



University of
Chester



NO DAIRY?
NO PROBLEM!



LEARNING ABOUT
PLANT-BASED ALTERNATIVES TOGETHER

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Plant-Based Dairy Alternatives

What is a 'plant-based dairy alternative'?

The term 'plant based dairy alternative' can be used to describe a number of products made for the purpose of replacing typical dairy products made using animal milks. They can be made from a range of plant sources such as oats, soybean, almonds, coconut, hazelnuts, rice and more!

Why is it important to consume regular or plant-based dairy products?

Dairy products are an essential component of a healthy balanced diet. They are important in ensuring you reach your daily recommended calcium intake which for adults is 700mg per day. Achieving your recommended calcium intake is important for maintaining bone health. Your peak bone health is achieved between the ages of 18 to 30 years therefore it is important to ensure calcium is present within your diet during this time to prevent health complications later in life.

Plant-based milks are typically fortified with additional micronutrients, including calcium, in order to make sure you can still achieve your recommended daily intake.

The Health Benefits

Plant-based milks are often fortified with additional vitamins and minerals (but make sure you check the label!). Typically, most plant-based milks are fortified with calcium, vitamin D and vitamin B12 however some will also have additional vitamins naturally available such as vitamin E in almond milk (as almonds are naturally high in this vitamin).

Vitamin D is important for your health as it works with calcium in maintaining your peak bone health.

Vitamin B12 is essential for maintaining healthy body cell function and making DNA.

How much dairy should I be having?

It is recommended that for both dairy and dairy alternative products a portion is:

- ▶ 200mls milk
- ▶ 125g yoghurt
- ▶ 30g cheese

Throughout the day you should have approximately 3 to 4 portions of dairy depending on the product. Remember it is important to check food labels and make sure you are meeting your calcium requirements.

Milk



a small glass

Yoghurt



A small pot or 3 tablespoons

Cheese



1 matchbox sized piece

Other Benefits

There are other benefits which can be associated with consuming some of the plant-based dairy alternatives such as lowering cholesterol and maintaining a healthy immune system.

Additional properties	Which plant-based milks are they in?	What benefit do they have?
Phytosterols	Soy & rice	Helps lower cholesterol
Isoflavones	Soy	Protective against cardiovascular disease and osteoporosis
β-Glucan	Oat	Helps to lower cholesterol
Lauric acid	Coconut	Aids in brain development and maintaining a healthy immune system

Cost and Nutrient Content

Common factors which usually influence choice when deciding whether to purchase plant-based or animal dairy are cost and nutrient content. The table below lays out these figures and highlights that whilst plant-based is more expensive some products may be more suitable nutritionally, such as in providing fibre.

Milk	Price/ litre	Kcal/ 100ml	Protein (g) /100ml	Fibre (g) /100ml	Saturates Fat (g)/100ml	Sugar (g) /100ml
Semi Skimmed cow's milk	71p	50	3.6	0	1.1	4.8*
Oat	£1.40	44	0.3	1.4	0.1	3.3*
Soy	£1.30	42	3.3	0.6	0.3	2.5
Almond	£1.70	22	0.4	0.4	0.1	2.4
Rice	£1.40	47	0.1	0	0.1	3.3*
Coconut	£1.70	20	0.1	0.1	0.9	1.9*
Hazelnut	£1.70	29	0.4	0.3	0.2	3.2

All plant-based milks above contain 120mg calcium, 0.75mg Vit D and 0.38ug Vit B12 per 100ml

Semi-skimmed cow's milk contains 124mg calcium, 0mg Vit D and 0.9ug VitB12 per 100ml

***=Naturally occurring sugars, other alternatives are the sweetened original versions of the products, the unsweetened alternatives are recommended**

Please Note - all values were taken from the Alpro 'original' long-life plant-based milks, please check the labels for variation in nutritional content and price between brands.

(All nutritional and price values correct as of January 2021)

Sustainability and the Environment

Environmental sustainability can be defined as

“meeting the resource and services needs of current and future generations without compromising the health of the ecosystems that provide them” (Morelli, 2011)

Scientific evidence, media publicity and knowledge of how our own lifestyle choices can individually affect the environment are increasing. One of the ways we can reduce our impact on the environment is through our diet by considering the following factors:

- ▶ Carbon dioxide (CO₂) emissions/carbon footprint e.g. by using local produce
- ▶ Water usage e.g. steam vegetables not boil as it uses less water
- ▶ Land usage e.g. not using products which are linked to deforestation
- ▶ Packaging e.g. using packaging can be recycled

Switching from animal dairy to plant-based dairy can be more environmentally friendly and sustainable, e.g. **soya** produces **1kg CO₂/L** whereas **cow's milk** produces **3.2kg CO₂/L**. **Soya milk** also uses **28L of water** per litre of milk produced, in comparison to **cow's milk** requires a staggering **628L**. A considerable amount of the water being used for cows' milk is the water required for the crops to grow that feed the cows.

BUT remember plant-based alternatives are **NOT** all the same!

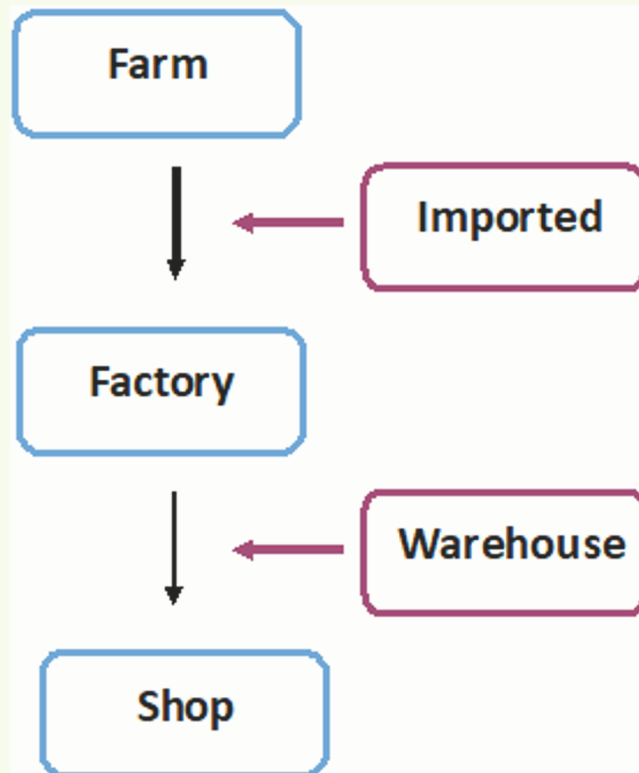
For example, the production of almond based dairy uses **MORE** water than other plant-based milk products.

Researching the brands values and stand points of environmental factors is also important. Some companies, such as Alpro, strive for reducing the carbon emission of their products. Alpro pride themselves as a company for reducing the environmental impact and sustainability of their products.

Where does our food come from?

Products that have been imported from outside of the UK are going to have travelled further leading to a greater carbon footprint as more fossil fuel (produces CO₂) will be used.

The flow chart below shows a simplified journey a food product might undertake. Does thinking about the journey your food has taken influence your dietary choices?



TOP TIPS

- Look on packaging for recyclable symbols/numbers and compare to your local council kerbside recycling
- Research different companies' sustainability efforts and company values
- Consider where the product was manufactured or grown
Further to travel = higher CO₂ emissions
- Any change (small or big) is a positive change
- Don't worry if you don't like plant-based milks other changes can be made, such as following recommended portion sizes



Products Available and Recipes

There are lots of new dairy-alternative products available, which can be used in a range of different recipes. Some examples include:

Savoury:

- ▶ Carbonara
- ▶ Veggie chilli
- ▶ Sweet potato curry
- ▶ Macaroni cheese with vegetables
- ▶ Lasagne
- ▶ Creamy dips e.g. avocado or zucchini

Drinks:

- ▶ Creamy coffees
- ▶ Smoothies
- ▶ Cocktails e.g. virgin blueberry sour

Desserts:

- ▶ Chocolate cake
- ▶ Blueberry and vanilla cake
- ▶ Chocolate orange brownies

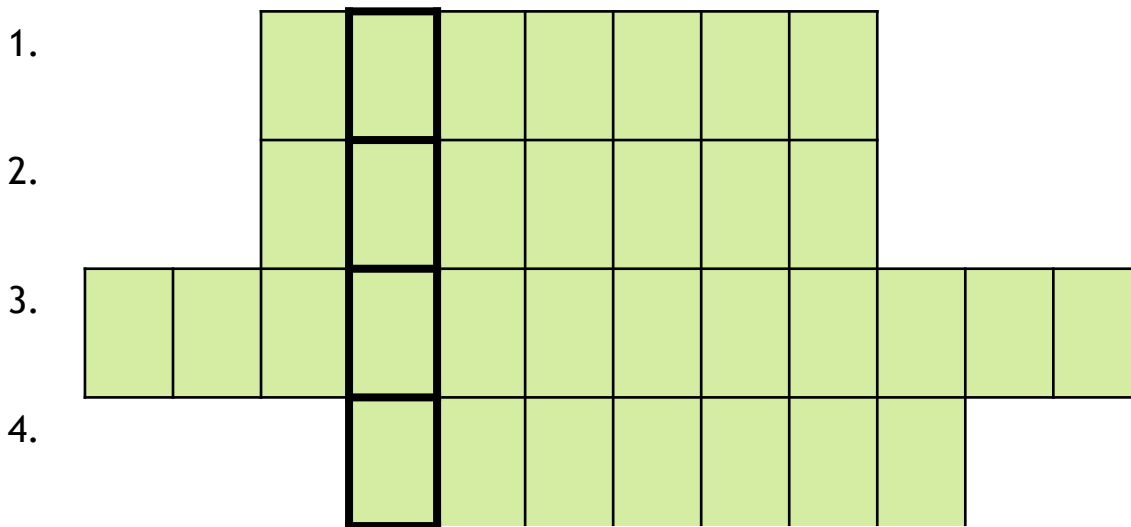
Recipes for the above dishes can all be found on the Alpro website (www.alpro.com/uk/recipes)
If you prefer other plant-based dairy alternatives these can be used in their place.

There are lots of different brands which are producing new and innovative plant-based dairy alternatives which could make it easier to stick to a dairy free diet without missing out on the food and drinks you like!

- ▶ **Milks** which can be whisked into foams and can be used to make frothy, flat or iced coffees.
- ▶ **Pre-packaged coffee products** which come in on-the-go cups or 1L cartons.
- ▶ **Yoghurts** which come in a wide variety of flavours such as plain, fruity, coconut, almond, oats and also Greek style.
- ▶ **Individual desserts** which are available in vanilla, chocolate and coconut
- ▶ **Ice cream** which are available in both traditional and fruity flavours such as mango, macchiato, chocolate, hazelnut, vanilla and coconut.
- ▶ **Cream alternatives and custards** are also available which can be used when making dishes or to serve with other foods.

Puzzle time!

Answer the questions to get the horizontal answers which will then reveal the vertical word. The answers can be found on the back page at the bottom



1. What is grown on palm trees and can be used to make a form of plant-based milk?
2. What is a mineral which can be found in dairy and is essential for bone formation and maintenance?
3. What additional properties does both soy and rice plant-based milk have?
4. What is a type of legume that can be used to make dairy alternatives

More Information

Alpro products

<https://www.alpro.com/uk/products/drinks/>

Alpro recipes

<https://www.alpro.com/uk/recipes/>

BDA one blue dot campaign:

<https://www.bda.uk.com/uploads/assets/539e2268-7991-4d24-b9ee867c1b2808fc/a1283104-a0dd-476b-bda723452ae93870/one%20blue%20dot%20reference%20guide.pdf>

BDA - Portion sizes

<https://www.bda.uk.com/resource/food-facts-portion-sizes.html>

Further information on dietary intake and sustainability:

<https://www.bda.uk.com/uploads/assets/2cdcc0fe-12ee-4a56-a0d7575eb010de9e/OBD-Sustainable-Diet-Recommendations-1.pdf>

Information of how diet impacts the environment:

<https://www.bda.uk.com/uploads/assets/d8463c33-5d7b-4f92-90e6ab4338cedd81/The-Environmental-Impact.pdf>

References

- ▶ British Dietetic Association. (2019). *Portion sizes: Food Fact Sheet*. Retrieved from <https://www.bda.uk.com/resource/food-facts-portion-sizes.html>
- ▶ Morelli, J. (2011). Environmental sustainability: A definition for environmental professionals. *Journal of environmental sustainability*, 1(1), 2.
<https://scholarworks.rit.edu/cgi/viewcontent.cgi?article=1007&context=jes>