rose, the team spied the 685 Harrison Street location, a former ice cream shop. "It was a full setup," Karabiyik says. "By chance, it had a kitchen."

SAVEUR

A Fermentation Feast in the Saveur Test Kitchen

A night of rare beers and funk-forward bites with Olmsted's Greg Baxtrom and Goose Island

By JASMINE P. TING | Published on December 18, 2019

The fermentation station has become a staple in professional kitchens all over the world. More and more chefs are making use of the process—not only to preserve certain ingredients but to experiment with flavors on their menu. "It's finding ways to make unique things that you can have on your menu that other people may not necessarily have," said Chef Greg Baxtrom of Olmsted and Maison Yaki. But one corner of the food and beverage industry has long been reaping the benefits from the technique—breweries. That's why Baxtrom, a born-and-raised Chicagoan, was the perfect chef to team up with the Chicago-based brewers of Goose Island for a beer-paired fermentation feast at the SAVEUR Test Kitchen.



Guests sipped Goose Island's Sofia Paradisi while enjoying Chef Greg Baxtrom's ferment-forward snacks.

Restaurant HOSPITALITY

Why chef and restaurateur Kelly Whitaker hired fermentation specialist

Mara King joined Id Est Hospitality Group to help push a zero-waste model

At Id Est Hospitality Group in Boulder, Colo., the idea of turning what often gets looked at as waste into something great to eat or drink started with bran, the byproduct of the company's whole-grain flour that gets made at its mill.

"For high performance we sift the flour, and the result is this bran, and it's beautiful, it's organic, and it was applicable to all the kitchens," said founder and chef Kelly Whitaker, who had been using it as compost for gardens and to trade to mushroom farmers for fungi. "You sell a pound of flour for \$1, but if 10% is bran it brings the cost up to a \$1.50, so we thought, why don't we have someone that can create this value?"

That's how fermentation specialist Mara King came into the picture last year.

Now, that bran gets used at one of the group's restaurants, The Wolf's Tailor in Denver's Highlands neighborhood, to make Japanese nukadoko, a bed of bran used for pickling. Often the technique uses rice bran, but King and Whitaker didn't see why wheat bran couldn't work. A bran pickle indeed is on the menu, gracing many of the dishes at the seasonal New American restaurant.

"Overall, Mara came in to create a use for the 'other products,' we don't like to say waste," said Whitaker.



レストランの格付けランキングで北米トップのBlue Hillも発酵に注力

< Lists / North America

North America

2024 TOP RESTAURANTS

LANGUAGE English ▾

Sort list by clicking on a column title

[View prior years](#)

TOP 599 RESTAURANTS

RANK	NAME	CHEF NAME	CUISINE TYPE	CITY	STATE/COUNTRY
1	Blue Hill at Stone Barns	Dan Barber	Progressive American	Pocantico Hills	New York
2	Yoshino	Tadashi "Edowan" Yoshida	Sushi	Manhattan	New York
3	Single Thread Farm	Kyle Connaughton	Progressive - Japanese	Healdsburg	California
4	Saison	Richard Lee & Paul Chung	Progressive American	San Francisco	California
5	Atomix	Junghyun Park	Modern Korean	Manhattan	New York
6	Smyth	John B. Shields	Progressive American	Chicago	Illinois
7	Harbor House Inn	Matthew Kammerer	Progressive American	Elk	California
8	Sushi Sho	Keiji Nakazawa	Sushi	New	Hawaii

レストランの格付けランキングで北米 トップのBlue Hillも発酵に注力



SUSTAINABLE GASTRONOMY ⌚ 3 minutes 📅 18 AUGUST 2021

How Blue Hill at Stone Barns Keeps It Green

For 17 years, Blue Hill at Stone Barns has been the most sustainable restaurant in New York. Here's how they do it.

Green Star

Sustainability

Earth Day

Food waste, waste recycling, and energy-sourcing

- They have bins for waste and recyclables, and the cooks dispose of everything else in one of the following: a bin for pigs, a bin for compost, and a bin for fermenting food scraps for laying hens.
- Their primary interest is preventing food waste beginning in the field and pasture: they serve only grass-fed beef and grass-fed milk. They don't serve beef or milk that's from cows fed grain.
- They serve mainly waste fed pigs—fed only scraps from the kitchen and the spent grains from local breweries.
- Corn cobs are ground up to become a substrate to grow oyster mushrooms.
- They buy male calves from dairy farmers (that are mostly killed at



レストランの格付けランキングで
世界トップのNomaも発酵に注力



Forbes

FORBES > BUSINESS > FOOD & DRINK

Why Noma's René Redzepi Believes Fermentation Is The Future Of Food

Christina Troitino Contributor @

I write about the business of food & drink.

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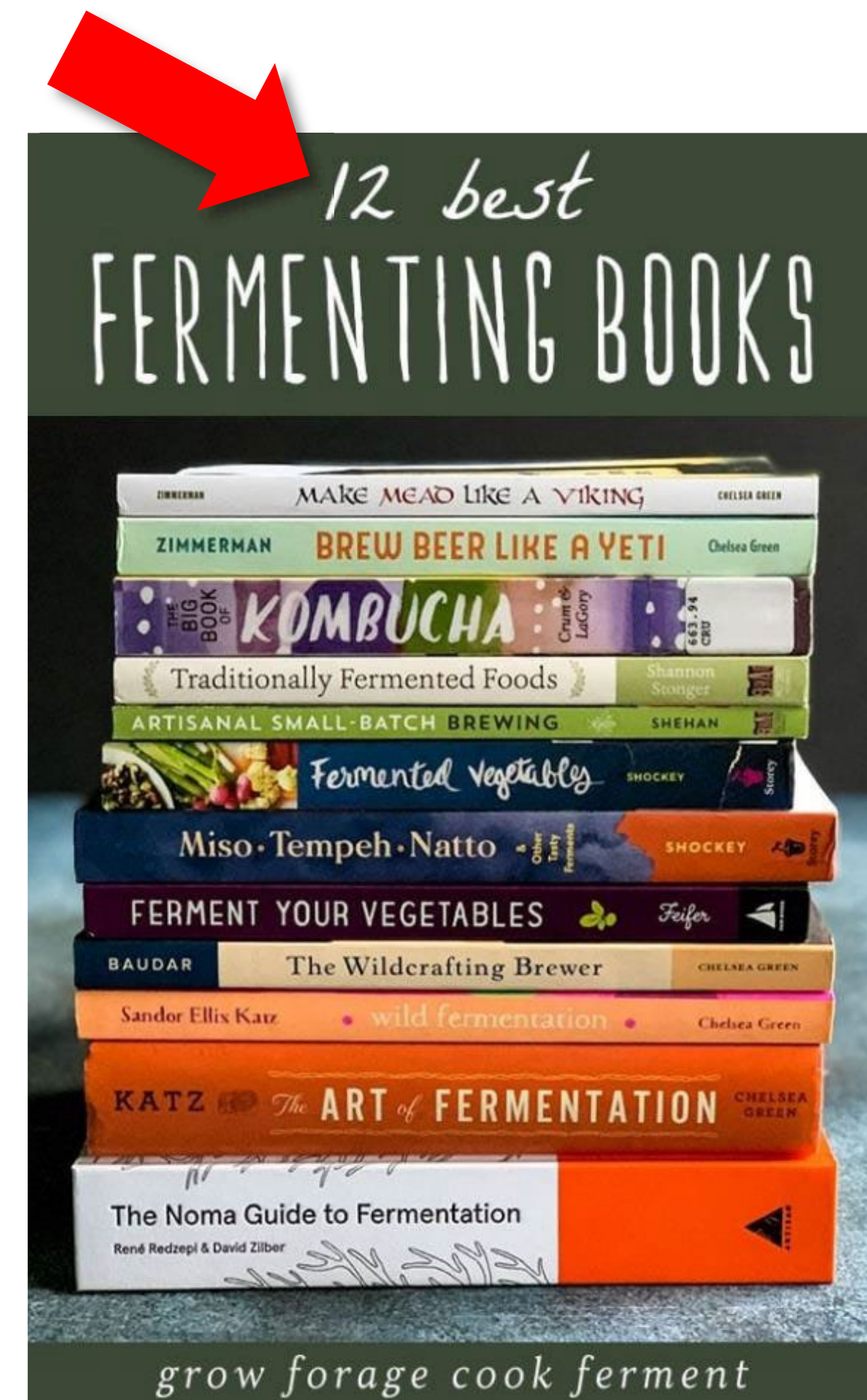
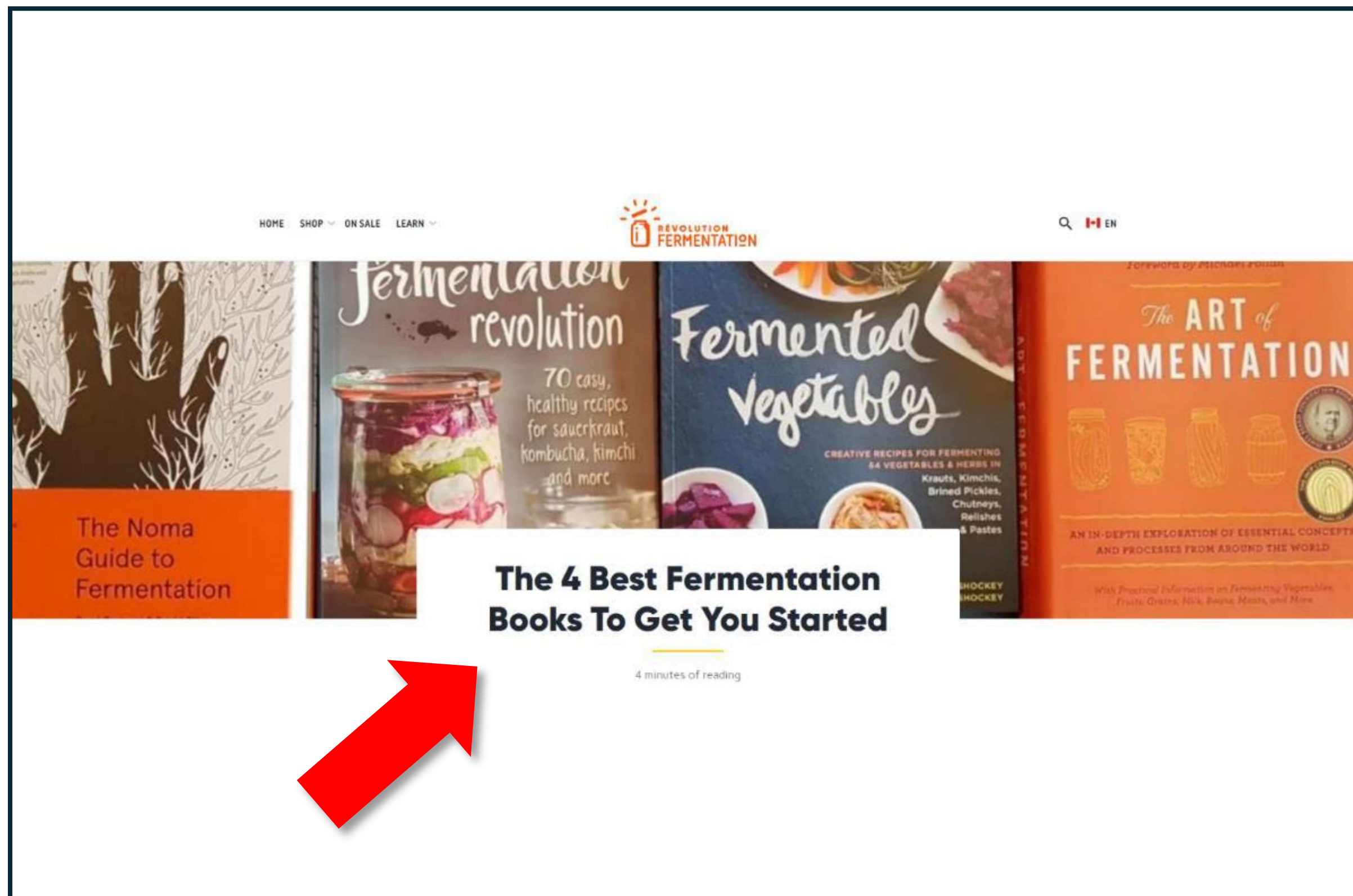
Oct 15, 2018, 03:42pm EDT

Updated Oct 16, 2018, 01:11am EDT

NomaとSan-Jで共同開発した
発酵調味料



**世界の発酵ブームが
日本人不在で進みつつある**



日本発の発酵の英語の本が一冊もない

THE INTERNATIONAL FERMENTATION CONFERENCE
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2022**

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スピーカー28人中
日本人は1人

Cornell University

HACKATHONS

CORNELL UNIVERSITY

SPECIAL GUESTS.

the challenges


special guests

weekend schedule


hackathon rundown

Food Hackathon 2024


We are thrilled to welcome a diverse group of mentors, judges, and speakers who bring a wealth of experience knowledge to the event. Industry leaders, professors, founders, and experts are here to guide participants, share valuable insights, and evaluate groundbreaking ideas. Get ready to learn from the best and take your skills to the next level. Check the Weekend Schedule for mentoring hours. *If you see them, say hello!*




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Chief Operating Officer
Sierra Development




Sam Alcala MS '05 PhD
Associate Professor - Dairy
Fermentation
Cornell CALS




Rajni Anuja MS '05, MBA
Managing Director
Cornell Institute for Food Systems




Terry Bates MS '16, PhD '22
Sr Applications Specialist
Bruker Applied Mass Spectrometry




Marie Bock MBA
EVP - Global Innovation & Insights
Dairy Management Inc




Barak Cohen MBA '18
Entrepreneur & Product Leader




Emma Conover MBA '23
Assoc. Brand Manager, Better For
You Innovation
Hershey




Alex De Leon '24
TA & Researcher
Entrepreneurship at Cornell




August Deibel MPS '10
Winemaker
Gallo




Nick Dokkoczi PhD
V&E Visitation, Chemistry and
Ecology
Gallo




Hazel Fromm-Tarozian MS '04
Sr Director, Global Food
Applications
Ingredion




Monica Galina '99, MS
Responsible Sourcing & Supplier
Partnerships
Olio Works




Alayna Hernandez PhD '28
HR Specialist
Entrepreneurship at Cornell




Leslie Herzog '77, MS
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The Understanding & Insight
Group LLC




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Takashi Sato
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Keith Seiz
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Zhiyin Wang MS '18 PhD '22
Food Technology Research
Manager
Puratos



Norrie Wilson MM
EVP Global Innovation Insights
Dairy Management Inc



John Zuccarello
Chief Innovation Officer
Sierra Development

審査員等39人中
日本人は1人

**日本が世界の発酵の進化に
貢献していくために**

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Takashi Sato

President of San-J, tamari soy sauce brewery in VA USA

8th generation of founding family | est.1804 in JPN

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linktr.ee/takashi_tamari

171K accounts reached in the last 30 days. View insights



Food waste



at WFM



on the Noma



our tamari



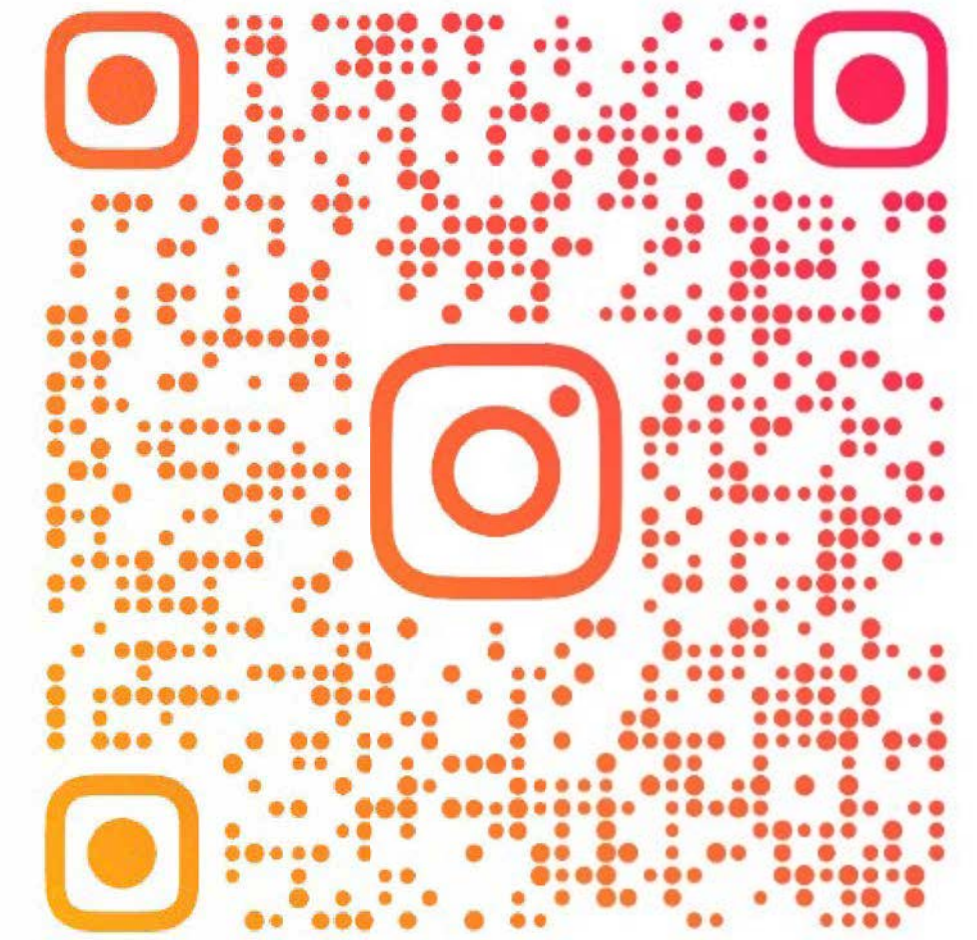
my tamari

POSTS

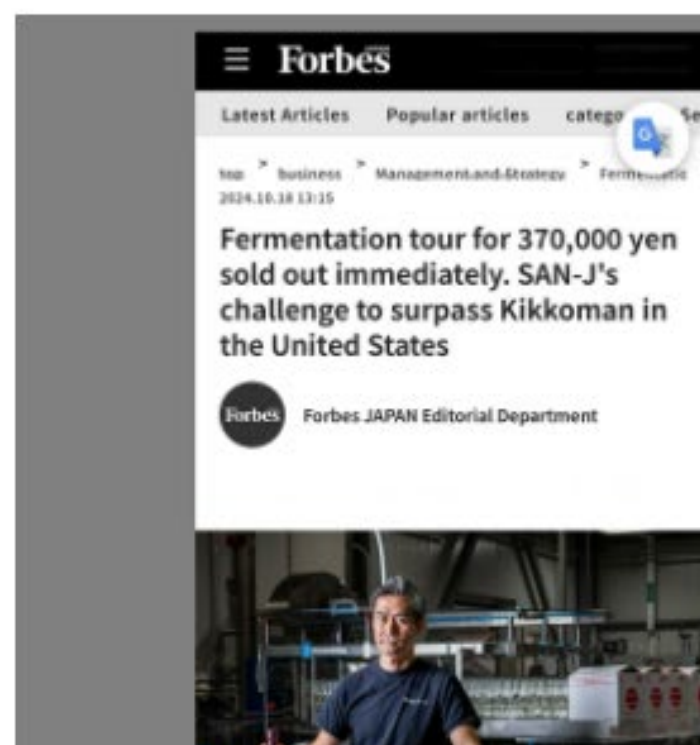
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TAKASHI_TAMARI



Website等もまとめた情報
を英語で発信



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Find everything you need to know about fermentation here.

Hakko means fermentation in Japanese. Learn the fermentation process of soy sauce, miso, and mirin, and explore the miraculous world of fermentation.



実際に発酵現場に触れる機会を提供（VA州の醤油工場を一般開放）



実際に発酵現場に触れる機会を提供（VA州の醤油工場を一般開放）

The factory tour.

Appeal to all five senses as much as possible, including touch, taste, and smell.



実際に発酵現場に触れる機会を提供（VA州の醤油工場を一般開放）

We invited manufacturers who sell koji-related products (free to exhibit).





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HOME / DESTINATIONS / ASIA / FUKUSHIMA IS JAPAN'S CAPITAL OF SAKE — HERE ARE THE BEST BREWERIES TO VISIT

Fukushima Is Japan's Capital Of Sake — Here Are The Best Breweries To Visit

Since the days of the samurai, Fukushima has been known as Japan's sake kingdom. Here are the centuries-old breweries to visit.

BY LA CARMINA | Published on Feb 02, 2024, 01:05 PM UTC



thejapantimes

LIFE / FOOD & DRINK

The Americans going where no miso has gone before

Eleana Hsu and Kevin Gondo are forging a new future for miso, shoyu and more

Kevin Gondo (left) and Eleana Hsu, the San Francisco-based founders of modern miso producer Shared Cultures, are behind some of the most innovative fermented products coming out of California. | OWEN ZIEGLER

BY OWEN ZIEGLER
STAFF WRITER

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TRAVEL

Japan aims to lure adventurous foodies with unique 'fermentourism'

By Nevin Martell | Globe correspondent, Updated December 22, 2022, 10:00 a.m.

CULTURE

'Napa Valleys' of Japan: Fermentation Tours as New Attraction

Here's what Michelin Star restaurant chefs from the US, food writers, alcohol beverage producers learned from their tour from Toyama to Fukui to Kanazawa.

Published 1 year ago on October 13, 2022
By Arielle Busetto

Hiraku Ogura and Takashi Sato co-organized a Fermentation Tour in Kanazawa (© San-J International)

News | Top | Japan | Features | Weather | Earthquake

Koji: Spilling the secrets of Japanese fermentation

LIFE / FOOD & DRINK

With Hokuriku's fermented foods, tasting is believing

Flavors favor the bold when it comes to hikkō shokuhin

A dish of saba (mackerel) fermented in a mixture of rice bran, salt, kombu and water, heshiko is a challenging bite for first-timers. | OWEN ZIEGLER

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WHAT'S TRENDING | EDITORS' PICKS

Series of quakes shake Chiba, with authorities calling for caution

Participants became Evangelists



San-Jの物流を活用して日本からの新規参入をヘルプ

1. 全米約18,000店舗に納入

- 醤油カテゴリーではKikkomanについてシェア 2 位、高級市場ではトップシェア。
。

2. 高級市場では全米シェアトップ

- 例えばホールフーズでは全米520店舗全てに配架、11品目が配架されており、日系食品メーカーでは最多。

3. 日系問屋を介さず米系チャネルを直接利用

- 問屋：全米トップ 2 社の問屋と直取引、現地系ブローカーも活用。

参考：ホールフーズの醤油棚の写真。赤枠がSan-J商品で、約4割を占める。



輸出への貢献：現状

一般的な日系食品メーカーの商流とその課題

日本語が使える環境を優先しがちなので、日系商社・問屋を使いがち。ただ、日系問屋は米系へのパイプが弱いため、売り先が日系小売に偏る。

結果として、日系人・アジア人向けの商売に偏り、商品や組織体制も日系市場に最適化されてしまう（＝逆に米系市場との相性が悪くなる）

メーカー → 日系商社 → 日系問屋 → 日系小売 → アジア系消費者

- 下流（商流・物流・購入者）が全て日系である為、日本語が求められるケースが多く、結果として、メーカー担当者（営業、マーケ・会計・出荷等々）も日本人になりがち。この組織での米系参入は構造的に困難。

- **日系問屋が直口座を持っているのは、ほぼ日系小売に限られる（勿論例外有り）**

- 日系は規模が小さい。例えば大手の日系小売で全米10数店舗。
- 一方、自然食大手のWhole Foodsは500、Grocery大手のKrogerは3000、Wal Martは5000店舗。

- 日系小売に買いに来るアメリカ人消費者は少数。

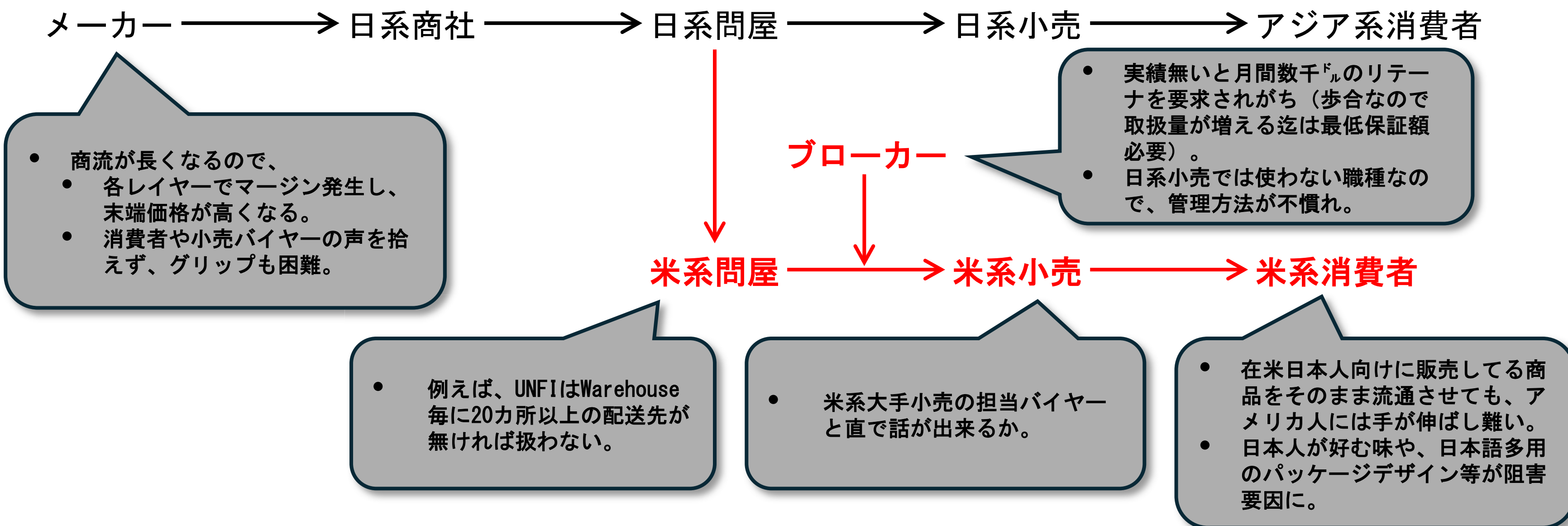
輸出への貢献：課題

日系商流を使って米系に参入を試みる際の課題

多くの日系食品メーカーは、「先ずは米国の日系市場でボリュームを作ってから米系に横展開すれば良い」と考えがち。ただ、日系問屋は米系小売に直接のアカウントを持っていない事が多く、その場合は間に米系問屋を挟まねばならない。

結果として、マージンが嵩む上に末端を把握しきれず米系に入りきれない。

また、前項で見たように、日系小売に最適化された商品（漢字多用等）や組織（日本人営業マン等）になってしまっているため、それらが逆に米系では足枷になる。



輸出への貢献：解決案

San-J商流を使った米系参入の試み

既にSan-Jは全米ほぼ全ての小売チェーンにアカウントがある。よって、そのチャンネルを或る種のインフラと捉え、そのチャンネルに他社メーカーも載り合いさせ、効率的な導入を図る。日系メーカーは輸出・通関・倉庫・入出荷・営業・集金・ブローカー管理等に新たな投資をせず、商品開発やPR等に特化できる。

メーカー → 日系商社 → 日系問屋 → 日系小売 → アジア系消費者

メーカー → **San-J** → 米系問屋 → ブローカー → 米系小売 → 米系消費者

- San-J既存Broker使えばリターナーを支払う必要無し。

- 日本の自社工場からの移送品コンテナに混載可能（毎月数本仕立て）。通関もSan-J社員が対応しているので、外部を使う必要無し。

- 例えば、UNFI・KEHE共に全ての倉庫でSan-J品がありアカウント開設済み。
- 各倉庫からのトラックも毎月数本来るので、いずれ追加作業が容易。

- Wegmansや安価チェーンを除いて、San-Jが納入されていない米系有力小売チェーンは無い。→ 全てのバイヤーへの直接提案が可能。
- San-JUPCコードであれば、San-Jと見做され、アカウント毎に発生する費用が掛からない。

輸出への貢献：対応事例

展示会でSan-Jブースに共同出展する利点

- 展示会では、有力リテールのバイヤーは既に配架されてる現行メーカーのブースを廻る事で忙しい。結果として、様々な新規メーカーのブースを廻って新商品を探す時間を確保し難しい。
- その限られた時間の中、海外からの出展エリア（JETRO様等のJapan Booth含め国毎にまとまってるエリア）を積極的に廻らない事も。理由は、これら海外エリアに出展してるメーカーは米国内での商流・物流を確保していないケースが多く、取引開始に時間が掛かる為（バイヤーも既知）。
- San-Jには有力リテールのバイヤーだけでなくUNFIやKEHE等の担当者も訪れる。よって、同じブース内であればSan-Jの営業マンがそのまま共同出展メーカーに紹介しやすく、先方の抵抗も低い。

展示会でのSan-Jブースの活用例



東京バル社

オリゼ社

Kimono Mom社



San-Jブースを訪れた ホールフーズバイヤー



輸出への貢献：成功例

San-J商流を使った成功事例

- 3月のNatural ExpoでSan-Jブースに出展したKimono Mom社が、ホールフーズで採用に。9月から全店配架決定。
- ホールフーズでは、メーカーをRegional AccountとGlobal Accountに分けて管理している。Regional Accountとして採用されても、或る特定の地域のみ（CA州南部のみ等）でしか配架されない。
- San-JはGlobal Accountとして認定されているので、San-Jが提案する商品はテキサス州の本社で採用可否が検討される。この検討会にてKimono Momブランドの商品採用が決まったので、全米450店舗での配架が決定した。Global Accountとして扱われている日系食品メーカーは恐らく10社強程度ではないか。代表例ではキッコーマンさん、ハウスさん、伊藤園さん、カルビーさん、森永さん、マルカンさん等。
- ラベルはKimono Momブランドだが、裏のUPCコードはSan-J社のものを使用している。よって、問屋・小売での扱いはSan-J社の商品の一部として扱われる。よって、たとえば店頭値引きプロモーション等を行うときには、San-JがPromo Fee（一回当たり1万1千ドル）を支払ってれば、これはアカウント単位のFeeなので、Kimono Mom社は別途支払う必要はない。
- Brokerも自動的にSan-J社のブローカーが全社扱う事になる。アカウント開設等の審査・事務処理は必要ない。







旧ブース

新ブース：1.5倍に拡張

