Nutrition Label Calculator – Experience Sharing Session

Part 1:

Brief introduction of using NLC in making a nutrition label

Contents

1. Brief review of the Nutrition Labelling Scheme and compliance enforcement

2. Use of Nutrition Label Calculator (NLC) in making nutrition labels

3. Use of NLC and indirect nutrient analysis

1. Brief review of the Nutrition Labelling Scheme and compliance enforcement
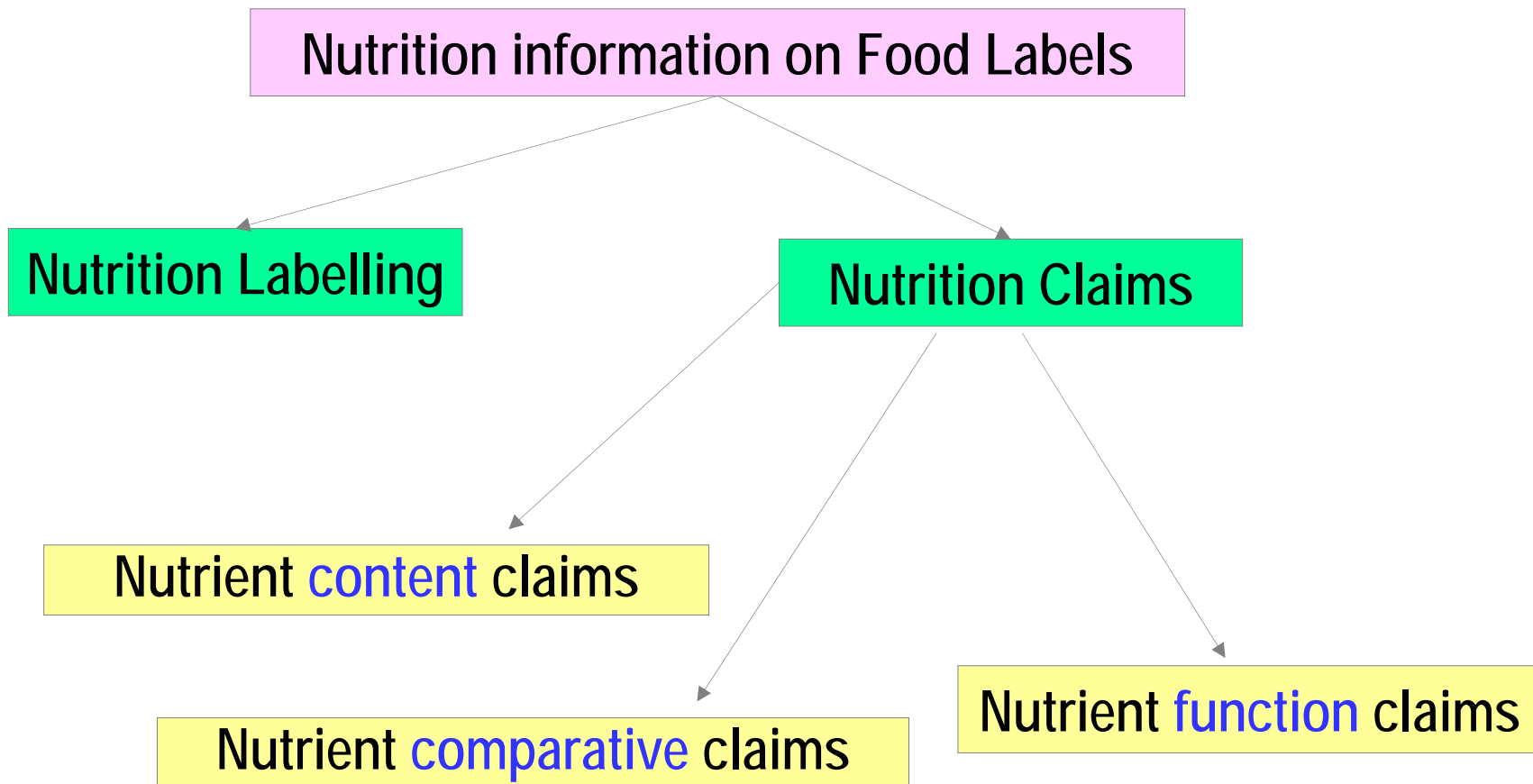
NL Scheme & its time frame

- **Aims:**

  – Facilitate consumers in making healthy food choices

  – Encourage food manufacturers to apply sound nutrition principles in the formulation of foods which would benefit public health

  – Regulate misleading or deceptive labels and claims on nutrition information

- **Time frame:**

  – Enforce on 1 July 2010
  (all prepackage food must have a nutrition label, except for those in the exemption lists)

Scope of the Scheme

- Applicable to general prepackaged food

- Not applicable to:
    - Formula and food intended to be consumed by children under the age of 36 months
    - Food for special dietary uses

Contents of the Scheme

Nutrition information on Food Labels

Nutrition Labelling

Nutrition Claims

Nutrient content claims

Nutrient comparative claims

Nutrient function claims

Required nutrients on nutrition labels

- **1+7** (energy and 7 core nutrients: protein, carbohydrate*, total fat, saturated fatty acids, trans fatty acids, sodium, and sugars)

- **Claimed nutrients** (must declare cholesterol for claims on any type of fat)

- **Other nutrients** (voluntary declaration)

  *Can be declared as "available" or "total" (the latter must declare dietary fibre).

Nutrition claims

- Any representation which states, suggests or implies that a food has particular nutritional properties

- Generally follow Codex standards

- Nutrition claims include:
  - Nutrient content claim
  - Nutrient comparative claim
  - Nutrient function claim

- Food labels and advertisement are subject to the control

Exemption highlights

- Total 16 items, following 4 principles:
  - Practical difficulty for the trade
    (e.g. package with a total surface area <100cm^2)
  - The food does not contain energy and core nutrients
  - The food is fresh in nature without any addition of ingredient, and is not subject to processing
    (e.g. fresh / dried fruits and vegetables)
  - The food has a small sales volume - Small Volume Exemption Scheme
    - annual sales volume not exceeding 30,000 units
    - apply for approval and subject to other conditions

Compliance test of nutrition labelling

- Based on the laboratory analysis using appropriate methods
  (refer to Method Guidance Notes)

- Comply with the tolerance limits:

  – Accuracy of nutrient values on nutrition labels

  – Do not apply to nutrition claims

  – Apply to the definition of "0"

Tolerance limits

Table 3   Tolerance limits for declaration of energy level or nutrient content on nutrition label

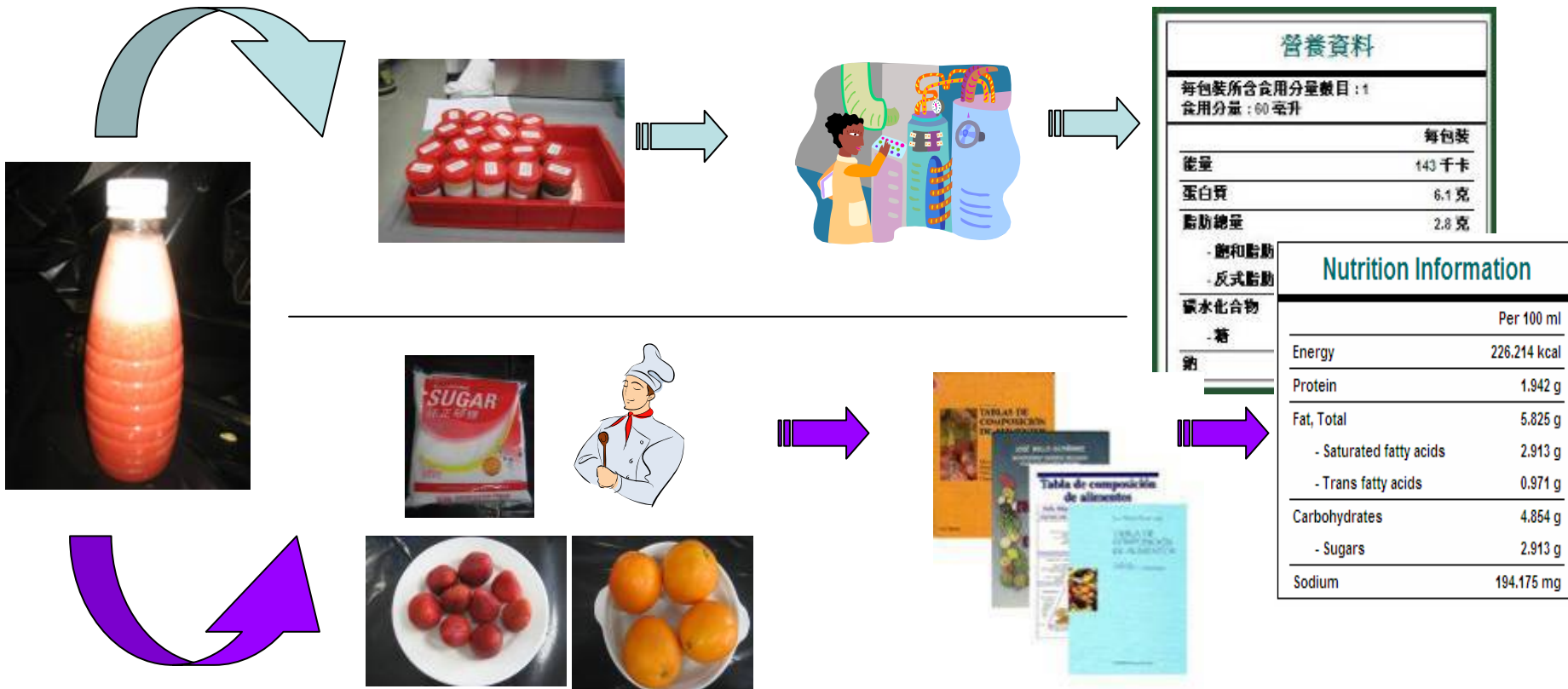| Energy/ Nutrients	Tolerance Limits
Energy, Total fat, Saturated fatty acids, Trans fatty acids, Cholesterol, Sodium, Sugars	$\leq$ 120% declared value
Protein, Polyunsaturated fatty acids, Monounsaturated fatty acids, Carbohydrates, Starch, Dietary fibre, Soluble fibre, Insoluble fibre, individual component of fibre	$\geq$ 80% declared value
Vitamins and minerals (other than Vitamin A, Vitamin D and added vitamins and minerals)	$\geq$ 80% declared value
Vitamin A and Vitamin D (including added ones)	80% - 180% declared value
Added vitamins and minerals (other than Vitamin A and Vitamin D)	$\geq$ declared value

- Technical Guidance Notes Table 3

2. Use of NLC in making nutrition labels

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Hygiene Department

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Obtain nutrition information required

- 2 ways:
  - Direct nutrient analysis (laboratory analysis)
    - Valid;
    - More accurate;
    - Higher cost
  - Indirect nutrient analysis
    - Estimation;
    - Lower cost;
    - Quicker in obtaining information;
    - Require more nutrition / food technology knowledge on the product

Steps of making nutrition label

Direct nutrient analysis

營養資料

每包裝所含食用分量數目：1
食用分量：60 毫升

	每包裝
能量	143 千卡
蛋白質	6.1 克
脂肪總量	2.8 克
- 飽和脂肪	
- 反式脂肪	
碳水化合物	
- 糖	
鈉	

Nutrition Information

	Per 100 ml
Energy	226.214 kcal
Protein	1.942 g
Fat, Total	5.825 g
- Saturated fatty acids	2.913 g
- Trans fatty acids	0.971 g
Carbohydrates	4.854 g
- Sugars	2.913 g
Sodium	194.175 mg

Indirect nutrient analysis

Responsibilities of the trade

"Ensuring the accuracy of the nutrition label."

- Choose an appropriate laboratory for direct nutrient analysis
- Use appropriate method in calculating nutrition labelling values; ensure the calculated values are representative of their particular product
  - If in doubt, use laboratory analysis
- Present nutrition label in appropriate format

Trade facilitation by using NLC

- Turn raw data obtained from laboratory analysis/calculation to a ready-to-use nutrition label

- Facilitate calculation of nutrient contents when using indirect nutrient analysis

- Design nutrition label in formats required by the Amendment Regulation

- Prepare different label formats quickly by using same set of nutrient data

- Available from internet; Free-of-charge

Prerequisites of NLC usage

- Read and understand the details in:
  - Amendment Regulation
  - Technical Guidance Notes
  - Method Guidance Notes
  - NLC User Guide
- Product detail:
  - Ingredient amounts
  - Nutrient contents
  - Nutrition label presentation

Steps of making a label using NLC

Step 1: Obtain the accurate nutrient profiles of the food product
- ✓ Direct: laboratory report
- ✓ Indirect: all ingredients' weight and nutrients adjusted to reflect the product
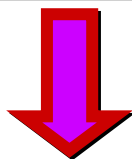
Step 2: Enter individual ingredient's nutrient values into NLC

Step 3: Choose label format and print label

NLC operation steps: an example

- Accessing the NLC to make a label for a package of sugar:
  - http://www.cfs.gov.hk/eindex.html
  - http://www.cfs.gov.hk/english/programme/programme_nifl/nlc-intro.html

http://www.cfs.gov.hk/eindex.html

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› Risk Assessment Studies - Safety of Irradiated Food NEW

› Food Safety Report for April 2009 NEW

› Risk Assessment Studies - Aluminium in Food NEW

› (Draft) Guidelines on the Use of Aluminium-containing Food Additives NEW

› Food Safety Focus (34th Issue, May 2009) NEW

› Introduction on the use of the Nutrition Label Calculator – Experience Sharing Session NEW

› Risk Assessment Studies - The Food Safety of Instant Cup Noodle Containers
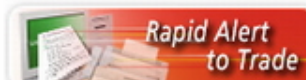
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Expert Committee on Food Safety

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Consumer Liaison Group

Food Safety Focus

WebSite Survey

Nutrition Labelling Scheme

Highlights of International Symposium on Food Safety

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Programme Areas >> Nutrition Information on Food Labels>> Nutrition Label Calculator

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[User Agreement | User Guide]

Nutrition Label Calculator

營養資料
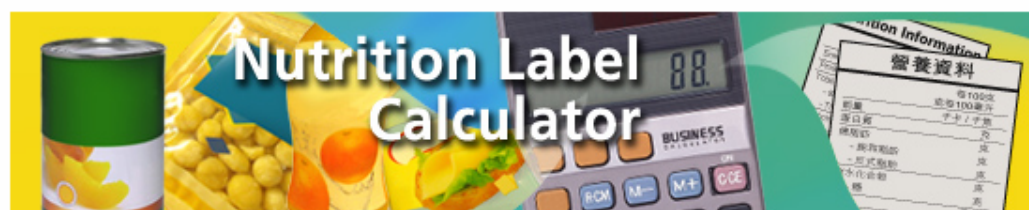
Introduction

Providing nutrition information on food labels is an important public health tool to promote a balanced diet as consumers can obtain specific nutrition information on individual food products and make informed healthy food choices.

Under the Food and Drugs (Composition and Labelling) (Amendment: Requirements for Nutrition Labelling and Nutrition Claim) Regulation 2008, of the Public Health and Municipal Services Ordinance (Cap.132) ("the Amendment Regulation"), with effect from 1 July 2010, all general prepackaged foods are mandated to carry a nutrition label, unless the food product is exempt prepackaged foods under Schedule 6 of the Amendment Regulation. The Amendment Regulation, however, is not applicable to formula and food intended to be consumed principally by children under the age of 36 months, and other food for special dietary uses. Users may find details in the Technical Guidance Notes on Nutrition Labelling and Nutrition Claims ("the Technical Guidance Notes").

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Programme Areas >> Nutrition Information on Food Labels>> Nutrition Label Calculator

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[Introduction | User Guide]

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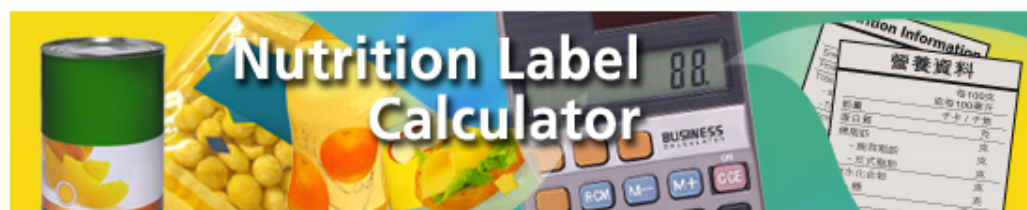
User Agreement

This is an agreement between the HKSAR Government and user of the online Nutrition Label Calculator (NLC) developed by the Centre for Food Safety (CFS).

Users are required to provide detailed nutrient information of their food products online when using the NLC. The Government does not guarantee that the information would not be made public or divulged to third parties because the use of NLC is made through internet.

The CFS grants the user a right to save, display, print and reproduce the nutrition label generated by the NLC in unaltered form for use only on food products.

Users shall use their skills, care and judgment when using the NLC to avoid errors.

The CFS makes no warranty that the results generated by the NLC will be free from error, or comply with the relevant requirements of the Amendment Regulation. Users shall take note that

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The CFS grants the user a right to save, display, print and reproduce the nutrition label generated by the NLC in unaltered form for use only on food products.

Users shall use their skills, care and judgment when using the NLC to avoid errors.

The CFS makes no warranty that the results generated by the NLC will be free from error, or comply with the relevant requirements of the Amendment Regulation. Users shall take note that generation of the nutrition label is based on calculation of nutrient values of product ingredients and the respective weights provided by the users. Users shall take note and have taken into account the many factors that may affect the nutrient values of food products when entering the data in NLC, including but not limited to seasonal variations, processing practices and ingredient sources. Users should ensure that information presented in the nutrition labels comply with the Amendment Regulation.

The CFS alerts users to the inherent limitations in the NLC. Users shall carefully evaluate the accuracy, completeness and relevance of the results, and are advised to obtain appropriate professional advice relevant to their own particular circumstances.

By pressing the "Agree" button, users agree that they are fully responsible for any information supplied to produce nutrition labels on food products. Users acknowledge that under no circumstances shall the CFS be liable for any incidental or consequential damages resulting from its use. Users agree that they have read and understood the Amendment Regulation, the Technical Guidance Notes, the Method Guidance Notes and the Introduction of the NLC. Users shall read and shall be deemed to have read the User Guide of the NLC before using the NLC.

This User Agreement shall be governed by the law of the Hong Kong Special Administrative Region. You agree to submit to the non-exclusive jurisdiction of the Hong Kong courts.

Users shall be deemed to agree to the terms and conditions of this User Agreement by pressing the "*Agree*" button.

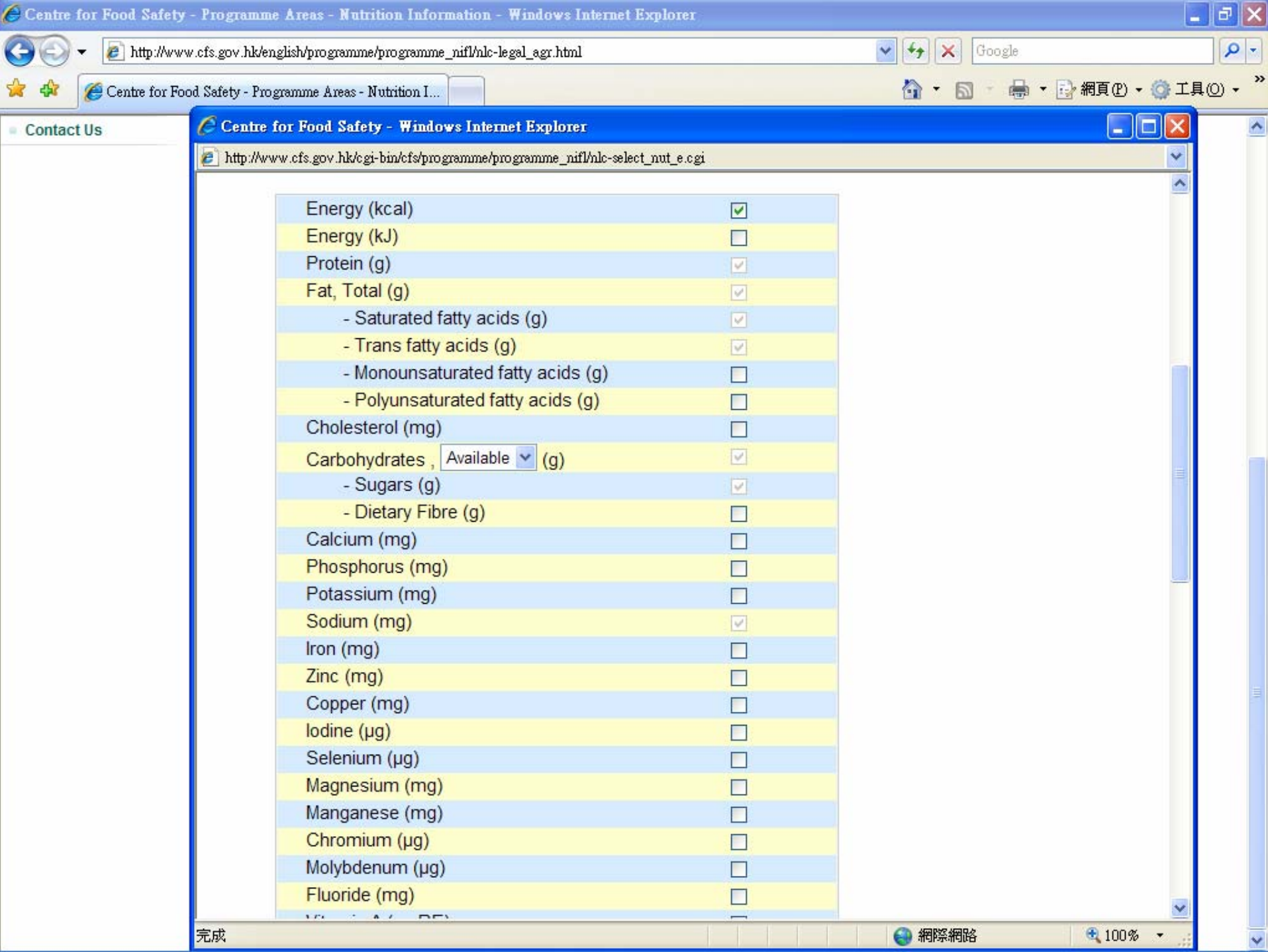[Agree] | [Cancel]

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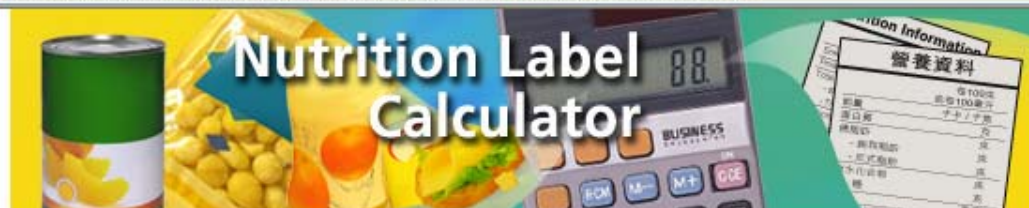
Nutrition Label Calculator
Step I: Select nutrients to be included in nutrition label

Please read the following:

1. Listing of Energy and the seven core nutrients (Protein, Available Carbohydrates, Total fat, Saturated fatty acids, Trans fatty acids, Sodium, and Sugars) are mandatorily required under the Amendment Regulation. For other nutrient(s) that you would like to include in the nutrition label, please select or enter it/them in the list below.
2. You may choose to label Energy in kcal, kJ, or both.
3. Nutrients of which a nutrition claim is made must be chosen.
4. Cholesterol must be selected if there is/are any nutrition claim(s) related to any type of fat.
5. Dietary fibre will be automatically selected if Total Carbohydrates is chosen.

Energy (kcal)	☑
Energy (kJ)	☐
Protein (g)	☑
Fat, Total (g)	☑
- Saturated fatty acids (g)	☑

Centre for Food Safety - Programme Areas - Nutrition Information - Windows Internet Explorer

http://www.cfs.gov.hk/english/programme/programme_nifl/nlc-legal_agr.html

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http://www.cfs.gov.hk/cgi-bin/cfs/programme/programme_nifl/nlc-select_nut_e.cgi

Energy (kcal)	☑
Energy (kJ)	☐
Protein (g)	☑
Fat, Total (g)	☑
- Saturated fatty acids (g)	☑
- Trans fatty acids (g)	☑
- Monounsaturated fatty acids (g)	☐
- Polyunsaturated fatty acids (g)	☐
Cholesterol (mg)	☐
Carbohydrates , Available ▼ (g)	☑
- Sugars (g)	☑
- Dietary Fibre (g)	☐
Calcium (mg)	☐
Phosphorus (mg)	☐
Potassium (mg)	☐
Sodium (mg)	☑
Iron (mg)	☐
Zinc (mg)	☐
Copper (mg)	☐
Iodine (μg)	☐
Selenium (μg)	☐
Magnesium (mg)	☐
Manganese (mg)	☐
Chromium (μg)	☐
Molybdenum (μg)	☐
Fluoride (mg)	☐

| Biotin (µg) | ☐ |
| Choline (mg) | ☐ |

Please tick the numbered box(es) and enter other nutrient(s) and unit(s). The maximum number of other nutrients to be entered is 10.

	Nutrient's Name (in English)	Nutrient's Name (in Chinese)	Unit (in English)	Unit (in Chinese)
1 ☐				
2 ☐				
3 ☐				
4 ☐				
5 ☐				
6 ☐				
7 ☐				
8 ☐				
9 ☐				
10 ☐				

Submit   **Reset**   **Cancel**

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Nutrition Label Calculator

You have chosen the following nutrients:

Energy (kcal)
Protein (g)
Fat, Total (g)
- Saturated fatty acids (g)
- Trans fatty acids (g)
Carbohydrates (g)
- Sugars (g)
Sodium (mg)

Confirm   **Reset**

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Nutrition Label Calculator

Step II: Enter ingredient(s) and its / their nutrient contents

Please press "Add Ingredient(s)" to enter ingredient(s) and its / their nutrient contents.

Add Ingredient(s) | **Delete Checked Ingredient(s)** | **New Calculation** | **Cancel**

Ingredient	Delete this item ?	Ingredient amount (g)	Energy (kcal)	Protein (g)	Fat, Total (g)	Saturated fatty acids (g)	Trans fatty acids (g)	Carbohydrates (g)	Sugars (g)	Sodium (mg)
Total (g)	-	0	0	0	0	0	0	0	0	0

Next Step >>

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Nutrition Label Calculator
Step II: Enter ingredient(s) and its / their nutrient contents

Please read the following:

1. Ingredient amount is to be entered in weight (in g). For a liquid ingredient in volume (in ml), please convert the amount in weight (in g) using an appropriate specific gravity.
2. The nutrient value entered should be as per 100 g edible portion.
3. The ingredient amount and nutrient value entered should reflect the final-product-as-sold status after taking into consideration of appropriate adjusting factors (e.g. yield factor and retention factor).
4. If you choose to present Energy in both kcal and kJ, you may enter the values for both units. However, if value for only one unit is entered, the NLC will automatically calculate the value for the other unit using the conversion 1 kcal equals to 4.2 kJ.
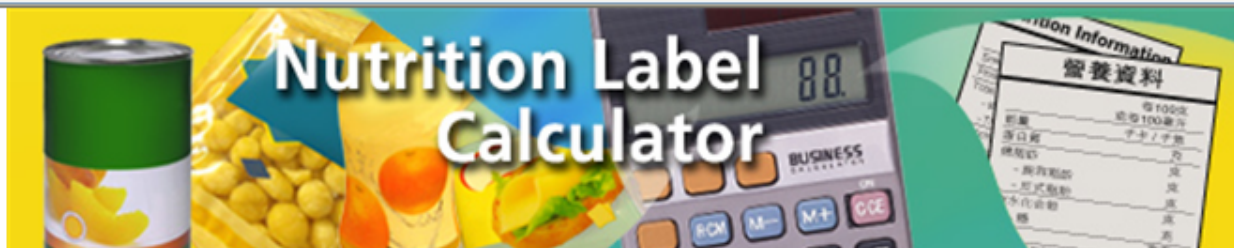
Ingredient Name: _____

Ingredient Amount: _____ g

Energy (kcal)		(per 100 g)
Protein (g)		(per 100 g)
Fat Total (g)		

Nutrition Label Calculator
Step II: Enter ingredient(s) and its / their nutrient contents

Please read the following:

1. Ingredient amount is to be entered in weight (in g). For a liquid ingredient in volume (in ml), please convert the amount in weight (in g) using an appropriate specific gravity.
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4. If you choose to present Energy in both kcal and kJ, you may enter the values for both units. However, if value for only one unit is entered, the NLC will automatically calculate the value for the other unit using the conversion 1 kcal equals to 4.2 kJ.

Ingredient Name: Granulated sugar

Ingredient Amount: ____ g

Energy (kcal)	____	(per 100 g)
Protein (g)	____	(per 100 g)
Fat Total (g)		

Nutrition Label Calculator
Step II: Enter ingredient(s) and its / their nutrient contents

Please read the following:

1. Ingredient amount is to be entered in weight (in g). For a liquid ingredient in volume (in ml), please convert the amount in weight (in g) using an appropriate specific gravity.
2. The nutrient value entered should be as per 100 g edible portion.
3. The ingredient amount and nutrient value entered should reflect the final-product-as-sold status after taking into consideration of appropriate adjusting factors (e.g. yield factor and retention factor).
4. If you choose to present Energy in both kcal and kJ, you may enter the values for both units. However, if value for only one unit is entered, the NLC will automatically calculate the value for the other unit using the conversion 1 kcal equals to 4.2 kJ.

Ingredient Name: Granulated sugar

Ingredient Amount: 454 g

Energy (kcal)		(per 100 g)
Protein (g)		(per 100 g)

volume (in ml), please convert the amount in weight (in g) using an appropriate specific gravity.

2. The nutrient value entered should be as per 100 g edible portion.
3. The ingredient amount and nutrient value entered should reflect the final-product-as-sold status after taking into consideration of appropriate adjusting factors (e.g. yield factor and retention factor).
4. If you choose to present Energy in both kcal and kJ, you may enter the values for both units. However, if value for only one unit is entered, the NLC will automatically calculate the value for the other unit using the conversion 1 kcal equals to 4.2 kJ.

Ingredient Name: Granulated sugar

Ingredient Amount: 454 g

Energy (kcal)		(per 100 g)
Protein (g)		(per 100 g)
Fat, Total (g)		(per 100 g)
- Saturated fatty acids (g)		(per 100 g)
- Trans fatty acids (g)		(per 100 g)
Carbohydrates (g)		(per 100 g)
- Sugars (g)		(per 100 g)
Sodium (mg)		(per 100 g)

Submit   **Reset**   **Back**

volume (in ml), please convert the amount in weight (in g) using an appropriate specific gravity.

2. The nutrient value entered should be as per 100 g edible portion.

3. The ingredient amount and nutrient value entered should reflect the final-product-as-sold status after taking into consideration of appropriate adjusting factors (e.g. yield factor and retention factor).

4. If you choose to present Energy in both kcal and kJ, you may enter the values for both units. However, if value for only one unit is entered, the NLC will automatically calculate the value for the other unit using the conversion 1 kcal equals to 4.2 kJ.

Ingredient Name: Granulated sugar

Ingredient Amount: 454 g

Energy (kcal)	400	(per 100 g)
Protein (g)	0	(per 100 g)
Fat, Total (g)	0	(per 100 g)
- Saturated fatty acids (g)	0	(per 100 g)
- Trans fatty acids (g)	0	(per 100 g)
Carbohydrates (g)	99.9	(per 100 g)
- Sugars (g)	99.9	(per 100 g)
Sodium (mg)	0.4	(per 100 g)

Submit   **Reset**   **Back**

Nutrition Label Calculator

Nutrition Label Calculator
Step II: Enter ingredient(s) and its / their nutrient contents

Please press "Add Ingredient(s)" to enter ingredient(s) and its / their nutrient contents.

Add Ingredient(s) | **Delete Checked Ingredient(s)** | **New Calculation** | **Cancel**

Ingredient	Delete this item ?	Ingredient amount (g)	Energy (kcal)	Protein (g)	Fat, Total (g)	Saturated fatty acids (g)	Trans fatty acids (g)	Carbohydrates (g)	Sugars (g)	Sodium (mg)
Granulated sugar	☐	454	1816	0	0	0	0	453.546	453.546	1.816
Total (g)	-	454	1,816	0	0	0	0	453.546	453.546	1.816

Next Step >>

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Nutrition Label Calculator

Nutrition Label Calculator
Step III: Print Label

Label Type:	○ Chinese ● English ○ Both
	● Tabular Format ○ Linear Format (Only for small packages with total surface area of less than 200cm^2)
	● Present information in gram ○ Present information in millilitre
	☐ Per 100g ☐ Per Package ☐ Per Serving
	☐ %Chinese NRV Per 100g ☐ %Chinese NRV Per Package ☐ %Chinese NRV Per Serving

| Output Format: | ☐ **To view in Rounded format:**
(Energy will be rounded up to the nearest 1 unit. For nutrients with units pre-set, values in g to the nearest 0.1 g, mg to 1 mg, and µg to 1 µg, and any respective %Chinese NRV to the nearest 1%.)

(Energy or nutrients with very small values per 100g (or ml) that meet the definition of "0" as stipulated in Table 2 of the Technical Guidance Notes will be set to 0, regardless whether the label is presented as per 100g (or ml), per package, per serving, or %Chinese NRV.)

(For nutrient(s) entered by users with unit(s) determined by the users, the value will be rounded up to the nearest 0.1.) | ☐ **To view in Pre-rounded format:**
(Energy and all nutrients will be rounded up to three decimal places)

(Any respective %Chinese NRV will be rounded to the nearest 1%.) |

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Nutrition Label Calculator
Step III: Print Label

Label Type:	○ Chinese ● English ○ Both

Label Type:

● Tabular Format   ○ Linear Format
                          (Only for small packages with total surface area of less than 200cm^2)

● Present information in gram   ○ Present information in millilitre

☑ Per 100g   ☐ Per Package   ☐ Per Serving
☐ %Chinese NRV Per 100g   ☐ %Chinese NRV Per Package   ☐ %Chinese NRV Per Serving

Output Format:

☑ **To view in Rounded format:**
(Energy will be rounded up to the nearest 1 unit. For nutrients with units pre-set, values in g to the nearest 0.1 g, mg to 1 mg, and μg to 1 μg, and any respective %Chinese NRV to the nearest 1%.)

(Energy or nutrients with very small values per 100g (or ml) that meet the definition of "0" as stipulated in Table 2 of the Technical Guidance Notes will be set to 0, regardless whether the label is presented as per 100g (or ml), per package, per serving, or %Chinese NRV.)

(For nutrient(s) entered by users with unit(s) determined by the users, the value will be rounded up to the nearest 0.1.)

☐ **To view in Pre-rounded format:**
(Energy and all nutrients will be rounded up to three decimal places)

(Any respective %Chinese NRV will be rounded to the nearest 1%.)

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Nutrition Label

營養資料

Nutrition Label Cal
Step III: Print Labe

Label Type:

- ○ C
- ◉ T

- ◉ P
- ☑ P
- ☐ %

- ☑ T
- (E
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- (F
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Output Format:

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Rounded Format

Nutrition Information

	Per 100 g
Energy	400 kcal
Protein	0.0 g
Fat, Total	0.0 g
- Saturated fatty acids	0.0 g
- Trans fatty acids	0.0 g
Carbohydrates	99.9 g
- Sugars	99.9 g
Sodium	0 mg

[Confirm to Print] [Save as HTML format] [Close]

完成　　　　　　　　　　　　　　網際網路　　　🔍 100% ▾

網際網路　　　🔍 100% ▾

Nutrition Label Calculator
Step III: Print Label

Label Type:	○ Chinese ⦿ English ○ Both
	⦿ Tabular Format 　　　　　　　　○ Linear Format
	(Only for small packages with total surface area of less than 200cm²)
	⦿ Present information in gram ○ Present information in millilitre
	☑ Per 100g 　　　☐ Per Package 　　　☐ Per Serving
	☐ %Chinese NRV Per 100g ☐ %Chinese NRV Per Package ☐ %Chinese NRV Per Serving
Output Format:	☑ **To view in Rounded format:** (Energy will be rounded up to the nearest 1 unit. For nutrients with units pre-set, values in g to the nearest 0.1 g, mg to 1 mg, and μg to 1 μg, and any respective %Chinese NRV to the nearest 1%.) (Energy or nutrients with very small values per 100g (or ml) that meet the definition of "0" as stipulated in Table 2 of the Technical Guidance Notes will be set to 0, regardless whether the label is presented as per 100g (or ml), per package, per serving, or %Chinese NRV.) (For nutrient(s) entered by users with unit(s) determined by the users, the value will be rounded up to the nearest 0.1.)	☐ **To view in Pre-rounded format:** (Energy and all nutrients will be rounded up to three decimal places) (Any respective %Chinese NRV will be rounded to the nearest 1%.)

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Nutrition Label Calculator

Nutrition Label Calculator
Step III: Print Label

|	
Label Type:	○ Chinese ● English ○ Both ● Tabular Format ○ Linear Format (Only for small packages with total surface area of less than 200cm²) ○ Present information in gram ● Present information in millilitre 100 g of final food product equals to [ ] ml of final food product ☐ Per 100ml ☐ Per Package ☐ Per Serving ☐ %Chinese NRV Per 100ml ☐ %Chinese NRV Per Package ☐ %Chinese NRV Per Serving
Output Format:	☑ **To view in Rounded format:** (Energy will be rounded up to the nearest 1 unit. For nutrients with units pre-set, values in g to the nearest 0.1 g, mg to 1 mg, and µg to 1 µg, and any respective %Chinese NRV to the nearest 1%.) (Energy or nutrients with very small values per 100g (or ml) that meet the definition of "0" as stipulated in Table 2 of the Technical Guidance Notes will be set to 0, regardless whether the label is presented as per 100g (or ml), per package, per serving, or %Chinese NRV.) (For nutrient(s) entered by users with unit(s) determined by the users, the value will be rounded up to the nearest 0.1.)	☐ **To view in Pre-rounded format:** (Energy and all nutrients will be rounded up to three decimal places) (Any respective %Chinese NRV will be rounded to the nearest 1%.)

Nutrition Label Calculator

Nutrition Label Calculator
Step III: Print Label

Label Type:	○ Chinese ● English ○ Both

● Tabular Format   ○ Linear Format
(Only for small packages with total surface area of less than 200cm^2)

○ Present information in gram ● Present information in millilitre

100 g of final food product equals to [115] ml of final food product

☐ Per 100ml   ☑ Per Package   ☐ Per Serving
☐ %Chinese NRV Per 100ml   ☐ %Chinese NRV Per Package   ☐ %Chinese NRV Per Serving

Serving(s) Per Package: [1]   Serving Size: (ml) [   ]

Output Format:

☑ **To view in Rounded format:**
(Energy will be rounded up to the nearest 1 unit. For nutrients with units pre-set, values in g to the nearest 0.1 g, mg to 1 mg, and μg to 1 μg, and any respective %Chinese NRV to the nearest 1%.)

(Energy or nutrients with very small values per 100g (or ml) that meet the definition of "0" as stipulated in Table 2 of the Technical Guidance Notes will be set to 0, regardless whether the label is presented as per 100g (or ml), per package, per serving, or %Chinese NRV.)

(For nutrient(s) entered by users with unit(s) determined by the users, the value will be rounded up to the nearest 0.1.)

☐ **To view in Pre-rounded format:**
(Energy and all nutrients will be rounded up to three decimal places)

(Any respective %Chinese NRV will be rounded to the nearest 1%.)

完成   網際網路   100%

NLC – rounded vs prerounded format

- Follow Technical Guidance Notes

Step III: Print Label

Label Type:	○ Chinese ⊙ English ○ Both
	⊙ Tabular Format ○ Linear Format (Only for small packages with total surface area of less than 200cm^2)
	⊙ Present information in gram ○ Present information in millilitre
	☐ Per 100g ☐ Per Package ☐ Per Serving
	☐ %Chinese NRV Per 100g ☐ %Chinese NRV Per Package ☐ %Chinese NRV Per Serving
Output Format:	☐ **To view in Rounded format:** (Energy will be rounded up to the nearest 1 unit. For nutrients with units pre-set, values in g to the nearest 0.1 g, mg to 1 mg, and μg to 1 μg, and any respective %Chinese NRV to the nearest 1%.) (Energy or nutrients with very small values per 100g (or ml) that meet the definition of "0" as stipulated in Table 2 of the Technical Guidance Notes will be set to 0, regardless whether the label is presented as per 100g (or ml), per package, per serving, or %Chinese NRV.) (For nutrient(s) entered by users with unit(s) determined by the users, the value will be rounded up to the nearest 0.1.)	☐ **To view in Pre-rounded format:** (Energy and all nutrients will be rounded up to three decimal places) (Any respective %Chinese NRV will be rounded to the nearest 1%.)

0612.ppt

Examples of Nutrition Label (1)
Rounded format: definition of 0, round to units

Nutrition Information	
	Per 100 g
Energy	339.231 kcal
Protein	23.698 g
Fat, Total	20.235 g
- Saturated fatty acids	12.958 g
- Trans fatty acids	0.299 g
Carbohydrates	15.213 g
- Sugars	0.499 g
Sodium	456.445 mg
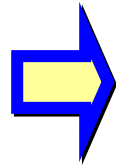
營養資料	
	每 100 克
能量	339 千卡
蛋白質	23.7 克
脂肪總量	20.2 克
- 飽和脂肪酸	13.0 克
- 反式脂肪酸	0.0 克
碳水化合物	15.2 克
- 糖	0.0 克
鈉	456 毫克

Examples of Nutrition Label (2)
Bilingual, %Chinese NRV, Per serving

Nutrition Information　營養資料

Serving(s) Per Package / 每包裝所含食用分量數目 ：2
Serving Size / 食用分量 ：50 g / 克

	Per Serving / 每食用分量	%Chinese NRV Per Serving/ 每食用分量的 中國營養素參考值 百分比
Energy / 能量	170 kcal / 千卡	8%
Protein / 蛋白質	11.8 g / 克	20%
Fat, Total / 脂肪總量	10.1 g / 克	17%
- Saturated fatty acids / 飽和脂肪酸	6.5 g / 克	32%
- Trans fatty acids / 反式脂肪酸	0.0 g / 克	--
Carbohydrates / 碳水化合物	7.6 g / 克	3%
- Sugars / 糖	0.0 g / 克	--
Sodium / 鈉	228 mg / 毫克	11%

Examples of Nutrition Label (3)
Linear format, Per package, in ml

Nutrition Information   Per Package
(1 Serving Per Package)

Energy 188 kcal, Protein 13.2 g, Fat, Total 11.2 g, Saturated fatty acids 7.2 g,
Trans fatty acids 0.0 g, Carbohydrates 8.5 g, Sugars 0.0 g,
Sodium 254 mg

3. Use of NLC and Indirect Nutrient Analysis

食物環境衞生署
Food and Environmental
Hygiene Department

食 物 安 全 中 心
Centre for Food Safety

Steps of Indirect Nutrient Analysis

1. Collect the product recipe and information on manufacturing processes
2. Find out the weight of individual ingredients → food composition database → nutrient content of each ingredient
3. Correct the weight of ingredients (reflect edible portions)
4. Adjust for the effects of cooking / processing:
   a) yield factors → raw and cooked weights change
   b) retention factors → nutrient losses / gains
5. Sum up the nutrient values of all ingredients
6. Determine the quantity of prepared food produced by the recipe
7. Determine the final values per weight / volume / serving portion

Foods suitable for INA

- Food products with uni-stage processing:

Single ingredient: **Multi-ingredient:**

✓ Steaming   ✓ Mixing

✓ Roasting

✓ Boiling

☑ **Conditions**: Ingredients' nutrient data / Edible portion/ Yield factor /Retention factor/ Specific gravity available

- Examples

Sorbet	Rice ball	Mixed fruit / veg juice	Glutinous rice ball
Jelly cup	Wonton	Dumpling	Sushi
Egg noodles	Sandwiches	Cereal bar	Imitated shark's fin soup
Ice lolly	Sesame dessert	Snowy moon cake	Red bean sweet soup
Salad	Mango pudding	Turnip cake	Glutinous rice dumpling

Foods less suitable for INA

- Food products with multi-stage processing:

Single or Multi-ingredient:

- ✗ Complicated process, e.g. fermentation
- ✗ Yield factor/ retention factor uncertain/unknown
- ✗ Examples

Soy sauce	Yoghurt	Bread
Semi-cooked frozen meals	Soy bean drink	Chinese soup

Prerequisites of indirect analysis

- Get ready of these information of the food products:
  - best available and suitable food composition data
    - estimates only, vary by many factors (e.g., seasons, processing practices, ingredient sources)
    - vary in definition of nutrients and analytical methods for estimating nutrient values in foods
  - relevant adjusting factors (e.g. edible portions, retention factors, yield factors, specific gravities)

Prerequisites of indirect analysis

- Calculations should be made by personnel with professional competence and are based on the best available food composition data and adjusting factors
  - Knowledge of the products
  - Competency in food production and varying factors
    - Food processing and cooking → gain / loss in weight and nutrients in the products.
  - Meticulous

Food Composition Database Examples

1. US Department of Agriculture. **USDA National Nutrient Database for Standard Reference**.
   (http://www.nal.usda.gov/fnic/foodcomp/search/)

2. Food Standard Agency and Institute of Food Research UK. **McCance and Widdowson's the Composition of Foods**.(http://www.food.gov.uk/science/dietarysurveys/dietsurveys/)
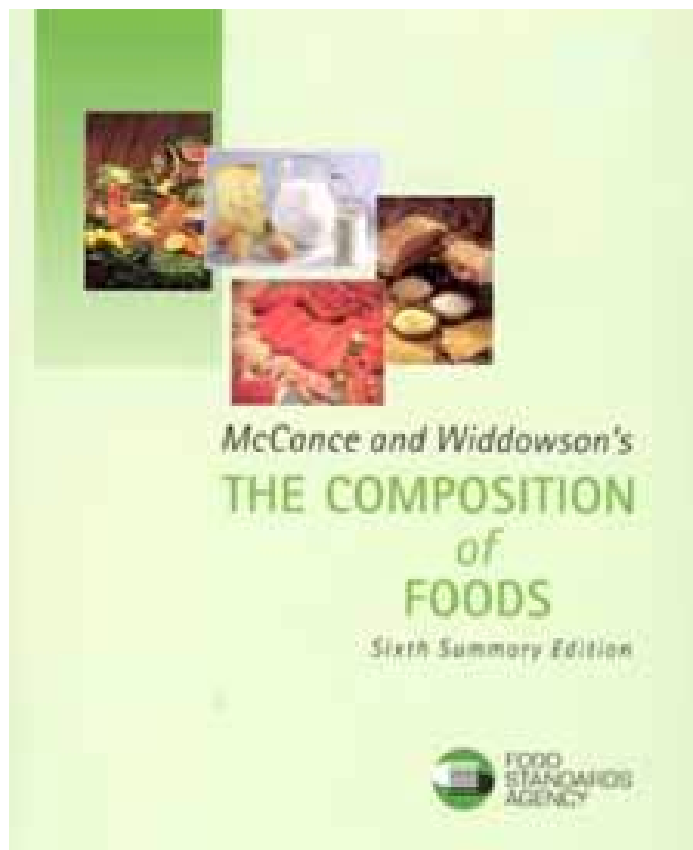
Food Composition Database Examples

3. Food Standards Australia New Zealand. **NUTTAB 2006 Australian Food Composition Tables**. (http://www.foodstandards.gov.au/monitoringandsurveillance/nuttab2006/)

Food Composition Database Examples

4. Puwastien P, Burlingame B, Raroengwichit M, & Sungpuag P. (2000). **ASEAN Food Composition Tables 2000 (1st Ed.).** Thailand: Institute of Nutrition, Mahildol University (INMU). ISBN: 974-664-480-7.
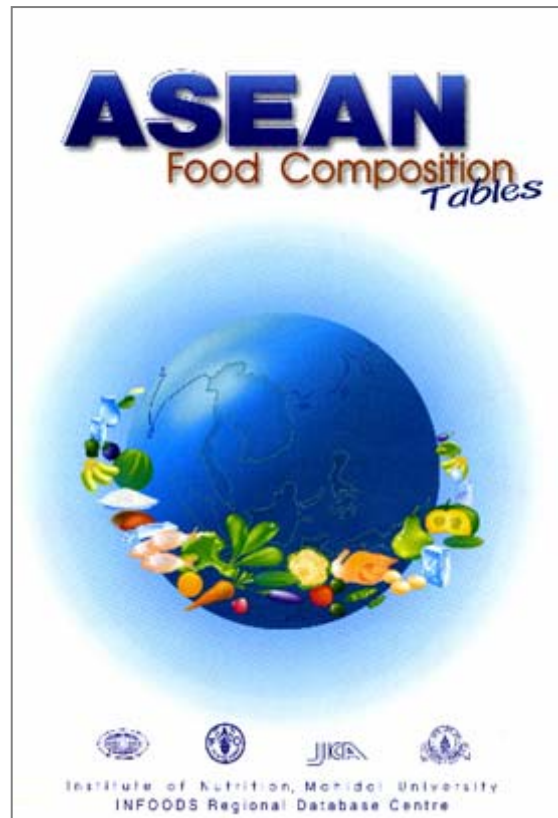
Food Composition Database Examples

5. Yang Y, Wang G, & Pan X. (Eds.). (2002). **China Food Composition Table 2002**. The Institute of Nutrition and Food Safety, Chinese Center for Disease Control and Prevention. China: Peking University Medical Press. ISBN: 7-81071-180-6.

6. Yang Y. (Ed.). (2005). **China Food Composition Table 2004 (Book 2).** The Institute of Nutrition and Food Safety, Chinese Center for Disease Control and Prevention. China: Peking University Medical Press. ISBN: 7-81071-678-6.

"1+7" data comparison of databases

	Energy	Protein	Total Fat	SFA	TFA (g)	CHO (g)	Sugars	Sodium	Other information
USDA SR21	Kcal / kJ	g	g	g	Selected items	Total	g	mg	EP ✓; DF ✓; different units (e.g. per 100g, 1 tsp, 1 cup)
UK (6th, 2002)	Kcal / kJ	g	g	g	Selected items	Avail.	g	mg	EP ✓; DF ✓; Sg ✓
FSANZ NUTTAB 2006	Kcal	g	g	g	--	Avail.	g	mg	EP ✓; DF ✓
ASEAN 2000	Kcal	g	g	--	--	Total	--	mg	
China 2002 and 2004	Kcal / kJ	g	g	Selected items	--	Total	--	mg	EP ✓; DF ✓

Note: SFA: saturated fatty acids; TFA: trans fatty acids; CHO: carbohydrates; DF: dietary fibres; Sg: Specific gravity; EP: edible portions

Other resources

1. US Department of Agriculture. **USDA Table of Nutrient Retention Factors, Release 6 (2007).**
   (http://www.ars.usda.gov/Services/docs.htm?docid=9448)

2. US Department of Agriculture**. Agriculture Handbook No. 102, Food Yields Summarized by Different Stages of Preparation**.
(http://www.ars.usda.gov/Services/docs.htm?docid=9447)
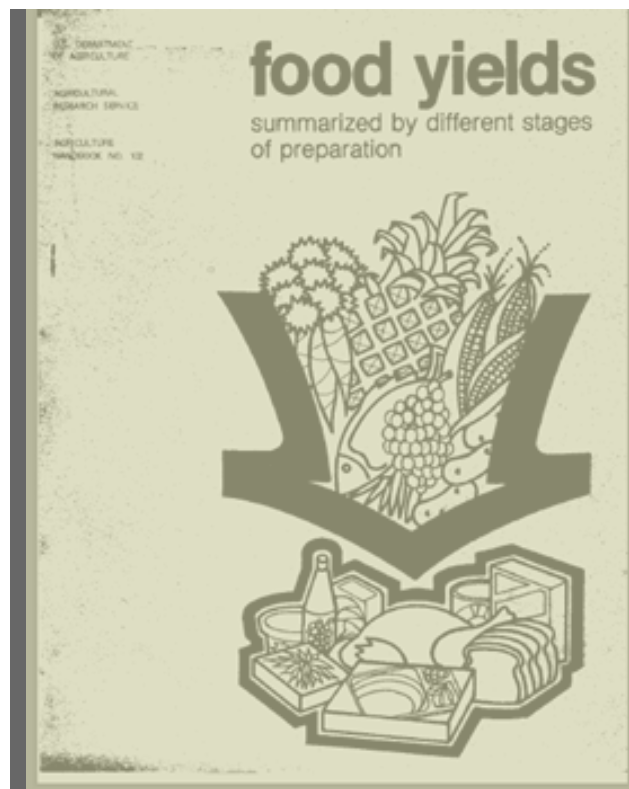
Other resources

3. the **International Food Composition Tables Directory** compiled by the Food and Agriculture Organisation (FAO) of the United Nations
(http://www.fao.org/infoods/directory_en.stm)

- 10 food products being successful produced in using NLC to make labels:

  - Lemon sorbet
  - Fresh fruit juice
  - Walnut paste
  - Egg noodles
  - Vegetable salad

  - Rice roll
  - Egg white agar pudding
  - Vegetarian dumpling
  - Jelly candy
  - Mixed nuts snack

- Results:

  - "1+7" nutrients complied with the results tested by laboratory analysis

Practical tips for indirect analysis

- Keep documents and records that support the analysis
- Data are estimates only (vary by many factors, e.g. seasons, processing practices, ingredient sources)
- Is the product suitable for using indirect analysis?
- Have all factors been taken into account in calculations?
- Is the chosen food composition database suitable for the product/ingredient?
  - adopted suitable analytical methods?
  - definition of nutrients?
  - the nutrient values derived suitable for nutrition labelling?
  - update frequency?

Thank You!