Applying the cold chain to cannabis to preserve terpenes

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Terpenes are one of the most important characteristics of cannabis flowers. Even though their specific medical use is not quite clear for all of them, it has been noted that they can be the cause of the so-called ‘entourage effect’: cannabis compounds act synergistically to modulate the overall psychoactive effects of the plant. However, these terpenes are really fragile to maintain, and some of them are lost during the drying and curing processes.

Michael Backes

The cannabis little secret

“I like to call it the dirty little secret of cannabis,” Michael Backes says. “You lose a great amount of terpenes when you prepare cannabis. Thing is, there is no literature about it at all. So, I got into the chemistry of it, and found out that the plant does something to protect its compounds through the production of fat and wax in the trichomes. Therefore, I leveraged that in my formulations to protect the terpenes contained in the sauce I was adding.”

One of the most interesting things is that Backes applied the concept of the cold chain to cannabis in order to preserve terpenes even more. “When you have perishable food, you need to maintain the cold chain, which refers to the keeping of the product at constant low temperature in order to preserve its properties, and not spoil. Cannabis flowers are

perishable products as well, and therefore it only made sense to apply the cold chain principle to it, if the end goal was to keep the flowers and their terpenes as intact as possible."

Applying the cold chain to cannabis

Bluntly put, Backes created a sauce infusion process where the sauce is stabilized, with the introduction of the cold chain to protect it even more. "The result is a product that is much closer to what we associate with the plant before the harvest, when the smell of the growing plant is particularly strong and pungent," Michael points out.

The application of such a process would increase the terpene profile of said plant, thus making it suitable for specific medical use. "You have to start with fresh frozen cannabis," Backes explains. "And we'll get it as cold as -120 degrees Fahrenheit during extraction. I pick the variety of cannabis with the characteristics I need, and then I extract them to produce high terpene extracts, and then I blend those together to get the sauce with the terpene profile that I want. I then finally blend that with the actual dried cannabis flower, increasing its terpene profile."

The point at the core of this process is the willingness to maintain the properties of the plant intact and to preserve its organoleptic properties. "It is as if we were taking a photograph of the plant right after the harvest: that's what you want," Backes says. "In order to do that, it is of the utmost importance to get the flowers at the coldest temperature possible and as quickly as possible, then maintain that low temperature until the product reaches the consumer. We are really trying not to disturb the living plant chemical profile. Over time, this process will be greatly fine-tuned with more technology to help, in order to provide a flower with terpene content identical to the living plant."

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