



Nutrition & Sustainability Fact Sheet

connect to the world of dairy

THE CARBON FOOTPRINT AND NUTRITIONAL VALUE OF DAIRY PRODUCTS

Recent studies discover the low climate impacts of dairy products when compared to their importance for a healthy diet.

- › **Dairy is a natural nutrient package offering a resource and carbon efficient way of achieving a balanced diet**
- › The FAO highlights that sustainable diets need to be nutritionally adequate
- › Dairy products are important in a healthy diet due to their high nutritional value
- › A sustainable diet links impact on climate with its nutritional value and nutrient security
- › Scientific studies analysing the nutrient density and carbon footprint of foods identify dairy as a major contributor to healthy diets with a lower overall environmental impact
- › Eliminating dairy has nutritional consequences
- › Dairy foot-printing is evolving to provide an even more accurate picture
- › **Dairy are part of sustainable diets**

The importance of a sustainable and healthy diet for both planet and people

To combine both of these perspectives a suitable diet would be deemed to be:

- protective and respectful of biodiversity and ecosystems,
- culturally acceptable,
- accessible,
- economically fair and affordable
- nutritionally adequate,
- safe and healthy.

According to the FAO's work on sustainable and healthy diets in 2010, the aim of such diets would be to optimise both our natural and human resources¹.

Is dairy part of a sustainable diet?

Current scientific studies on diet scenarios suggests that diets containing relevant parts of dairy emit more greenhouse gas emissions (GHGe, also referred to as the carbon footprint) compared to other diets, but are far more nutritionally adequate.

A publication from Adam Drewnowski^A indicates that, from studies carried out in France and the United Kingdom, the most nutrient dense foods and the highest-quality diets have been associated with higher per calorie carbon costs. Based on the comparatively high GHGe on a per kilo basis

for animal foods, including dairy, reductions in the consumption of animal products has been proposed as contributing to more sustainable diets.

The principle is that to reduce the dietary carbon footprint it is necessary to eat less animal products.

So reducing the dietary carbon footprint is to eat less animal products?

The study also concluded that animal products, including dairy, do have a higher carbon footprint than sugars or grains, but are naturally more nutritional.

However, when avoiding some food groups, and particularly a nutrient dense food like dairy, replacing the nutrients with other foods also comes with a large environmental cost.

Current data on healthy sustainable diets highlights the positive role of dairy

A survey based on self-selected diets of a sample of adults show that the net result of avoiding dairy may, in fact, result **a higher climate impact**.

As a matter of fact, eating less of nutrient dense foods have to be compensated by consuming more of the other nutrient dense but low energy foods such as fruits and vegetable, which therefore increase the GHGE.

So, combining the overall balance of inputs and outputs of dairy based diets, the results are extremely positive, and favour dairy.

¹ Different research projects are ongoing to clarify the term of sustainable diets, e.g. at Wageningen University, or have shown some approach that is possible (LifeWell for Life plates)



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Eliminating dairy products from the diet has nutritional consequences

A recent study carried out by the University of Copenhagen^B, showed that excluding dairy products from the diet does not necessarily reduce GHGE but may have negative nutritional consequences.

It agrees that reductions in animal-based food makes the greatest contribution to reducing diet related carbon.

It confirmed on a per kilo basis dairy products had a relatively high carbon footprint but also a high nutritional value.

If dairy products were removed from the diet, it would be difficult to fulfil the daily intake of vital nutrients like calcium.

It concluded that when optimising a diet with regard to sustainability, it is crucial to account for the nutritional value and not solely focus on carbon per kilo of products.

Dairy products have a higher nutrient density compared to low carbon food products

A third study^C, by the American Society for Nutrition, analysed the challenge of ensuring sustainable nutrition security in the face of climate change.

It correlated to the results to a French study illustrating that many foods with low carbon impact also had relatively low nutritional values. Some of the lowest values were for sugars and sweets.

A conclusion from the study - further investigations are needed to link the nutrient adequacy of specific foods and the associated carbon costs.

The evolution of carbon footprinting

GHGe indicators are only available for a limited percentage of food items, and severely limit the analysis of varied and realistic diets.

Other sustainability related aspects such as land use, water footprint, biodiversity and ecosystem quality, acidification and eutrophication, are also important when assessing the sustainability of different food items and dietary patterns

The EDA is helping to develop a methodology ²to further enhance the detail of real environmental impact by:

- calculation of environmental footprints for different categories of dairy products
- rigorous testing the information, and
- developing communication tools

This may further point to the benefits that dairy brings compared to other less nutrient dense foods.

Conclusion

Dairy provides balanced, sustainable nutrition

Eliminating dairy products from the diet can reduce the total dietary greenhouse gas emissions.

However, it is evident that dairy plays an important role from a nutritional and health perspective, and that dairy can be part of sustainable diets. Excluding dairy from the diet is detrimental:

- for our nutrition,
- for our health and
- for the environment.

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This factsheet only looks at three studies for the time being; a more exhaustive look at further recent studies is already in preparation – please stay tuned on the next update (via @EDA_dairy or www.euromilk.org)

REFERENCES

^A Drewnowski A.: Energy and nutrient density of foods in relation to their carbon footprint. American Society for Nutrition 2014. 10.3945

^BWerner LB: Greenhouse gas emissions of realistic dietary choices in Denmark: the carbon footprint and nutritional value of dairy products. Food & Nutrition Research 2014. 58: 0687

^C Drewnowski A.: Healthy diets for a healthy planet. American Society for Nutrition 2014. 10.3945

^D Chase, L.E: Reducing Greenhouse Gases Can also Reduce Feed Costs,

www.ars.usda.gov/sp2UserFiles/Place/36553000/.../Chase%20Friday.pdf, accessed 05/01/16

Background on GHGs, diet and dairy

- > A carbon footprint is the sum of greenhouse gas emissions (GHGEs) associated with food production, processing, transporting, and retailing. The main sources of carbon in food production include agricultural production, food processing, transport, distribution, storage, food preparation and food waste.
- > Agriculture and food industries contribute between 15% to 30% to global carbon emissions^A.
- > Dairy production is just 2% of overall carbon emissions^D. The European dairy industry has been already improving the performance of the dairy chain, and is continuously working on this.
- > The importance of dairy products in a healthy diet is recognised in all dietary recommendations, and is published by all member states authorities. (www.milknutritiousbynature.eu)

² [The Dairy Product Environmental Footprint.](#)