

Harnessing AI for future of food science

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As the food industry faces increasing pressure to innovate quickly, meet changing consumer demands, and address complex sustainability challenges, the Institute of Food Technologists (IFT) has introduced an innovative tool designed to revolutionise product development. CoDeveloper, powered by an AI-enabled “co-scientist” named Sous, combines nearly a century of IFT’s validated research with state-of-the-art technology to provide real-time, science-based insights for research and development teams.

In an interview with NUFFOODS Spectrum, Jay Gilbert, PhD, Director of Scientific Programs and Product Development at IFT, discusses the inspiration behind CoDeveloper, how it addresses significant challenges in food product development, and its potential to reshape the global food system.

What key challenges in traditional food product development inspired IFT to create CoDeveloper, and how does it specifically address those pain points?

Our community continues to tell us they’re being asked to do more with less. At the same time, the challenges they face are increasingly complex. CoDeveloper transforms how R&D teams meet these challenges by harnessing the power of AI to

quickly deliver science-backed considerations that are informed by IFT's 85+ years of validated, trusted studies, publications, and peer-reviewed research.

Sous, the generative AI co-scientist within CoDeveloper, sounds like a major innovation. Can you share how it assists users during formulation and R&D workflows?

Sous is the AI-enabled "co-scientist" that drives the CoDeveloper experience and is always at the user's side. What's unique about Sous is that when a question is asked, the system looks through nearly a century of IFT's content and information to find relevant information. That information is then used to generate a response, with the original source being referenced. This helps to address hallucinations, one of the main problems with generative AI systems.

How does CoDeveloper leverage IFT's vast library of scientific research to inform real-time product development, and what safeguards are in place to ensure scientific accuracy and relevance?

CoDeveloper was built by food scientists, for food scientists, to ensure an intuitive, user-friendly R&D platform for our community. When users ask a question or look up information, Sous searches through IFT's historical data repository to find the relevant information, then generates an appropriate response and connects the user to that original source.

Many food companies are protective of proprietary R&D data. How does CoDeveloper ensure enterprise-grade data privacy and security for its users?

CoDeveloper is built using Microsoft Azure and is designed to ensure a user's proprietary information remains secure. User questions, formulas, ingredient lists, and all other information will never be used for training purposes, and it cannot be accessed by other users.

Reverse engineering tools can be transformative for competitive benchmarking—can you elaborate on how this feature works within CoDeveloper?

A key feature of CoDeveloper is the ability to create custom formulations or reverse engineer an existing product. When reverse engineering, users can either look up a product's publicly available ingredient list and nutritional information based on a specific category or brand, or through a Global Trade Identification Number. Sous uses this information to reverse engineer and optimize formulas using a proprietary process designed by IFT's team of food scientists to provide the user with a starting point.

Looking ahead, how do you see platforms like CoDeveloper reshaping the role of food scientists and R&D professionals in the global food system?

IFT is in a unique and advantageous position. We're laser focused on our mission of promoting and advancing the science of food and its application. CoDeveloper represents this mission in action, allowing us to leverage technology to continue to develop tools and resources to support our community and take them along on this journey.

We also believe IFT has an obligation to lead the food science community in embracing new technologies. That's because AI and other innovations will never replace food scientists, but food scientists who use these technologies will. And with nearly a century of validated, proven scientific research and peer reviews to guide the way, it's something only IFT can do.

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