

ESHA Research

ESHA Research was established in 1981 as one of the very first nutrition software solutions. Today, ESHA's suite of nutritional software products, services, and databases are recognized as the industry's top choice for food and supplement formulation, recipe development, labeling, nutritional analysis, and regulatory compliance.

ESHA Solutions

- Genesis R&D® Food Formulation
- Genesis R&D® Supplement Formulation
- Food Processor® Nutrition & Diet Analysis
- Consulting Services

Our mission is to help remove the complexity of product development and regulatory compliance for the food, beverage, and supplement industries through software, services, and nutritional databases.

Genesis R&D Foods



Genesis R&D Foods, first released in 1991, is designed to help users manage processes, overcome industry challenges, and meet federal requirements. Industry professionals use Genesis R&D for quick and accurate nutrient evaluation, virtual product development, nutrition labeling, and regulatory compliance.

- Product Development
- Formulation Analysis
- Menu Analysis
- Reporting
- Regulatory Compliance



Upcoming Webinars



September 23, 2020 | Drive to Digital: Integrating Genesis R&D to Improve Your Innovation Workflow

During this webinar, we will discuss the key features of the Genesis R&D API and how you can quickly and predictably integrate Genesis R&D using pre-built integration accelerators (using Verdant's COG platform) that connect your nutrition analysis and Nutrition Facts label data in Genesis R&D with common ERP, PLM, and MDM vendor solutions.

Guest Speaker, Andy Greenwald, Senior Project Manager for R&D and Manufacturing Systems at The Kraft Heinz Company will share his experience with integrated compliance and how they are using it to streamline and improve their overall NPD process.

October 14, 2020 | Tracking and Disclosing Sulfites Using Genesis R&D Foods

The FDA requires that products containing 10 ppm (parts per million) or more of sulfiting agents must declare the presence of sulfites on the product label. During this webinar, we will walk users through the steps for entering, tracking, and declaring sulfites on your product label.

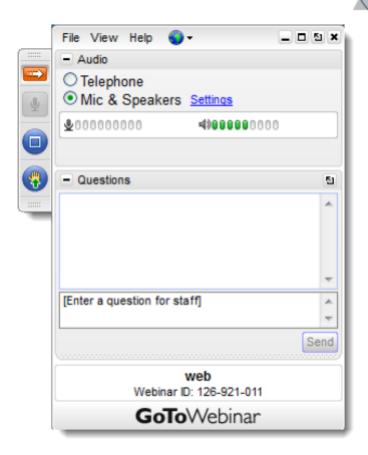
STAY TUNED FOR ADDITIONAL WEBINARS

To register or view archived webinars visit: www.esha.com/news-events/webinars

Please Note!

- √ The webinar is being recorded
- ✓ All webinars available on our website
- ✓ Submit your questions in the GoToWebinar control panel
- ✓ We'll email a copy of the recording and the slides following the webinar





What we'll cover today

- Review of Regulatory Changes
 - Compliance Dates
 - Nutrients and %DVs
 - Serving Size
 - Sugars and Ingredient Statements
- Genesis R&D Features and Labels
- Q&A



Canadian Labels 2016



Nutrition Facts Valeur nutritive

Per 2 slices (50 g) pour 2 tranches (50 g)

Calories 140	% Daily Value* % valeur quotidienne*
Fat / Lipides 3 g	4 %
Saturated / saturés 0.5 g + Trans / trans 0 g	3 %
Carbohydrate / Glucides 25	 5 g
Fibre / Fibres 1 g	4 %
Sugars / Sucres 2 g	2 %
Protein / Protéines 4 g	
Cholesterol / Cholestérol 0	mg
Sodium 180 mg	8 %
Potassium 75 mg	2 %
Calcium 30 mg	2 %
Iron / Fer 1.5 mg	8 %
*5% or less is a little, 15% or more *5% ou moins c'est peu, 15% ou pl	

Valeur nutritive pour tranche (79 g)	
Calories 230	% valeur quotidienne*
Lipides 4.5 g	6 %
saturés 1 g + trans 0 g	5 %
Glucides 39 g Fibres 2 g	7 %
Sucres 3 g Protéines 6 g	3 %
Cholestérol 0 mg	
Sodium 3 mg	1 %
Potassium 100 mg	2 %
Calcium 40 mg	3 %
Fer 2.25 mg	13 %
*5% ou moins c'est peu, 15% ou	plus c'est beaucoup

Nutrition Facts Per 2 tsp (10 mL): Calories 15

Fat 0.5 g (1 %), Saturated 0 g + Trans 0 g (0 %), Cholesterol 0 mg, Carbohydrate 2 g, Fibre 1 g (4 %), Sugars 1 g (1 %), Protein 0.3 g, **Sodium** 2 mg (1 %),

Potassium 20 mg (1 %), Calcium 10 mg (1 %), Iron 0.2 mg (1 %). % = % Daily Value* *5% or less is a little, 15% or more is a lot

Valeur nutritive pour 2 tsp (10 mL): Calories 15 Lipides 0.5 g (1 %), saturés 0 g + trans 0 g (0 %),

Cholestérol 0 mg.

Glucides 2 g, Fibres 1 g (4 %), Sucres 1 g (1 %), Protéines 0.3 g, Sodium 2 mg (1 %).

Potassium 20 mg (1 %), Calcium 10 mg (1 %), Fer 0.2 mg (1 %). % = % valeur quotidienne * 5% ou moins c'est peu, 15% ou plus c'est beaucoup

Nutrition Facts Valeur nutritive

Per 2 slices (50 g) pour 2 tranches (50 g) Per Container 12 par contenant 12

Calories 140

- * DV = Daily Value * VQ = valeur quotidienne

% DV * /	/ % VQ*		% DV * / % VQ *
Fat / Lipides 3 g	4 %	Protein / Protéines 4 g	,
Saturated / saturés 0.5 g	3 %	Cholesterol / Cholestérol () mg
+ Trans / trans 0 g	3 70	Sodium 180 mg	8 %
Carbohydrate / Glucides 25 g	4.0/	Potassium 75 mg	2 %
Fibre / Fibres 1 g	4 %	Calcium 30 mg	2 %
Sugars / Sucres 2 g	2 %	Iron / Fer 1.5 mg	8 %

^{*5%} or less is a little, 15% or more is a lot / *5% ou moins c'est peu, 15% ou plus c'est beaucoup

Compliance Date



- Health Canada finalized changes to the Nutrition Facts tables on December 14, 2016 giving manufacturers a five-year compliance period
- Compliance date: December 14, 2021*

"*Note: It is currently being proposed that the transition period be extended to December 14, 2022. Additional information will be provided at a later date."

https://www.canada.ca/en/health-canada/services/food-nutrition/food-labelling/nutrition-labelling/regulations-compliance.html

Highlights of Nutrition Facts Changes



- Display of Calories
- Serving Sizes
- Updated Daily Values (DV) based on scientific findings
- New DV for Total Sugars
- Core Nutrients Updated
- Added amounts in mg for minerals (Potassium, Iron, Calcium)
- Footnote explaining %DV
- Ingredient and Allergen Statement updates

Nutrition Facts 2003 vs. 2016



2003

N. .4..!4! - ... F - .4-

Valeur nutritive Per 1 cup (140 g) par 1 tasse (140 g)	
Amount Teneur	% Daily Value* % valeur quotidienne*
Calories / Calories 160	
Fat / Lipides 8 g	12 %
Saturated / saturés 3 g + Trans / trans 0 g	15 %
Cholesterol / Cholestéro	I 0 mg
Sodium / Sodium 60 mg	3 %
Carbohydrate / Glucides	21 g 7 %
Fibre / Fibres 16 g	64 %
Sugars / Sucres 15 g	
Protein / Protéines 3 g	
Vitamin A / Vitamine A	0 %
Vitamin C / Vitamine C	0 %
Calcium / Calcium	2 %
Iron / Fer	8 %
*Based on a 2,000 Calorie diet.	
*Selon un régime alimentaire de 2 0	000 calories.

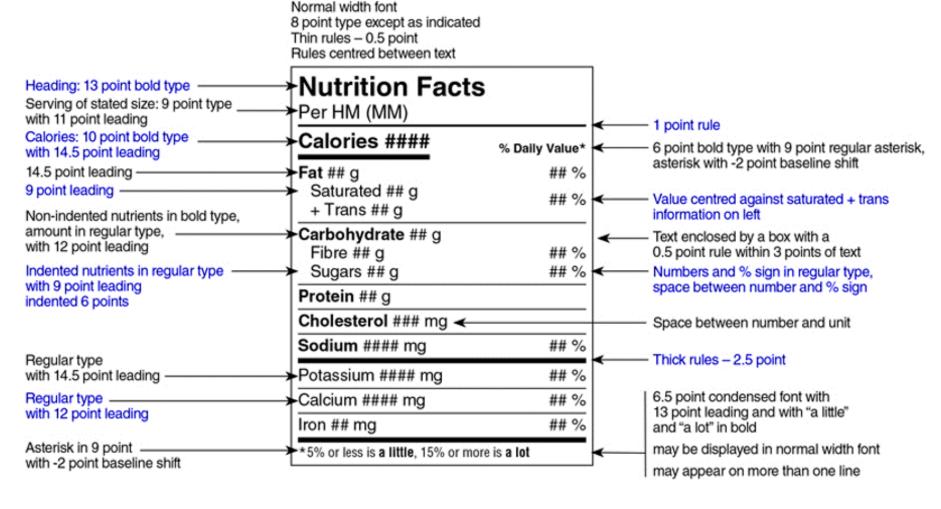
- Calories is larger and stands out more with bold line below
- Serving Sizes are consistent for similar foods
- Daily Values updated
- %Daily Values for total sugars
- Updated nutrients of public health concern
- Order of nutrients changed
- mg amounts shown in lower portion of label
- New %Daily Value footnote

2016

Nutrition Facts Valeur nutritive Per 1 cup (140 g) pour 1 tasse (140 g)	
Calories 160	% Daily Value* % valeur quotidienne*
Fat / Lipides 8 g	11 %
Saturated / saturés 3 g + Trans / trans 0 g	15 %
Carbohydrate / Glucides 2	_
Fibre / Fibres 16 g	57 %
Sugars / Sucres 15 g	15 %
Protein / Protéines 3 g	
Cholesterol / Cholestérol (0 mg
Sodium 60 mg	3 %
Potassium 225 mg	5 %
Calcium 20 mg	2 %
Iron / Fer 1 mg	6 %
*5% or less is a little, 15% or mor *5% ou moins c'est peu, 15% ou	

Standard Label Format Specs





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Rounding of Nutrition Facts Table Information <

TOTAL FAT

<0.5g, meets "free of fat", sat & trans fat declared as "0g" - express as zero

<0.5g all other cases, express to nearest multiple of 0.1g

≥ 0.5g to < 5g, express as nearest multiple of 0.5g

>5g, express as nearest multiple of 1g

CHOLESTEROL

< 2 mg & meets "free of cholesterol"-express as zero

All other cases- nearest multiple of 5mg

TOTAL CARB

< 0.5g - express as zero

≥ 0.5g - express to nearest multiple of 1g

TOTAL SUGARS

< 0.5g - express as zero

≥ 0.5g - express as nearest multiple of 1g

Nutrition Facts Valeur nutritive

Per 1 cup (140 g) pour 1 tasse (140 g)

Calories 520	% Daily Value* % valeur quotidienne*
Fat / Lipides 4 g	5 %
Saturated / saturés 0.5 g + Trans / trans 0 g	3 %
Carbohydrate / Glucides 11	5 g
Fibre / Fibres 25 g	89 %
Sugars / Sucres 8 g	8 %
Protein / Protéines 16 g	
Cholesterol / Cholestérol 0	mg
Sodium 520 mg	23 %
Potassium 600 mg	13 %
Calcium 75 mg	6 %
Iron / Fer 18 mg	100 %
*5% or less is a little, 15% or more	is a lot

*5% ou moins c'est peu, 15% ou plus c'est beaucoup

CALORIES

- < 5 calories, meets "free of energy" = 0 calories
- < 5 calories, all other cases = nearest multiple of 1 Cal
- > to <50 calories = nearest multiple of 5 Cal
- > 50 Calories = nearest multiple of 10 Cal

SAT FAT

<0.5g, meets "free of saturated fat"- express as zero

<0.5g all other cases - nearest multiple of 0.1g

> 0.5g to <5g - nearest multiple of 0.5g

>5g - nearest multiple of 1g

SODIUM

- < 5 mg, meets "free of sodum or salt" 0mg
- <5 mg all other cases -nearest multiple of 1mg
- > 5mg to <140 mg nearest multiple of 5mg
- > 140mg nearest multiple of 10 mg

DIETARY FIBRE

- < 0.5g express as zero
- > 0.5g nearest multiple of 1g

PROTEIN

- < 0.5g nearest multiple of 0.1g
- > 0.5g nearest multiple of 1g

Nutrient Changes: Core Nutrients



Calories

Fat

Saturated Fat

Trans Fat

Carbohydrates

Fibre

Sugars

Protein

Cholesterol

Sodium

Potassium

Calcium

Iron

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Nutrient Changes: Increases



Increases

Nutrient	New DV	Old DV
TOTAL FAT	75 g	65 g
DIETARY FIBRE	28 g	25 g
POTASSIUM	4700 mg	3500 mg
CALCIUM	1300 mg	1100 mg
IRON	18 mg	14 mg
VITAMIN C	90 mg	60 mg
VITAMIN D	20 mcg*	5 mcg**
VITAMIN E	15 mg	10 mg
VITAMIN K	120 mcg*	80 mcg*
VITAMIN B12	2.4 mcg*	2 mcg*
PHOSPHORUS	1250 mg	1100 mg
MAGNESIUM	420 mg	250 mg
ZINC	11 mg	9 mg
SELENIUM	55 mcg*	50 mcg*
MANGANESE	2.3 mg	2 mg

Potassium

- New Core Nutrient
- 4700 mg (up from 3500 mg)

Vitamin C

- Changed to Additional Label Nutrient
- 90 mg (up from 60 mg)

Folate

- Additional Nutrient
- 400 mcg DFE (up from 220 mcg)*

Nutrient Changes: Decreases



Decreases

Nutrient	New DV	Old DV
SODIUM	2300 mg	2400 mg
THIAMINE	1.2 mg	1.3 mg
RIBOFLAVIN	1.3 mg	1.6 mg
NIACIN	16 mg NE	23 mg NE
VITAMIN B6	1.7 mg	1.8 mg
PANTOTHENIC ACID	5 mg	7 mg
IODIDE	150 mcg*	160 mcg*
COPPER	o.9 mg	2 mg
CHROMIUM	35 mcg*	120 mcg*
MOLYBDENUM	45 mcg*	75 mcg*
CHLORIDE	2300 mg	3400 mg

Vitamin A

- Change to Additional Label Nutrient
- 900 mcg RAE (change from 1000 RE)*

Sodium

- Core Label Nutrient
- 2300 mg (down from 2400mg)

Sugar

- Core Label Nutrient
- Newly Established DV of 100g

Choline

- New Additional Label Nutrient
- DV of 550 mg





Vitamin A (Voluntary nutrient - previously mandatory)

- Must now be listed on the table in mcg of Retinol Activity Equivalents (RAE)
- Change from 1000 RE to 900 mcg RAE
- Conversion Factors:

1 RAE = 1 mcg retinol

1 RAE = 12 mcg beta-carotene

Folate (Voluntary nutrient)

- Label unit has changed from mcg to mcg Dietary Folate Equivalents (DFE)
- Change from 200 mcg to 400 mcg DFE
- Conversion Factors:

1 mcg DFE = food folate mcg + $(1.7 \times folic acid mcg)$

Nutrient Calculator

Genesis includes the Nutrient Calculator to help convert nutrient units

Novel Fibres

Defined Examples Substances obtained from agricultural crop by-"Novel fibres are ingredients manufactured to be sources of products and from raw plant materials not usually considered food (hull, straw, etc.) dietary fibre and consist of carbohydrates with a degree of Chemically modified substances (modified cellulose, polymerization of 3 or more that are not digested and partially hydrogenated beta-glucan, or guar gum) absorbed by the small intestine. They are synthetically Oligosaccharides (fructo-, galacto-, isomaltoproduced or are obtained from natural sources which have oligosaccharides) no history of safe use as dietary fibre or which have been Synthetic products (polydextrose) processed so as to modify the properties of the fibre Polysaccharide complex (glucomannan, xanthan contained therein. Accepted novel fibres have at least one gum, sodium alginate) physiological effect demonstrated by generally accepted Resistant starches scientific evidence." Syrup fibres

List of Dietary Fibres Reviewed and Accepted by Health Canada's Food Directorate:

https://www.canada.ca/en/health-canada/services/publications/food-nutrition/list-reviewed-accepted-dietary-fibres.html

Bilingual Requirements

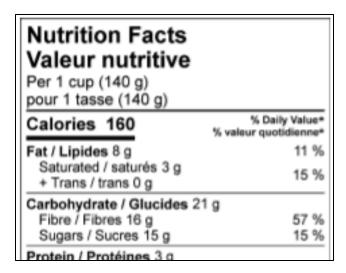


All mandatory information must be shown on the label in both English and

French

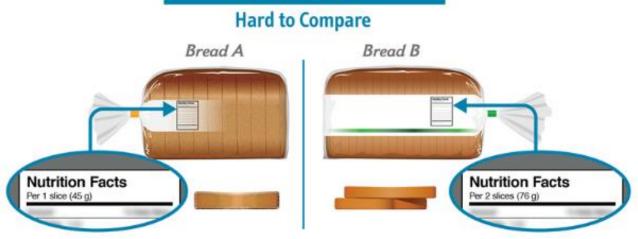
Exemptions:

- Specialty Foods
- Test Market Foods
- Local Foods
- Some provinces may have additional language requirements for products marketed within their jurisdiction. For example, the province of Quebec has additional requirements concerning the use of the French language on all products marketed in Quebec.

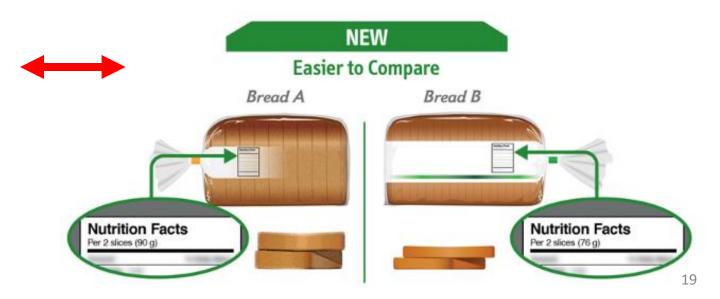


Updated Serving Sizes

- Serving Sizes more consistent for food groups
- Easier for consumers to compare one product or brand to another



ORIGINAL







- Serving Size is based on a specific amount of food (edible portion) and is a quantity of food that can be reasonably consumed at a single eating occasion
- The serving size must be expressed in the Nutrition Facts table by declaring a household measure (HM) first, followed by the corresponding metric measure (MM), within brackets
- Table of Reference Amounts for Food

Nutrition Facts Valeur nutritive Per 1 cup (140 g) pour 1 tasse (140 g) Per Container 2 par contenant 2	
Calories 540	% Daily Value* % valeur quotidienne*
Fat / Lipides 2 g	3 %
Saturated / saturés 0.3 g + Trans / trans 0 g	2 %
Carbohydrate / Glucides 12	
Fibre / Fibres 2 g	7 %
Sugars / Sucres 93 g	93 %
Protein / Protéines 6 g	
Cholesterol / Cholestérol 0	mg
Sodium 35 mg	2 %
Potassium 1350 mg	29 %
Calcium 200 mg	15 %
Iron / Fer 6.5 mg	36 %
*5% or less is a little, 15% or more	e is a lot

https://www.canada.ca/en/health-canada/services/technical-documents-labelling-requirements/table-reference-amounts-food.html

Foods in Single Serving Containers

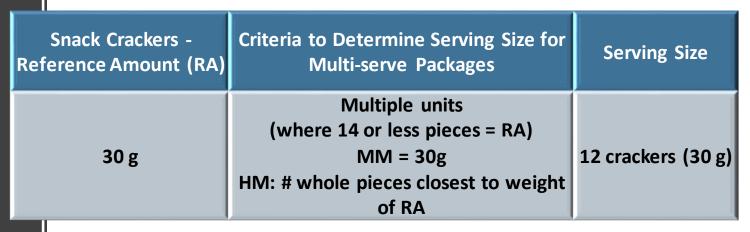


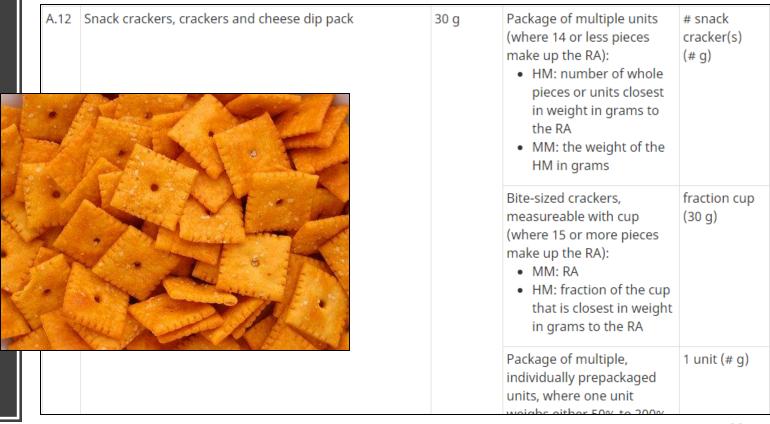


Weight or mL	Serving Size Declaration	Serving Size Example Milk RA = 250 mL; <200% = <500 mL
Less than 200% RA	Amount in whole container	Container size = 473 mL; 189% of RA Serving Size: 473 mL; entire container

Foods in Multiserve Packages

- Refer to Table of Reference Amounts for Food Groups
- Household Measure
 - Might be volume, pieces, slices, etc, or expressed as fraction of the whole
- Look for additional descriptions in the Table of RA





Servings Per Container



- Servings Per Container shows the total number of servings in the entire food package or container
- Servings per container is **not** required for Canada but may be voluntarily included

Nutrition Facts	
Valeur nutritive	
Per 1 cup (140 g)	
pour 1 tasse (140 g)	
Per Container 2	
par contenant 2	
Calories 540	% Daily Value* % valeur quotidienne*
Fat / Lipides 2 g	3 %
Saturated / saturés 0.3 g	2 %
+ Trans / trans 0 g	
Carbohydrate / Glucides 12	26 g 7 %
Fibre / Fibres 2 g Sugars / Sucres 93 g	93 %
Protein / Protéines 6 g	33 70
Cholesterol / Cholestérol 0	
Sodium 35 mg	2 %
Potassium 1350 mg	29 %
Calcium 200 mg	15 %
Iron / Fer 6.5 mg	36 %
*5% or less is a little , 15% or more *5% ou moins c'est peu , 15% ou p	

²³

Ingredient List Format



• In descending order by weight of the ingredients before they are combined to form the prepackaged product. In other words, based on what was added to the mixing bowl.

type height

requirements

- Declared by common names
- Must be in English and French
- Mostly lower case text, use upper case when:

1st letter of each ingredient

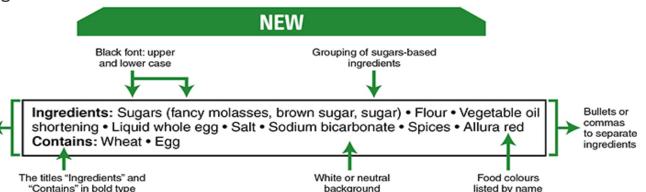
Food additive acronym

Alpha-descriptor

- Group sugars-based ingredients in brackets
 Use lower case for bracketed items
- List Food Colours by Individual Common Names
- Use bullets or commas to separate ingredients

The following ingredients can be listed at the end of the ingredients list in any order:

- Spices, seasonings, herbs (except salt)
- Natural and artificial flavours
- Flavour enhancers
- Food Additives, except ingredients of food additive preparations or mixtures of substances for use as a food additive
- Vitamins and their salts or derivatives of vitamins
- Mineral nutrients and their salts



Sugars-based Ingredients



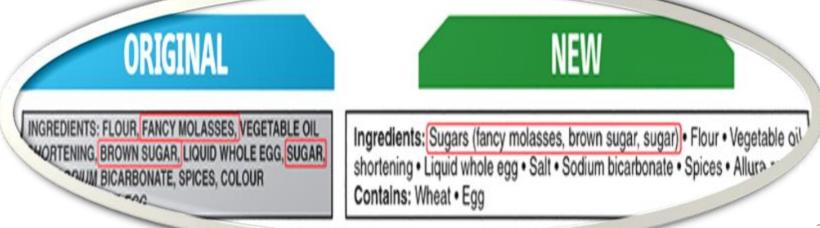
- Are required to be grouped within the list of ingredients following the term "Sugars"
- Sugars-based ingredient means, in respect of a prepackaged product:
- a) An ingredient that is a monosaccharide or disaccharide or a combination of these
- b) An ingredient that is a sweetening agent other than one referred to in paragraph (a); and
- c) Any other ingredient that contains one or more sugars and that is added to the product as a functional substitute for a sweetening agent

Grouping Sugars on the Ingredient List



Sugars-based ingredients grouped are in brackets in descending order by weight after the name "Sugars" to help consumers:

- Quickly identify the sources of sugars added to the food
- Understand how the amount of sugar added to the food compares to other ingredients



Allergens, Gluten, and Sulfites



Food allergen means any protein from any of the following foods, or any modified protein that includes any protein fraction derived from any of the following foods:

- Crustaceans
- Eggs
- Fish
- Milk
- Mustard seeds
- Peanuts
- Sesame seeds
- Shellfish
- Soybeans
- Tree Nuts: almonds, Brazil nuts, cashews, hazelnuts, macadamia nuts, pecans, pine nuts, pistachios or walnuts
- Wheat or triticale
- Gluten gluten protein or modified gluten protein or fraction from: barley, oats, rye, triticale, or wheat, and prolamins
- Sulphites added sulphites in a total amount of 10 ppm or more

Within the **ingredients** list

Ingredients: Apples, Pie crust [flour (wheat), shortening, liquid albumen (egg), salt], Sugar, Flour, Lemon juice, Whole milk, Cinnamon. May contain pecans.

Ingredients: Apples, Pie crust [flour, shortening, liquid albumen, salt], Sugar, Flour, Lemon juice, Whole milk, Cinnamon.

Using a **contains** statement

Contains: Wheat, Egg, Milk. May contain pecans.

OR

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Best Practices for Record Keeping



- Review and Document in Genesis
 - Ingredient records
 - Recipes
- Attachments
 - Attach supplier spec sheets, lab analyses, and other records
- Notes
 - Use the Notes fields in Ingredient and Recipe records to capture further detail and clarification
- Check Data Feature
- Spreadsheet to review Recipes
 - For every Recipe
 - Check for missing data

Genesis R&D Training



Genesis R&D Training | September 22-24, 2020 | web-based

Professional and/or Advanced training session. The first two days cover the fundamentals of the Genesis R&D Food program: creating ingredients, building recipes/formulas, nutrition analysis and reporting, labeling, and best practices. In addition, you can attend a third day of Advanced instruction, or just attend the Advanced session as a single day. Advanced training presents more complex scenarios and more comprehensive regulatory issues.

Genesis R&D Training | October 6-8, 2020 | web-based

Professional and/or Advanced training session. The first two days cover the fundamentals of the Genesis R&D Food program: creating ingredients, building recipes/formulas, nutrition analysis and reporting, labeling, and best practices. In addition, you can attend a third day of Advanced instruction, or just attend the Advanced session as a single day. Advanced training presents more complex scenarios and more comprehensive regulatory issues.

Genesis R&D Training | December 1-3, 2020 | web-based

Professional and/or Advanced training session. The first two days cover the fundamentals of the Genesis R&D Food program: creating ingredients, building recipes/formulas, nutrition analysis and reporting, labeling, and best practices. In addition, you can attend a third day of Advanced instruction, or just attend the Advanced session as a single day. Advanced training presents more complex scenarios and more comprehensive regulatory issues.

Contact <u>training@esha.com</u> with any questions or to inquire about training for your organization

See the Training Schedule at: https://www.esha.com/news-events/training-schedule/

QUESTIONS?



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