

ANNEX I

MITIGATION MEASURES REFERRED TO IN ARTICLE 2(1)

III.FINE BAKERY WARES

The mitigation measures in this Chapter are applicable to the fine bakery wares such as cookies, biscuits, rusks, cereal bars, scones, cornets, wafers, crumpets and gingerbread, as well as unsweetened products such as crackers, crisp breads and bread substitutes. In this category a cracker is a dry biscuit (a baked product based on cereal flour), e.g. soda crackers, rye crispbreads and matzot.

Agronomy

In case of contract farming, where agricultural products are supplied to FBOs directly by their producers, FBOs shall ensure that the following requirements to prevent elevated asparagine levels in cereals are applied:

- to follow Good Agricultural Practices on fertilisation, in particular with regard to maintaining balanced sulphur levels in the soil and to ensure a correct nitrogen application;
- to follow Good Phytosanitary Practices in order to ensure the application of good practices on crop protection measures to prevent fungal infection.

FBOs shall carry out controls to verify the effective application of the aforesaid requirements.

Recipe and Product Design

In the manufacturing process FBOs shall apply the following mitigation measures:

1. For relevant products, FBOs shall consider reducing or replacing fully or partially ammonium bicarbonate with alternative raising agents such as
 - (a) sodium bicarbonate and acidulants, or
 - (b) sodium bicarbonate and disodium diphosphates with organic acids or potassium variants thereof.

As part of this consideration, FBOs shall ensure that the use of the said alternative raising agents do not result in organoleptic changes (taste, appearance, texture etc.) or increase the overall sodium content which influence product identity and consumers acceptance.

2. For products where the product design allows, FBOs shall replace fructose or fructose-containing ingredients such as syrups and honey with glucose or non-reducing sugars such as sucrose, particularly in recipes containing ammonium bicarbonate where possible and taking into consideration that replacing fructose or other reducing sugars may result in a modified product identity due to loss of flavour and colour formation.
3. FBOs shall use asparaginase where effective and possible to reduce asparagine and mitigate the potential for acrylamide formation. FBOs shall take into account that there is limited or no effect on the levels of acrylamide of the use of asparaginase in recipes with high fat content, low moisture or high pH value.
4. Where a product characteristic allows, FBOs shall review whether it is possible to utilise the partial replacement of wheat flour with alternative grain flour, such as rice, taking into consideration that any change will have an impact on the baking process and organoleptic properties of the products. Different types of grains have shown different levels of asparagine (typical asparagine levels are the highest in rye and in descending order lower in oats, wheat, maize and with the lowest levels in rice).

Changes to legislation: This version of this Regulation was derived from EUR-Lex on IP completion day (31 December 2020 11:00 p.m.). It has not been amended by the UK since then. Find out more about legislation originating from the EU as published on legislation.gov.uk. (See end of Document for details)

5. FBOs shall take into account in the risk assessment the impact of ingredients in the fine bakery wares that may raise acrylamide levels in the final product, and use ingredients that do not have such effects but maintain physical and organoleptic properties (such as almonds roasted at lower rather than higher temperatures and dried fruits as fructose source).
6. FBOs shall ensure that suppliers of heat treated ingredients which are susceptible to acrylamide formation carry out an acrylamide risk assessment and implement the appropriate mitigation measures.
7. FBOs shall ensure that a change in products sourced from suppliers does not result in increased acrylamide levels in such cases.
8. FBOs shall consider to add organic acids to the production process or decrease the levels of pH as far as possible and reasonable in combination with other mitigation measures and taking into account that this can result in organoleptic changes (less browning, modification of taste).

Processing

FBOs shall take the following mitigation measures in the manufacture of fine bakery wares and shall ensure that the measures taken are compatible with the product characteristics and food safety requirements:

1. FBO shall apply the heat input, i.e. time and temperature combination that is the most effective to reduce acrylamide formation while achieving the targeted product characteristics.
2. FBOs shall increase the moisture content in the final product in consideration of achieving the targeted product quality, the required shelf life and food safety standards.
3. Products shall be baked to a lighter colour endpoint in the final product in consideration of achieving the targeted product quality, the required shelf life and food safety standards.
4. In developing new products, FBOs shall take into account in their risk assessment the size and surface area of a particular piece of product taking into account that small product size potentially leads to higher acrylamide levels due to heat impact.
5. As certain ingredients used in the manufacture of fine bakery wares could be heat treated several times (e.g. pre-processed cereal pieces, nuts, seeds, dried fruits, etc.), which results in the raise of acrylamide levels in final products, FBOs shall adjust product and process design accordingly to comply with the benchmark levels of acrylamide set out in Annex IV. In particular the FBOs shall not use burnt products as rework.
6. For product pre-mixes that are put on the market to be baked at home or in catering establishments, FBOs shall provide preparation instructions to their customers to ensure that the acrylamide levels in the final products are as low as reasonably achievable below the benchmark levels.

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