



Controlling *Listeria monocytogenes* and  
Ensuring Food Safety in the  
Production of Certain  
Cook/Chilled Ready-to-Heat  
Meals

# **Controlling *Listeria monocytogenes* and Ensuring Food Safety in the Production of Certain Cook/Chilled Ready-to-Heat Meals**

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**Food Safety Authority of Ireland**

The Exchange, George's Dock, IFSC,  
Dublin 1, D01 P2V6

T +353 1 817 1300

E [info@fsai.ie](mailto:info@fsai.ie)

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## 1. Background

Some multi-component ready meals which are fully pre-cooked at the manufacturing stage, then chilled before they are sealed in their packaging and labelled with valid cooking instructions to ensure they are thoroughly cooked by the consumer before consumption, are not intended by the manufacturer to be ready-to-eat. In Ireland, these pre-cooked meals are referred to as 'ready-to-heat' meals.

Such ready-to-heat meals do not meet the legal definition of 'ready-to-eat foods' and therefore they are not subject to the same prescriptive legal requirements laid down in the microbiological criteria regulations<sup>1</sup> concerning control of *Listeria monocytogenes* (*L. monocytogenes*). Nevertheless, the overarching obligations under Regulation (EC) No 178/2002<sup>2</sup> and Regulation (EC) No 852/2004<sup>3</sup> apply, and food business operators must assess the risk and implement hazard controls in their food safety management systems (FSMS) based on the Hazard Analysis and Critical Control Point (HACCP) principles.

An outbreak in Ireland in 2025 of listeriosis linked to ready-to-heat meals containing the pathogenic bacterium *L. monocytogenes*<sup>4</sup>, has highlighted the importance of accounting for 'reasonably foreseeable use' of the food by consumers when establishing controls within a FSMS. A similar outbreak in the USA in June 2025, also involving ready-to-heat meals, demonstrated that the Irish outbreak was not a unique event<sup>5</sup>.

## 2. Scope

In the interests of public health protection, by way of these best practice recommendations, the FSAI is emphasising the need for food business operators to exert an appropriate level of control over *L. monocytogenes* in certain ready-to-heat meals; specifically those multi-component meals which are fully pre-cooked at the manufacturing stage, then chilled, assembled, sealed in their packaging and labelled with valid cooking instructions with the intention that they are thoroughly cooked at home by the consumer before consumption.

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<sup>1</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02005R2073-20200308&qid=1760707661511>

<sup>2</sup> <https://eur-lex.europa.eu/eli/reg/2002/178/oj/eng>

<sup>3</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32004R0852&qid=1760707710323>

<sup>4</sup> <https://www.hpsc.ie/news/title-24987-en.html>

<sup>5</sup> <https://www.cdc.gov/listeria/outbreaks/chicken-fettuccine-alfredo-06-25/index.html>

Ready-to-heat meals, as described above, that are sold into catering establishments where cooking is controlled under a FSMS, are not within the scope of this document.

### 3. Legal basis and related guidance

Food business operators have a primary legal duty under Regulation (EC) No 178/2002 (General Food Law) to ensure that all food placed on the market is safe to eat. This obligation applies to all stages of production, processing and distribution of food, regardless of whether or not a food product is subject or not to specific legal microbiological criteria (e.g. for example in Regulation (EC) No 2073/2005 as amended) or other product specific prescriptive hygiene requirements.

This duty extends beyond simply meeting minimum legal standards. Article 14 of Regulation (EC) No 178/2002 requires that food is not placed on the market if it is unsafe, and Article 17 requires that food business operators “shall ensure that foods satisfy the requirements of food law relevant to their activities and verify that such requirements are met”.

Article 5 of Regulation (EC) No 852/2004 (Hygiene of Foodstuffs) requires food business operators to “put in place and maintain a permanent procedure or procedures based on the Hazard Analysis and Critical Control Point (HACCP) principles”. Article 5(5) specifies that the details for implementing such procedures may be further specified. The European Commission (2022) produced a *Commission Notice on the implementation of food safety management systems covering Good Hygiene Practices and procedures based on the HACCP principles, including the facilitation/flexibility of the implementation in certain food businesses (2022/C 355/01)*<sup>6</sup> which, although not legally binding, provides clarity on how a food business operator establishes and maintains food safety and hygiene procedures under Article 5. In this Commission Notice, Annex II covers HACCP, and in section 4.3 on ‘identification of intended use’ it states:

“The HACCP team should also define the reasonably foreseeable use of the product by the customer and by the consumer target groups for which the product is intended. In specific cases, the suitability of the product for particular groups of consumers, such as institutional caterers, travellers [e.g. holidaymakers], etc. and for vulnerable groups of the population may have to be considered”.

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<sup>6</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=urisrv%3A0J.C..2022.355.01.0001.01.ENG&toc=OJ%3AC%3A2022%3A355%3ATOC>

## 4. Determining “reasonably foreseeable use” by the consumer

For guidance on interpretation of the concept of “reasonably foreseeable use” see section 3.4.1 of the European Food Safety Authority (EFSA) *Guidance on date marking and related food information - Part 1 (date marking)*<sup>7</sup>. It is also important for food business operators to understand that while consumers are reasonably familiar with thorough cooking of foods that look raw, they are not always as familiar with thorough cooking of pre-packaged foods that look cooked. At home, consumers may be more familiar with ‘warming up’ food they have cooked previously, and this may affect how they handle ready-to-heat meals.

Surveys, focus groups and other behavioural studies can be used to identify common use or misuse of specific foods by a particular sub-population and food business operators are encouraged to conduct such studies either individually or collectively.

## 5. Controlling the risk posed by *L. monocytogenes*

These best practice recommendations relate to multi-component ready-to-heat meals which are cooked, chilled and assembled prior to sealing in the final packaging (see Table 1). Environmental niches, harbourage sites, and other potential vectors in the food processing facility may allow the persistent survival and growth of *L. monocytogenes*. *L. monocytogenes* in the processing environment can cross-contaminate ready-to-heat pre-cooked meals via food-contact surfaces and equipment because the food is open to the factory environment after cooking. The risk here is much higher than for ready-to-heat meals that are thoroughly heat treated after sealing in their final package.

Even with an effective factory hygiene programme in place, there may be harbourage sites and growth niches within the food processing environment where *L. monocytogenes* can evade cleaning and disinfection procedures, persist, and potentially proliferate. For example, this may be due to the poor implementation of the hygiene programme, an inadequate hygiene programme, poor training of staff, maintenance work being carried out, damaged areas in the fabrication of the buildings, and/or poor hygienic design of processing equipment. These areas may pose a risk of

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<sup>7</sup> <https://efsa.onlinelibrary.wiley.com/doi/epdf/10.2903/j.efsa.2020.6306>

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cross-contamination to ready-to-heat meals exposed to the environment and to food-contact surfaces after cooking in the processing facility.

If *L. monocytogenes* has contaminated the ready-to-heat meal post-cooking in the factory as discussed above, domestic cooking and handling of that contaminated food may not be sufficient to reduce or eliminate the risk. Variables that can affect the risk to consumers include:

- Uneven heat distribution between different meal components because of their different density, water/fat content and location in the ready-to-heat meal
- Variations in power, age, and performance of domestic ovens and microwave ovens
- Consumer deviation from labelled storage, handling and heating instructions (e.g. opening and portioning before heating, high storage temperatures in domestic fridges, heating to eating temperature (i.e. warm) rather than following labelled cooking instructions, not stirring meal/mixing meal components during heating).

The greatest risk is for those people who are susceptible to illness from lower infectious doses of *L. monocytogenes* (e.g. adults aged 65 and older, immunocompromised people, and pregnant women and their unborn children).

## 6. Role of retailers and distributors

In cases where food is manufactured on behalf of retail brands (own-label products), it is essential that roles and responsibilities are clearly defined and documented.

While the manufacturer has the primary responsibility for ensuring that the product complies with food safety and hygiene legislation during production, the retail brand owner also carries legal responsibility for the safety of the food it places on the market. Therefore, both parties must ensure that contractual arrangements, the FSMS, and verification activities are robust and aligned to guarantee that products are safe for consumers. Retailers of own-label products should implement systems to verify that their suppliers are meeting contractual specification.

Retailers and distributors within Ireland, sourcing multi-component ready-to-heat meals from both inside and outside of Ireland, should consider inclusion of the *L. monocytogenes* control best practice recommendations in this document as part of supplier contract specifications. This can help food business operators meet their legal obligations to place safe food on the market and reducing the risk to consumers.

## 7. Best practice recommendations

**Table 1** Legal requirements and recommended best practice for the control of the risk posed by *L. monocytogenes* in the manufacture of certain cook/chilled ready-to-heat meals.

Step	Component of the step	Recommended best practice (In ready-to-heat meals cooked, chilled, and assembled before sealing in pack)
Establishing a food safety management system (FSMS)	Prerequisite programme (PRP)	<p>A prerequisite programme is required by law<sup>1</sup> and includes basic hygiene and infrastructure practices necessary to create a safe environment for food production.</p> <p><b>Recommended best practice:</b></p> <p>Within a validated hygiene programme, use appropriate sanitisers at the correct concentrations that are demonstrated to be effective to eliminate <i>L. monocytogenes</i>.</p> <p><b>Note:</b> Sanitiser suppliers should provide evidence of the efficacy of their chemicals based on European standard test methods e.g. EN 13697.</p>
	Procedures based on HACCP principles	<p>A procedure or procedures based on HACCP principles are required by law<sup>1</sup>.</p> <p><b>Recommended best practice:</b></p> <p>The food business operator should follow the guidance in the European Commission's Commission Notice (2022/C 355/01)<sup>2</sup> and pay particular attention to Article 4.3 of Annex II on intended use, which includes the concept of, "reasonably foreseeable use" of the food by the consumer. In this context, <i>L. monocytogenes</i> should be included in the HACCP hazard analysis along with other pathogens as dictated by the ingredients and the process. These should be controlled appropriately under the food business operator's HACCP-based procedures.</p> <p><b>Note:</b> Food business operators should not rely on thorough cooking or correct handling of the ready-to-heat meal by the consumer as the only control for <i>L. monocytogenes</i> and other pathogens. Data shows some consumers could reasonably be foreseen to deviate from the labelled storage, handling and cooking instructions.</p>

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Step	Component of the step	Recommended best practice (In ready-to-heat meals cooked, chilled, and assembled before sealing in pack)
Microbiological testing of food	Finished product testing	<p>There is no specific finished product testing specified in law although the hygiene regulation<sup>1</sup> does list ‘testing and analysis’ as part of specific hygiene measures that food business operators should adopt.</p> <p><b>Recommended best practice:</b></p> <p>Based on the food business operator’s own risk assessment, and in consultation with the relevant competent authority, implement appropriate sampling plans and microbiological criteria to test finished product for <i>L. monocytogenes</i> and other pathogens included in the HACCP hazard analysis.</p> <p><b>Note:</b> Testing is used to verify that the food safety management system is working as designed.</p>
	Ingredient testing	<p>Ingredient testing is not specifically required by law.</p> <p><b>Recommended best practice:</b></p> <p>Testing of ingredients using appropriate microbiological criteria may be undertaken as part of the verification process for suppliers based on the food business operator’s own risk assessment.</p>
	Environmental monitoring system	<p>An environmental monitoring system for <i>L. monocytogenes</i> is not specified in law although the hygiene regulation<sup>1</sup> does list ‘testing and analysis’ as part of specific hygiene measures that food business operator s should adopt.</p> <p><b>Recommended best practice:</b></p> <p>Based on the food business operator’s own risk assessment, and in consultation with the relevant competent authority, implement an appropriate environmental monitoring programme aimed at detection of <i>L. monocytogenes</i> (or <i>Listeria</i> species) in addition to microbiological testing for hygiene indicator organisms. The programme should have risk-based corrective actions in place to address situations where <i>L. monocytogenes</i> (or <i>Listeria</i> spp.) is detected above specified limits in the FSMS.</p> <p><b>Note:</b> If testing for <i>Listeria</i> spp., a positive finding in the environment should prompt corrective action to identify and eliminate the cause, because there is a possibility that the same environmental niche may harbour <i>L. monocytogenes</i>. In addition to addressing <i>L. monocytogenes</i> contamination of the production environment,</p>

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Step	Component of the step	Recommended best practice (In ready-to-heat meals cooked, chilled, and assembled before sealing in pack)
	<b>Environmental monitoring system (continued)</b>	appropriate testing of the food production environment, e.g. ATP, hygiene indicator organisms, is considered best practice for verification of the hygiene programme under the FSMS.
	<b>Shelf-life validation</b>	Shelf-life validation is an essential part of ensuring that only safe food is placed on the market as specified in law <sup>4</sup> . <b>Recommended best practice:</b> Validation of shelf life is required to prevent spoilage and/or growth of pathogens to numbers that would make the food unsafe. If the food can support the growth of <i>L. monocytogenes</i> and its shelf life is 5 days or longer, then shelf-life must be validated, accounting for reasonably foreseeable use of the product by the customer especially the specific consumer groups for which the product is intended. Further guidance can be found in the FSAI's <i>Guidance Note 18 Validation of Product Shelf-life</i> .
<b>Labelling of prepacked foods</b>	<b>Instructions for safe use</b>	Instructions for the safe use of food products is required by law to ensure food is safe and consumers are not misled <sup>3</sup> . <b>Recommended best practice:</b> The packaging of ready-to-heat meals should include clearly distinguishable, validated safe storage, handling and cooking instructions. To aid consumer understanding, any heating instructions should be labelled as 'cooking instructions' so their intent is clear. In addition, food business operators should include a clear statement on the front of pack and/or on the sealing film to highlight the importance of thorough cooking by the consumer, such as: "Cook to steaming hot before eating" or wording with similar intent.

<sup>1</sup> Regulation (EC) No 852/2004 on the hygiene of foodstuffs - as amended

<sup>2</sup> Commission Notice on the implementation of food safety management systems covering good hygiene practices and procedures based on the HACCP principles (2022/C 355/01)

<sup>3</sup> Regulation (EU) No 1169/2011 on the provision of food information to consumer - as amended

<sup>4</sup> Regulation (EC) No 178/2002 laying down the general principles of food law - as amended.



Údarás Sábháilteachta Bia na hÉireann  
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Dublin 1, D01 P2V6

T +353 1 817 1300

E [info@fsai.ie](mailto:info@fsai.ie)



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