



# Trans Fat in Food Products

## **Glamorgan Food Standards Group**

Bridgend CBC  
Cardiff CBC  
Merthyr Tydfil CBC  
Neath Port Talbot CBC  
Rhondda Cynon Taf CBC  
Swansea CBC  
Vale of Glamorgan CBC

# Executive Summary

- ◆ Trans fatty acids (trans fats) are formed during the hydrogenation process of unsaturated fats to form saturated fats found in solid fats.
- ◆ Some foods containing hydrogenated vegetable oil may also contain trans fats. Consequently, if the list of ingredients of a food product's includes hydrogenated vegetable oil, there is a possibility the product may also contain trans fats. Hydrogenated vegetable oil must be declared in the ingredients list.
- ◆ Currently trans fatty acids is not required to be listed in the ingredients list nor do not have to be included in the nutritional information label unless a specific trans fats claim has been made e.g. 'low in trans fats'.
- ◆ This means that consumers are unable to make an informed choice because there is no legal requirement to declare the presence of trans fatty acids
- ◆ Trans fats affect the body in a similar way to saturated fats, food manufacturers are recommended by the Food Standards Agency in the UK and the Food and Drug Administration in the USA to reduce the content of both saturated and trans fatty fats in their products.
- ◆ A total number of 31 samples were submitted for analysis
- ◆ 13 samples (42%) contained less than 0.1 g/100g and the remaining 18 samples (58%) contained between 0.2 g/100g to 1 g/100g of trans fat.
- ◆ Cheese products had the highest values of trans fat of 0.9 – 1.0 g/100g. (Sam Nos 202076 to 202078 inclusive)
- ◆ The savoury snack products were found to contain the highest unsaturated fat content and relatively low trans fat content

## Introduction

Margarines are developed from various vegetable and animal oils. These are converted into solid fats by a process called hydrogenation. This process converts the unsaturated fat into saturated fats and leads to the formation of *trans*-fatty acids.

- Hard margarine contains high levels of saturated fats as well as raised levels of trans-fatty acids (over 15%).
- Spreadable margarines that are not labelled as high in polyunsaturates or monounsaturates have lower levels of trans-fatty acids (15%).
- Spreadable margarines labelled as high in polyunsaturates or monounsaturates have even lower levels of trans-fatty acids (5-7%).

Some foods containing hydrogenated vegetable oil may also contain trans fats. Consequently, if the list of ingredients of a food product's includes hydrogenated vegetable oil, there is a possibility the product may also contain trans fats. Hydrogenated vegetable oil must be declared in the ingredients list but currently trans fatty acids is not required to be listed in the ingredients list nor do not have to be included in the nutritional information label unless a specific trans fats claim has been made e.g. 'low in trans fats'.

Nutritional labelling requires the declaration of the total fat, which will include saturated, monounsaturated and polyunsaturated fats but does not include the trans fatty acid content contained in food product. This means that consumers are unable to make an informed choice because there is no legal requirement to declare the presence of trans fatty acids

The trans fats found in food have no known nutritional benefits but are harmful by raising the cholesterol in the blood, which increases the risk of coronary heart disease. Some evidence suggests that the effects of these trans fats may be worse than saturated fats. The full facts concerning trans fatty acids are not entirely known.

However, because they affect the body in a similar way to saturated fats, food manufacturers are recommended by the Food Standards Agency in the UK and the Food and Drug Administration in the USA to reduce the content of both saturated and trans fatty fats in their products.

Trans fats, although they can be found naturally, are basically a bi-product of the hydrogenation of oils & fats. Little regard has been given to the health implications of using trans fats in foods, the legislators have ignored this problem, as there is no legal requirement to inform consumers of the levels of trans fats that may be present in the food product unless there is a claim viz “low in trans fat” and until recently the food industry had a very similar attitude.

The Glamorgan Food Standards group undertook a survey in 2004/05 regarding Trans fats in margarines/ butters type products, which revealed that 25% contained trans fat but did not declare the trans fat content. These types of product are very common as an ingredient of other food products.

This survey was to investigate the trans fat content of various food products which declared hydrogenated fat or oil in the list of ingredients as shown in **Table 1**

Bridgend	Biscuits products
Cardiff	Crisps
Merthyr	Pies (prepacked)
Neath Port Talbot	Cakes
RCT	Stuffing mixes
Swansea	Cream crackers
Vale of Glam	Various

**Table 1 – Products sampled**

## Results

The analytical results for the different products sampled by each Authority are shown in **Table 2**

Sam No	Product	Total Fat g/100g	Sat Fat	Mono Unsat	Poly Unsat	%Total Unsat /total fats	Trans Fat g/100g	% Trans / total fats	% Trans / Sat. fats
<b>Bridgend</b>	<b>Biscuit products</b>								
7706	Double Chocolate Chip Cookies	25.5	N/A	N/A	N/A	N/A	< 0.1	< 3.9%	N/A
7707	Milk Chocolate Digestive	24.5	N/A	N/A	N/A	N/A	< 0.1	< 4.1%	N/A
7708	Chocolate Sandwich	16.3	N/A	N/A	N/A	N/A	< 0.1	< 6.1%	N/A
7709	Milk Chocolate Digestive	23.6	N/A	N/A	N/A	N/A	< 0.1	< 4.2%	N/A
7710	Plain Chocolate digestives	24.1	N/A	N/A	N/A	N/A	< 0.1	< 4.1%	N/A
<b>Cardiff</b>	<b>Savoury snacks</b>								
113358	Snackrite cheese & onion crisp	34.2	9.5	17.9	6.6	71.6%	0.2	5.8%	2.1%
113359	Red Mill quarter backs	27.3	2	17.3	7.6	91.2%	0.3	11%	15.0%
113360	Red Mill cheesy nibbles	31	2.7	19.4	8.6	90.3%	0.3	9.7%	11.1%
113409	Snackrite cheese puffs	41.4	4.6	25.4	11	87.9%	0.4	9.7%	8.7%
113411	Snackrite cheese curls	36.7	3.3	23	10.2	90.5%	0.3	8.2%	9.1%
<b>Merthyr</b>	<b>Pies etc</b>								
750	McDonald mince beef & onion pie	16.1	7.8	5.8	1.4	44.7%	0.4	24.8%	5.1%
751	Peters mince beef & onion pie	12.7	5.9	4.7	1.5	< 48.8%	< 0.1	< 7.8%	< 1.7%
752	Bowyers pork pie	32.8	13.5	13.5	4.2	< 54%	< 0.1	< 3%	< 0.7%
753	Aunt Bessies steak pie	13.4	4.8	5.5	2	56%	0.5	37.3%	10.4%
754	Holland meat pies	17.1	7	7.1	2	53.2%	0.3	17.5%	4.3%

<b>RCT</b>	<b>Stuffing Mixes</b>								
3918	Tesco sage & onion	2.6	1.0	0.4	0.6	38.5%	0.3	11.5%	30%
3919	Paxo Celebrations apricot & walnut	3.6	0.9	0.7	1.7	66.7%	0.2	5.6%	22.2%
3920	Tesco Mushroom, garlic & thyme	1.7	0.7	0.4	0.1	29.4%	0.3	17.6%	42.9%
3921	Farmwood sage & onion	3.2	1.5	0.6	0.6	37.5%	0.3	9.4%	20%
3922	Somerfield speciality sausage seasoning & herbs	4.9	2.1	1	0.9	38.8%	0.6	12.2%	28.6%
3923	Sage & onion	1.9	0.7	0.3	0.6	47.4%	0.2	10.5%	28.6%
<b>Swansea</b>	<b>Cream crackers</b>								
69	Happy Shopper	15.1	N/A	N/A	N/A	N/A	< 0.1	< 6.6%	N/A
70	Spar	15.2	N/A	N/A	N/A	N/A	< 0.1	< 6.6%	N/A
71	Crusti Croc	14.9	N/A	N/A	N/A	N/A	< 0.1	< 6.7%	N/A
73	Lyons	15.3	N/A	N/A	N/A	N/A	< 0.1	< 6.5%	N/A
74	Jacobs Hi fibre	17.4	N/A	N/A	N/A	N/A	< 0.1	< 5.7%	N/A
<b>Vale-Glam</b>	<b>Miscellaneous</b>								
202078	Goats cheese bites	42.4	29.5	8.9	1.1	23.6%	1	2.3%	3.4%
202077	Cheddar cheese bites	42.4	26.6	10.4	2.6	30.7%	1	2.3%	3.4%
202076	Cheddar cheese straws	38.5	23.6	10.3	2	31.9%	0.9	2.3%	2.3%
202080	Organic Lightly salted crisps	17.9	2.5	10.6	4	< 81.6%	< 0.1	< 5.6%	< 4%
202078	Prawn Crackers	28.6	13.2	11.3	2.7	49%	0.1	3.5%	0.8%

**Table 2 – Analytical results for Trans fat content**

## Evaluation

A total number of 31 samples were submitted for analysis and the results revealed several interesting points

- 13 samples (42%) contained less than 0.1 g/100g and the remaining 18 samples (58%) contained between 0.2 g/100g to 1 g/100g of trans fat. All samples of biscuit and cream cracker products contained less than 0.1 g/100g of trans fat. This would appear to indicate that the food industry is aware of the health concerns of food containing trans fat and are in the process of reducing the levels of trans fat in food products
- Cheese products had the highest values of trans fat. Sam Nos 202076 to 202078 inclusive

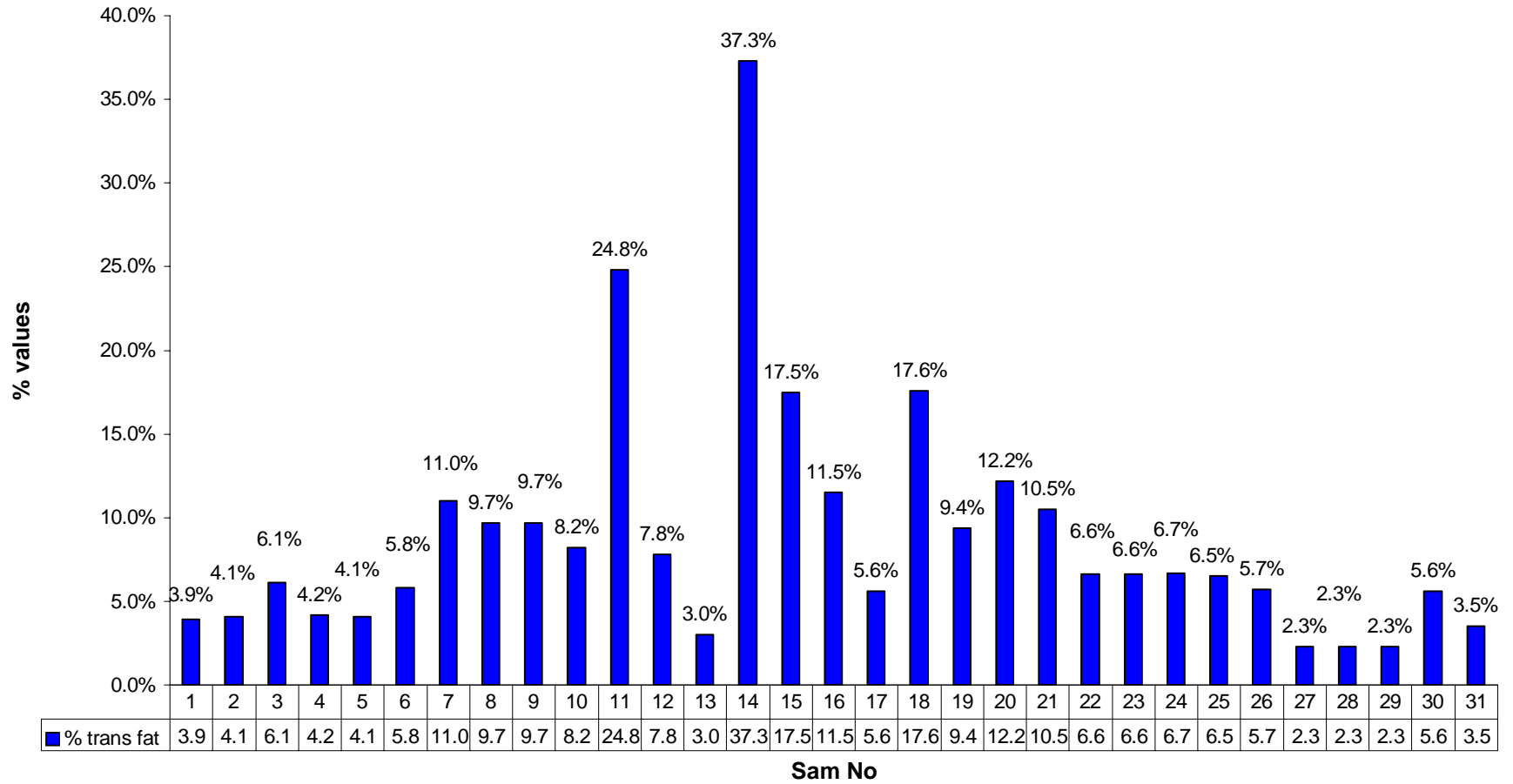
- **The values of trans fat compared to the total fat values.**

The total fat content will vary from one food product to another and it would be the same for the trans fat content. In order to give a more realistic comparison of the trans fat content, it was decided to show the trans fat content as a percentage of the total fat content. This comparison is graphically shown in **Fig 1**

It can be seen that the samples of pie products generally had the highest percentage values with Sam No 753 Aunt Bessies Steak pie having the highest percentage of 37.3% Although Sam No 752 Bowyers Pork pie had one of the lowest percentages of < 3%

The cheese products Sam Nos 202076, 202077 and 202078 was found to have the lowest percentages of 2.3% even though these products had the highest trans fat content and the highest total fat content

### %Trans Fat /Total Fat content

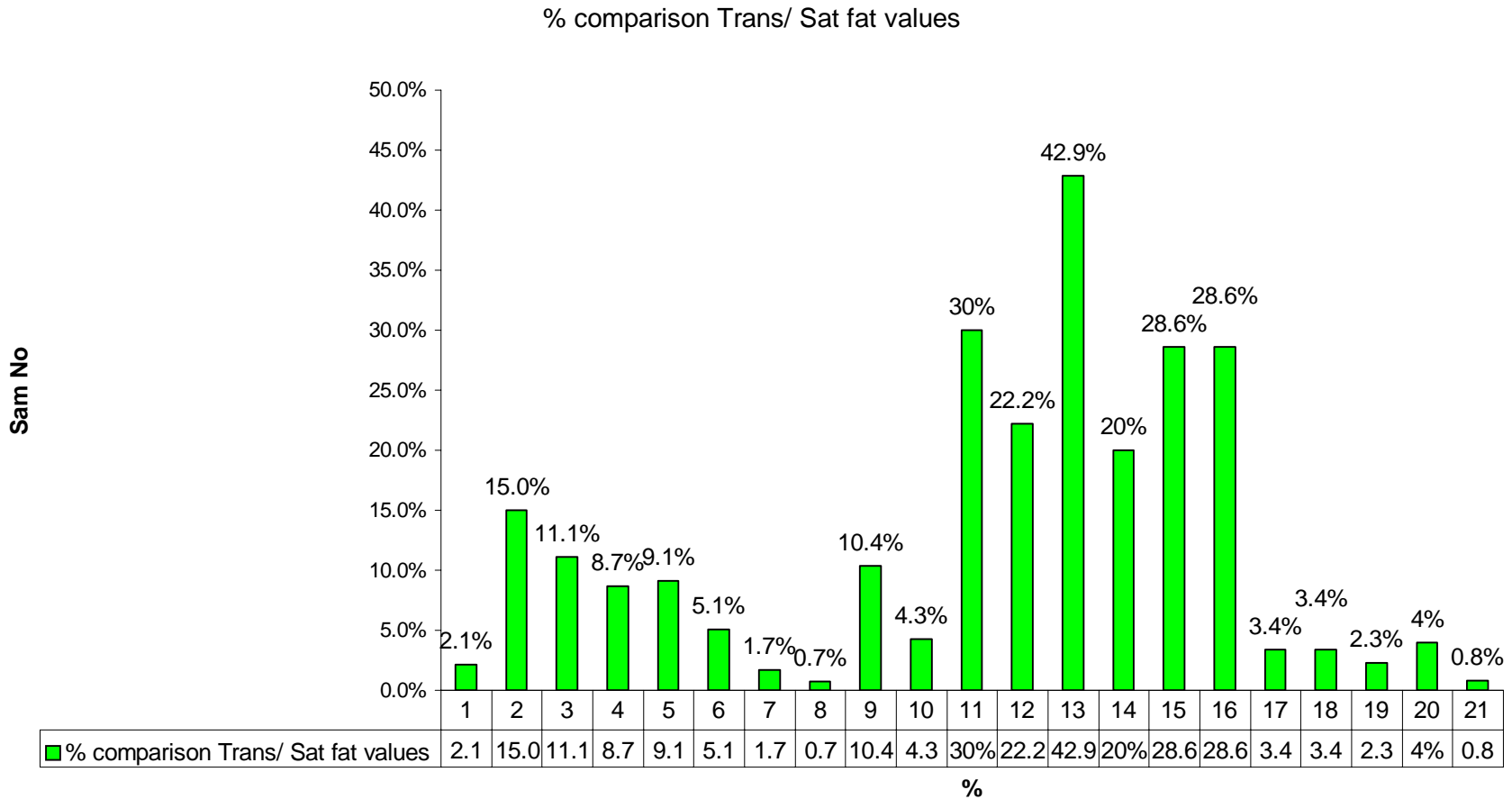


**Fig 1 – Comparison between trans fat and total fat values**



- **The values of trans fat compared to the saturated fat values**

Total content is the summation of the Saturated fat, unsaturated fat and trans fat so again a comparison of the trans fat and the saturated fat contents was made and expressed as a percentage. This comparison is graphically shown in **Fig 2**



**Fig 2 - Comparison between trans fat and Saturated fat values**

**NB** This comparison could only be made with only 21 out of the 31 samples submitted for analysis due to the fact that the analytical results of the 10 samples submitted by Bridgend and Swansea did not give the saturated fat content of these samples.

When this comparison is made there is a significant difference to these findings compared to the previous comparison i.e. trans fat / total fat. It can be seen that Sam No 753 Aunt Bessies Steak pie had the highest percentage in the previous comparison was now found to have a percentage of only 10.4% and Sam No 752 Bowyers Pork pie had the lowest percentages of < 0.7%

The samples of stuffing mix i.e. Sam Nos 3818 to 3823 have been shown to have the highest percentages (20 to 43.9%) with Sam No 3820 Tesco Mushroom, garlic & thyme stuffing mix had the highest percentage of 42.9%

- **The values of total unsaturated fat compared to the total fat values.**

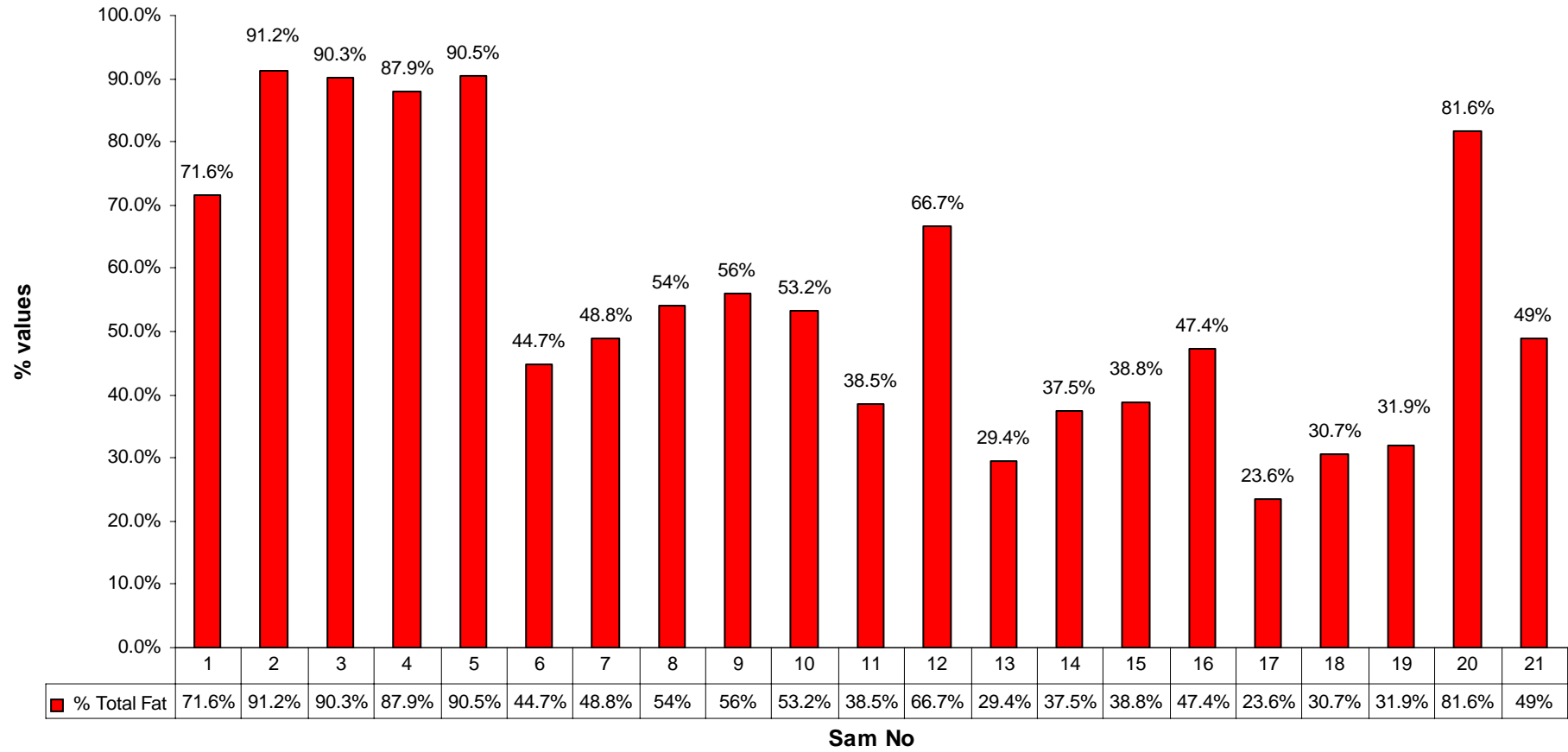
To complete the above-mentioned comparisons the total fat content was compared to the total unsaturated fat content and expressed as a percentage. This comparison is graphically shown in **Fig 3**.

This comparison allows for the easy identification of the food products that uses unsaturated fat during the food production.

The samples of savoury snacks had the highest percentages due to the relatively high unsaturated fat content found in these products

**NB** This comparison could only be made with only 21 out of the 31 samples submitted for analysis due to the fact that the analytical results of the 10 samples submitted by Bridgend and Swansea did not give the unsaturated fat content of these samples.

**%Total Fat / total Unsat. Fat**



**Fig 3 – Comparison of trans fat / Unsaturated fat content**

## Conclusions

- The levels of trans fat found in 13 samples (42%) was less than 0.1 g/100g which indicates that the food industry are aware of the health implications of trans fat in their products and are reducing these levels
- Cheese products had the highest values of trans fat of 0.9 – 1.0 g/100g. (Sam Nos 202076 to 202078 inclusive)
- The savoury snack products were found to contain the highest unsaturated fat content and relatively low trans fat content