

Guide to the Management of Risk of Listeriosis from Frozen Vegetables

Contents

- 1. The regulatory framework**
- 2. Raw material specifications**
- 3. HACCP Plan**
- 4. Product label**
 - 4.1 Cooking Instructions and verification**
 - 4.2 Use of advisory statements for on-pack instructions**
- 5. Business to Business specifications**

Introduction

Processing was first published in November 2015 with the aim of helping food businesses involved in the production and preparation of ready to eat (RTE) and ready to defrost and eat (RTDE) foods understand and control *Listeria* by managing and controlling risks, resulting in food safe for consumers.

However, since Dec 2015, *L. monocytogenes* serotype 4b, multi-locus sequence type 6 (MLST 6) has been associated with a significant number of cases of Listeriosis. At the time of writing, this stretches across five EU member states, including the UK, and has resulted in a number of deaths, one of which was linked to the consumption of uncooked frozen sweetcorn.

Historically frozen vegetables have not been represented as ready to eat (RTE) and ready to defrost and eat (RTDE) foods. However, changing consumer behaviour towards 'healthy', 'on-the go', 'convenient' meals has changed consumer perception meaning that many frozen vegetables are now treated as safe to eat without cooking. For example, pre-prepared/cut vegetables such as sweetcorn, beans, peas, diced onion, spinach and kale.

A recent internal review of products in the frozen market identified variance in current labelling standards, with some products clearly stating that they are raw and require cooking, others implying the need to cook, and others with next to no clarity. This in turn drives and encourages consumers to apply their own understanding of safe usage. Furthermore, where information was present, it was often hard to locate on pack.

An area of concern was also identified where specifications supplied to food businesses did not provide clear information on the RTE status of the vegetables provided. In some instances, there was also a failure of the receiving business to request that information or to follow the instructions where they were provided.

This latest guidance aims to address these issues by helping food businesses understand the importance and control of *Listeria* by providing clear instructions for use, whether that be between business to business (in which case the information may be provided in supporting documents or on the product label) or from business to consumer.

This guidance should be followed in conjunction with the British Frozen Food Federation Guide to the Management of *Listeria* in Food Processing and the advice given therein.



1. Regulatory framework

Regulation (EU) No 1169/2011 of the European Parliament on the Provision of Food Information to Consumers came into force on 13 December 2014 and details the requirements for clear usage instructions in the following articles:

Article 9 (Mandatory Particulars), states that an indication of the instructions for use is mandatory where it would be 'difficult to make appropriate use of the food in the absence of such instructions'.

Article 13 (Presentation of Mandatory Particulars), states that 'mandatory food information shall be marked in a conspicuous place in such a way as to be easily visible, clearly legible and, where appropriate, indelible'..[and that it]... 'shall not in any way be hidden, obscured, detracted from or interrupted by any other written or pictorial matter or any other intervening material'.

Article 27 (Instructions for Use), requires that 'the instructions for use of a food shall be indicated in such a way as to enable appropriate use to be made of the food'.

The Regulation can be downloaded from the Commission Eur-Lex website:

<https://tinyurl.com/y8zqxt9p>

Commission Regulation (EC) No 2073/2005 on the microbiological criteria for foodstuffs came into force on 1 January 2006. The Regulation defines the microbiological standards that certain foods must achieve with respect to specified pathogenic bacteria, including *L. monocytogenes*. The Regulation can be downloaded from the Commission Eur-lex website: <https://tinyurl.com/oddyv8n>

2. Raw Material Specifications

Where a raw material is being purchased to use without cooking by the manufacturer or consumer prior to its consumption, the specification should always be checked and regularly reviewed to ensure it clearly states that the material is RTDE, RTE or otherwise gives a clear indication of suitability for the intended purpose. Where possible those usage instructions should also be highlighted in some way to draw attention.

If such usage information is not present, the manufacturer should first seek amendment of the specification to include the required statement. Where that is not possible, and to maintain a due diligence defence, it is highly advisable to seek written approval from the supplier that the material supplied will be suitable for use in an RTDE or RTE product without further processing. Such a statement should also be supported by interrogating the microbial limits that should be listed within the specification.



These should meet the standards detailed in the Public Health England (formerly HPA) Guidelines for Assessing the Microbiological Safety of Ready-to-Eat Foods Placed on the Market, which can be found here: <https://tinyurl.com/yc6r9ood> , and in Commission Regulation (EC) No 2073/2005 of 15 November 2005 on microbiological criteria for foodstuffs which can be downloaded here: <https://tinyurl.com/y93agnbb> .

If the raw material has not been through a decontamination process such as cooking, some form of statement should be present on the raw material specification indicating that it should be cooked prior to consumption. This may be accompanied by a qualifying statement such as 'unless that would be significantly detrimental to quality' in which case you must be able to show the product is safe to eat at a lower temperature. In this instance, scientific expert advice should be sought from a suitably qualified expert.

Therefore, unless the product is safe to eat without first being cooked, the BFFF Technical Expert Group considers it essential that the finished product label or specification contains a 'must cook' type of advisory statement whether it is intended for another business, caterer or a member of the public.

3. HACCP Plan

The requirement for the inclusion of a ready to consume material within the finished product should be noted within the HACCP plan when detailing microbiological risk. This decision should be driven by the required scoping statements concerning the microbiological risks, intended consumers, and expected usage of the product that have been considered.

Whether producing frozen vegetables or manufacturing a multi-component product which contains frozen vegetables there are two key steps within a HACCP plan where this topic is applicable:

- **Describe the product**

A full description of the product should be drawn up, including relevant safety information such as: composition, physical/chemical structure (including Aw, pH, etc.), processing treatments (heat-treatment, freezing, brining, smoking, etc.), packaging, durability and storage and usage conditions and method of distribution.

This step in constructing the HACCP plan is the suitable place to clearly describe the finished product, categorisation (e.g. RTE), customer usage instructions or appropriate warnings.



For the case of manufacturers producing multi component RTE or RTDE foods that include frozen vegetables, the status of the ingredients used to produce the product and whether they require any further processing should also be detailed. e.g. cooking frozen sweetcorn prior to using in a multi-component salad.

The 'Describing the Product' step is also an appropriate point in the HACCP plan to define the acceptable microbiological criteria for raw materials and that of the finished product.

BRC Global Standard for Food Safety Issue 8 (BRC 8), Clause 2.3.2, requires for any HACCP plan to be based upon comprehensive information sources. This includes 'historical and known hazards associated with specific food products' therefore a third party or customer auditor may expect any manufacturer of frozen vegetables to have considered the recent European Listeriosis outbreak referenced at the start of the guidance note.

- **Identify the intended use**

When constructing a HACCP plan it is important to consider the additional wording in BRC 8, clause 2.4.1. which states, 'The intended use of the product by the customer, and any known alternative use, shall be described, defining the consumer target groups, including the suitability of the product for vulnerable groups of the population (e.g. infants, elderly, allergy sufferers).'

The additional inclusion of 'any known alternative use' in comparison to definition of CODEX Alimentarius leads to the reasonable expectation that a 3rd party auditor would want to see knowledge of the recent changes in consumer behaviour with regards to use frozen vegetables previously used for cooking as ingredients in smoothies and defrosted directly onto salads.

While many frozen vegetables are inedible raw such as frozen butternut squash it may still be worth considering the above examples of alternative uses and stating they do not apply due to the organoleptic properties of such product types. The requirement for the inclusion of a ready to consume material within the finished product should be noted within the HACCP plan when detailing microbiological risk. This decision should be driven by the required scoping statements concerning the microbiological risks, intended consumers, and expected usage of the product that have been considered.



4. Product label

4.1 Cooking Instructions and verification

Cooking instructions should reasonably reflect those available to the consumer e.g. microwaving with a range of wattages and boiling or roasting of the product, if designed for these uses.

Verification of on pack cooking instructions should be carried out to show the product is safe to eat if the instructions are followed.

Verification need not be independent, but a record should be kept of your findings. It should take into account the temperature reached of all components and the microbial reduction that can be achieved. Note that the largest component, or component in the centre, may not be the slowest to heat.

As a minimum, the manufacturer should be able to demonstrate that if followed correctly, the cooking instructions on pack ensure the centre of the product reaches 75oC for an immediate reading or 70oC for at least 2 minutes. (Note: in Scotland it is a legal requirement for the centre of the product to reach 82oC for at least 2 mins). If this is not the case, then independent verification should be used.

The importance and relevance of such cooking instructions and clear concise labelling has been illustrated by the results of a recent Leatherhead Food Research survey. Conducted in 2017 the survey of 1,300 UK consumers showed that more than 80% of the respondents said they follow cooking instructions 'always' or 'most of the time'. Only a very small number (4%) 'rarely' or 'never' follow instructions.

Further reassurance in current back of pack labelling practices was found when 95% of respondents found on-pack cooking and reheating instructions 'very easy' or 'Somewhat easy' to follow.

Therefore, when considering how to amend current on pack cooking instructions to incorporate further statements reflecting the product categorisation, the BFFF Technical Expert Group would recommend keeping messages clear, concise and easy to follow.



4.2 Use of advisory statements for on-pack instructions

- Adhere to current legislation regarding mandatory particulars including
- adhering to the minimum font size as specified in Regulation (EU) No 1169/2011.
- Keep any messages clear, concise, unambiguous and easy to understand.
- Ensure that any messages on back of pack do not contradict any front of pack serving suggestions photographs or slogans. For example, it is not appropriate to include pictures of smoothies or salads if the product requires cooking for food safety reasons.
- Statements should be composed in simple short sentences free of any jargon and positioned appropriately.

Examples of good practice already in use include statements such as:

1. Do not eat raw, product must be cooked.
2. This product is raw and must be cooked as per instructions.
3. Follow cooking instructions and ensure food is piping hot before serving.

- For best practice, advisory statements may be included within or near to the legal name e.g:

READY TO COOK SWEETCORN
cook before eating

- Advisory statements may also appear next to the cooking and storage instructions.
- The use of additional caution or warning icons may also be considered.

5. Business to Business specifications

To assist in customers in obtaining a clear understanding of the frozen vegetable categorisation, businesses should adopt the following examples of good practice.

- Clear concise product names which reflect the nature of the product e.g. Uncooked Sweetcorn: cook before eating
- Use of appropriate industry terminology to categorise the product e.g. Ready to Eat and Ready to Cook.
- Provide clear usage and storage instructions which reflect the nature of the product. Examples: 'Product is not safe to eat without further processing such as cooking.' Or 'Must be cooked or otherwise treated prior to consumption'
- When providing or reviewing process flows clearly mark the process stages which are Critical Control Points (CCPs) and label any low risk / high care barriers.
- To avoid any ambiguity, the product name on the outer case should include qualifying words which reflect the nature of the product e.g. 'Raw', 'Uncooked' or 'Ready to Eat', 'Cooked' or similar.



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