

Study on illegal dyes in imported foods

Summary

A FSA-sponsored study to monitor the presence of illegal dyes in a range of imported foods revealed that out of 893 food samples, six were found to contain illegal food dyes. Sudan I (3 mg/kg) was found in a tandoori masala mix, Sudan IV (1, 3 and 13 mg/kg), was found in three separate palm oils and Orange II was found in a ground red chilli product (427 mg/kg) and a pepper soup mix (8 mg/kg). Eighteen samples contained Bixin, which is a permitted food colour authorised for use in certain foods but not spices.

Introduction

The Imported Food Sampling and Surveillance Project was set up in 2003 as part of a cross-Government initiative to achieve a Step Change improvement in imported food controls. The 2005/06 project funded 149 Local Authorities and associated Public Analysts to sample a range of imported foods in line with priorities set with the Agency, from a variety of different countries.

As part of the 2005/06 Imported Food Programme, Local Authorities were asked to carry out sampling of various foods to check for a variety of illegal colours. Sampling Authorities that took part in this aspect of the Programme are listed in Appendix 1.

When food products contaminated with illegal dyes are identified, the FSA works with Local Authorities to ensure the products are traced and that appropriate action is taken to withdraw any such products from the market. The affected materials are then disposed of in accordance with approved protocols and a certificate of disposal is issued by a licensed disposal operator.

During this study, 893 samples of spices, sauces and oils were taken to check for the presence of a range of illegal dyes (some of which have previously been found in food). However, not all samples were tested for the full range of colours.

The dyes chosen for analysis were Sudan I - IV, *para* Red, Rhodamine B, Orange II, Red G, Butter Yellow and Metanil Yellow. A validated method was sent to Public Analysts with a reporting level of 0.3 – 2mg/kg depending on the food matrix. One laboratory had a reporting level of 5 – 10mg/kg.

Additionally, samples were analysed for the unauthorised presence of Annatto (Bixin and Norbixin), which in the EU are permitted food colours but are only permitted to be added to specific foods and not to colour spices.

Results

Table 1: Summary of samples taken, including those found to contain illegal dyes.

Table 2: Details of all samples found to contain an illegal dye.

Illegal dyes were detected in a very low number of foods. Of the 893 samples tested, only 6 (0.7%) were found to contain detectable levels of illegal dyes. Sudan I was found in only 1 sample, Sudan IV was found in 3 samples and Orange II was found in 2 samples.

The only sample found to contain Sudan I (3 mg/kg) was a tandoori masala mix from an unknown country of origin. It was established that this product was for the retailer's own use and not for public sale. Subsequently, the retailer was advised to dispose of the remainder of the product.

Orange II (8 mg/kg) was found in a Nigerian pepper soup mix which was removed from sale. Orange II (427 mg/kg) was also found in a ground red chilli product originating from Nigeria. All traceable product was withdrawn from sale.

All three samples containing Sudan IV were palm oils and originated from Ghana. Two of these palm oils (40g and 10kg consignments) contained 1 and 3 mg/kg Sudan IV, respectively and were both destroyed at point of entry. The other palm oil that contained Sudan IV (13 mg/kg) was removed from sale by Local Authority officers.

Bixin was detected in 18 of the spice samples analysed.

Discussion

This study provided up to date information on the prevalence of illegal dyes in imported foods. The low percentage of samples found to contain illegal dyes was encouraging.

Since the first detection of Sudan I in foods in 2003, legislation has been in place to ensure that chilli and curry powder imported into the EU does not contain illegal dyes. These results illustrate the overall success of current control measures, whereby Member States prohibit the import of chilli, chilli products, curcuma and palm oil unless an original Certificate of Analysis (which must be endorsed by the Competent Authority of the exporting country), accompanies the consignment to demonstrate the product does not contain Sudan I, II, III, or IV.

Although Bixin is a permitted food colour, it is not sanctioned for use in spices under EU/UK colours legislation. Bixin is derived from Annatto seeds, which are sometimes added (ground) for their flavouring properties in food. We are currently considering the possible distinction of these two uses of Bixin and Annatto as a colour and as a flavouring. The issue will be discussed with relevant Stakeholders and with the European Commission.

A similar study further investigating the presence of illegal dyes in various foods will form part of the 2006/07 Imported Food Programme.

Table 1: Summary of data from imported foods study with respect to illegal dyes

Food Type	Total number of samples analysed	Number of samples containing detectable levels of illegal dyes	Number of Local Authorities involved in sampling
Spices, spice mixtures and sauces	841	2	26
Oils	51	3	7
Soup Mix	1	1	1

Table 2: Information on adverse results from imported foods study

Food Type	Sample Details	Sudan I (mg/kg)	Sudan IV (mg/kg)	Orange II (mg/kg)
Soup Mix	Nigerian pepper soup mix, HAX brand.			8
Spice	Tandoori masala mix, unspecified pack size, country of origin not clear as label badly worn, Chenab brand.	3		
Spice	Ground red chilli, 100g, of Nigerian origin, Otco brand, imported by Yadco.			427
Oil	Palm oil from Ghana (40g).		1	
Oil	Palm oil from Ghana (10kg).		3	
Oil	BFW Zomi Palm oil from Ghana.		13	

Appendix 1

List of Local Authorities participating in the illegal dyes in imported foods study

Bolton

Camden

Crawley

CEnTSA (Central England Trading Standards Authority)

Dover

East Ayresshire

East Riding

Essex FLG (Essex Food Liaison Group)

Hammersmith and Fulham

Hillingdon

Lincolnshire Food Group

London North East Sector

London Port Health Authority

Manchester

Northumberland

Northern Ireland

North Lincolnshire

North West Leicestershire

Portsmouth

Renfrewshire

Southampton

South Ayresshire

South Yorkshire Liaison Group

Stockton on Tees

SWERCOTS (South West of England Regional Co-ordination of Trading Standards)

Suffolk

TSSE (Trading Standards South East)

West Yorkshire Trading Standards Service

Wigan