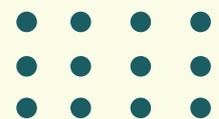


# Dried fruit and nuts

shaping  
the nutrition  
of the future

**Author: Martina Zurli**  
**Certified Nutritionist**



Taste and convenience are no longer the only features the modern consumer looks for when choosing a product. Other characteristics such as healthfulness, environmental footprint, and ethically sourced ingredients, are nowadays gaining more importance. In addition to that, certain health trends (e.g., gut health, mental health and immunity) are growing. People are looking for food products that provide more than just calories for sustenance. It is the presence of additional health benefits that is increasingly orienting consumer's choice.



At the same time, health agencies such as the WHO are calling for action to solve the problems caused by unhealthy lifestyles, in which diet plays a pivotal role. The food industry needs to find innovative solutions to deal with the environmental impact of food production.

In the context of the EU's Farm-to-Fork Strategy, Europe is acting to facilitate the shift towards healthier and more sustainable diets, and

the change of food information to consumer on food labels is among the initiatives. This should make consumers more aware of the food they eat, whilst also encourage food companies to reformulate their products.





“The presence of **additional health benefits** is increasingly orienting consumer’s choice.”

Reformulation is the process of altering a food or beverage product’s recipe or composition, for example by lowering the sugar, salt or fat content. To tackle the health issues related to unhealthy dietary choices, products should also be high in ingredients included in international dietary recommendations as they are good for both people and the planet. This approach has been called positive nutrition. A product which delivers positive nutrition is a product containing impactful amounts of vegetables, fruits, proteins, fibre, unsaturated fatty acids

or micronutrients such as vitamins and minerals. Purchasing choices are less about avoiding calories and fat, and more about products that offer active health profiles and added benefits, combining health and indulgence. Nutrition claims are increasingly focusing on the goodness of a product, rather than on restriction.





## Dried

**fruit** and **nuts** are gaining interest from the food industry for their versatility and ability to align with consumer needs. Since they are packed with important nutrients, both products are recommended under most food-based dietary guidelines. Producers are looking for ingredients that will not only substitute sugar but will add nutritional value to products, such as minerals, fibre and vitamins.



For this reason, dried fruit can be a good asset - acting as a binding agent, giving a chewy texture and attractive colours, and also boosting caramelization and moisture. Furthermore, dried fruit is increasingly being used in savoury products, such as meat products, creating original combinations of flavours.





**Nuts**  
can partially replace other fats, adding unsaturated fat, protein, fibre, minerals, and vitamins to the product, as well as a pleasant nutty flavour and crunchy texture. Nuts have a number of different applications in the food industry. Whereas whole nuts and various cut sizes and forms (flour, blanched, slivered, diced, paste) are most frequently used, there are now fractionated nut powders, such as protein powder, flour powder and defatted flour.

The inclusion of nuts along with dried fruit is particularly interesting in transforming consumers' perception of snacks.

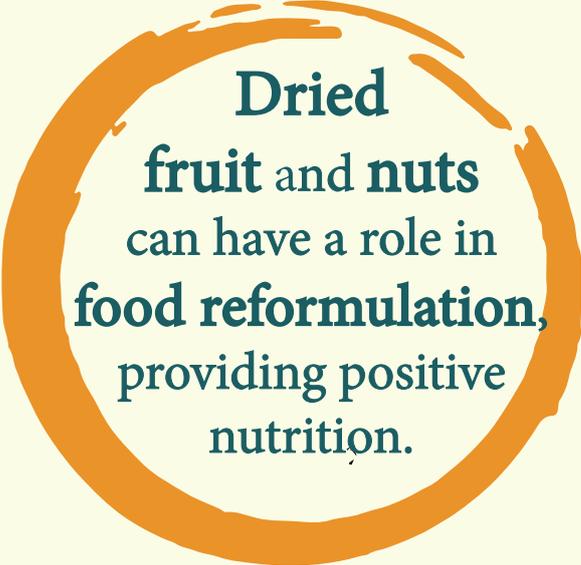
Far from being a simple treat, a snack is becoming an opportunity for consumers to get something out of their snacking occasion. Food manufacturers are creating healthier snacks that not only satisfy taste and indulgence, but also responding to the increased demand for functional foods.



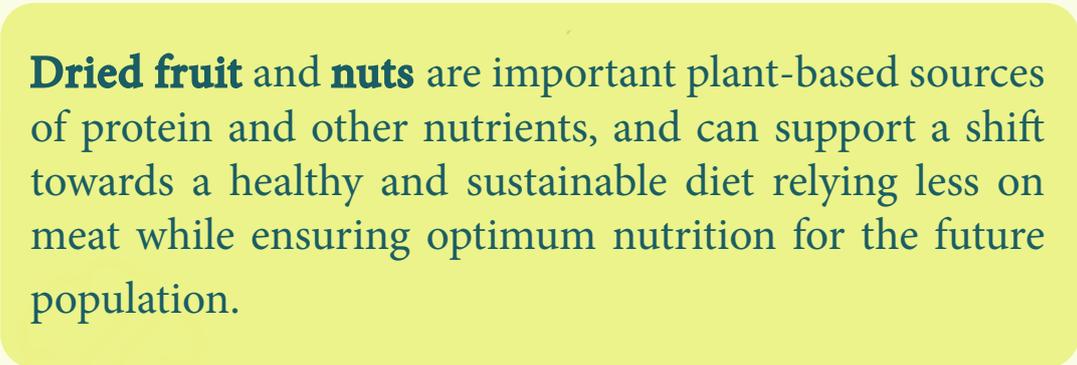
Products include ready-to-eat cereals and baked goods, pizza and pasta, particularly gluten-free options. Other products are on the rise: plant-based alternatives to desserts and ice cream, spreads, plant-based fresh and powdered milk, plant-based dairy alternatives, dips, and sauces. But also products for sport nutrition such as bars and isolated proteins, and convenience foods, and cuisines such as those from Asian, which traditionally include nuts, especially peanuts and cashews.

Other interesting applications are alternative meat products, in which nuts are used as an ingredient to replace beef in patties and minced meat. These products are often made with soy and pea proteins, but consumer concerns about allergens and additives have turned some developers towards ingredients such as walnuts. Another innovative prod-

uct is, for example, peanut coffee. Many food industries are participating in this process of transformation. Unilever committed to raise nutritional standards across their food portfolio whilst Nestle has reduced sugar and salt and used more whole grain and fortification. Product reformulation alone is unlikely to provide a complete solution and change eating patterns, but it can contribute to this process.



**Dried  
fruit and nuts  
can have a role in  
food reformulation,  
providing positive  
nutrition.**



**Dried fruit and nuts** are important plant-based sources of protein and other nutrients, and can support a shift towards a healthy and sustainable diet relying less on meat while ensuring optimum nutrition for the future population.

# Environmental Impact

## *of Dried Fruit and Nuts*

Sustainability will play a pivotal part in the nutrition of the future.

The environmental impact of **dried fruit** and **nuts** can vary significantly because multiple variables need to be taken into account, such as product type, place of farming, and parameters measured, e.g., water and carbon footprint.



### **CARBON FOOTPRINT**

Generally, dried fruit and nuts are responsible for far fewer greenhouse gas emissions per kilogram of food compared to other agricultural products such as beef, dairy, and poultry.

For instance, Turkish hazelnuts can grow on sloping land unsuitable for annual crops, and their production has a moderate CO<sub>2</sub> footprint (2 kg CO<sub>2</sub> equivalent/kg). Cashews (2 kg CO<sub>2</sub> equivalent/kg) and Spanish almonds (2,13 kg CO<sub>2</sub> equivalent/kg) have a similar CO<sub>2</sub> footprint, while Californian walnuts (0,95 kg CO<sub>2</sub> equivalent/kg.) pistachios (1.11 kg CO<sub>2</sub> equivalent/kg) and California

almonds (1.23 kg CO<sub>2</sub> equivalent/kg) have a lower impact. Additionally, the CO<sub>2</sub> impact of Californian almonds farms is often moderated by the reuse of nut co-products - including orchard biomass, hulls and shells, as sources of renewable energy and dairy feed.

The average carbon footprint of dried fruits is not very different (1,1 kg CO<sub>2</sub> equivalent/kg for dates). In addition, certain species such as date palms are tolerant to difficult environmental conditions. This tree can grow in hot, arid climates and tolerate saline water. These qualities allow it to grow and offer a food source even in difficult environmental conditions, such as deserts.

## WATER FOOTPRINT

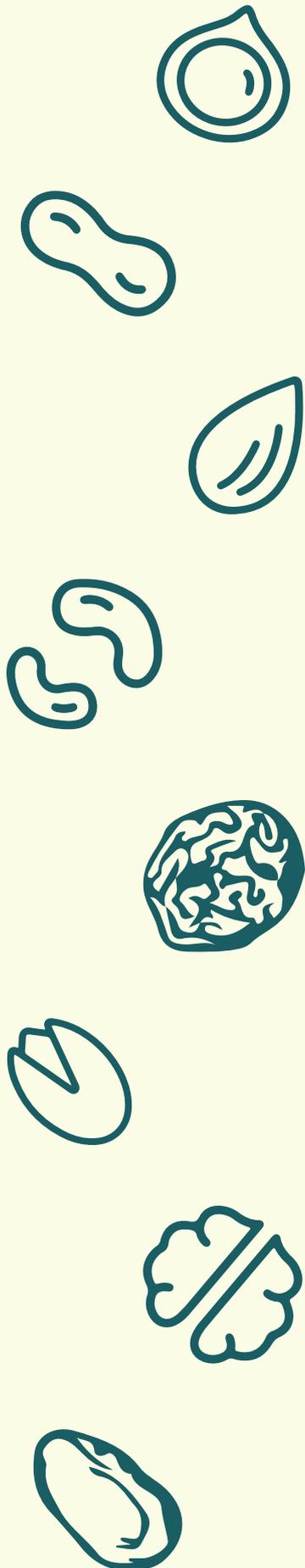
Nuts' water requirements are generally higher than most fruits and vegetables, but they are also much more nutrient-dense. New and more water-efficient varieties of treenuts are being planted (e.g., varieties of pistachios). Furthermore, agricultural wastewater is recycled back on the orchards as agricultural irrigation water. The vast majority of **almond** farms in California use microirrigation, thereby considerably reducing water use. Being a legume, water requirements for **peanuts** are lower. In addition, peanuts are a nitrogen-fixing rotation crop for cotton, and thus the amount of fertilizers needed to grow peanuts is quite low.

Although some **dried fruit** and **nuts** have a higher environmental impact than others, they are far from those of certain animal products such as beef, which carries the highest environmental impact among foods, at around 50kg CO<sub>2</sub>eq of greenhouse gas emissions per kg of meat produced. If methane is included, the emissions reach 100kg CO<sub>2</sub>eq per kg of meat produced. As far as water is concerned, 15415 litres of water are necessary to produce 1 kg of beef. Other animal products have a lower impact but they still rank among the highest: cheese accounts for 24 kg CO<sub>2</sub> equivalent (including methane emissions), whilst the production of 1 kg of chicken demands 10 kg CO<sub>2</sub> equivalent. The advantage of nuts in terms of sustainability remains also in relation to the environmental impact per gram of protein.

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Rue de Trèves 49-  
51, Box 14  
1040 Brussels

+32 2 231 06 38

<https://frucom.eu/>

[info@frucom.eu](mailto:info@frucom.eu)

