

Q&A Almonds



with
Chef Henry Hill
Food & Beverage Consultant
(Hill's Research Kitchen)

Leveraging Artificial Intelligence in the Product Development Process

Technology is ever-evolving, and so is the world of food. Artificial intelligence (AI) is the latest tool creating a land of opportunity in the realm of product innovation. We sat down with Chef Henry Hill, Food & Beverage Consultant, to discuss his experience with utilizing AI as a tool in his recipe formulation process. "AI is a really good tool for sorting through data and conducting research at categorizing things," says Hill. "With a human element and a creative lens, you can start to take those different aspects and tie them together to make connections into new and interesting formats."

The Almond Board of California (ABC) partnered with Tastewise, a generative AI platform, and Chef Hill to explore food and beverage trends develop inspirational recipes based on the promising opportunities for almonds. Check out ABC's [Food & Beverage Research and Trends Hub](#) to learn more.

1 **ABC:** *What does the beginning of your recipe formulation process look like?*

HILL: It begins in a lot of different ways. I like to keep an open mind to the product development process. When you're creating something very new, you want to remove as many guardrails as you can and keep as many options as possible available for whatever you're developing. But when starting a formulation on the bench, that means that you've already decided what the idea is of what you're going to make. Now we're going from this intangible idea to try to make it this tangible object.

In creating something that's new, it might be a slightly different approach. I take this "kitchen sink" sort of approach and throw everything at the wall to get this to work. When we were working on the aerated almond butter ([Whipped Coffee with Almond Milk & Almond Butter](#)) for IFT, I had to pull a bunch of different tools out of the belt to get this high fat emulsion to happen so it would aerate. Then once you have something, that's basically the gold standard. Then you can go in and start to layer on guardrails, whether it's cost improvement, nutrition improvement, sugar reduction, manufacturing optimization, shelf-life optimization, resale optimization, etc. And all these different things come into play after that.

2 **ABC:** *How much do rising food trends influence your work while also trying to develop new and innovative recipes? How do you balance taking a step back from the food trends going on while still creating recipes that are new and original?*

HILL: That's almost like the chicken or the egg. Capturing trends and having these buzzwords is a good way to capture an audience so it's exciting for people. But ultimately you want your product to have an edge, otherwise you're like any product on the market. Invest in what's unique about your product that is solving this opportunity in the market and is going to make it difficult for competitors to replicate it. That's where brands can become very important, and where innovation or uniqueness on that level, whether it's a unique formulation or process, can come into play.

Then you can get into the playground of the food world and decide what category you want to explore. From there, you can begin carving out opportunities and seeing where there's weaknesses in the category and on the shelf. You can begin to dial in on the format to solve this customer problem. Because ultimately what you're trying to do is solve a customer problem, and then once you have the vehicle then you can find trends that apply to it.

3 **ABC:** *What trends are you most excited about, looking ahead to 2024 and beyond?*

HILL: I'm excited about this Almond Butter Chili Crisp (presented at [NOSH Live 2024](#)). I love this chili crisp trend, and trends that make me excited are trends that are not new flavor formats, but new delivery formats. I see delivery formats as having staying power, they're fun and interesting. Introducing flavor formats is almost seasonal—there's ones that we love and stay around forever, and customers are never going to get enough of the classic flavors. Sometimes you'll see an "it" trend come through and it's not about the flavor format but about the delivery method. I think that's something worth sinking your teeth into, no pun intended.



4 **ABC:** *What is exciting for you in that realm of new food delivery methods and in the world of almonds, how can that be shaken up a little bit? What are you excited about in that sphere of new food trends?*

HILL: These kinds of new food forms are hard to find, and it's hard to find ones that are easily scalable. That's why they present such great opportunities. Sometimes innovation can mean creating something completely new, but it can also mean redefining a word, like an old word that hasn't been used in a long time and bringing that to a new concept. For example, there's a ton of opportunity still in the aerosol category, but sometimes the difficulty of getting to market with these types of products is availability of manufacturing and finding the right co-man.

If you're not going to build a plan of your own, that can definitely be a barrier to entry, which is why I think that there's still room to find formats like the chili crisp or aerosol where you have this existing manufacturing format that has an opportunity— with the right formulation— to emerge into a new area of the store or a new category.

Alcohol-infused whipped cream is an example of that. Suddenly, you get this dairy-free alcoholic thing, and it brings this old, stale vehicle into a whole new category and makes it fresh and exciting. There are always opportunities for different manufacturing methods and once-stale platforms that we can inject new life into.

5 **ABC:** *How have you used AI in your recipe ideation, and how did that affect your process compared to times when you haven't had AI as a tool at your disposal?*

HILL: Social media is such a great tool, it's like a window to the world. Now everyone is using their phone to provide snapshots of whatever is happening at any given time and just about anywhere in the world. But the challenge is that my Instagram ends up getting tailored to who I am, what I like, what I'm looking for, and what I'm trying to find— which makes it incredibly difficult to conduct research because you're in this silo.

One of the most useful things that I found through the [Tastewise] platform was you can see everything that's happening. It sorts through all this information because it's a neutral platform that we're able to scroll through and see different recipes that I don't get to see in my little nugget of the world because everything is so tailored to the user.

6 **ABC:** *In your experience with using Tastewise, what were the sort of flavors that drew you to incorporate them into your recipes? What sort of flavors, cuisines, and/or formulating processes attracted you to use them in your own recipes?*

HILL: What attracts me to certain flavors is being able to put these twists on classics or flipping the script on something that already exists but hasn't quite been seen. We've seen these cereal bars that are bars with milk on the bottom, and all these different versions of that. But I haven't really seen anything that's made specifically for snacking in the cereal category.

A lot of the time, we might use that as a case study for a creative concept. Because nostalgia items are making a comeback, breakfast is the usage occasion, and cereal is the delivery platform and opportunity. But how do you make this platform new and interesting? You can look at what's trending. Something that's trending lately are a lot of tropical Southeast Asian flavors. You can apply that to another classic, maybe an example like tropical cereals inspired by nostalgic cereal colors. For IFT, that led us to create an almond-based cereal [snack](#), which put a twist on a classic. We have these emerging flavors of blueberry, spirulina, goji, and pandan, which is basically just a new twist on something that people have enjoyed for decades.

7 **ABC:** *When you're looking at these emerging flavors, what makes you think that something could go well with almonds, or when you were thinking of recipes for ABC, what makes you think that something would be a good flavor combination or format?*

8 **ABC:** *How do you see human creativity collaborating with these AI tools? From your perspective, how do you see things changing in the food realm as new trends and tools are emerging?*

9 **ABC:** *What advice do you have for entrepreneurs and product developers when thinking about incorporating AI into their products?*

HILL: Everything pairs well with almonds. Almonds are a good vehicle for many different flavors because of what they can provide. They have a little bit of savory and nuttiness without an overpowering flavor profile which can add this base note of richness and indulgence, that you can layer with either sweet or savory flavors. It's a unique platform that acts like a canvas for that reason. That's why we're able to do so many different things with it.



HILL: AI is great at doing a lot of the dirty work for us and sifting through a lot of information that's going on out there. It can help to provide a lot of insight into what's happening, but it doesn't identify opportunities for you. You still have to find those opportunities yourself. There is still a qualitative approach in the product development process, startup process or any new opportunity-type of process. AI is a really good tool for sorting through data, conducting research and categorizing things. Then, with a human element and a creative lens, you can start to take those different aspects and tie them together to make connections into new and interesting formats.

HILL: If I were a product developer and I was trying to find a way to use AI, I would use it as a tool to find trends, insights, and emerging formats, to keep a pulse on what's happening. It's a great way to conduct research, to quickly and easily find information, because all that information can become difficult to sort through and find opportunities. My approach to this has always been to think of different ways to categorize information, and as you come up with more ways to categorize things, you can find different ways to make connection points for ideas.

