

Recipe Analysis for Nutritional Labelling

A Case Study



The Rowett Institute of Nutrition and Health (RINH) has a dedicated team of research dietitians with expertise and experience in nutritional analysis and access to an extensive and growing database of nutritional information for specific ingredients. This case study shows how recipe analysis can be the first step when reformulating a food product for health benefits.

Recipe analysis process

In order to complete a recipe analysis and suggest reformulation if required the following information is required:

- The full list of the standard recipe ingredients, including fluid
- All weights in grams with the edible portion weight e.g. drained weight for canned foods, fruit and vegetables after peeling
- Clearly define each ingredient in the recipe e.g. beef - is it cooked or raw? What cut?
- The batch size and portion yield should be established by testing the recipe
- Calculate cooking losses or gains, by test weighing the finished product before and after cooking
- Product specification sheet for ingredients

Here is an example of a recipe inputted into a nutritional analysis program. This information allows the dietitian or nutritionist to assess the analysis for back of pack nutritional information, front of pack information, the recommended traffic light system, the reference intakes (RIs) and to highlight any nutrition claims.

Stovies Traditional Recipe	Stovies reformulated Recipe	Stovies Readymade Meal
900g potatoes uncooked	900g Potatoes uncooked	Potatoes
225g beef fore-rib/rib-roast roasted	225g beef fore-rib/rib-roast roasted	Beef
150g Onion raw	150g Onion raw	Onion
25g butter	50g vegetable spread 45% fat	Tomato puree
25g beef dripping		Barley malt extract
300g water	300g Water	Water
6g beef stock cube	3g beef stock cube	lactose
1g salt		salt
		Yeast extract
		Flavouring
		Sunflower oil
		Pepper
		Dehydrated Onion
		Beef Extract
		Onion Extract
Weight loss on cooking 19%	Weight loss on cooking 25%	Weight loss N/A

The readymade meal does not give enough information from the packaging to analysis. A limitation of nutritional analysis software is that not all foods are in the accepted McCance and Widdowsons dataset. For example the barley malt extract is not in the database, so in this instance the manufacturer would be asked for the nutrient data. If not available, inputting the figures from published data, where the food is sufficiently similar, would have to be agreed.

Labelling

Back of pack labelling

Nutritional labelling will be mandatory for most pre-packed food products from 13th December 2016.

Information per 100g must be provided for energy (kJ and kcal), fat (including of which saturates), carbohydrate (including of which sugars), protein and salt.

Front of pack labelling

Product as consumed and portion size are required for front of pack figures to be calculated.

The Reference Intake (RI) values are based on an average size woman, doing an average amount of physical activity.

Traditional Stovies Back of pack labelling (mandatory from December 2016)

Typical values	Amount per 100g	Amount per serving (340g)
Energy	535kJ/128kcal	1818kJ/434kcal
Fat	5.6g	18.9g
(of which Saturates)	(2.8g)	(9.6g)
Carbohydrate	11.4g	38.8g
(of which Sugars)	(1.0g)	(3.4g)
Protein	7.3g	24.8g
Salt	0.31g	1.04g

Traditional Stovies Front of pack labelling

Per 340g serving

Energy	Fat	Saturates	Sugars	Salt
1818kJ 434kcal	18.9g	9.6g	3.4g	1.04g
22%	27%	48%	4%	17%

Typical values (as sold) per 100g: Energy 535kJ / 128kcal

Readymade Stovies Back of pack labelling (taken from label)

Typical values	Amount per 100g	Amount per serving (340g)
Energy	488kJ/117kcal	1660kJ/398kcal
Fat	5.8g	19.7g
(of which Saturates)	(2.3g)	(7.8g)
Carbohydrate	10.5g	35.7g
(of which Sugars)	(1.8g)	(6.1g)
Protein	3.9g	13.3g
Salt	0.8g	2.7g

Readymade Stovies Front of pack labelling

Per 340g serving

Energy	Fat	Saturates	Sugars	Salt
1660kJ 398kcal	19.7g	7.8g	6.1g	2.7g
20%	28%	39%	7%	45%

Typical values (as sold) per 100g: Energy 488kJ / 117kcal

Reformulated Stovies Back of pack labelling (mandatory from December 2016)

Typical values	Amount per 100g	Amount per serving (340g)
Energy	470kJ/112kcal	1599kJ/380kcal
Fat	3.1g	10.6g
(of which Saturates)	(1.1g)	(3.7g)
Carbohydrate	12.4g	42.1g
(of which Sugars)	(1.1g)	(3.7g)
Protein	7.9g	26.7g
Salt	0.18g	0.62g

Reformulated Stovies Front of pack labelling

Per 340g serving

Energy	Fat	Saturates	Sugars	Salt
1599kJ	10.6g	3.7g	3.7g	0.6g
380kcal				
19%	15%	19%	4%	10%

Typical values (as sold) per 100g: Energy 470kJ / 112kcal

Nutrition Claim

The following nutrition claims can be made on the *reformulated* stovies:

Low saturated fat

EU Regulation No. 1924/2006 state (a claim that a food is low in saturated fat, and any claim likely to have the same meaning for the consumer, may only be made if the sum of saturated fatty acids and trans-fatty acids in the product does not exceed 1.5g per 100g for solids or 0.75g/100ml for liquids and in either case the sum of saturated fatty acids and trans-fatty acid must not provide more than 10% of energy). In this product the saturated fat content is 1.1g per 100g.

Low salt

EU Regulation No. 1924/2006 state (a claim that a food is low in sodium/salt, and any claim likely to have the same meaning for the consumer, may only be made where the product contains no more than 0.12g of sodium or the equivalent value for salt, per 100g or per 100 ml.). In this product the salt content is 0.18g, which equates to 0.072g sodium per 100g.