

## Innovating with CBD

by Holly McHugh



### INSIDER's take

- ◆ Despite future market uncertainty and regulatory hurdles, many food and beverage brands continue to launch CBD products.
- ◆ Foods and beverages containing CBD range in taste and efficacy, highlighting the ingredient's formulation challenges.
- ◆ Beyond achieving an effective and stable product, brands face issues in finding co-packers and distribution strategies.

**C**annabidiol (CBD) has been a buzzword the last few years because it has a laundry list of suggested health benefits, including relief from pain, anxiety, depression, sleeplessness and more. Another potentially appealing quality of CBD is that it's risqué in nature. CBD is a cannabinoid that comes from the *Cannabis sativa L.* plant, which can consist of hemp stalks and flowers of marijuana. The easiest way to discern hemp from marijuana is through the THC content (the intoxicating compound in cannabis). Plants with no more than 0.3% THC are considered hemp, while those exceeding that threshold are considered marijuana.

Though CBD can come from either source, marijuana-derived CBD products are only legal at the state level where recreational marijuana is also legal. For this reason, most products on the market use hemp-derived CBD, though there are still very complicated regulations about incorporating it into consumable products. Even hemp-derived CBD is currently illegal for use in food and beverages because the Federal Food, Drug, and Cosmetic (FD&C) Act prohibits adding approved drugs to human or animal food in interstate commerce, and CBD is an active ingredient in GW Pharmaceuticals' epilepsy drug Epidiolex.

Despite the regulatory hurdles, many food and beverage brands continue to launch CBD products. The most common legal loophole is to promote hemp content on packaging and assume the target consumer will relate the ingredient and product claims to CBD. Common ingredient callouts include "hemp extract," "broad spectrum hemp extract" and "hemp oil" (not to be confused with hemp seed oil, which has no CBD content). Other brands are incurring the risk of being reprimanded by FDA by marketing their products as CBD and/or making unqualified health claims like "relieves stress" or "improves vitality."

Though launching food and beverage products with CBD is a gamble, the risk might pay off. [According to](#) cannabis industry analysts The Brightfield Group, the CBD industry experienced 562% growth in 2019. The company also predicts beverages will be the fastest-growing category for CBD products outside of pharmaceuticals between 2020 and 2025 with a compound annual growth rate (CAGR) of 35%. Following beverages are foods (excluding gummies), beauty care products and capsules, which each have a CAGR of 26% during the same time period.

### Range of products

Despite the legal gray area surrounding CBD, a plethora of products are on the market ranging from water to hot sauce. In wake of COVID-19, more CBD-enhanced products are expected to launch in response to greater demand for products that relieve stress and sleeplessness. According to Brightfield, 51% of consumers who purchase CBD products use them to relieve anxiety. Other reasons include treating chronic pain (29%), reducing depression symptoms (29%), relieving insomnia (24%) and fighting inflammation (17%).

Since there are many suggested benefits of CBD, brands market their products for several different usage occasions, such as relaxation, energy, focus, post-workout recovery and sleep. There are even brands who leverage CBD's many uses by creating product lines designed to provide benefits for different dayparts, such as energy in the morning, relaxation in the afternoon and sleep in the evening.

Water is one of the most common delivery methods of CBD. [According to Data Intelligence](#), the CBD water market is expected to increase at a CAGR of 26.9% globally through 2026 with most of the growth coming from North America. Products in the category include still drinking waters like Flow Glow and CBD Living, flavored still waters like Endowater and OKI, and flavored sparkling waters like Weller and Daytrip.

Coffee and tea are other popular formats for CBD infusions. In addition to being available as an enhancement at many coffee shops around the country, the market is replete with several ready-to-drink (RTD) cold brews infused with CBD. Brands like [Superlost](#), [Good Day](#) and [Soul Grind](#) suggest the combination of coffee and CBD results in a calm, jitter-free energy that will help consumers stay alert and focused.

There are a wide range of CBD-enhanced tea products as well, including brewed teas, iced teas, sparkling teas and lattes. CBD tea products offer a range of benefit claims. [La Di Da](#) claims the brand's matcha tea latte will improve morning momentum. [Mood33](#)'s line of teas are suggested to improve emotional well-being.

Other categories with CBD-enhanced products include energy drinks, sports nutrition, juice and carbonated soft drinks (CSDs). Like CBD coffee products, CBD energy drinks are suggested to provide mental clarity and a sustained, even energy. CBD-enhanced protein and recovery beverages are suggested to improve focus during workouts and reduce post-workout muscle soreness.



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Source: The Brightfield Group

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Juice is a format used in two ways: to introduce CBD to consumers in a familiar format such as lemonade, or to leverage the inherent health benefits of the compound in combination with fruits and vegetables for a multi-functional beverage. CSDs are another way to introduce CBD to the masses in a familiar format while also creating a more sophisticated and adult-forward product.

### **Developing a market-ready CBD product**

Though the food and beverage market is becoming increasingly saturated with hemp and CBD products, the taste and efficacy of products range significantly. CBD is very bitter on its own, so product developers need to screen suppliers for cleaner-tasting ingredients and/or use a masking system for a product to be palatable.

Another solution to taste is citrus-derived CBD. These ingredients are bioidentical to hemp and cannabis-derived CBD and they come in powder and liquid form. They perform well in beverages and are suggested to have a cleaner taste than traditional CBDs because they don't have the terpenes and other chemicals that tend to give hemp-derived sources a cannabis-like taste. However, they tend to be more expensive and are still a legal gray area as a CBD ingredient.

In addition to taste concerns, traditional CBD is an oil-based cannabinoid, which means it is insoluble in water and needs to be transformed into another format, such as an emulsion or powder, to be used in aqueous products. Many brands utilize nano-emulsion as a delivery system for CBD. Nano-emulsions are similar to typical oil-in-water emulsions commonly used to deliver flavors and other oil-based functionals in beverages, except the particle size is 10 to 100 times smaller. In addition to improving stability in beverages, studies suggest the smaller particle size of nano-emulsions may also improve bioavailability of CBD, though exploration of the topic is still in its infancy and more research needs to be done.

A challenge with nano-emulsions is they can fall out of solution when exposed to elevated heat and shear conditions commonly used when thermally processing a range of beverage types such as RTD coffee, protein and shelf-stable juice. Emulsions that work well in formats like gummies and baked goods won't necessarily remain intact over time in a thermally processed beverage. High temperature processing can also affect the efficacy of functional ingredients, though it's unclear how CBD content is affected in these conditions. Other elements that can affect the stability of a beverage with CBD include the overall nutritional composition—such as protein and fat content—and pH.

CBD emulsions for beverage applications are available in both liquid and spray-dried powder forms. The spray-dried powder form is similar to liquid in that the CBD component is essentially an oil-in-water emulsion; however the spray-dry process removes the water phase and adheres the emulsion component to a water-soluble carrier (such as gum arabic or maltodextrin). Either form can work in a beverage and deliver the desired stability, but there are variations in emulsion quality and oil phase density among ingredients supplied by different companies. To find the CBD source with the right level of quality at a similar oil phase density to your beverage, product developers should screen a variety of ingredients in application for taste and stability.

Dosage can also affect stability of beverages. Ingredients that contain 99% CBD content are less water soluble and therefore more challenging to formulate with. Most product developers use CBD ingredients that are 80% to 90% pure. Another challenge with dosage is many products on the market have less CBD content than claimed on the label. Products on the market typically claim anywhere between 5 mg to 20 mg of CBD. In an independent study of several hundred products on the market, more than 70% of products failed to be within the stated dosage and more than 90% failed to be within 10% of the stated dosage.<sup>1</sup> Therefore, brands must test products after processing and throughout shelf life to improve product quality and transparency to the consumer.

Beyond achieving an effective and stable product, brands face challenges with co-packer selection and distribution of CBD beverages. Some co-packers will not assume the risk of processing CBD beverages. Additionally, major retailers will not sell CBD beverages until they are legalized by FDA. Therefore, many brands developing CBD



## Opportunity for CBD products in the wake of COVID-19

by Mike Hughes

Over the last five years, the CBD market has become more mainstream across the globe. Moreover, while usage of CBD products is currently low, a high proportion of consumers demonstrate a willingness to use such products. This is in response to many consumers suffering from feelings of stress and anxiety, something that will have intensified in 2020 as a result of COVID-19. However, while the opportunity for products that aid relaxation and address anxiety is growing, brands need to do more to reassure consumers about the safety of such products.

In Q3 2019, [FMCG Gurus surveyed](#) 25,000 consumers across 25 countries on the topic of CBD. The research found that only 9% of consumers say they are currently using products with CBD. However, a total of 40% of consumers say they would be willing to use such products. When asked why they would use them, the two most popular answers given were to help with sleep patterns (40%) and to help address anxiety (40%), two issues that are often interlinked. Mental health issues are becoming more common across the globe while consumers are also becoming more open about the issue. For instance, consumers can often feel stressed out as they must juggle a wide range of concerns relating to issues such as health and finance. They can also feel constantly tired and fatigued as a result of trying to cram too many activities into the day, something that can further impact mental well-being.

## Product trends



beverages must rely on boutique retailer sales and/or a direct-to-consumer business model. Even a direct-to-consumer model can be a challenge because some mail carriers will not ship CBD products, and there may be issues when shipping products outside of the U.S.

### The future of CBD

The future of CBD looks bright, though federal regulations that restrict incorporating the ingredient into food and beverage products could curtail its growth potential. Additionally, the industry is being described as the Wild West, because FDA has not administered guidelines that hold CBD suppliers accountable for quality and backing up claims. Therefore, brands need to be careful when choosing a CBD supplier to ensure a stable product that delivers the dosage suggested on a product label.

Moving forward, brands will gain credibility with consumers through transparency. This might include providing test results of CBD content from a third-party lab analysis or authoring an origin story of where the ingredient was farmed and how it was processed. Other CBD innovation will include entering new categories and offering multiple benefits, such as promoting calm and immunity or reduced inflammation and pain relief. ✦



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These feelings of stress and anxiety are something that will intensify in 2020 and beyond as a result of COVID-19. In April 2020, FMCG Gurus surveyed consumers across 18 countries about their attitudes and behaviors in response to coronavirus. The research found 76% of consumers say they feel concerned about COVID-19, while 63% believe the world is heading toward recession. Moreover, 36% say they have become more conscious about their mental well-being and 19% about their sleeping habits as a result of coronavirus. This is because consumers are experiencing an array of worries, such as the health and well-being of themselves and loved ones and the state of the economy. Additionally, 48% of consumers believe coronavirus is something that will have an impact on day-to-day behavior for at least 12 months.

The current level of uncertainty facing consumers is something that creates an opportunity to target them with products that help them relax and unwind. However, in order to make CBD products more mainstream, greater reassurance is needed when it comes to the safety of products. Indeed, of those consumers unwilling to use such products, 41% said they do not believe such products are safe. In addition to this, of those consumers who are willing to use such products, 37% admit they would be concerned about side effects.

The CBD market will continue to become more mainstream, and the COVID-19 pandemic is something that will create an opportunity for brands to target consumers who are struggling with feelings of stress and anxiety in an era of uncertainty. However, more reassurance will be needed than ever before when it comes to the safety of products. ✦



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