

Survey of acrylamide and furan in UK retail products 2010-11

Area of research interest: [Chemical hazards in food and feed](#)

Study duration: 2010-02-01

Project code: FS241002

Conducted by: Premier Analytical Services (PAS) and Ventress (Sampling)

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Background

Process contaminants are chemical substances that are produced naturally in food during manufacturing or home-cooking. They are absent in the raw foods, or the raw materials used to make the food, and are only formed when components within the food or raw materials undergo chemical changes during processing. Acrylamide and furan may be formed at high temperatures during cooking, whether by manufacturers or consumers at home and both have the potential to increase the risk of cancer. This risk will increase with regular exposure to higher levels over a lifetime. Experts, including the Joint Food and Agriculture Organisation and the World Health Organisation Expert Committee on Food Additives (JEFCA), have concluded that current levels of dietary exposure to acrylamide and furan indicate a human health concern (FAO/WHO, 2010). Our organisation considers that exposure to acrylamide and furan should be reduced to as low as reasonably practicable (ALARP).

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Research Approach

The 248 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 analyses was carried out on 248 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 & 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).

The number and range of products analysed for furan were increased for the 2010-2011 survey with 92 samples tested from Group 2, 7, 8 and 10.

The acrylamide and furan results from this UK survey have been sent to the European Food Safety Authority (EFSA) for collation with other Member States' survey data, trend analysis within the EU and, in the case of furan, a risk assessment.

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Results

This is the fourth year of a rolling programme and the levels of acrylamide and furan obtained over the period November 2010-April 2011 do not increase concern about risk to human health and we have therefore not changed its advice to consumers.

To establish clearer trends for each product group (including Group 9 where statistically there was an upward trend in acrylamide levels), further surveys are being carried out during the period 2011-2013. This should help refine our statistical trending and also our current risk assessments on which our consumer advice is based.

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 and trend analyses. 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 survey gives a snapshot of the range of levels of acrylamide and furan that may be expected in retail products on sale in the UK during the 2010-2011 sampling period and therefore an indication of the levels that consumers may typically be exposed to in certain foods. However, the survey does not cover food prepared in the home, which has the potential to be a major contributor to overall exposure. As such, these results do not tell us about all the acrylamide or furan that consumers may be exposed to from home-cooking.

Research report

England, Northern Ireland and Wales

PDF

[View A rolling programme of surveys on process contaminants in uk retail foods acrylamide & furan as PDF\(Open in a new window\)](#) (965.73 KB)

England, Northern Ireland and Wales

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[View Survey of Acrylamide and Furan in UK Retail Products - Analysis Phase: Summary Report for Samples Purchased as PDF\(Open in a new window\)](#) (281.02 KB)