



The Hornblower



NORTHERN CALIFORNIA INSTITUTE OF FOOD TECHNOLOGISTS



NCIFT Suppliers' Night Symposium and EXPO: Mark Your Calendars Now for This Great Event

Serving up the Modern Cornucopia – Short Stories from the New Menu

The symposium precedes the Suppliers' EXPO April 25th from 1-3 PM at the Alameda County Fairgrounds. Stick around after the symposium for the EXPO 3-7 PM. This year, our symposium will bring 4 companies together that are on the forefront of food industry innovation. They will present how they got their ideas, how they have turned that idea into a real product and where they are headed in the marketplace. Join us to hear from Perfect Day Foods about their milk proteins that are not from cows; from MeliBio about their bee-free honey; from Zero Acre Foods about their fermentation sourced oils; and from Sundial Foods about their plant-based, bone-in, skin-on 'chicken' products.

Whether you are a product developer, quality practitioner, food engineer or involved in other areas of the food industry, I know you'll enjoy this exciting and informative symposium, moderated by Dr. Jaime Reeves, Executive Vice President, Product Development & Commercialization at Mattson. There will be plenty of time for Q&A after presentations and some presenters are also exhibiting at the EXPO so you can get more information. To

Suppliers' Night April 24 & 25

by Bruce Ferree, CFS, IFT Fellow,
NCIFT Suppliers' Night Chair

NCIFT Suppliers' Night activities are always exciting and they are coming up fast. Be sure to set your calendars to ensure you can attend some of our events. We have 5 events for you to enjoy.

April 24 is the 31st Golf Outing. Notice this is not a tournament – it's an outing. Bring your best suppliers or customers and use this as a 6-hour appointment to talk business in a relaxed setting. Or just come out and enjoy a fun day playing golf with your friends. This year we're at Callippe Preserve in Pleasanton. Get your 4-some and sign up ASAP. Following golf is a dinner where we will continue to enjoy the day's events and share the results of the fun day on the golf course.

April 25 brings you the Suppliers'

Night Symposium and EXPO at the Alameda County Fairgrounds. The Symposium presents on the topic of 'Serving up the Modern Cornucopia – Short Stories from the New Menu' from 1-3PM and is followed immediately from 3-7 PM by the Suppliers' EXPO. During the EXPO, visit the student Poster Competition to learn what students in food science are up to. With space for over 200 exhibitors, you're sure to find a supplier of that service or material you're looking for. As an exhibitor, you can reach 500 decision makers in the northern California food industry while sharing information about your company in a local-flavored and casual setting. And using an expanded floor layout, there's additional room to keep you safer in our post-pandemic world.

For more info visit the NCIFT website at ncift.org/suppliersnight.

CONTINUED ON PAGE 3

CONTINUED ON PAGE 4

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Table of Contents

Suppliers' Night.....	1
Symposium & Expo.....	1
NCIFT Officers.....	2
Welcome New Members.....	4
Misleading Nutrition Labels in Seafood.....	5
NCIFT Luncheon.....	5
New Smart Technology.....	6
Grocery Shopping with Food Safety in Mind.....	7
New Professionals Event.....	7
The Importance of Handwashing.....	8
Awards and Recognitions.....	8
Platinum Sponsors of Suppliers' Night.....	9

Correction

There were two errors in the biographies of current NCIFT Directors at Large (*Hornblower* issue July-December 2022, page 5). The biographies for Mr. Christopher Ham and Ms. WanChin Lim were omitted, and Mr. Richard Stier is not a current Director at Large with NCIFT.

Below are biographies for Mr. Christopher Ham and Ms. WanChin Lim:

Mr. Christopher Ham is currently a Business Development and Sales Manager at CJ Food & Nutrition Tech where he is providing savory enhancement ingredients and food grade amino acids to the food industry. Chris earned a bachelor's in food science from the University of California at Davis and was involved as an officer at the Food Tech Club. He enjoys being a part of NCIFT as a way to connect with members in the food industry.

Ms. WanChin Lim spent nearly 14 years working in the food industry with a focus on food safety, quality assurance, and regulatory compliance. She recently focused on a new territory- material science space focusing on the quality of bio-leather. But she wants to continue remaining active in NCIFT to give back to the community where she found her passion for food science and technology.

Suppliers' Night April 24 & 25

CONTINUED FROM FRONT PAGE

Learn about the exact dates and times for all the events. Navigate to the registration link so that you, too, can be an exhibitor. Most of all, set aside time on your calendars for these events. The symposium and EXPO are FREE for attendees so bring others from your office/company to help them grow in their jobs too. Looking forward to seeing you again this year. PS: Attendees can preregister at the NCIFT website also or by calling 650-802-0888. We'll have your name badge printed and ready for you if you preregister, saving you time when you arrive.

Welcome New Members

Rita Chuang	Nick Long
Steven Ciganek	Robert Noble
Dezbah Duchicela	Luciano Peralta
Steven Frese	Stephanie Schutz
Danny Gubser	Barb Stuckey
Michael Kinzie	Laurie Welborn
Alison Lacombe	Jennifer Jo Wiseman

Welcome New Student Members

Alise Chavanapanit	Chayuth Pantrattanamongkol
Qianqian Chen	Brianna Price
Tanyamon Chupongstimun	Laura Vu
Samantha Dahlberg	Phasiri Wongmahapaul
Chenxi Guo	Emily Yoshii
Amanda Hu	Natasong Yuan
Benjamin Lee	Yuqin Zhang
Xiran Li	

NCIFT Suppliers' Night Symposium and EXPO

CONTINUED FROM FRONT PAGE

give you a feel for the presenters, here are their bios. I look forward to seeing you at the event – and stick around afterwards for the EXPO!

SPEAKER BIOS

Presentation title: *Perfect Day Foods – “Change the Process. Not the Food.”*

Dr. Helen Joyner:

Helen Joyner has a BS in Chemical Engineering from Drexel University and an MS and PhD in Food Science from North Carolina State University. She has been the head of the Material Characterization group in Perfect Day's Food Team for almost 4 years. She specializes in instrumental, sensory, and shelf life testing of food products. Prior to joining Perfect Day, she worked as a faculty member in the School of Food Science at the University of Idaho, teaching and researching in rheology and food engineering. A sabbatical in 2019 led her to Perfect Day, and she's been in the Bay Area since then. Helen is also an Associate Editor of the Journal of Food Science, an active member of the Society of Rheology, and a reviewer for a number of journals and federal grant panels. When she's not working, she enjoys reading and taking walks with her husband and 1-year-old daughter (who is running quite a series of rheology and sensory experiments of her own!).

Julia Portillo:

Julia came to Perfect Day last fall and has had the pleasure to work on developing various frozen dessert products in the Dairy, Non-Dairy and Animal Free Dairy categories. They graduated from Cal Poly San Luis Obispo in June of 2021 with a

Food Science degree. In the last six months of their time at Cal Poly they completed their senior project studying the efficiency of different extraction methods of phenolic compounds from apple pulp. This project led to their job as a cider maker at a local cidery. Prior to that, they spent several years working in the restaurant industry and in events management. Product development for Perfect Day has been exciting and educational as Julia continues to build their career.

Steve del Cardayre is Co-founder and CTO of Zero Acre Farms. Steve is a Biochemist by training who has focused his career on the development and commercialization of sustainable products and technologies for the food, chemical, and fuel industries. Prior to Co-founding Zero Acre, Steve was V.P. Research and Development at REG Life Sciences, which was focused on the production of sustainable chemicals and fuels using biotechnology and was formed through the acquisition of LS9, which Steve Co-founded in 2006. More at (9) Stephen del Cardayre | LinkedIn

Dr. Katie Uhl Potts is a Food Scientist at MeliBio, bringing honey made without bees to the market. She is primarily focused on scaling up production of the first generation product, plant-based honey, in order to develop a more sustainable product for all pollinators. Katie earned her PhD in Food Science from UC Davis in 2022 where she studied not only the aroma profiles of different honey varieties, but also the fruit and flower of the California-native blue elderberry.

Sundial Foods

Sundial Foods has developed a novel processing technology for creating plant-based whole cuts of meat. The Sundial process transforms clean plant ingredients into complex textures, mimicking the layers of animal tissue that contribute to the meat-eating experience. Sundial Wings, which are currently sold in California restaurants, are the first commercially available product in Sundial's portfolio. The wings are complete with skin, meat, and bone, and are made without additives or binders, and are rich in protein. The delicious taste and mouthfeel produced through the Sundial process creates a healthy and delightful eating experience.

Siwen Deng, PhD

Siwen's passion for plant science and improving food systems stems from her upbringing in a rural agricultural town in China. Growing up in this environment, she became acutely aware of the challenges of food security and the importance of food system stability, particularly in the face of unprecedented climate change. Siwen spent over ten years in academia before co-founding Sundial with Jessica Schwabach in 2019. She holds a BS in Plant Biology from China Agricultural University, a BS in Plant Sciences from Purdue University, and a PhD in Plant Biology from UC Berkeley. Her academic background, coupled with her firsthand experience of the challenges facing the food system, inspired her to devote her career to developing innovative solutions that address these critical issues.

Misleading Nutrition Labels in Seafood

by Ai Van Le (Department of Nutrition, Food Science and Packaging, San Jose State University, San Jose, CA 95192)
Submitted by Xi Feng PhD

Over the past 50 years, there has been a significant increase in seafood consumption, making it the most widely traded food product (Kroetz et al., 2020). However, the frequent mislabeling of seafood has issues, as it raises questions about the source, safety, and sustainability of seafood. Research shows that substituted products are often imported from fisheries with ineffective management, which can have detrimental effects on marine populations. Therefore, it is crucial to develop comprehensive, integrated, and cooperative techniques to understand the impacts of mislabeling and implement strategies to reduce it. Fig. 1 illustrates the pairings of seafood products with the reported consumption and mislabeling rates in the United States. The mislabeling rate is represented by the horizontal axis, while the vertical axis depicts the apparent mislabeling consumption. While most pairs have low rates and consumption of mislabeled products, those with high consumption are categorized as predicted or substitute commodities. This graph reveals that alternative seafood is the highest overall consumption of mislabeled

goods (Kroetz et al., 2020).

Incorrect seafood labeling significantly impacts food industry, and it may jeopardize the precision and dependability of food labeling systems that are crucial for ensuring the quality, safety, and traceability of food. Mislabeling may also result in inaccurate compositional and nutritional evaluations, which may have an impact on studies on the dietary and health benefits of seafood. Mislabeling of fish can also have a financial effect on the seafood industry. The mislabeling of fish can also have a financial impact on the seafood industry, resulting in price differences and unfair competition for species that are incorrectly categorized as being of higher value. The mislabeling of seafood can also make it challenging for customers to make informed decisions about the seafood they purchase, leading to inefficiencies in the market and customer confusion.

Seafood mislabeling is a significant problem in the field of food science as it compromises the accuracy and dependability of food labeling systems, interferes with studies on seafood, damages the reputation of organizations that certify seafood, and causes financial losses for the seafood industry. Seafood DNA tests are insufficient to determine if fish were caught sustainably or

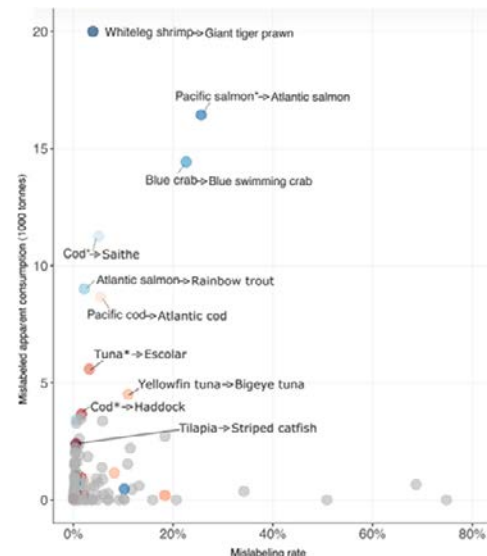


Fig.1. Mislabeling and apparent consumption for the US seafood supply (Kroetz et al., 2020)

ethically (Haynes, 2021). Therefore, stronger government regulations are recommended to ensure accurate labeling, improve testing procedures, educate consumers, and enforce laws to prevent fraudulent labeling practices. The Marine Stewardship Council (MSC) program, which requires traceability and certification for sustainable fishing methods, and includes public awareness campaigns and penalties for mislabeling, is one example of an initiative that can help address these issues. In Canada, organizations like Oceana and SeaChoice have called for stronger sustainability claim laws to prevent "greenwashing" (Haynes, 2021).

NCIFT Luncheon at Sacramento Food Processing Expo



Above: Tara McHugh, our guest speaker (left) and Zhongli Pan, our President Elect, while he was introducing the speaker.

Right: Erin Evers (left) and Kathy Kennedy, SPI Group.



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New Smart Technology Developed by UC Davis Professor May Help in Early Detection of Insects in Food and Agricultural Products

by Neelanjana Gautam (Reprinted with permission from AJ Cheline)

Post-harvest losses are common in the global food and agricultural industry. Research shows that storage grain pests can cause serious post-harvest losses, almost 9% in developed countries to 20% or more in developing countries. To address this problem, Zhongli Pan, an adjunct professor in the Department of Biological and Agricultural Engineering, has developed a potential solution.

Pan's recent project using an IoT (Internet of Things) based smart wireless technology to remotely detect early insect activity in storage, processing, handling and transportation may solve the insect infestation related challenges for the agricultural industry. The technology uses a novel device called SmartProbe — designed by Pan and his team using wireless sensors and cameras — and leverages cloud computing to monitor and predict insect occurrences. This could help control insect pests, reduce food loss and the fumigants used in agricultural products today. Ragab Gebreil, a project scientist in Pan's lab, is the co-inventor of this technology.

How the IoT based Technology Works

Five years ago, when the California Farmers' Rice Cooperative reached out to him with an insect problem in rice storage, Pan decided to investigate.

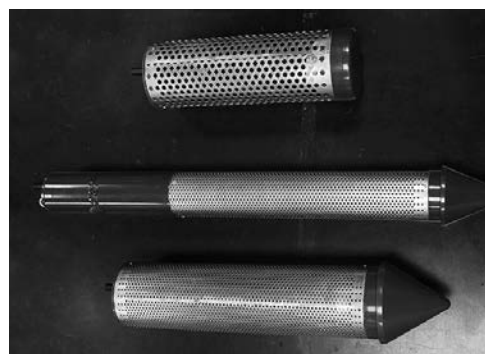
The current inspection method involves manual detection of insects in the storage facilities by sending humans to the silos, which can be inaccurate, time consuming and incur high costs. Pan said that this kind of inspection may not even be possible for packaged products.

The new SmartProbe device that Pan and colleagues developed has three main functions: 1) to capture and photograph insects, 2) to measure the temperature and humidity of the environment using the integrated sensors, and 3) to send the images and sensor data to cloud servers

using Wi-Fi. The servers then count the number of insects by analyzing the images. Notifications are then sent out to a PestDetect app, which the facility managers can use to take necessary pest control action.

SmartProbe Device

"Through years of research, we found that the powerful technology we developed helps detect insects in the emerging phase before the damage is done," said Pan. "Typically, the insects start from the top of stored or packaged product and move gradually to the bottom. With this new technology we can do the surface treatment by using only a small amount (e.g. 26%) of the chemicals instead of fumigating the entire product, which is not desirable." Pan said that this 80% reduction in chemicals compared to traditional measures of fumigation is



SmartProbe device

a significant development.

According to Pan, there are many benefits of using this SmartProbe device. The early detection and notification of insect infestation will solve common problems in pest management, such as product and quality loss, inappropriate amount of chemical use, food safety and workers' safety concerns and high management costs.

Collaborations and Technology Support

With the support of California Rice Research Board and the Almond Board of California Pan and colleagues selected some of the storage facilities to work on the project. Pan also found that insect infestation caused significant damage to almonds in a



Professor Zhongli Pan and his team developed a novel device called SmartProbe to monitor and predict insect occurrences in agricultural products. (Karin Higgins/UC Davis)

very short time.

Pan stated that the team has successfully designed, built and demonstrated the online monitoring and early detection technology for insect activity in stored rice, almonds and walnuts at 13 commercial storage and processing facilities.

In 2022, Pan received support to advance the technology towards commercialization from the UC Davis Venture Catalyst Science Translation and Innovative Research (STAIRTM) grant program. The grant laid the foundation for Pan to form the startup AIVision Food Inc. during the 2021-22 fiscal year.

"The STAIR grant was very helpful in bringing the technology from the lab to the marketplace and has been the greatest support to transition from concept to commercialization," said Pan.

Pan is optimistic about the role of AI in pest control for the agricultural industry. "Right now, AI is only helping detect what's happening. When we have more of these kinds of smart devices, we'll collect a lot of the data and then eventually the AI can use the data and models to predict where and when insects may occur, affording the opportunity to take action to prevent before the infestation starts," he said. "The technology will be important to sustainable food production, and will reduce food loss and hunger in the world."

Grocery Shopping with Food Safety in Mind

by Bruce Ferree

'This article has been approved for republication by QA and Food Safety magazine'

I've gone back to my curmudgeon ways. I've recently been disappointed with food safety actions while I've been grocery shopping and thought I'd share some of my observations with others in the food safety world. How do we improve food safety behaviors at the consumer and retail level?

What I Have Observed: Costco: Shoppers have gallons of milk and blocks of cheese at the bottom of their cart, and are shopping for clothes, computers and engine oil. Super Wal-Mart: Shopper carts having boxes of frozen dinners and goods, meats in just the sales wrap (no bag), cheeses and fresh leafy greens under clothes, toys, and garden supplies (including

pesticides!). Safeway Grocery: Carts with meats, leafy greens, cheeses and milks while the shoppers walk the aisles of breads, canned goods and soda, then review the entire wine selection before checking out.

Why it's Important: The food safety geek in me knows that all those refrigerated and frozen goods are already thawed or starting to spoil – even before the consumer gets out of the stores. I'm confident that these same customers are the folks who return next week to complain about their purchases spoiling (or share openly with their friends that best by dates are bogus!). My bet is that many a consumer has been poisoned by not separating poisons and foods, or raw meats from other goods in their cart (did that raw meat drip on your RTE apples?). For those of us in manufacturing, our

HACCP or Preventive Controls plans are expected to address reasonably foreseeable hazards. Did we include these poor shopper habits as reasonably foreseeable? Lastly, of course all this is also a source of waste. Spoiled foods are discarded and become waste that is not sustainable.

What Are Some of the Potential Causes? Shopper Ignorance (doesn't know). Shopper being lackadaisical (doesn't care). Poor store design (household and food items sold in the same store. Store designed so that shoppers end up in a shelf-stable food area after going through refrigerated and frozen items).

How Can It Be Remedied? 1: End the ignorance. Educate the consumer. Get the right people who have the right skills to talk with consumers and get them into the media to explain these poor food safety habits and corrective actions.

2: Get people to care. Should there be an employee at each store to observe and educate shoppers that exhibit these poor behaviors?

3: Can the stores be designed for food safety instead of marketing? Quit putting meats and dairy on the back wall of the store – with the frozen foods at the complete other side of the store. Can the stores create a traffic flow so that shoppers first see the non-perishables, then end up at perishables and frozen just before the checkouts? Can retailers stop having stores that sell household items and foods? Can retailers split the store (think Super Wal-Mart and others) to not allow foods to be taken to the households side? Can (at a minimum) retailers provide some education for shoppers – fliers/handouts could be a start.

Yes, my curmudgeonly ways are coming out again and I may have to put my blinders back on just so that I can shop with a calm mind. Am I the only one who has seen this? Let me know what you do when you have seen these behaviors. Help me get my sanity back. I'm sure it will be therapeutic for me to know I'm not the only crazy food safety geek out there grocery shopping.

New Professionals Event: Torani



Submitted by Erin Evers

Many thanks to the team at Torani for hosting the NCIFT New Professionals! What a treat it was to be at the brand new Torani facility in San Leandro. We were honored to hear Torani CEO Melanie Dulbecco speak about the rich history of the Torani company, from their origins in San Francisco and growth through the years. We were impressed to learn that Torani has never had a lay-off in its almost 100-year history.

The cold and hot beverages featuring Torani products were enjoyed by all! Thank you to Mailyne Park and Suellan Le for all the hard work organizing and preparing for our group!

Making Sure Your Staff Wash Their Hands

by Richard F. Stier

As a nation, we have come three years since COVID-19 appeared on the scene. The experts made many recommendations to slow the spread of the virus; some of which were good and others well off the mark. When one is unsure of what to do, being very conservative may be the best way to go. Handwashing was one of the early recommendations. Since COVID is transmitted through respiration, this was unnecessary. Handwashing is essential, however, for many other illnesses, especially foodborne illness. Fecal to oral transmission is all too common. The handwashing recommendations really had little effect on the food processing and food handling industries since handwashing should be a mainstay in everyone's Good Manufacturing Practices. Well managed food processing and handling facilities and restaurants and foodservice operations mandate and manage handwashing to protect their products and customers. Basic requirements state that hands should be washed at the start of the work day, after using the restrooms, after eating or drinking, after handling waste and any time hands may have been soiled. Bottom line.....in such operations hands are washed many times each day.

But handwashing program is more than just your staff washing their hands. There are five basic elements to a handwashing program. These are;

- Providing proper handwashing facilities
- Making sure that your handwash stations are properly supplied
- Making sure that the handwash stations are easily accessible to plant workers
- Educating staff on how to properly wash their hands
- Monitoring and managing handwashing to verify that hands are being washed as required.

All food processing, handling and other operations must install hands-free systems of some sort. This means that the system engages without having to touch anything with dirty hands. Handwash stations may be foot, knee or elbow activated, or utilize an electric eye. If you have a system which has handles for hot and cold water get it replaced. If a dirty hand is used to turn on the water to wash your hands, the clean hand must then touch the dirty handle to turn off the water, which may re-contaminate the clean hand. There are also handwash systems such as those manufactured by a company called Meritech in which workers insert their hands into a chamber in which the hands are washed, rinsed and sanitized. One word of warning....if your handwash sinks utilize electric eyes, make sure that those systems are on a regular schedule for changing the batteries. As one who has audited plants around the world, I must say that I have had to write up many operations for handwashing issues simply because the electric eye did not work.

It is imperative that handwash facilities be properly supplied so that the workforce can actually wash their



hands. I am guessing that many of you have seen auditors engage your handwash sinks, place their hand under the flowing water and start counting. They expect the system to deliver warm or hot water within a few seconds. No water and you get dinged. Warm or hot water is essential for several reasons. It enhances the efficacy of cleaning, especially if your people are handling oily or greasy foods. Hot water helps melt the fat making it easier to remove. It is also more comfortable for workers. Washing hands in ice water in a freezing plant is not pleasant. Each station should also be supplied with soap preferably delivered via a hands-free system and a means for drying hands. Single use towels or an air dryer are the most common tools for drying hands. If single use towels are employed, a waste basket is also needed. Hand sanitizers may or may not be used in food plants or restaurants. Operations that produce ready-to-eat (RTE) foods will usually include hand sanitizers as part of the handwash station. Other operations which may be deemed lower risk like soft drinks or canned foods might determine that a hand sanitizer is unnecessary. The well-managed plant will usually assign people to regularly monitor the handwash stations to ensure that everything works and they are properly supplied. These checks usually include a form to verify that the checks were actually performed.

The next step is to ensure that handwash stations are easily accessible. This is not a real issue in restaurants but may be in food plants. Processors need to examine how their facilities are laid out and install handwash stations in the vicinity of all work stations. If someone has to walk

CONTINUED ON BACK PAGE

Awards and Recognitions

Zhongli Pan Awarded the Distinguished Service Award by the Rice Technical Working Group

Professor of Biological and Agricultural Engineering Zhongli Pan has been awarded the Distinguished Service Award by the Rice Technical Working Group. The award is presented to individuals who have given distinguished long-term service to the rice industry in areas of research, education, international agriculture, administration and industry rice technology. Pan was officially presented with the award at the 2023 Rice Technical Working Group Conference February 20-23.

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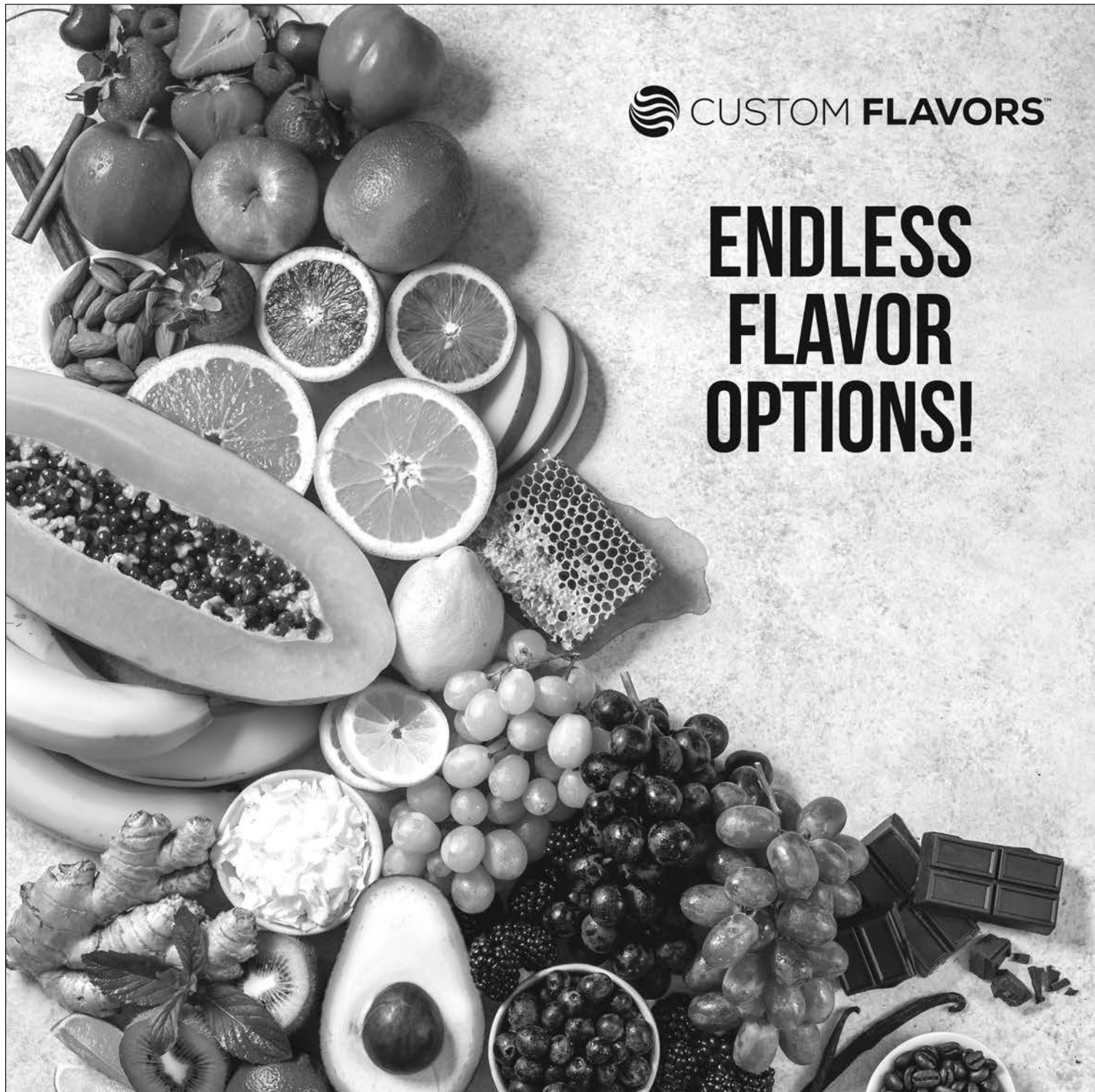
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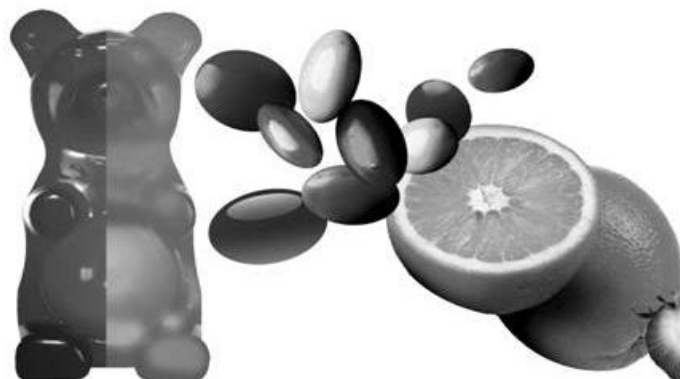
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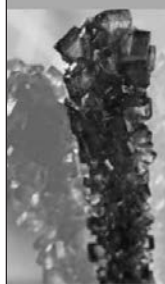


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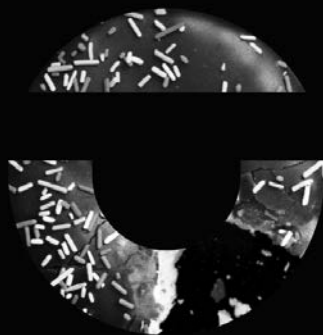
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Making Sure Your Staff Wash Their Hands

CONTINUED FROM PAGE 8

400 - 500 yards to get to a handwash station, there is a good chance that they will forego handwashing. So, make it easy for your crew to get to the handwash stations.

Perhaps the most important element is making sure that your people not only know how to properly wash their hands but why handwashing is important. When washing hands, workers should first wet their hands then apply soap and wash for at least twenty (20) seconds. Some suggest singing two choruses of the "Happy Birthday" song to time one's self. Finally, they rinse and dry their hands and apply sanitizer if that is what is mandated by plant management. How to properly wash hands and the importance of handwashing should be part of every new hire's orientation and yearly refresher sessions for all employees.

As alluded to earlier, handwashing is an essential element for disease control. Getting this point across to your workers must be part of the orientation and the refresher sessions. One of the best tools for demonstrating the efficacy of handwashing is to utilize petri plates. Make sure that there is at least one plate for each person in the session plus 5 or 6 more. The media can be Plate Count Agar, Nutrient Agar or Dextrose Tryptone Agar with a Brome Cresol Purple indicator. The blue indicator turns yellow if the organisms produce acid. Have each person in the class touch a plate with four fingers then label each plate with the person's name and tape them shut. Next, ask 3 or 4 persons to wash and dry their hands as they have been taught. Have this group touch new plates. Bring the group back the next day to look at the plates they touched and others including those touched after handwashing. Most people are quite surprised how "dirty" their hands really are. If there are extra plates, have people place one of their hairs on a plate. When the plates are viewed, people are again surprised at how dirty their hair is. For the parents with kids, bringing plates to your kid's classroom is a great way to introduce the need to wash hands to children.

There is another excellent tool to demonstrate how bacteria can spread between people and how persons



often do not wash their hands properly. This is a product called GLO-GERM (www.glogerm.com) produced by Glo-Germ of Moab, Utah. They make a powder that is easily transferred from hands to other surfaces including other hands and a gel or oil that can be used to demonstrate the efficacy of handwashing. Check out their website.

So, we now get to the last element; monitoring and verification. Is your staff really following your handwash guidelines? One element of this program has been touched on already; monitoring to ensure that the handwash stations are well-supplied. But, how does a facility, especially a large facility, ensure that everyone is following the handwash procedures? Can you really be sure that your 100 or 200 employees are washing their hands between 5 and 10 times a day? You really can't so it is up to management to emphasize the message that handwashing is important and is an integral part of the company's food safety culture. Do this through the basic orientations for new employees, refresher sessions for old staff, signage throughout the plant and some random checks. Some operations even go so far as to randomly swab their employee's hands. The bottom line is that handwashing is essential to protect your employees, your customers and your company's good name.