

SUSTAINABLE NUTRITION IN PRACTICE

Considering sustainability as an element of nutrition science and dietetics has been of vital importance for many years. Some would say it first came to awareness with the book *Diet for a Small Planet* by France Moore Lappé which argued that sustainable agriculture may be the key to protecting our planet for future generations.



Sustainability is of growing importance to consumers and is an area that causes a bit of confusion as they learn to navigate new terminology and food labels. To help understand consumer perceptions of food, the International Food Information Council (IFIC) conducts extensive annual surveys. The 2020 survey of more than 1,000 Americans found that:

- Nearly 6 in 10 consumers say it is important that the food products they purchase or consume are produced in an environmentally sustainable way (similar to the 54% who said the same in 2019).
- 40% say the same about knowing food was produced using farming technologies that seek to reduce the impact on natural resources.
- An identified barrier for choosing more sustainable products is lack of knowledge and limited labeling. “Sustainably sourced” labels and recyclable packaging can help with decision making, but over 6 in 10 of those surveyed said it was hard to know whether their food choices are environmentally sustainable.

In the latest 2021 IFIC survey, half (53%) say that if it was easier to understand the impact their choices have, it would have a greater influence on the choices they make. For those who believe their choices have a significant impact, 2 in 3 (67%) say that environmental sustainability is a key purchase driver.

Source: <https://foodinsight.org/wp-content/uploads/2020/06/IFIC-Food-and-Health-Survey-2020.pdf>

Source: <https://foodinsight.org/wp-content/uploads/2021/05/IFIC-2021-Food-and-Health-Survey.May-2021-1.pdf>

HOW TO BOOST YOUR SUSTAINABILITY IQ

Understanding the constraints on the global food system (climate change, land use and population) is a critical development area for nutrition professionals to promote diets that promote both human health and the health of our planet. The latter may at first seem a monumental topic to learn, but as your clients develop more interest in sustainability, it's important to educate yourself.

Let's begin with some terminology. Defining sustainability may be like asking how long is a piece of string. There are many ways to consider this vast topic: social, economic, or environmental elements -- and it's complicated.

ENVIRONMENTAL SUSTAINABILITY

is defined in the *Journal of Environmental Sustainability* as “the condition of balance, resilience and interconnectedness that allows human society to satisfy its needs while neither exceeding the capacity of its supporting ecosystems to continue to regenerate the services necessary to meet those needs nor by our actions diminishing biological diversity.”

AGRICULTURAL SUSTAINABILITY

is growing healthful foods in a manner that protects the land for future generations.

SUSTAINABLE NUTRITION

is about choosing foods that are healthful to our environment and our health. According to the 2019 EAT-Lancet commission on healthy diets from sustainable food systems, a global shift toward more plant-based foods would help feed the world's growing population a nutritious and sustainable diet.

Sustainable nutrition is reflected in changing Food-based Dietary Guidelines (FBDGs) where in fact, many countries' national food strategies, including Germany, Italy, the UK and France, reflect sustainability as a component of a healthy diet.*

SUSTAINABLE ALMOND FARMING

utilises production practices that are economically viable and are based upon scientific research, common sense and a respect for the environment, their neighbours, and employees. The result is a plentiful, nutritious and safe food product.

*<http://www.fao.org/3/i5640e/i5640e.pdf>



Everyone is on a journey together to figure out what sustainable nutrition means. A food can't just be judged on one element alone e.g. its water usage. One needs to consider it holistically and take into consideration other environmental factors like:

- CO₂ emissions
- Land use
- Water use
- Bee health
- Soil degradation
- Local impact including transportation
- Nutrient yield of food produced (i.e. the nutrition value you get out of the resources used to grow the food)

We can tell you about the Almond Board of California's own sustainability journey and the steps we've taken.

ALMONDS AS A CASE STUDY TO UNDERSTAND SUSTAINABLE NUTRITION

Background of Almond Board Sustainability Efforts

Almond farming is a family affair fueled by a passion for growing a healthy food. Of California's 7,600 almond farms, 90 percent are run as family farms¹, many owned by third-and fourth-generation famers who live on the land and plan to pass it down to their children. This means we understand the need to farm responsibly, managing resources carefully for future generations.

California is one of five places on Earth with the Mediterranean climate needed to grow almonds. It is also the most efficient place to grow almonds on the planet - home to rich soils, natural resources and infrastructure, and innovative research and technology.

For close to 50 years, California almond farmers have invested millions of dollars in research to help them grow almonds in better, safer and healthier ways. With targets across zero waste, water efficiency, pest management and air quality, the Almond Orchard 2025 Goals continue the work of improving almond farming for the future of agriculture and a healthier planet.

Packed with plant-based goodness, California almonds are a responsibly grown, zero-waste food hero and an important part of a low-carbon² diet.



CORE AREAS OF SUSTAINABLE ALMOND AGRICULTURE

WATER

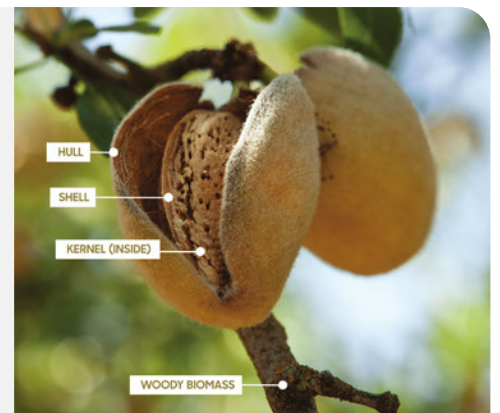
While almond trees use around the same amount of water as other fruit and nut trees in California, plants require more energy, and thus water, to grow proteins and fats than carbohydrates and sugars. Although almonds need more water than most fruits and vegetables, they are also rich in essential nutrients, good fats and protein.



Where we are going: With a commitment to water efficiency and decades of research and innovation, California almond farmers reduced the water needed to grow each almond by 33 percent between the 1990s and 2010s and are committed to an additional 20 percent by 2025.

CLIMATE SMART

Almonds can't be grown in large quantities in all parts of Europe and need to be imported. Unlike fresh fruit and other perishables, California almonds are shipped, not flown, to the Europe in containers designed to maximise shelf life and minimise transportation emissions. What's more, current almond farming practices offset about 50% of the carbon emitted from almond production.



California almond farmers are committed to achieving zero waste in orchards by putting everything they grow to optimal use. The nutritious almonds we eat grow in a shell, protected by a hull, on a tree. The hulls become livestock feed, offsetting the need to grow other crops, and the shells are used as livestock bedding. As for both the shells and hulls, they can be used to cultivate mushrooms, strengthen post-consumer recycled plastics, and even brew beer.

Where we are going: With further production improvements and policy changes, the California almond industry could eventually be carbon neutral or even carbon negative.

Learn about our Almond Orchard 2025 Goals:

<https://www.almonds.com/almond-industry/2025-goals>



CORE AREAS OF SUSTAINABLE ALMOND AGRICULTURE

POLLINATORS

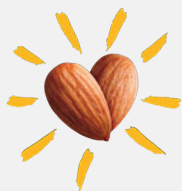
Bees and almonds are a partnership designed by nature. Just like almonds are a nutritious snack for us, almond pollen is very nutritious for bees and, as a result, they consistently leave California almond orchards stronger than when they arrived. The California almond industry has been leading pollinator health research efforts since 1995, so farmers can confidently provide safe and welcoming habitats on their farms.³ California almond orchards provide bees with their first nutritious food source of the year, providing all 10 of the amino acids their diet requires.⁴



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NUTRITIONAL CONTENT

Since 1995, almond growers and handlers have supported sound science to understand the health effects of almonds on heart disease, diabetes, and weight management. With nearly 200 published papers to date, and studies in progress, almonds are one of the most researched foods in the world.



A 30-gram portion provides 175 kcal of energy, 6 grams of plant protein and 4g of fibre.



Where we are going: We are dedicated to nutrition science research to understand how almonds fit into plant-based, planet-forward dietary guidelines and improve diet quality as a key means to improve overall health status.

RESOURCES FOR HEALTH PROFESSIONALS

Learning about sustainable nutrition is more accessible than ever before and many associations and health bodies have sections dedicated to the topic with peer-reviewed resources. Also, be sure you check with your local university for course offerings about sustainable nutrition.

Academy of Nutrition and Dietetics:

<https://www.eatrightfoundation.org/why-it-matters/public-education/future-of-food/sfs/>
<https://www.eatright.org/health/lifestyle/culture-and-traditions/sustainable-eating>

British Dietetic Association:

<https://www.bda.uk.com/resource/one-blue-dot.html>

British Nutrition Foundation:

<https://www.nutrition.org.uk/nutritionscience/sustainability/sustainability.html>

EAT Forum:

<https://eatforum.org/>

Food and Agriculture Organization of the UN:

<http://www.fao.org/nutrition/>
<http://www.fao.org/nutrition/education/food-dietary-guidelines/regions> (more FBDG information)

United Nations' Sustainable Development Goals (SDGs):

<https://sdgs.un.org/goals>

2021 Almond Board Virtual Orchard Tour:

Come see the almond orchards for yourself without leaving your home.

<https://youtube.com/playlist?list=PL-4hcdcwd4bgGfZDdtlGjDewb9eEoXvnq>

REFERENCES

1. United States Department of Agriculture. 2017 Agricultural Census, Table 6.
2. Kendall A, Marvinney E, Brodt S, Zhu W. Life cycle-based assessment of energy use and greenhouse gas emissions in almond production, *Journal of Industrial Ecology*, 2015.
3. Ellen Topitzhofer, et al. Assessment of Pollen Diversity Available to Honey Bees in Major Cropping Systems During Pollination in the Western United States. *Journal of Economic Entomology*. 2019.
4. Ramesh Sagili. Department of Horticulture, Oregon State University.