Survey of acrylamide and furan in UK retail products

Background

This survey of process contaminants forms part of a current rolling programme due for completion in December 2018.

Process contaminants are chemical substances that are produced naturally in food during manufacturing or home-cooking. They are absent in the raw foods or raw materials used to make the food, and are only formed when components within the raw foods or materials undergo chemical changes during processing.

Acrylamide and furan may be formed at high temperatures during cooking. Both substances have the potential to raise the risk of cancer, which will then increase with regular exposure to higher levels, over a lifetime.

The European Food Safety Authority (EFSA) has concluded that current levels of dietary exposure to acrylamide, furan and its methyl analogues such as 2-methyl furan and 3-methyl furan indicate a potential human health concern.

The Agency considers that exposure to acrylamide and furans should be reduced to as low as reasonably achievable (ALARA).

Research Approach

The 271 UK retail product samples represented the 10 food groups as specified in Commission Recommendation (EU) No. 2010/307 on the monitoring of acrylamide in food.

Acrylamide analysis was carried out on 269 samples taken from;

- Group 1 (French fries sold as ready to eat)
- Group 2 (Potato crisps)
- Group 3 (Pre-cooked French fries for home-cooking)
- Group 4 (Soft bread)
- Group 5 (Breakfast cereals)
- Group 6 (Biscuits and crackers)
- Group 7 (Coffee)
- Group 8 (Baby food other than processed cereal-based)
- Group 9 (Processed cereal baby food)
- Group 10 (Others e.g. popcorn, cakes, pastries and chocolate).

Furan analysis was carried out on 120 samples taken from Groups 5, 6, 7, 8 and 10.
The acrylamide and furan results from this survey form part of a longer term surveillance programme and have been sent to the European Food Safety Authority (EFSA) for collation and analysis with survey data from other European countries.

Results

The levels of acrylamide and furans obtained over the period of January 2017- December 2017 do not increase our concern about the risk to human health. The Agency has therefore not changed its advice to consumers.

Due to the nature of the survey and the limited dataset to date, it is important to be cautious when drawing conclusions from the reported data. It is important also to consider the variety of different ways that manufacturers may process similarly branded products resulting in different levels of process contaminants being found.

This phase of the on-going programme of surveillance gives a snapshot of the range of levels of acrylamide and furan that may be expected in retail products on sale in the UK at the time of sampling. It is therefore an indication of the levels that consumers may typically be exposed to in certain foods. However, the survey does not cover all food prepared in the home and as such, these results do not take into account the acrylamide or furan that consumers may be exposed to from home-cooking.

Research report

Acrylamide and Furan 2017 (806.97 KB)
Acrylamide and Furan Summary report 2017 (1.46 MB)
Acrylamide and furan FSIS 2016 (528.84 KB)
Acrylamide and furan FSIS 2014-15 (655.49 KB)
Survey of acrylamide and furan in UK retail products: January 2014 - November 2015 results (1.63 MB)