

Guide to Plant Milks

by Reed Mangels, PhD, RD

Plant milks such as soymilk, oat milk, almond milk, and other cow’s milk alternatives are increasingly being used in the United States and globally. In 2023, the most recent year for which information is available, the global dairy alternatives market size was valued at 28.55 billion USD; more than half of this amount is attributed to plant milks.¹ This market size is projected to reach 91.15 billion USD by 2032.¹ In 2032, in the United States, the dairy alternatives market size is projected to be 18.91 billion USD.¹ In mid-2023, in the United States, almond milk had the highest sales followed by oat milk and then by soymilk.²

Plant milks are popular with vegans but are also used by non-vegans who recognize their health benefits and the lower environmental effects of non-dairy milks. A recent comprehensive analysis³ found that soymilk and oat milk had 28-29% of the average environmental impact of whole and low-fat cow’s milk; almond milk had 33%; and rice milk had 41% of the environmental impact of cow’s milk. All three types of plant milks had less than half the effect on greenhouse gas emissions and less than 25% of the effect on land use compared to cow’s milk. Soymilk and oat milk had 5-9% of the effect of cow’s milk on water use; rice milk and almond milk had more of an effect on water use but still had less effect than cow’s milk. Plant milks are clearly better for the environment than cow’s milk.

In late summer and fall 2024 we investigated the nutritional content of commonly available brands of original and unsweetened plant milks. VRG interns and volunteers collected nutrition information from product websites and packages. We identified 192 products—30 based on soy, 66 based on grains or peas, 81 based on nuts or seeds, and 15 based on coconut. Complete product information is available on our website.

Table 1 provides a summary of what we discovered about calories, protein, fat, and carbohydrate in unsweetened and original flavors of plant milks.

Table 1. Range of calories, protein, fat, and carbohydrate per 8-ounce serving in plant milks.

Type of milk	Calories	Protein (grams)	Fat (grams)	Carbohydrate (grams)
Soymilks	70-140	5-12	3-6	3-22
Grain and pea milks	40-170	0-8	0-9	<1-27
Nut and seed milks	25-130	0-9	1.5-11	<1-20
Coconut milks	40-90	0-1	2.5-8	1-11

Plant milks are often fortified with nutrients, commonly calcium, vitamin B12, and vitamin D and may represent important sources of these nutrients, especially for vegans. We were surprised that a number of plant milks weren’t fortified or were only fortified with one or two of these key nutrients. For example, less than a quarter of nut and seed milks are fortified with vitamin B12.

Table 2. Percentage of plant milks that we surveyed that are fortified with key nutrients

Type of milk	% of products fortified with calcium	% of products fortified with vitamin D	% of products fortified with vitamin B12
Soy-based	77%	70%	53%
Grain or pea-based	83%	82%	62%
Nut or seed-based	70%	67%	22%
Coconut-based	67%	80%	60%

How do you decide, from a nutritional standpoint, which plant milk is best for you or your family members? The milk's protein content is one consideration. Those whose diets are relatively low in protein or who have higher protein needs (during pregnancy and lactation, older people, elite athletes, and others) may benefit from a higher protein milk. Higher protein milks are often recommended for children and teens because they are a convenient way to provide some of the protein needed to support growth. Generally, soymilks are highest in protein and coconut milks are lowest. Some grain and pea milks and nut and seed milks have higher protein versions. Check the label or see product lists on our website to find higher protein plant milks.

None of these beverages should be used to replace infant formulas or breast milk. They are not suitable for use by infants as a main food since they do not resemble breastmilk or infant formula in composition.

Plant milks can be convenient sources of calcium, vitamin D, and vitamin B12 if these nutrients are added to the plant milk. In our lists below, we use the spelling used on the product's website. That's why you may see both "Soymilk" and "Soy Milk," for example.

Plant milks (original or unsweetened versions) supplying the most calcium in an 8-ounce serving:

- Kirkland Signature Almond Non-dairy Beverage, Original, Unsweetened (600 milligrams)
- Califia Farms Original Protein Oatmilk (590 milligrams)
- Silk Original Protein Oatmilk (500 milligrams)
- Golden Wing Barley Milk (470 milligrams)
- Milkadamia Macadamia Milk Unsweetened (470 milligrams)
- Silk Unsweet or Original Coconutmilk; Original Oatmilk (refrigerated) or Extra Creamy Oatmilk ; Unsweet Extra Creamy or Unsweet (refrigerated) or Original (refrigerated) Almondmilk; Unsweet Cashewmilk; Unsweet Almond Coconut Blend (470 milligrams)
- Almond Breeze Original (refrigerated and shelf-stable), Unsweetened Original, or Extra Creamy Almondmilk; Original Almondmilk & Oatmilk Blend or Original Almondmilk Coconutmilk Blend or Unsweetened Original Almondmilk Coconutmilk Blend (refrigerated and shelf-stable) (450 milligrams)
- Mariani Original or Unsweetened Walnutmilk (450 milligrams)
- Milkadamia Macadamia Milk Original or Creamy (450 milligrams)
- Nature's Promise Plant-Based Original or Unsweetened Almondmilk (450 milligrams)
- Silk Original or Unsweet Oatmilk (shelf-stable); Unsweet (shelf-stable) or Original (shelf-stable) Almondmilk; Original Soymilk (refrigerated or shelf-stable) (450 milligrams)
- Simple Truth Dairy Free Original Almond Milk (450 milligrams)
- Wegmans Original Almondmilk (450 milligrams)

Plant milks (original or unsweetened versions) supplying the most vitamin D in an 8-ounce serving:

- Golden Wing Barley Milk (11 micrograms)
- Bettergoods Plant-Based Original Soymilk (6 micrograms)
- Kirkland Signature Organic Soy Non-Dairy Beverage, Original (6 micrograms)
- Lidl Foods Organic Soymilk Original (6 micrograms)
- Nature's Promise Organic Original Soymilk (6 micrograms)
- Simple Truth Organic Unsweetened or Original Soymilk (6 micrograms)
- Wegmans Organic Original Soymilk (6 micrograms)
- Wild Harvest Organic Original Soy Milk (6 micrograms)
- Almond Breeze Original (refrigerated), Unsweetened Original (refrigerated), or Extra Creamy Almondmilk; Original Almondmilk & Oatmilk Blend or Unsweetened Original Almondmilk Coconutmilk Blend (refrigerated) (5 micrograms)
- Bettergoods Plant-Based Unsweetened Original or Original Almondmilk (5 micrograms)
- Califia Farms Original Protein Oatmilk (5 micrograms)
- Friendly Farms Original Oat Milk (5 micrograms)
- Good Karma Kids Original Oatmilk+ (5 micrograms)
- Kirkland Signature Almond Non-dairy Beverage, Original, Unsweetened (5 micrograms)
- Living Harvest Original or Unsweetened Original Hemp Milk (5 micrograms)
- Mariani Original or Unsweetened Walnutmilk (5 micrograms)
- Nature's Promise Plant-Based Original or Unsweetened Original or Extra Creamy Oat Milk (5 micrograms)
- Open Nature Almond Milk Original or Original Unsweetened (5 micrograms)
- Ripple Original or Unsweetened Original Pea-based Milk (refrigerated or shelf-stable) (5 micrograms)
- Simple Truth Dairy Free Unsweetened Plain Almond Milk (shelf-stable) (5 micrograms)
- Sproud Plant-based Original or Unsweetened (pea-based milk) (5 micrograms)
- 365 by Whole Foods Organic Unsweetened Almond Milk; Organic Unsweetened Original Soy Non-dairy Beverage (refrigerated or shelf-stable) or Organic Original Soy Non-Dairy Beverage; Organic Unsweetened Coconut Milk (5 micrograms)
- Trader Joe's Organic Unsweetened Almond Beverage or Original Unsweetened Almond Beverage (shelf-stable) or Non-dairy Almond Beverage Original or Unsweetened (refrigerated) (5 micrograms)

Plant milks (original or unsweetened versions) supplying the most vitamin B12 in an 8-ounce serving:

- Milkadamia Macadamia Milk Original (Lightly Sweetened) or Unsweetened or Creamy) 5.8-5.9 micrograms)
- Silk Original (refrigerated or shelf-stable) or Unsweet Original Soymilk (shelf-stable); Unsweet Oatmilk (3 micrograms)
- So Delicious Organic Unsweetened or Original Coconutmilk Beverage (shelf-stable or refrigerated) (3 micrograms)
- Edensoy Original Extra, Organic Soymilk (2.9 micrograms)

We looked for plant milks that had (per 8-ounce serving) 7 or more grams of protein, 230 milligrams or less of sodium, 300 or more milligrams of calcium, 2.4 or more micrograms of vitamin D, and 1.2 or more micrograms of vitamin B12. These values were chosen to be similar to the amounts in cow's milk (protein, calcium, vitamin D, and vitamin B12) and less than 10% of the Daily Value (sodium). These milks that met these criteria are especially good choices for overall nutrition:

- Bettergoods Plant-Based Original Soymilk
- Kirkland Signature Organic Soy Non-Dairy Beverage, Original
- Lidl Foods Organic Soymilk Original
- Pacific Foods Original Ultra Soy Milk
- Silk Original Soymilk (refrigerated or shelf-stable) or Organic Unsweet Soymilk (refrigerated or shelf-stable)
- 365 by Whole Foods Organic Unsweetened Original Soy Non-dairy Beverage, refrigerated or shelf-stable or Organic Original Soy Non-dairy Beverage
- Wegmans Organic Original Soymilk
- Wild Harvest Organic Original Soy Milk

Along with nutrition, taste is also an important consideration. Try a variety of plant milks until you find one or more that both taste good and meet your nutritional needs.

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We often depend on product and ingredient information from company statements. It is impossible to be 100% sure about a statement, info can change, people have different views, and mistakes can be made. Please use your best judgment about whether a product is suitable for you. To be sure, do further research or confirmation on your own.

REFERENCES:

¹ Fortune Business Insights. Dairy alternatives market size, share and industry analysis, by source (soy, almond, coconut, rice, oats, and others), by product type (non-dairy milk, butter, cheeses, yogurts, ice cream, and others), by distribution channel (supermarkets/hypermarkets, convenience stores, online retail, and others), and regional forecast, 2024-2032.

<https://www.fortunebusinessinsights.com/industry-reports/dairy-alternatives-market-100221>. 2024.

² Statista. Sales value of milk substitutes in the United States in mid 2023, by category.

<https://www.statista.com/statistics/932707/sales-milk-dairy-free-alternatives-us/>. 2024.

³ Springmann M. A multicriteria analysis of meat and milk alternatives from nutritional, health, environmental, and cost perspectives. *Proc Natl Acad Sci U S A*. 2024;121(50):e2319010121.

See more extensive charts at https://www.vrg.org/nutrition/milk_alternatives/

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