

Navigating food safety and shelf life challenges: Corbion's solutions for natural preservation

Author: Dienneke van Houwelingen, Business Development Manager, EMEA

In today's fast-paced food industry, ready-to-eat (RTE) meals have become a staple for many consumers. As these meals grow in popularity, manufacturers face increasing pressure to deliver not just convenience, but also safety, freshness, and sustainability. Balancing these demands is far from easy—especially when it comes to controlling pathogens like *Listeria monocytogenes*, reducing sodium, and extending shelf life without compromising on quality or taste.

The risk of *Listeria* contamination, particularly in refrigerated products like RTE meals, salads and bowls presents a constant challenge. And while consumer demand for clean labels and natural ingredients rises, manufacturers must find ways to protect their products while reducing artificial preservatives. Corbion, a global leader in food preservation, is at the forefront of this effort, offering advanced tools and solutions that help food producers overcome these challenges with confidence.

The challenge of listeria control in refrigerated foods

Listeria control is one of the most critical issues for food manufacturers, especially those working with RTE products. *Listeria monocytogenes* can grow at refrigerated temperatures, making it a persistent threat in these products. Not only does this raise safety concerns, but it can also lead to costly recalls and loss of consumer trust.

Managing *Listeria* risks while maintaining natural ingredients and clean-label claims requires precision and innovation. This is where Corbion's expertise in fermentation and natural preservation comes into play. With decades of experience, Corbion has developed a suite of solutions that ensure safety, extend shelf life, and maintain flavor, all while meeting the demand for healthier, more sustainable food.

The Corbion listeria Control Model: Predicting and preventing outbreaks

One of Corbion's most powerful innovations is the Corbion *Listeria* Control Model (CLCM), an online tool designed to help manufacturers predict and manage *Listeria* growth in their products. The CLCM allows food producers to run simulations, adjusting variables such as pH, temperature, and food composition to understand how these factors influence *Listeria* development over time.

By using the CLCM, manufacturers can make informed decisions about their formulations,



optimizing both safety and shelf life. The ability to predict *Listeria* growth before it becomes a problem can significantly reduce development time, lower costs, and speed up time to market. This proactive approach helps manufacturers avoid recalls and ensure consumer safety without compromising on the natural quality of their products.

For example, a food producer working with RTE meals might face the challenge of balancing flavor with safety. By inputting their product's specific parameters into the CLCM, they can determine the most effective combination of Corbion solutions to inhibit *Listeria* growth while keeping the taste and texture intact. This not only reduces the need for trial and error in the formulation process but also provides peace of mind that their product will remain safe throughout its shelf life.

Balancing sodium reduction with taste and preservation

In addition to *Listeria* control, sodium reduction is another significant hurdle for manufacturers. Consumers are increasingly looking for lower-sodium options, but sodium plays a vital role in preservation, especially in RTE products. Cutting back on sodium can jeopardize both the flavor and the safety of these foods if not done correctly.

Corbion addresses this challenge with its range of natural preservation solutions. The PuraQ® Arome line, for instance, offers a solution that enhances the savory taste of food while reducing sodium by up to 30%. This ingredient reestablishes a salty, umami-like flavor profile, ensuring that taste isn't sacrificed in the pursuit of health benefits.

Verdad® and PURAC®: Natural ingredients for safety and flavor

Corbion's Verdad® and PURAC® ingredient lines play a key role in helping manufacturers navigate the delicate balance between taste, food safety, shelf life, and natural preservation.

Verdad® vinegars offer a natural form of concentrated acetic acid, providing antimicrobial efficiency without affecting a product's flavor or texture. Available in both liquid and powder formats, Verdad® can be tailored to a product's specific needs—whether that's adjusting for sodium content, buffering agents, or acid concentration. This flexibility allows manufacturers to create safer, longer-lasting foods without relying on synthetic preservatives.

PURAC® lactic acid is another critical component of Corbion's portfolio. It delivers natural acidification, contributing to both food safety and a mild, sour taste. The antimicrobial properties of



PURAC® make it an excellent choice for RTE meals, sauces, and dips, where controlling spoilage is essential while maintaining a natural, fresh flavor profile.

Sustainability and speed to market

Beyond the technical benefits, Corbion's solutions help manufacturers meet their sustainability goals by reducing food waste and cutting down on synthetic additives. The predictive power of the Corbion Listeria Control Model also plays a vital role in accelerating the product development process. With fewer trial runs and a clearer understanding of how different factors affect food safety, manufacturers can bring safer, healthier

products to market more quickly.

Local and regional support is another advantage Corbion offers. With manufacturing facilities across the globe, Corbion's solutions are designed to meet the specific needs of regional markets while ensuring compliance with local regulations. This global reach, combined with local expertise, helps manufacturers adapt their preservation strategies to align with regional preferences and demands, all while maintaining the highest safety standards.

Meeting the challenges of today's food industry

For manufacturers navigating the challenges

of Listeria control, sodium reduction, and balancing natural preservation with shelf life and a great taste, Corbion's solutions offer a comprehensive approach. By combining advanced tools like the Corbion Listeria Control Model with innovative ingredients such as Verdad® vinegars, PURAC® lactic acids, and PuraQ® Arome flavorings, Corbion helps food producers create safer, healthier, and tastier products that meet the demands of today's consumers.

In a world where food safety and sustainability are more important than ever, Corbion remains committed to delivering natural preservation solutions that work—not only for the product but also for the business. By using Corbion's predictive tools and tailored ingredients, manufacturers can achieve the perfect balance of safety, quality, and sustainability in their ready-to-eat meals and other refrigerated foods.



Corbion

www.corbion.com