

ERUCIC ACID IN FOODS PRESERVED IN OIL

The Food Standards Agency has completed a survey on erucic acid in pickles, sauces and preserved vegetables sold by shops serving South Asian and Chinese communities, following the finding of illegal levels of erucic acid in some products from this category by Birmingham City Council. Erucic acid is a natural component of some oils and has been shown to cause fatty deposits in the hearts of test animals, but this effect disappears over time once erucic acid is removed from their diet. The results of the FSA survey showed that some products imported from Bangladesh, China, India and Pakistan contained levels of erucic acid that exceeded the statutory limit.

Key Facts

- The survey was commissioned after Birmingham City Council (BCC) found levels of erucic acid which exceeded legal limits in some pickles, sauces and preserved vegetables imported from Pakistan and China.
- The Erucic Acid in Food Regulations 1977 (S.I. 1977 No. 691 [as amended]) limit the erucic acid content of foods to no more than 5% of the total fatty acid, in products with more than 5% fat (the latter restriction does not apply for foods aimed at infants or young children).
- There have been no confirmed reports of erucic acid causing health problems in humans. However, the evidence of health affects in animals means this does not rule out an effect in humans and it is possible that frequent and regular consumption of high levels of erucic acid may add to the risk of developing heart disease. However, evidence from animal studies indicates that this potential increase in risk would diminish once consumption of high levels of erucic acid ceases.
- In the FSA survey, 71 samples of pickles, sauces and preserved vegetable products, produced in South and South East Asia, the Far East and the UK were bought. Products were purchased during June-July 2004 from a range of retail and wholesale outlets in Manchester, Leicester, West Yorkshire and the London Borough of Tower

Hamlets. These locations were chosen as they have large Chinese and South Asian communities and a wide range of these products was likely to be available. The results are shown in Table 1.

- Eight of the products sampled had levels of erucic acid above the legal limit; all of them were imported.
- The illegal products found in this survey and the BCC study have been withdrawn from sale. The results from the latter work are given in Table 2.
- The importers of the affected products were given the opportunity to comment on the results for their products and their comments are attached at Annex 1.

Consumers are advised not to eat the products identified in this survey which have an erucic acid content above the legal limit in food.

Please note that as this was a survey and not a formal enforcement exercise the method used for establishing erucic acid content of food was based on the up-to-date methods contained in "The Codex Standard For Named Vegetable Oils [CN-STAN 210-1999]" for fatty acid analysis, rather than the official test method contained in SI 1982 No. 264.

A copy of the final report for this survey has been placed in the FSA Library - address details below. If you wish to consult a copy, please contact the library for an appointment giving at least 24 hours notice or, alternatively, copies can be obtained from the Library: a charge will be made to cover photocopying and postage.

The FSA Library,
Aviation House
125 Kingsway
London WC2B 6NH.
e-mail: library&info@foodstandards.gsi.gov.uk
Tel. 020 7276 8181 or 020 7276 8182
Fax. 020 7276 8069

For further information on erucic acid please contact:

Paul Nunn
Room 115B
Aviation House
125 Kingsway
London WC2B 6NH
e-mail: paul.nunn@foodstandards.gsi.gov.uk
Tel. 0207 276 8160
Fax. 0207 276 8193

Table 1 Results of FSA survey of erucic acid in food

Sample Code	Brand	Product Description	Pack size (g)	Best Before Date	Country of Origin	Purchased from	Erucic acid content (% of fat/oil)
ABOVE STATUTORY LIMIT							
M06	LAO GAN MA* ¹	HOT PEPPER SAUCE	300	12/04/04	China	Wing Fat, 1 Gorton Road, Manchester M11 2DZ	27
M11	PRIYA	GREEN CHILLI PICKLE IN OIL	300	12-May-05	India	Fine Foods Superstore, 46-48 Wilmslow Road, Manchester M14 5TQ	6.1
M12	ASHOKA	PUNJABI MANGO TEEKHA	300	Dec-05	India	Ravi Food Store, 213 Wilmslow Road, Manchester M14 5AG	10.2
T04	NICOBENA	MANGO HOT PICKLE	unknown	Jul-04	Bangladesh	UK Foods and Catering Ltd., 66 Vallance Road E1 5BW	7.1
W03	KHANUM	MINCED GREEN CHILLI PASTE	210	19-Oct-04	China	Maumoniats, Dewsbury Road, Leeds	15.1
W08	LAO GAN MA* ¹	ORIENTAL BLACK BEAN SAUCE	300	16-Feb-05	China	Wing Leeds Hong, Edward Street, Leeds	22.8
W11	PACHRANGA INTERNATIONAL PVT LTD (PIP)	RED CHILLIES STUFFED PICKLE	800	Jun-04	India	A Taste from India, Dewsbury Road, Leeds	23.4
W16	PRAN	MIXED PICKLE	300	02-Jun-04	Bangladesh	Pakeezah, 91 Edderthorpe Street, Bradford BD3 9UD	5.1
BELOW STATUTORY LIMIT							
L01	SIMTOM	MIXED PICKLE	350	Feb-06	India	Popats Foods, 21 Belgrave Commercial Centre, 160 Belgrave Road, Leicester LE4 5AU	0.6
L02	SIMTOM	CHILLI PICKLE	350	Oct-05	India	Popats Foods, 21 Belgrave Commercial Centre, 160 Belgrave Road, Leicester LE4 5AU	1.05
L03	NATCO	BRINJAL PICKLE	300	Aug-05	India	Popats Foods, 21 Belgrave Commercial Centre, 160 Belgrave Road, Leicester LE4 5AU	8.3* ²

L04	PACHRANGA INTERNATIONAL PVT LTD (PIP)	MANGO PEELED PICKLE IN OIL	800	Sep-05	India	Popats Foods, 21 Belgrave Commercial Centre, 160 Belgrave Road, Leicester LE4 5AU	< 0.1
L05	NATCO	ACHAR PACHRANGA	800	Sep-05	India	Popats Foods, 21 Belgrave Commercial Centre, 160 Belgrave Road, Leicester LE4 5AU	0.2
L06	SUDHA'S	TRADITIONAL MIXED PICKLE	1000	27-May-06	unknown	Popats Foods, 21 Belgrave Commercial Centre, 160 Belgrave Road, Leicester LE4 5AU	< 0.1
L07	GUNDA	KERI PICKLE	250	10-Sep-04	unknown	Shiva Shakti Foods, 4-6 Macdonald Road, Leicester LE4 5HO	1.8
L08	PATAK'S	BRINJAL AUBERGINE PICKLE	312	04-Jun-07	UK	J. Sainsbury, 5 Belgrave Road, Leicester LE 4 6AR	1.3
L09	SHARWOOD	PICKLE	300	Mar-06	UK	J. Sainsbury, 5 Belgrave Road, Leicester LE 4 6AR	0.6
L10	MAYSAN	CONCENTRATED CURRY SAUCE PASTE	448	11-May-05	UK	Wang Fung Hong, 1 Jarrom Street, Leicester, LE2 7DH	0.4
L11	KEEJAY'S	CHINESE CURRY SAUCE CONCENTRATE	405	Apr-06	UK	Wang Fung Hong, 1 Jarrom Street, Leicester, LE2 7DH	0.6
L12	JEFI	SALTED MACKERAL IN OIL	350	31-Dec-06	Malaysia	Wang Fung Hong, 1 Jarrom Street, Leicester, LE2 7DH	< 0.1
L13	TRS	SARSON KA SAAG	450	Dec-05	India	Ghelani's Superstore Cash and Carry Ltd, 180 Catherine Street, Leicester LE4 6GA	< 0.1
L14	EAST END	PALAK PANEER	400	Sep-06	India	Ghelani's Superstore Cash and Carry Ltd, 180 Catherine Street, Leicester LE4 6GA	< 0.1
L15	SWAD	PAV BHAJI	450	Sep-06	India	Ghelani's Superstore Cash and Carry Ltd, 180 Catherine Street, Leicester LE4 6GA	< 0.1

L16	PAKSTAR	CURRIED CHICK PEAS	400	Dec-06	unknown	Ghelani's Superstore Cash and Carry Ltd, 180 Catherine Street, leicester LE4 6GA	< 0.1
L17	NAFIS	CURRIED WHOLE MOONG	400	Sep-05	unknown	Ghelani Brothers, 136 Harrison Road, Leicester LE4 6BS	< 0.1
L18	KOON HICK WAH KEE	CHILLI OIL	200	30-Dec-04	China	Radia's Super Stores, 123-127 Melton Road, Leicester, LE4 6QS	< 0.1
L19	HAJRA'S	SPICY CARROT PICKLE	220	Sep-04	UK	Al Mekka, 241A Mere Road, Leicester, LE5 5GS	0.3
L20	WAY ON	CHILLI FLAVOURED OIL VEGETARIAN	110	Aug-05	UK	Tai Fat Company, Tai Fat Building, 5 Melton Street, Leicester LE1 3NB	0.6
M01	CO-OP	BALTI COOK-IN SAUCE	440	Jan-05	UK	Co-op Pioneer, Gorton District Centre, Manchester M18 8LB	0.8
M02	CO-OP	MADRAS COOK-IN SAUCE	440	Jan-05	UK	Co-op Pioneer, Gorton District Centre, Manchester M18 8LB	0.2
M03	CO-OP	KORMA COOK-IN SAUCE	440	Jan-05	UK	Co-op Pioneer, Gorton District Centre, Manchester M18 8LB	0.1
M04	PATAK'S	JALFREZI	540	09-Sep-05	UK	Co-op Pioneer, Gorton District Centre, Manchester M18 8LB	0.3
M05	SHARWOODS	MADRAS	420	Mar-06	UK	Co-op Pioneer, Gorton District Centre, Manchester M18 8LB	0.3
M07	JA JAN	JA JAN SAUCE - VEGETARIAN	370	Mar-05	Taiwan	Wing Fat, 1 Gorton Road, Manchester M11 2DZ	< 0.1
M08	LAZIZA	MIXED PICKLES	330	Apr-07	Pakistan	Fine Foods Superstore, 46-48 Wilmslow Road, Manchester M14 5TQ	< 0.1
M14	KITCHEN MAGIC	COCONUT SAMBOL	300	Feb-05	India	Ravi Food Store, 213 Wilmslow Road, Manchester M14 5AG	< 0.1
M15	MTR	LIME PICKLE	500	Mar-04	India	Ravi Food Store, 213 Wilmslow Road, Manchester M14 5AG	1.2
M16	KITCHEN MAGIC	MANGO CHUTNEY	300	Feb-05	India	Ravi Food Store, 213 Wilmslow Road, Manchester M14 5AG	< 0.1

M17	PRIYA	AMLA PICKLE IN OIL (WITH GARLIC)	300	12-May-05	India	Fine Foods Superstore, 46-48 Wilmslow Road, Manchester M14 5TQ	0.75
M18	PRIYA	GONGURA PICKLE IN OIL (WITHOUT GARLIC)	300	19-Dec-05	India	Fine Foods Superstore, 46-48 Wilmslow Road, Manchester M14 5TQ	< 0.1
T01	PATAK'S	TIKKA CURRY PASTE TAMARIND & PAPRIKA MILD	300	07-May-07	UK	East India Cash & Carry Ltd., 25/E East India Dock E14	0.4
T02	PATAK'S	BALTI CURRY PASTE TOMATO & CORIANDER MEDIUM	283	21-Nov-06	UK	East India Cash & Carry Ltd., 25/E East India Dock E14	0.7
T03	PATAK'S	JOSH CURRY PASTE TOMATO & PAPRIKA MEDIUM	283	09-Feb-07	UK	UK Foods and Catering Ltd., 66 Vallance Road E1 5BW	0.5
T05	NICOBENA	OLIVE HOT PICKLE	unknown	Aug-05	Bangladesh	UK Foods and Catering Ltd., 66 Vallance Road E1 5BW	4.1
T06	MR NAGA	VERY HOT PICKLE	227	Sep-06	Bangladesh	UK Foods and Catering Ltd., 66 Vallance Road E1 5BW	2.9
T07	RAJAH	TANDOORI PASTE	285	13-Jan-05	India	Devon Creameries, 640 Mile End Road, London E3 4PH	0.2
T08	TRS	CURRIED PATRA LEAVES	400	Jan-05	unknown	Devon Creameries, 640 Mile End Road, London E3 4PH	< 0.1
T09	SILK ROAD	MINCED GREEN CHILLI	210	Mar-03	Thailand	Alan's, 199 East India Dock Road, London E14 0ED	< 0.1
T10	YEO'S	HOT BEAN SAUCE	250	unknown	Malaysia	Alan's, 199 East India Dock Road, London E14 0ED	< 0.1
T11	unknown	CHILLI PICKLE X 2	100	Oct-04	unknown	Taj Stores, 112 Brick Lane, London E1	1.6
T12	SIMTOM	KEBAB PASTE	370	Oct-05	UK	Taj Stores, 112 Brick Lane, London E1	0.5
T13	NATCO	THECHA CHILLI PASTE	300	Jul-05	India	Taj Stores, 112 Brick Lane, London E1	< 0.1
T14	SITAR	HOT & SPICY MADRAS TOMATO SAUCE	300	Jul-05	India	Zamman Brothers, 17-19 Brick Lane, London E1	< 0.1
T15	KHANUM	MINCED GINGER PASTE	1000	23-Jun-06	China	Banglatown Cash & Carry, 67-77 Hanbury Street, London E1 5JP	< 0.1
T16	KHANUM	MINCED GARLIC PASTE	1000	10-Jan-07	China	Banglatown Cash & Carry, 67-77 Hanbury Street, London E1 5JP	< 0.1

W01	EAST END	READY TO SERVE MIXED VEGETABLE CURRY	340	Dec-04	EU	Karims Foodstore, Harehills Road, Leeds	<0.1
W02	SOHNA	TARKA DALL	450	Oct-05	India	Karims Foodstore, Harehills Road, Leeds	0.3
W04	PRIYA	CUT MANGO PICKLE IN OIL WITHOUT GARLIC	300	12-May-05	India	Maumoniats, Dewsbury Road, Leeds	2.1
W05	KEEJAY'S	ORIGINAL MADRAS CURRY SAUCE	405	Mar-06	UK	Maumoniats, Dewsbury Road, Leeds	0.5
W06	NAFIS	CURRIED CHICK PEAS	400	Mar-07	UK	Fareeds Mini Market, Harehills Road, Leeds	< 0.1
W07	WUJIANG	WUJIANG BRAND ZHACAI	70	28-Oct-04	China	Wing Leeds Hong, Edward Street, Leeds	< 0.1
W09	AMOY	CHILLI OIL	113	Sep-04	UK	A Taste from India, Dewsbury Road, Leeds	0.8
W10	JIMMY'S	SATE SAUCE	360	Oct-05	Hong Kong	A Taste from India, Dewsbury Road, Leeds	< 0.1
W12	RAJAH	MINCED RED CHILLI PASTE	210	Dec-05	China	Morrison, Church Street, Hunslet, Leeds	< 0.1
W13	PATAK'S	AUBERGINE PICKLE MEDIUM	312	26-Mar-07	UK	Morrison, Church Street, Hunslet, Leeds	0.7
W14	RAJAH	MIXED PICKLE	285	19-Jan-06	India	Morrison, Church Street, Hunslet, Leeds	0.6
W15	PRIME	SATKORA PICKLE ORIGINAL	300	Dec-05	unknown	Pakeezah, 91 Edderthorpe Street, Bradford BD3 9UD	0.4
W17	MR NAGA	VERY HOT	227	Aug-05	unknown	Pakeezah, 91 Edderthorpe Street, Bradford BD3 9UD	2.8
W18	SAFI	KERDA PICKLE	400	Aug-05	India	Pakeezah, 91 Edderthorpe Street, Bradford BD3 9UD	1.4
W19	LAZIZA	MANGO PICKLE	1000	Jun-06	Pakistan	Pakeezah, 91 Edderthorpe Street, Bradford BD3 9UD	< 0.1
W20	QARSHI	MANGO PICKLE IN OIL	1000	Sep-03	Pakistan	Pakeezah, 91 Edderthorpe Street, Bradford BD3 9UD	<0.1

*1 Translated from Chinese. Picture on website.

*2 The fat content of this product is below 5%.

Table 2 Results of survey of erucic acid in food conducted by Birmingham City Council

Product Name	Sample Description	Pack Size (g)	Purchased from	Best Before Date	Country of Origin	Erucic acid content (% of fat/oil)
ABOVE STATUTORY LIMIT						
*Lao Gan Ma	Chilli black bean sauce	300	Day In Supermarket, 1 Ruttersley St,B5 4RT	20/09/2005	China	23.8
*Le Yau Gau	Preserved vegetable	200	Day In Supermarket, 1 Ruttersley St, B5 4RT	12/06/2003	China	42.1
Regal	Chilli pickle	400	Select and Save, 870 Stratford Road, Sparkhill, B11 4BS	25/10/2004	Pakistan	46
Regal	Mixed pickle	400	Select and Save, 870 Stratford Road, Sparkhill, B11 4BS	25/08/2004	Pakistan	44.2
Adil Foods	Mango pickle	500	Select and Save, 870 Stratford Road, Sparkhill, B11 4BS	30/12/2004	Pakistan	46.1
*Lao Gan Ma	La Sam Din - Vegetable, Chillis Tofu	300	Day In Supermarket, 1 Ruttersley St,B5 4RT	20/05/2005	China	20.3
*Le Yau Gau	Preserved bamboo shoots	200	Day In Supermarket, 1 Ruttersley St,B5 4RT	30/08/2004	China	43.3
*Le Yau Gau	Assorted Chinese pickle	200	Day In Supermarket, 1 Ruttersley St,B5 4RT	N/P	China	42.8
*Le Yau Gau	Preserved chilli beans	200	Day In Supermarket, 1 Ruttersley St,B5 4RT	30/08/2004	China	43.9
*Le Yau Gau	Preserved vegetable	200	Day In Supermarket, 1 Ruttersley St,B5 4RT	30/08/2004	China	44.7
*Lao Gan Ma	La Sam Din - Vegetable, Chillis Tofu	200	Day In Supermarket, 1 Ruttersley St,B5 4RT	20/05/2005	China	20.6
*Le Yau Gau	Preserved black fungus	200	Day In Supermarket, 1 Ruttersley St,B5 4RT	12/06/2003	China	44.2
*Le Yau Gau	Assorted Chinese pickle	200	Day In Supermarket, 1 Ruttersley St,B5 4RT	30/10/2003	China	42.2
BELOW STATUTORY LIMIT						
KTC	Vegetable oil	4l	Tesco, Edgbaston	Aug-05	UK	Not detected
N/A	Patra leaves in oil	400g	Tesco, Edgbaston	2005	India	Not detected
Rolin	Preserved bamboo shoots	350	Wing Yip	Nov-05	Taiwan	Not detected
Pride	Mustarda	4l	Wing Yip	22/10/2005	UK	0.5
Rajah	Chilli paste	210	Sing Fat	Mar-05	China	2.8
Rajah	Lime pickle	N/A	Sing fat	09/06/2005	India	0.5
N/A	Preserved Radish	N/A	Day In Supermarket, Unit 11 The Arcadia, Hurst Street	31/12/2004	undetermined	Insufficient vegetable oil present for erucic acid determination.
African Farm	Hot African Chilli, Green Chilli	250	Sun Yip, Bradford Street, Birmingham	31/10/2003	South Africa	Insufficient vegetable oil present for erucic acid determination.

N/A - This information is not available

* Translated from Chinese. Picture on website.

Annex 1 Comments from Importers/Distributors of Affected Products

Company Name	Product Name	Comment
Day In Import & Export Co Ltd	Oriental Black Bean Sauce	<p>We have made a recall of all the products so they should no longer be on sale to the public.</p> <p>We would like to receive a copy of the full results of the survey when released by the Agency so that we can use the findings to push our supplier to amend the recipe for the Oriental Black Bean Sauce so that we comply with the regulations.</p>