



## THINK GREEN



## EAT GREEN

### NUTS!

Most of us typically think of nuts as snack food, or as an ingredient in cookies, cakes, or trail mix. In this newsletter we're going to look at the nutritional value of nuts, their role as a source of plant protein, as well as water needs for their cultivation. We will talk mainly about "tree nuts," or what most of us consider (with the addition of peanuts) to be **nuts**.



Let's have a quick botany lesson. Some of us may know that peanuts are not nuts, but rather legumes – edible seeds enclosed in a pod. They are in the same family as lentils and peas. True tree nuts are indeed nuts – a plant with fruit and seed enclosed in a hard shell (such as hazelnuts, chestnuts, acorns).

Another category of “tree nuts” are drupes – a fleshy fruit enclosing a hard shell with a seed inside. Most plants that we call tree nuts are actually drupes (almonds, cashews, walnuts, pecans – as well as peaches and mangoes!).

The generally accepted term of “culinary nuts” is used to describe drupes, tree nuts and peanuts, or what most of us call “nuts.”

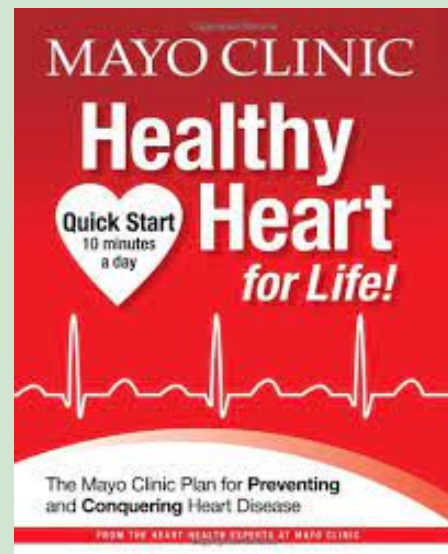


Nuts are an energy-dense and nutrient-rich food. They are a good source of **protein**. As part of a varied plant-based diet, nuts compare favorably to animal protein sources. *Stone Pier Press*, a food and environmental publishing

company, has put together a [guide](#) on how to build muscle by eating plant-based proteins. Not surprisingly, nuts are included as a good protein source, a welcome crunchy taste, as well as a source of healthy fats.

These **healthy fats** contribute to heart health in different ways. The *Mayo Clinic* has published an [article](#) that discusses eating nuts for heart health. We have previously talked in this space about the benefits of certain types of plant oils, some of which are from culinary nuts. A few facts about plant oils from the “heart-health viewpoint” include:

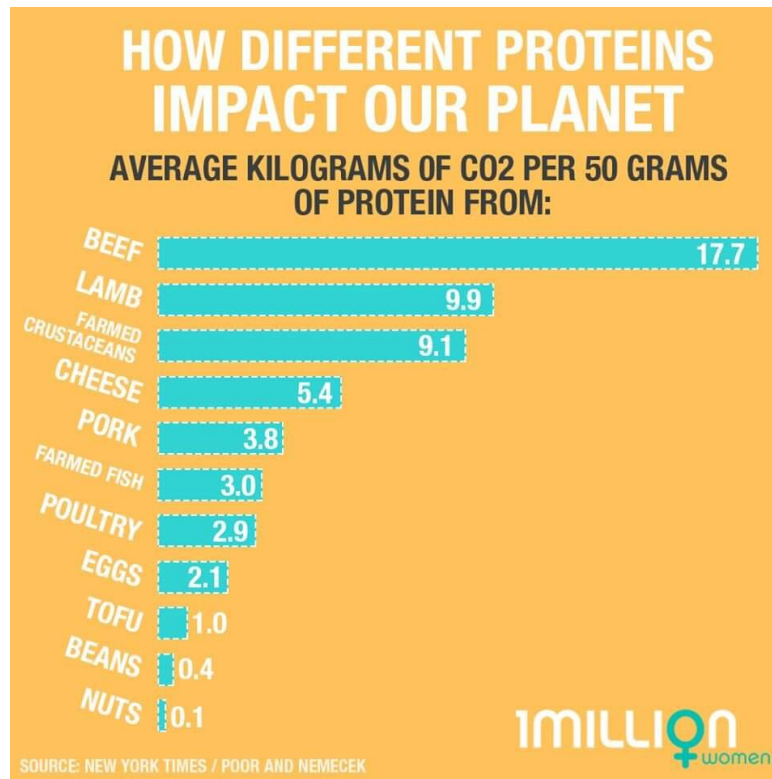
- unsaturated fats are thought to lower “bad” cholesterol
- Omega-3 fatty acids (found in walnuts) are thought to prevent irregular heart rhythms that can lead to heart attacks
- nuts are a source of L-arginine, a substance that may help improve the health of your artery walls by making them more flexible and less prone to blood clots that can block blood flow
- all nuts contain soluble fiber which helps lower cholesterol.



**American Heart Association®**

We now know that it’s a good idea to include nuts in our diet, but we also know that *nuts contain a lot of calories*. It’s helpful to think of nuts as a heart-healthy and **planet-healthy** source of protein, perhaps substituting them for animal

protein (with its saturated fat). Nuts can and should be viewed as a nutritionally dense part of our diet, not simply as snack food. The **American Heart Association** recommends eating about four servings of unsalted, dry-roasted nuts per week. One serving is a small handful (1.5 ounces) or 2 tablespoons of nut butter.



Now let's look at water and other resource needs of cultivating nuts, as well as their carbon footprint. This chart, included in the *Stone Pier Press* guide to plant-based proteins, provides a simple comparison of how various protein sources affect our planet, measured by carbon dioxide and other greenhouse gases produced annually in plant or animal production. We can see in this chart that nuts have one of the lowest impacts, even less than legumes. However, the main concern in cultivating nuts is their **water requirement**.



We will start with the **almond**, which is *the planet's most cultivated nut*. In terms of metric tons, almond production is 1.5 times greater than the walnut, which has the second-most abundant yield worldwide (data from statista.com). **80% of the world's** (yes, the world's!) **almonds are grown in California**, a state well-known for its droughts and water shortages.

Almond orchard acreage has more than doubled in the last 25 years, with an eightfold increase in production, easily becoming California's most intensively irrigated crop. California also grows 99%

of the US **pistachios** (and is a close second to Iran's production as the worldwide leader). The US grows approximately one-third of the world's **walnuts** (China leads the world with this nut), with most walnut cultivation in water-stressed California.



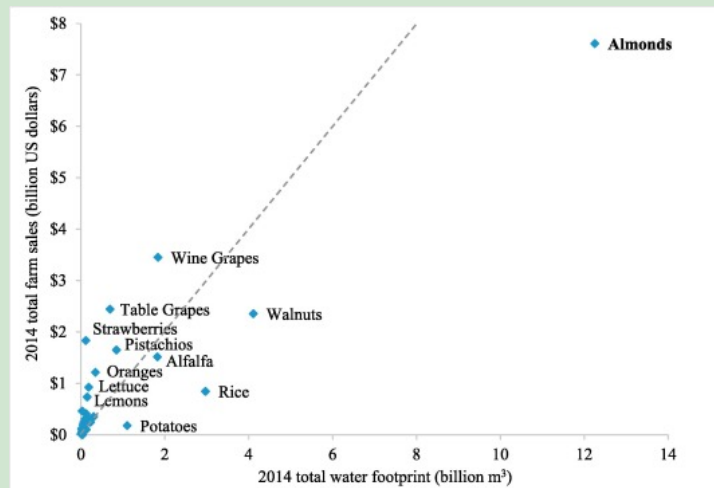
Science Direct.com, a leading source for scientific research, published a very extensive [article](#) on water and almonds. The article looks at various comparisons of nutritional values and economic values to determine water footprints. These water footprints facilitate discussions of the benefits and impacts of growing almonds relative to other crops, given California's limited water resources. [Water footprints are calculated across a variety of cultivation areas as well as over different time periods as a way to compare crops, based on the amount of water consumed in their production.]

Almonds use a lot of water, but so do many other California crops. And alfalfa, which is grown solely to feed cattle and dairy cows, is the thirstiest of all California crops according to this [article](#) by *TakePart.com*. And to further understand the extraordinary disparity of water used in raising animals over raising plants, take a look at the statistics offered in *Water Footprint Network's* comparison [article](#).

Farmers choose which crops to grow based on many factors, water access and **profitability** among them.

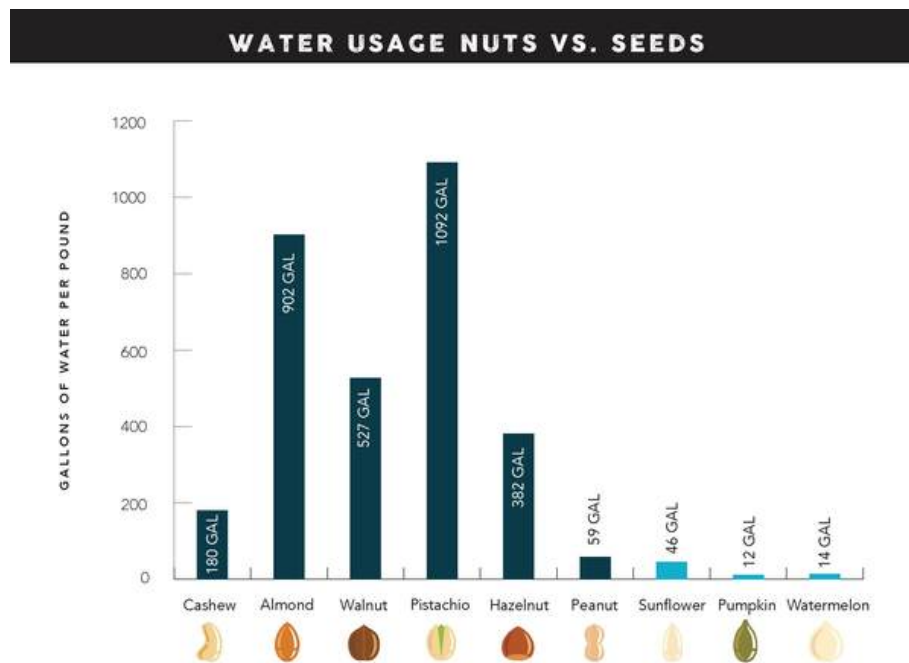
Here is a graphic included in *Science Direct's* "Water-indexed Benefits and Impacts of California Almonds." We can see from this indexed graph that

almonds use a lot of water AND are highly profitable.



The California Department of Food and Agriculture (CDFA) provides a wealth of information in [production statistics](#) for the state's 400 commodities. California produces one-third of U.S. vegetables and two-thirds of the county's fruits and nuts. In California in 2019, almonds ranked second (behind dairy production) with an annual value over \$6 billion. One definition of commodity is "primary agricultural product that can be bought and sold; a useful thing." Almonds are indeed a valuable commodity.

Those of us who wish to adjust our eating habits with the environment in mind could look to **seeds** instead of nuts. Examples of protein-rich seeds include pumpkin, hemp, sunflower, and chia. Water usage in cultivating seeds is a fraction of that for most “nuts,” with the exception of peanuts. Seeds often come from plants grown for both edible flesh and seeds, thus producing two crops. **88acres.com**, a food company specializing in allergen-friendly products, maintains that when we choose between eating nuts or seeds, we are actually making a choice about water. Here’s a chart from their [article](#) “Water Footprint of Seeds v. Nuts.”



In dietary terms, seeds provide many healthy fats as well as protein and other nutrients equivalent to those of nuts. *Superfood Evolution* provides a good [resource](#) with very comprehensive nutritional information on seeds and nuts.

When we choose to include nuts and seeds in our diet, we should keep in mind that they are a dense source of nutrition and can be an adequate substitute for animal protein and dairy products.

### SOME GREEN THOUGHTS



"Seeds and nuts are indispensable for cardiovascular health. The protective properties of nuts against coronary heart disease were first recognized in the early 1990s, and a strong body of literature has followed, confirming these original findings."

-Joel Fuhrman, MD, Family Physician, nutritional researcher, author

"Protein is most definitely not a synonym for meat."

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-Marion Nestle, author and public health nutritionist