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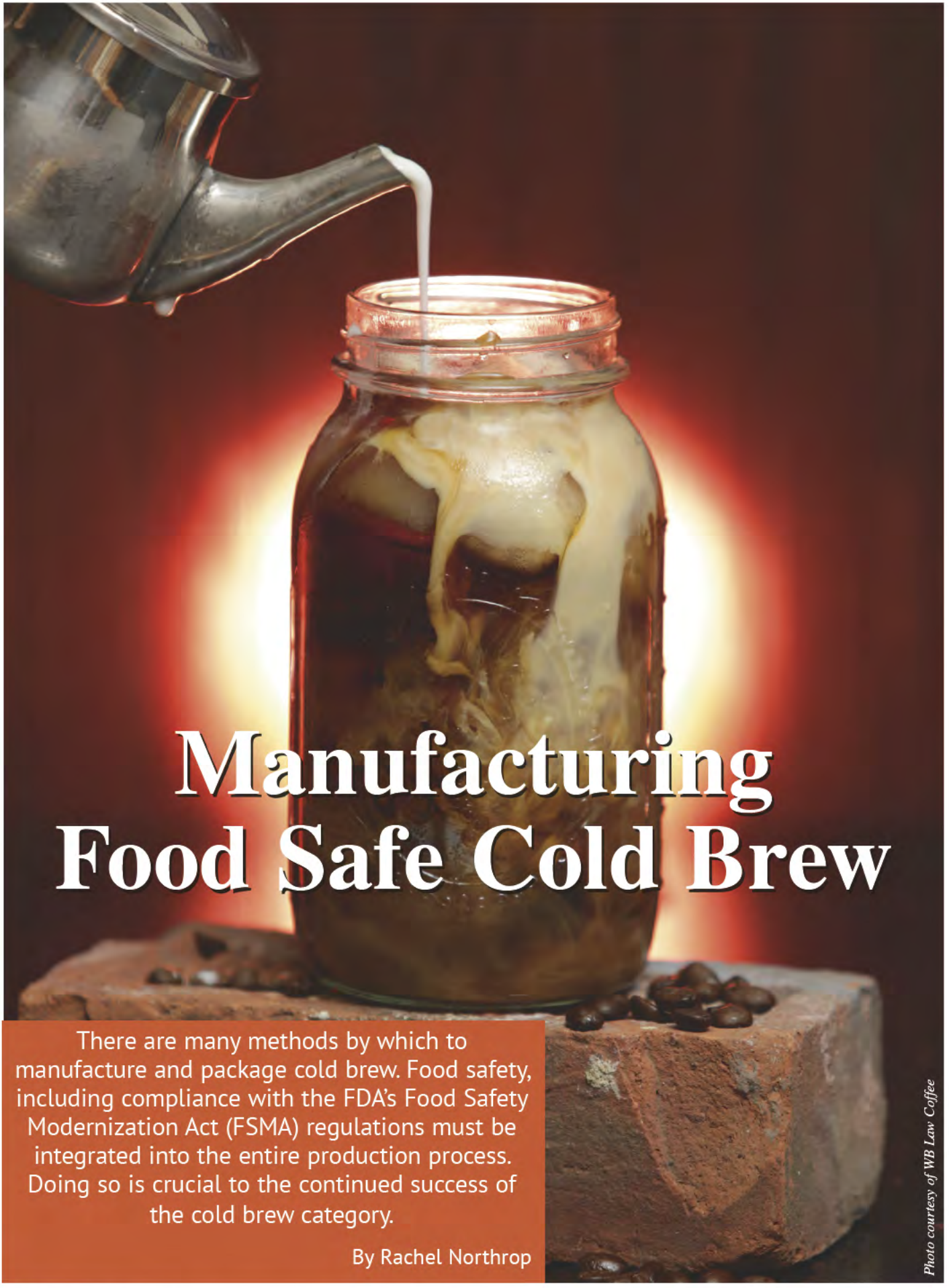

Manufacturing Food Safe Cold Brew

There are many methods by which to manufacture and package cold brew. Food safety, including compliance with the FDA's Food Safety Modernization Act (FSMA) regulations must be integrated into the entire production process. Doing so is crucial to the continued success of the cold brew category.

By Rachel Northrop

Photo courtesy of WB Law Coffee

Cold brew is a brewing method, not a singular final product. The New York, New York-based National Coffee Association's (NCA) Cold Brew Toolkit draft, released this spring for industry comment, explains that "cold brew coffee is made with roasted and ground coffee. In most cases, the brewing process trades time for temperature; instead of brewing with very hot water over a very quick duration, cold brewing typically uses ambient or cooler water and extended periods of time to extract an optimal amount of flavour compounds and solids from the beans."

Establishing the Category

The cold brew category is growing. Because of its versatility as a ready-to-drink (RTD) product, cold brew increases opportunities for coffee occasions throughout the day. According to Sarah Snudden of Keurig Dr Pepper, based in Waterbury, Vermont, a presenter at the NCA's webinar, *The Business of Cold Brew*, "Cold brew is one of the ways coffee is becoming more premium, convenient and refreshment driven."

Matthew Barry, beverages industry analyst for London, England-based global market intelligence firm, Euromonitor International, said that cold brew's growth in RTD form "does not seem to be taking consumers away from mainstream brands like [Starbucks] Frappuccinos, which are still performing well. The growth of RTD cold brew represents new consumers entering the category. Cold brew growth should be thought of as complementary to existing RTD products rather than a major challenge to them."

Cold brew is here to stay and is a major avenue for attracting and retaining lifelong coffee drinkers. Now, the challenge is to stay ahead of potential risks and keep cold brew safe for consumers.

New Safety Considerations

"Different from roasted coffee, cold brew is a liquid," said Mark Corey, the NCA's director of scientific and government affairs. "Increased water activity and moisture create conditions for pathogens to grow. Brewed coffee has a low-acid pH, which has inherent food safety risks to consider in a comprehensive food safety plan, similar to other low-acid foods like canned soup or tuna."

Corey explained that cold brew manufacturers must "understand that pH must be closely controlled to prevent risk of *Clostridium botulinum*, a deadly pathogen in hermetically sealed containers." Hazards that can harm a consumer fall into three categories: biological (yeast, mold), physical (foreign objects) and chemical (lead, pesticide residue, allergens). Risk is the proximity of a hazard and the likelihood that it will affect the manufacturing process.

Controlling the Risks

The US Food and Drug Administration's (FDA) Food Safety Modernization Act (FSMA) requires that all food manufacturers write a Food Safety Plan identifying how a facility controls inherent manufacturing risks.

Corey suggests thinking of risk control as a pyramid. "The baseline is good manufacturing practices (GMPs), next is identifying hazard analysis critical control points (HACCP), and the top level is a Food Safety Management System that builds confidence into your process." Confident processing means that statistical and scientific knowledge is built into the process to reduce the need for testing every time. "There is less risk, and the risk is controlled appropriately," he said. "You want to empower your employees with knowledge so safe processing becomes innate and intuitive."

FSMA's Hazard Analysis and Risk-Based Preventative Controls (HARPC) rule requires a facility's food safety plan to first identify hazards and then establish preventative controls for the risks those hazards pose.

The NCA's Cold Brew Toolkit recommends that cold brewers "complete challenge studies, which involve testing the ability of unwanted micro-organisms to grow in a product in use and abuse conditions. Apply the Process Approach: Plan, Do, Check, Act." ⊳

Made Coffee learned about canning cold brew from the craft beer industry by attending trade shows and seminars.

Photo courtesy of Made Coffee

Photo courtesy of Peet's Coffee

(Below) Peet's Coffee introduced RTD Nitro Cold Brew in April of this year, joining its line of RTD bottled Cold Brew (Left) that launched in 2016.

An Array of Packing Options

Different packing materials have different food safety requirements. Additives like dairy and sweeteners also change the safety measures required for different RTD cold brew products.

Emeryville, California-based Peet's Coffee manufactures a variety of cold brew products, all of which are pasteurized as a kill step to guarantee food safety and freshness. "Peet's Cold Brew line has two dairy-free beverages. The Baridi Black is pasteurized and then hot filled into the glass bottle still at pasteurization temperature to meet federal processing requirements for low acid foods in hermetically sealed containers," commented Gretchen Koch, director of marketing and innovation for Peet's Coldcraft division. "For our canned Nitro Cold Brew, we High Temperature Short Time (HTST) pasteurize the coffee first and then fill the cans through sterilized lines. The coffee is nitrogenated in line just prior to capping and seaming of the can." These processes preserve the taste and improve shelf life in refrigerated distribution.

Dairy and dairy-alternative flavours in the Peet's Cold Brew line are sold in PET bottles, "pasteurized using Ultra High Temperature (UHT) to minimize the time of the heat treatment and maintain the longest shelf life in a refrigerated supply chain," explained Koch. "Both methods provide food-safety benefits but still require the product to remain refrigerated throughout the supply chain."

Peet's True Iced Espresso is manufactured with a retort process that renders the canned espresso commercially sterile and capable of being distributed and sold at room temperature. "We did this to better utilize our current Peet's Coffee ambient temperature delivery routes for coffee beans, so we can reach a broader national distribution quickly and cost effectively."

Cold Chain for Safety and Quality

Shelf-stable products have certain distribution advantages, but maintaining the cold chain, even for pasteurized products, offers other advantages in final taste. Setting up a new cold distribution network is part of the challenge for a coffee company adding cold brew manufacturing to its portfolio.

"[Our] company is 109 years old, and several years ago we started with a new RTD product," noted David Mendez Jr, vice president of Newark, New Jersey's WB Law Coffee, about building a nitro cold brew facility from the ground up. "We know coffee but refrigerated trucks and refrigerated distribution were completely new to us." Law's Ironbound Cold Brew and private label products for wholesale B2B are packed as bag-in-a-box kegs, made with an in-line nitrogen system.

WB Law has extensively trained its distribution team in the importance of maintaining the cold chain. "Cold brew has to be delivered directly into a refrigerated space – it can't be left on a hot loading dock," commented Mendez.

In St Petersburg, Florida, Made Coffee also roasts, brews and packages a canned cold brew. It will soon produce a concentrate for a retorted product line. "We are vertically integrated under one roof, so we are able ▷

Photo courtesy of Peet's Coffee

Photo courtesy of WB Law Coffee

WB Law's Ironbound Nitro Cold Brew and private label nitro cold brew are packed in bag-in-the-box kegs with an in-line nitrogen system.

to control our processes," shared Made Coffee founder Mike Rideout. Made is set to launch its Cold Brew Con Leche in September.

"Made's in-house coffees are cold chain products brewed and packaged at temp and distributed through the dairy channel in refrigerated trucks to local grocery stores," explained Rideout. "We are big on testing our products. We pull random samples during production for full-panel testing on listeria, yeast, mold, and botulism. It's our extra step in quality control, some consumers want to see that we have documentation and testing."

Beverage Industry Cross Pollination

When Made Coffee began, there was limited information available in the coffee industry about how to design a safe facility for canning cold brew. "Ultimately, it was the craft beer community that gave us our first idea what to do. We flew to craft beer trade shows and attended many seminars." Made also consulted with equipment manufacturers while writing its facility's food safety plan and with other food service industry professionals during construction.

WB Law Coffee sought recommendations on kegged products from fountain soda companies and consulted architects with expertise in building FDA-

approved clean room facilities prior to constructing their plant, but Mendez also found a lack of cold brew-specific resources. "There is a Gold Cup standard for desired TDS [Total Dissolved Solids] when brewing hot coffee. Will that be established for cold brew? Where is the collaboration to keep cold brew safe?"

Space to Collaborate

According to the NCA's Corey, collaboration is just beginning and will determine the next chapter of cold brew's evolution, particularly as the category maintains consumer confidence in food safety. "With the enactment of FSMA and cold brew's rapid changes, there is so much new product innovation, questions from throughout the supply chain, even consumers making cold brew at home. This is a great opportunity to bring the industry together to address these concerns," he said.

The Cold Brew Toolkit was drafted to reflect those questions and concerns, and the next step is a workshop hosted by the NCA this fall to offer a Preventative Controls Qualified Individual (PCQI) certification with content specific to the coffee industry, such as draft model food safety plans for manufacturing roasted and ground, flavoured, decaf, and instant/soluble coffee.

The NCA's Cold Brew Toolkit, currently in draft form, was created to give cold brewers safety guidelines for brewing, storing and packing cold brew coffee.

"You don't have to be a big brand to win in this space. The ones who do best are focusing on specific consumer needs," noted Snudden in the NCA's webinar. If smaller, newer brands are to continue to meet consumers' demands, then the cold brew conversation, especially as it relates to food safety, must continue to share information and provide education to new brands getting into the space. "We're ready to share what we've learned," said Made's Rideout. "Now is the time to collaborate and help build the proper procedures for this category."

Rachel Northrop has been covering coffee for *T&CTJ* since 2012, while she lived in Latin America's coffee lands writing *When Coffee Speaks*. She is based in Brooklyn, NY. She may be reached at northrop.rachel@gmail.com.

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