

An update on global regulatory landscapes for plant-based products

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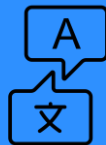
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Listing on the AIM market of London Stock Exchange (AIM: SAG)



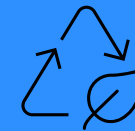
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State-of-the-art R&D facilities



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Languages spoken in-house



1

Sustainability practice: strategy, sustainable innovation, product stewardship

Unique access to Group resource: e.g. additional language skills, toxicologists, food chemists

Welcome – today's presenters

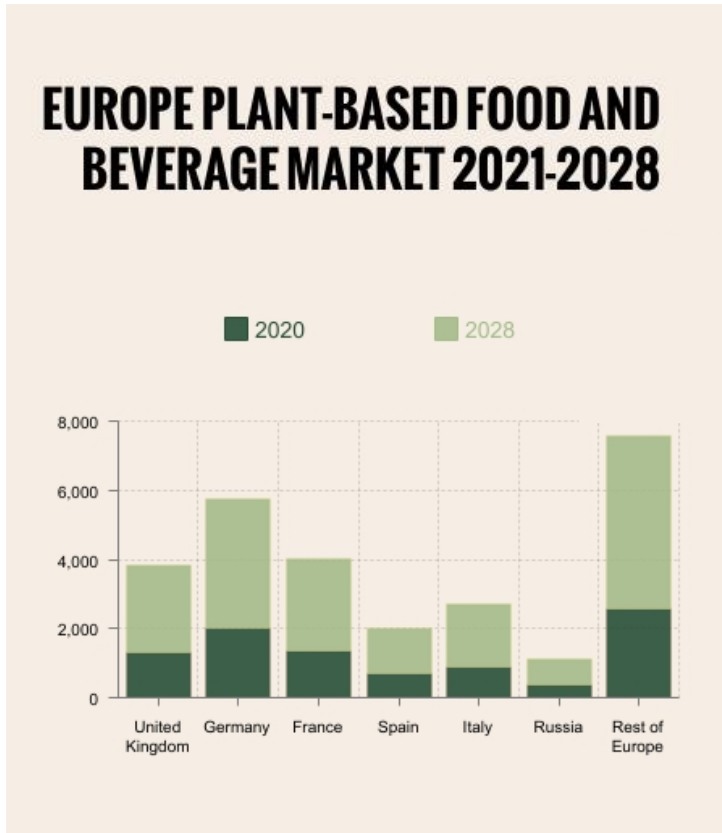


Leon Cook
Senior Membership Manager

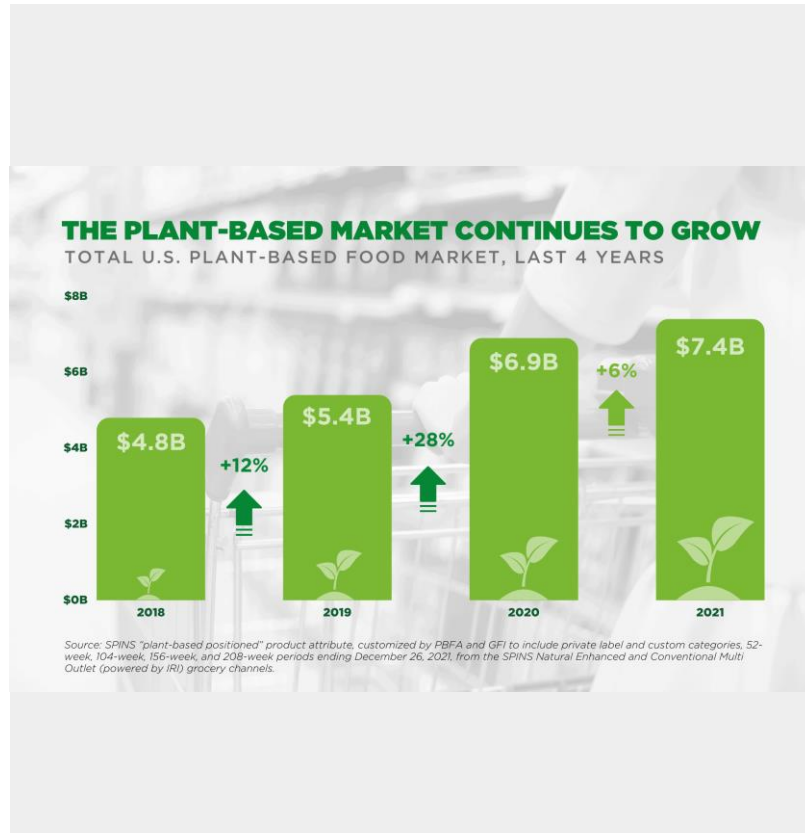


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Plant-based food sales have been growing and are expected to continue to grow



Source: Europe plant-based food and beverage market 2021-2028 (tritonmarketresearch.com)



Source: <https://www.plantbasedfoods.org/2021-u-s-retail-sales-data-for-the-plant-based-foods-industry>

Has the vegan bubble burst? Sales stagnate in UK as brands withdraw plant-based products

Oatly, Nestlé and Innocent Drinks are among those pulling products from shelves as figures show even Veganuary backfired

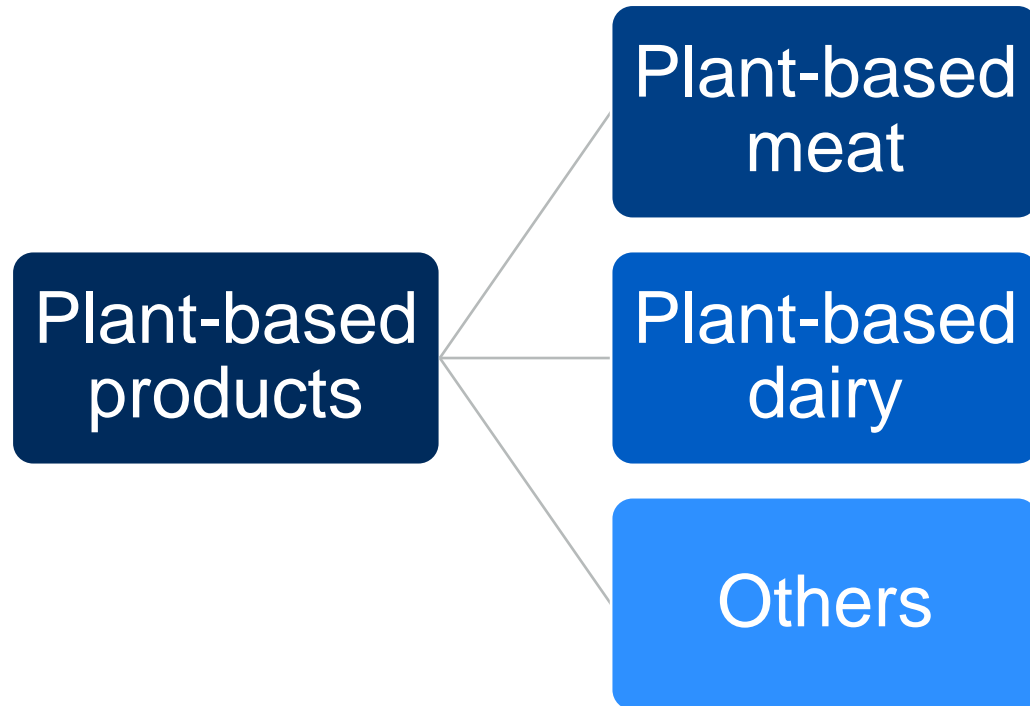


Plant-based sausages and steaks are all part of the vegan food boom. Nearly a quarter of food products launched in 2019 were labelled vegan. Photograph: Westend61/Getty Images

When the dairy-free brand Oatly launched a range of vegan ice-creams, including chocolate fudge and hazelnut swirl, in October 2019, it hoped to entice consumers with flavours described as "unashamedly indulgent".

Source <https://www.theguardian.com/food/2023/may/20/has-the-vegan-bubble-burst-sales-stagnate-in-uk-as-brands-withdraw-plant-based-products>

Plant-based meat alternatives and dairy product alternatives are the top categories of plant-based food



Plant-based sales in 10 categories across 13 countries in Europe between 2020-2022

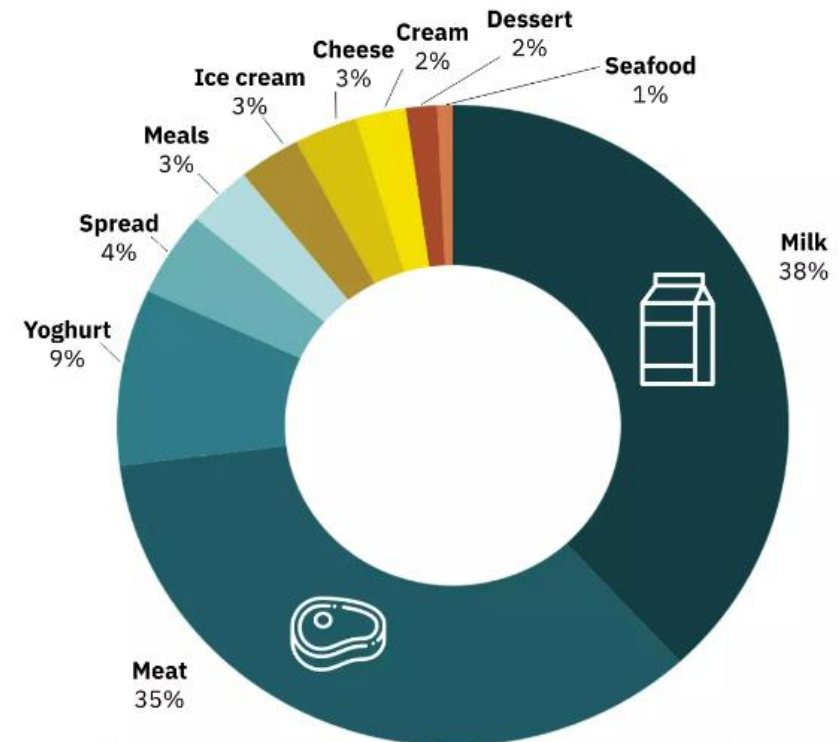


Chart created by Nielsen IQ, as cited in Good Food Institute Europe

Plant-based vs vegan vs vegetarian diet

	Plant-Based	Vegan	Vegetarian
Meat & Poultry 🐄 🐓	--	✗	✗
Seafood 🐟 🍤	--	✗	✗
Dairy 🥛	--	✗	✓
Eggs 🥚	--	✗	✓
Oil 🛢️	✓	✓	✓
Fruits & Veggies 🍏 🥬	✓	✓	✓
Grains 🌾	✓	✓	✓
Legumes 🥜	✓	✓	✓

✗ - No -- - Avoid ✓ - Yes

Source:
<https://www.findrcpes.com/thesizzle/how-to-guide-plant-based-diet>

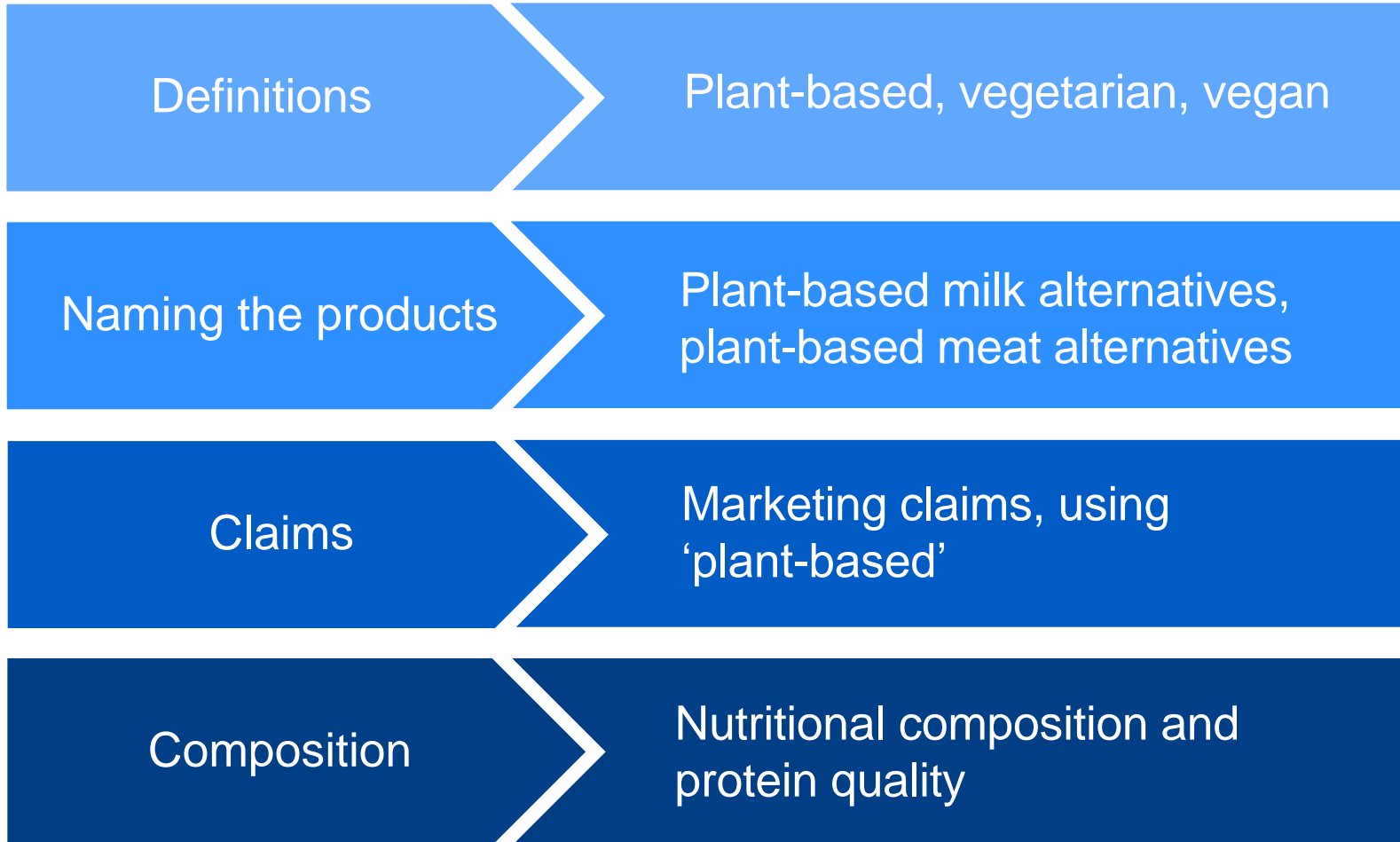
General perceptions

- The terms 'plant-based', 'vegan' & 'vegetarian' may be perceived differently by consumers
- Survey conducted by the International Food Information Council – 32% of respondents regarded plant-based as 'vegan', 20% regarded it as 'vegetarian' and 8% regarded it as eating an abundance of fruits and vegetables but with no limit on consumption of animal products
- 'Plant-based' can mislead consumers into thinking the product is sourced wholly from plant-based ingredients (without any cross contamination) when this may not be the case



Flexitarians eat plant-based foods while reducing, but not eliminating, meat and other animal products

Today's agenda – 4 key challenges



Definitions



Definitions

	Plant-based	Vegan	Vegetarian
Argentina			
Canada			
China	<i>Plant based meat</i>		
EU			
France			
GCC			
Germany			
India			
Japan	<i>Plant based meat</i>		
South Korea			
US			



Definition of 'vegan' products

Argentina

- The term 'vegan' is reserved for products which do not contain ingredients of animal origin and/or derivatives thereof (including additives and processing aids) and whose manufacturers and importers certify to the competent national bodies that their processes and management system guarantee compliance with the provision under the Argentine Food Code, which may be verified by an officially recognised body

India

- 'Vegan food' means the food or food ingredient (including additives, flavourings, enzymes and carriers) or processing aids that are not products of animal origin, and in which at no stage of production and processing, ingredients (including additives, flavourings, enzymes and carriers) or processing aids that are of animal origin have been used

France

- Foodstuffs and food ingredients (including additives, flavourings, enzymes and carriers) or processing aids which are not products of animal origin and in which at no stage of manufacture and processing, no use has been made of ingredients (including additives, flavourings, enzymes and carriers) or processing aids of animal origin
- **No testing on animals must have been carried out, unless otherwise provided by law or regulation**

Germany

- Vegan foods are foods that are not products of animal origin and that which, at all stages of production and processing, do not contain any ingredients (including additives, carriers, flavourings and enzymes) processing aids or substances which are not food additives but are used in the same way and with the same purpose as processing aids of animal origin, whether processed or unprocessed, have been added or used
- **Microorganisms (bacteria, yeasts and fungi) are of non-animal origin and may also be used in foods that are advertised as 'vegan'**

Definition of 'vegetarian' products

Argentina

- The term 'vegetarian' is reserved for products which do not contain ingredients of animal origin and/or their derivatives (including additives and processing aids), with the exception of the following ingredients and/or their constituents or derivatives: milk and milk products, eggs or egg products obtained from living animals, and honey or apiculture products

India

- “‘Vegetarian food’ means any article of food other than non-vegetarian food as defined in these regulations”
- ‘Non-vegetarian food’ means an article of food which contains whole or part of any animal including birds, insects, fresh water or marine animals or **eggs** or products of any animal origin, but does not include milk, milk products, honey or bees wax or carnauba wax or shellac

Canada

- For vegetarians, in addition to plant foods such as fruits, vegetables, grains and nuts, their diet may include animal products not derived from slaughter, such as eggs, milk and cheese. Animal products resulting from slaughter, such as animal/fish flesh, bone, stock, fats and gelatin, are not, by definition, included in a vegetarian or vegan diet
- The term 'vegetarian' may be used to describe foods that are suitable for any one of the types of vegetarian diets. For example:
 - lacto-ovo (or ovo-lacto)-vegetarian – permits plant foods plus dairy and egg
 - lacto-vegetarian – permits plant foods plus dairy, no eggs
 - ovo-vegetarian – permits plant foods plus eggs, no dairy
- If any of the vegetarian claims above or other type of vegetarian claims are being made on a food, the food is expected to contain only ingredients derived from the sources included in that type of diet

Germany

- Vegetarian foods are foods that meet the requirements of vegan foods, but whose production deviates from these requirements:
 - milk
 - colostrum
 - farm poultry eggs
 - bee honey
 - beeswax
 - propolis or
 - wool fat/lanolin from wool obtained from live sheep
 - or their components or products derived therefrom may have been added or used

Gulf Technical Regulation GSO 2704:2022: *Plant-based substitutes for meat and other products of animal origin (vegan product)*

Definition: Plant-based substitutes for meat

Food products are manufactured by extracting proteins from plant sources such as soybeans, wheat or peas, and then the protein extracts are subjected to heating, extrusion and cooling to produce a meat-like texture. Other ingredients (such as flavorings and food colors) are added to mimic the flavor, taste and appearance of meat.

- ✓ The proteins and fats in the plant-based substitute product should be from a plant-sourced raw material
- ✓ Animal products or one of its derivatives such as fat, protein and gelatin are prohibited to add with the plant-based products of meat, egg or milk, etc.
- ✓ Food additives (including micro nutrients such as vitamins and minerals) provided being not of an animal origin, can be used according to what is stated in the GSO standard mentioned in item No. (2.10)
- ✓ It is prohibited to manufacture products of plant-based substitutes in the same production line of animal products or use the same facility during storage, preparation, cooking or display in order to prevent the transfer of animal residues to plant products and cross-contamination with allergens or animal materials in production



Plant-based meat definitions in China and Japan

China group standard voluntary group standard: **plant-based meat products (definition)**

Foodstuffs obtained from raw materials of plant origin (e.g., soybean, cereal grains, as well as algae and fungi) or the products thereof as the sources of protein and fats, with or without supplementary ingredients, additives including fortificants, bearing similar texture, flavour, taste and appearance of meat and meat products from livestock, poultry or seafood.

China group standard voluntary group standard: **plant-based meat products (basic requirements)**

Protein and fat shall be derived from plant raw materials; **animal-derived protein and fat shall not be added.**

Food additives (including food nutritional fortifier), microorganisms and microorganisms-derived ingredients can be used. Exclude water and edible salt, the total **added non-plant ingredients shall not exceed 10% of the total mass of the product.**

China (DRAFT voluntary standard): **meat analogues or substitutes**

Meat analogues or substitutes: foodstuffs obtained from plant protein (e.g., soybean proteins, cereal proteins, oilseed proteins, algal proteins, etc.) or microbial proteins (fungal protein etc.) as main raw materials, with or without supplementary ingredients, additives and fortificants, bearing similar appearance, texture, nutritional value, flavour, taste and colour of meat products.

Japan: plant-based (plant-derived) food (alternative meat)

‘Plant-based (plant-derived) food’ (alternative meat) refers to products made to resemble livestock products such as meat or marine products such as fish using mainly plant-derived raw materials (excluding livestock and marine products). Even if animal-derived additives are included, if the main raw material is plant-derived, it will be included in ‘plant-based (plant-derived) food.’ – Q&A on plant based food related information by Consumer Affairs Agency.

Naming



Naming plant-based products

	Dairy alternatives	Meat alternatives
	Are the terms 'milk', 'cheese', 'cream' allowed?	Are the terms 'meat'/'burger'/'sausage' etc. allowed?
Argentina		
Canada		Simulated meat product
China		
EU		MS may have additional rules
GCC		
Russia		
South Africa	Imitation, 'dairy free'	
UK		
Japan		
US		'Imitation'



Codex Alimentarius

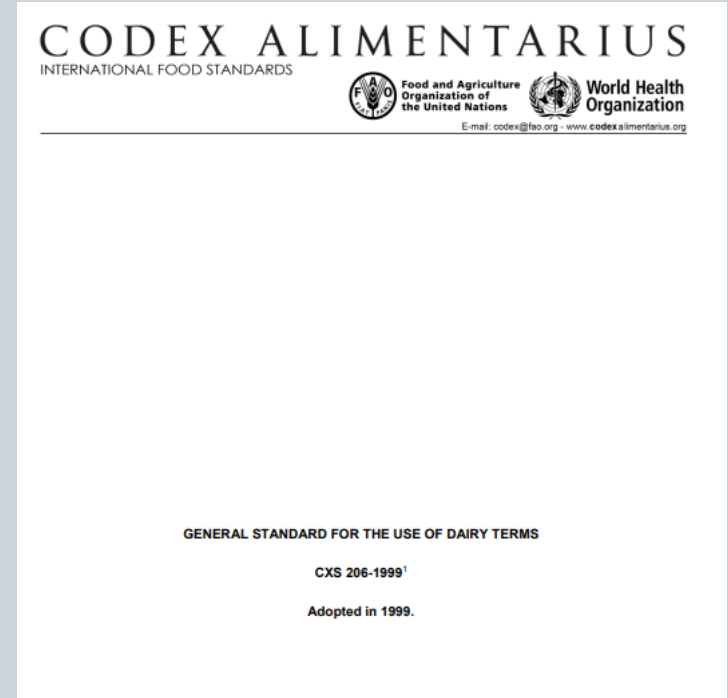
Dairy terms means names, designations, symbols, pictorial or other devices which refer to or are suggestive, directly or indirectly, of milk or milk products.

4.6 Use of dairy terms for other foods

- 4.6.1** The names referred to in Sections 4.2 to 4.5 may only be used as names or in the labelling of milk, milk products or composite milk products.
- 4.6.2** However, the provision in Section 4.6.1 shall not apply to the name of a product the exact nature of which is clear from traditional usage or when the name is clearly used to describe a characteristic quality of the non-milk product.
- 4.6.3** In respect of a product which is not milk, a milk product or a composite milk product, no label, commercial document, publicity material or any form of point of sale presentation shall be used which claims, implies or suggests that the product is milk, a milk product or a composite milk product, or which refers to one or more of these products².
- 4.6.4** However, with regard to products referred to in Section 4.6.3, which contain milk or a milk product, or milk constituents, which are an essential part in terms of characterization of the product, the term “milk”, or the name of a milk product may be used in the description of the true nature of the product, provided that the constituents not derived from milk are not intended to take the place, in part or in whole, of any milk constituent. For these products dairy terms may be used only if the consumer would not be misled.

If however the final product is intended to substitute milk, a milk product or composite milk product, dairy terms shall not be used.

For products referred to in Section 4.6.3 which contain milk, or a milk product, or milk constituents, which are not an essential part in terms of characterization of the product, dairy terms can only be used in the list of ingredients, in accordance with the *General Standard for the Labelling of Prepackaged Foods* (CXS 1-1985). For these products dairy terms cannot be used for other purposes.



EU TofuTown Case & Amendment 171 & 165

In 2017, the ECJ ruled that plant-based foods could not use dairy terms such as milk, butter, cheese & yogurt

- The ECJ was ruling in a case referred to it by a German court and involving German food company TofuTown
 - *“The addition of descriptive or clarifying additions indicating the plant origin of the product concerned, such as those used by TofuTown, has no influence on that prohibition”*

In May 2019, Amendment 171 was adopted by the AGRI Committee and approved in October 2020. AM171 was withdrawn in May 2021

- *AM171 would go further than the ECJ ruling by banning terms such as buttery and creamy. Anything that constitutes “imitation or evocation” of dairy products would not be allowed*

Amendment 165 which aimed to reserve meat terms, such as ‘burger’, for animal products was dropped at the same time



Naming of plant-based products



The product name is formed by combining the term ‘plant-based drink’ and information about the type of grain, nut, coconut, raw material used, for example: ‘plant-based soy drink’ or ‘soy drink’; ‘plant-based drink from coconut and rice’ or ‘coconut-rice drink’. The terms related to products of animal origin (milk, cream, yogurt, etc.) shall not be used in the names of plant-based drinks.



Naming the product in the form of ‘vegan meat’, ‘vegan eggs’, ‘rice milk’ or ‘almond milk’ is **prohibited**, as these names are specific to animal-based products.



The European Parliament has voted to accept proposals to ban the use of words like ‘yoghurt substitute’ or ‘imitation cheese’ for alternative products that contain no dairy. But MEPs voted to reject proposed bans on terms like ‘veggie burger’ or ‘veggie sausage’ for plant-based alternatives to meat (2020).

However, Member States may have their own rules for plant based meat alternative products – e.g. France, Belgium in discussion.

Naming of plant-based products



Authorities note: The Department of Agriculture, Land Reform and Rural Development has published (in June 2022) a letter indicating that meat analogues cannot use product names prescribed and reserved for processed meat products. Plant-based egg substitutes cannot use the term 'egg'.



Product name can include terms such as 'milk, 'meat' 'burger' etc.; however, a statement to clarify that the product does not contain 'milk', 'meat' etc. should be provided on the label.



In the case where the product category name does not reflect the true nature of the final product or sufficiently indicate that the product uses the raw materials of plant origin, the descriptive words indicating sufficiently that the ingredients are from plant origin or the products mimic meat products of certain animal should be used together with product name, for example:

- To use descriptive words including the word 'plant': plant beef, plant-based beef, plant-derived beef, plant protein beef or plant-made beef
- To add the word 'plant' or equivalent in front of the product name for the conventional meat-based counterparts: plant hamburger, plant sausages, plant ham, plant steak, plant meat balls, plant bacon, etc.

Naming of plant-based products



Labeling of Plant-Based Milk Alternatives and Voluntary Nutrient Statements: Guidance for Industry

Draft Guidance

This guidance is being distributed for comment purposes only.

Canada Health Food Guide: Healthily eating recommendation eliminate dairy as a category, plant-based 'milk', 'cream' and 'cheese' products



Plant based products must not use 'regulated names' of foods of animal origin defined in the Argentinian Food Code, except for references regarding its flavour and/or taste.



Plant-based products' standards

	Plant-based milk / drink	Plant-based meat
Argentina	<u>DRAFT</u> : Vegetable drinkable preparations	
Brazil	Detailed plant-based regulation also in early stage development	
Canada		Simulated meat products
China	<ul style="list-style-type: none"> Plant Protein Beverage – Almond Beverage Plant Protein Beverage – Walnut Beverage Plant Protein Beverage – Soymilk and Soymilk Beverage 2 x voluntary group standards on <ul style="list-style-type: none"> Plant-based milk powder alternative Plant-based protein drinks 	<ul style="list-style-type: none"> Plant-based meat products <u>DRAFT</u> 3 x voluntary industrial standards on meat alternatives (veggie meat products) – 1. General, 2. Stewed and 3. Prepared Voluntary group standards – plant-based meat alternative
Japan	Soy milk	Textured soy protein products
Mexico	<ul style="list-style-type: none"> Non-alcoholic beverages containing vegetable or fruit Prepacked non-alcoholic flavoured beverages 	
Russia	Plant-based drinks (from grain, nuts, coconut)	
South Africa	Imitation daily products	Meat analogue (non-meat based products)
UAE	Milk substitutes	

Claims



Plant-based / meat-less claims



'Free from' claims



Nutritional composition



Joint FAO/WHO Food Standards Programme

ANNEX – Initial review of policies and guidelines for the nutritional composition of plant-based and other alternative protein foods and beverages internationally

Country/Region	Nutritional Composition of Plant-based and other Alternative Protein Source Foods and Beverages
European Union	No specific nutritional composition requirements for plant-based/other alternative protein source products. Nutrients can be voluntarily added to foods, including plant-based alternatives, to provide a similar nutritional value to foods for which they are intended as alternatives. ⁴³
United States	No specific nutritional composition requirements for plant-based/other alternative protein source products. Nutrients can be voluntarily added to plant-based alternatives to replace those nutrients found in the animal-based counterpart. ⁴⁴
Canada	Simulated meat and poultry products ⁴⁵ must meet certain nutritional compositional criteria, ⁴⁶ and plant-based beverages are permitted to voluntarily add certain vitamins and minerals. ⁴⁷
Australia/ New Zealand	No required nutritional composition requirements for plant-based/other alternative protein source products. Certain vitamins and minerals can be added to both meat analogues and plant-based milk alternatives as long as a certain level of protein is present (12% for meat analogues, 3% for plant-based milk alternatives). ^{48,49}
Japan	No specific nutritional composition requirements for plant-based/other alternative protein source products. In April 2020 the Japanese Ministry of Agriculture, Forestry and Fisheries established the “Food Tech Study Group” with the goal to establish regulations for a variety of emerging protein sectors including alternative meats. ⁵⁰
China	No specific nutritional composition requirements for plant-based/other alternative protein source products. A voluntary standard for plant-based meat products was developed in 2020 by the Chinese Institute of Food Science and Technology, and implemented in June 2021. ⁵¹ The voluntary standard includes basic composition requirements, including that the formulation shall be based on the nutrition composition of the animal product it is simulating, and manufacturers are encouraged to improve the protein content and quality, and reduce total fat and sodium content of products.

Purpose and scope of the new work

- The purpose of this project is to develop guidance and general principles for the nutritional composition of foods and beverages made from plant-based and other alternative protein sources which are intended to replace animal-based products
- The scope of this project:
 - Includes foods and beverages with protein derived from plants, bacteria, insects, and fungi, which are intended to replace a meat, poultry, fish/seafood, or dairy product; and
 - Does not include animal-based or animal cell-based proteins

https://www.fao.org/fao-who-codexalimentarius/sh-proxy/pt?lnk=1&url=https%253A%252F%252Fworkspace.fao.org%252Fsites%252Fcodex%252FMeetings%252FCX-720-43%252Fdocuments%252Ffn43_07e.pdf

Nutritional composition



The composition of the final plant-based substitute for meat products, eggs, milk, dairy products, meat, fish, fats, etc., must mimic the main product in terms of protein content. Additionally, the fat and sodium content of the plant-based substitute product should not exceed the fat and sodium content of the original product.



The formula of final product shall be designed based on the nutritional composition of the animal product it simulates. It is encouraged to improve protein quality, increase the protein content, and reduce the total fat and sodium content.



- Minimum total protein content
- Minimum protein rating
- Maximum fat content



- Amino acid score
- Soy protein content

Protein Digestibility Corrected Amino Acid Score (PDCAAS)

Upcoming changes



leatherhead food research

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