



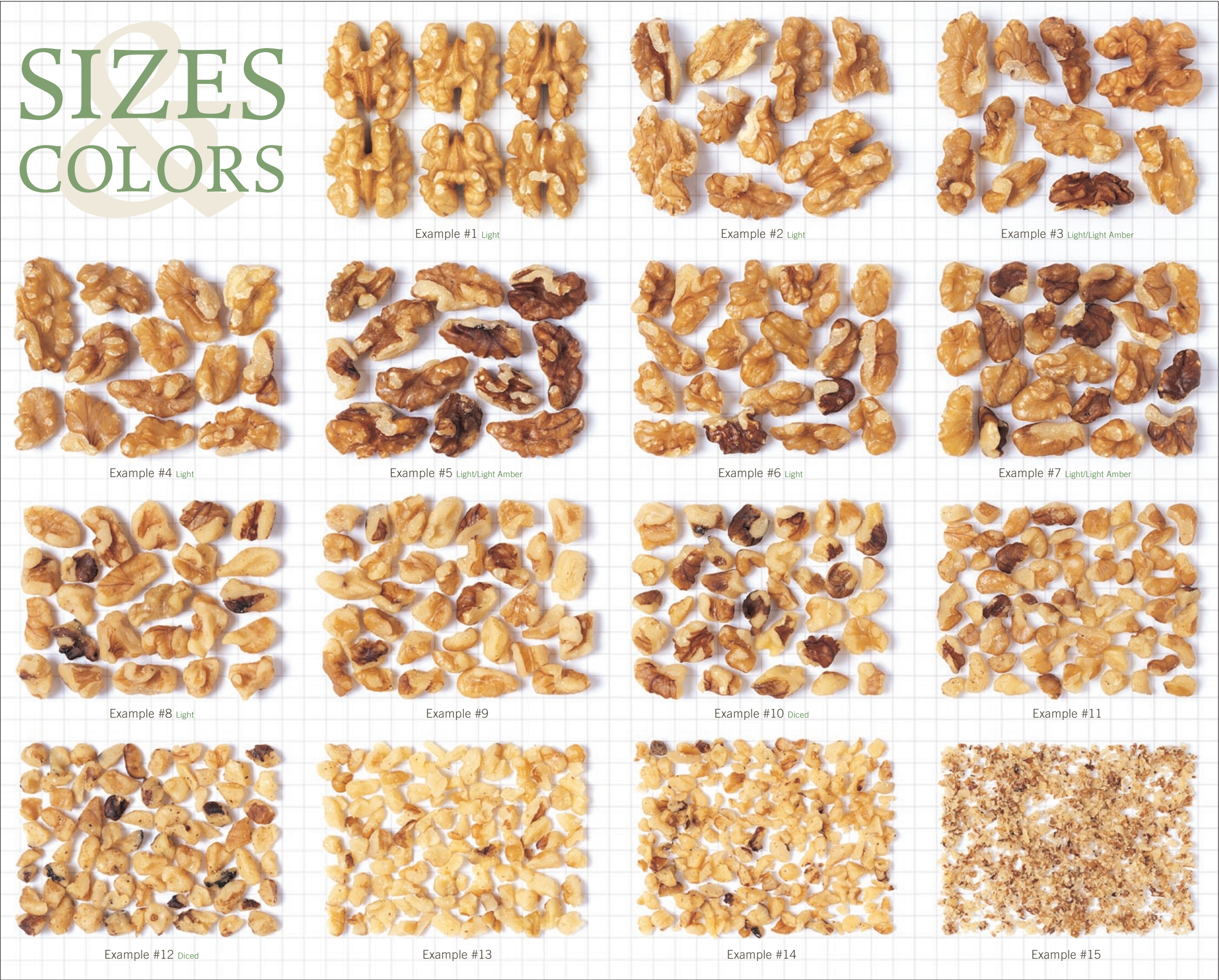
California Walnuts

SIZES & COLORS





CALIFORNIA WALNUTS



California shelled walnuts are available in a variety of sizes and colors. Descriptions and size tolerances are based on the USDA Standards for Grades of Shelled Walnuts. These are highlighted in **green** text. Also included are some size categories commonly used in the industry and these are highlighted with **brown** text. Screen sizes are for reference only. *Consult your California walnut supplier for exact specifications.*

Walnut Halves

Description: $\frac{7}{8}$ or more of the kernel is intact. 85% or more of lot, by weight, are half kernels with the remainder three-fourths half kernels.

USDA Size Tolerances: No more than 5% smaller than three-fourths halves of which no more than 1% may pass through $\frac{16}{64}$ inch (6.35 mm) round screen hole. (see Table 3)

Refer to Example 1

Walnut Pieces and Halves (Halves and Pieces)

Description: 20% or more of lot, by weight, are half kernels ($\frac{7}{8}$ or more of the kernel is intact).

USDA Size Tolerances: No more than 18% shall pass through $\frac{24}{64}$ inch (9.52 mm) round hole of which no more than 3% may pass through $\frac{16}{64}$ inch (6.35 mm) and of 3% no more than 1% may pass through $\frac{8}{64}$ inch (3.18 mm) round screen hole. (see Table 3)

Refer to Examples 2 and 3

Walnut Pieces

Description: Portions of kernels in lot cannot pass through $\frac{24}{64}$ inch (9.53 mm) round openings.

USDA Size Tolerances: No more than 25% shall pass through $\frac{24}{64}$ inch (9.53 mm) round hole of which no more than 5% may pass through $\frac{16}{64}$ inch (6.35 mm) and of 5% no more than 1% may pass through $\frac{8}{64}$ inch (3.18 mm) round hole included in the 5%. (see Table 3)

Refer to Examples 4, 5, 6 and 7

Walnut Medium Pieces

Although not covered in USDA Standards, Medium Pieces are a common size classification used in the California walnut industry. No less than 98% may pass through a $\frac{32}{64}$ inch (12.7 mm) screen. No more than 3% may pass through $\frac{16}{64}$ inch (6.35 mm) screen. No more than 1% may pass through $\frac{8}{64}$ inch (3.18 mm) screen.

Refer to Examples 8, and 9

Walnut Small Pieces

Description: Portions of kernels in lot pass through $\frac{24}{64}$ inch (9.53 mm) round openings but cannot pass through $\frac{8}{64}$ inch (3.18 mm) round openings.

USDA Size Tolerances: 10% will not pass through $\frac{24}{64}$ inch (9.53 mm) round hole and 2% pass through $\frac{8}{64}$ inch (3.18 mm) round hole. (see Table 3)

Refer to Example 11, 12, and 14

Walnut Meal (double diced)

The smallest form of the California walnut comes in various consistencies ranging from a coarse meal to a fine powder. Use walnut meal to dust cakes, integrate into dough and batter, and for walnut compounds. Finely ground walnuts are incorporated into pastas, added to fillings, and used as a thickening agent in sauces.

Refer to Example 15

Topping Pieces

SQUARE HOLE	ROUND HOLE
$\frac{1}{4}$ 6.35 mm	$\frac{20}{64}$ 7.94 mm

Typical industry screen sizes

Refer to Example 13 and 14

Syrupers

SQUARE HOLE	ROUND HOLE
$\frac{3}{8}$ 9.53 mm	$\frac{28}{64}$ 11.11 mm

Typical industry screen sizes

Refer to Example 10

Walnut Colors

California walnuts may be color sorted to meet specific product needs. The walnut spectrum chart (for comparison only) illustrates the wide range of color classifications available.

- A Extra light:** No more than 15% shall be darker than extra light of which only 2% (included in the 15%) may be darker than light.
- B Light:** No more than 15% shall be darker than light of which only 2% (included in the 15%) may be darker than light amber.
- C Light amber:** No more than 15% shall be darker than light amber of which only 2% (included in the 15%) may be darker than amber.
- D Amber:** No more than 10% shall be darker than amber.

The official color chart is available from:

DFA
710 Striker Avenue, Sacramento, CA 95834-1112
Tel: 916-561-5900 Fax: 916-561-5906
www.dfaofca.com



TABLE 3 (USDA STANDARDS)					
Size Classification	Tolerance for Size				
	Smaller than $\frac{1}{4}$ halves	Will not pass through $\frac{24}{64}$ " round hole	Pass through $\frac{24}{64}$ " round hole	Pass through $\frac{16}{64}$ " round hole	Pass through $\frac{8}{64}$ " round hole
Halves	5%			1% (included in 5%)	
Pieces and Halves*			18%	3% (included in 18%)	1% (included in 3%)
Pieces			25%	5% (included in 25%)	1% (included in 5%)
Small Pieces**		10%			2%

*No part of any tolerance shall be used to reduce the percentage of halves required or specified in a lot of "pieces and halves".
**The tolerance of 10% and 2% for "small pieces" classification shall apply, respectively, to any smaller maximum or any larger minimum sizes specified.

Note: The industry standard of $\frac{9}{64}$ is tighter than the USDA standard of $\frac{9}{64}$.

Source: USDA, United States Standards for Grades of Shelled Walnuts (Juglans regia). Agricultural Marketing Service. Effective September 1, 1968, reprinted January, 1997. <http://www.ams.usda.gov/standards/walnuts.pdf> (Adobe Acrobat format).



California Walnut Board and California Walnut Commission
101 Parkshore Drive, Suite 250, Folsom, CA 95630
Telephone (916) 932-7070 • Fax (916) 932-7071
www.walnuts.org | Email info@walnuts.org

Non-Discrimination Statement

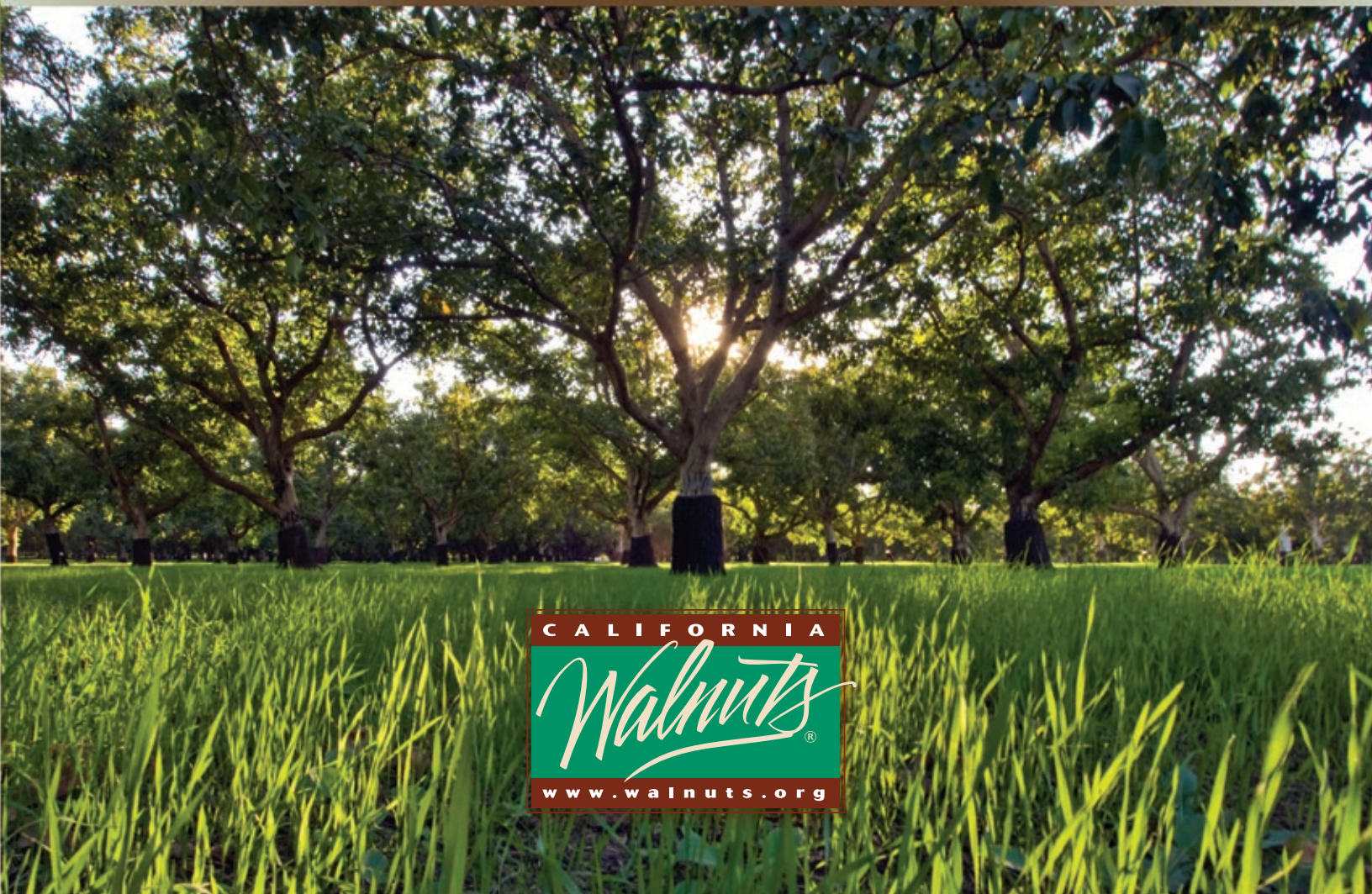
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California Walnuts

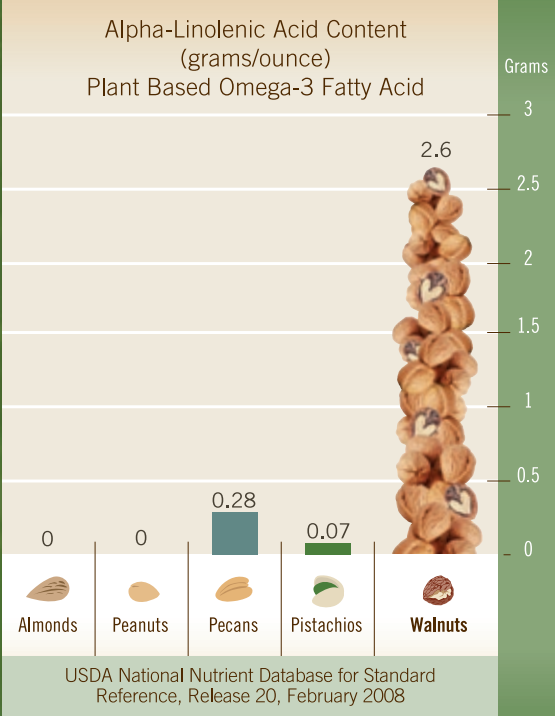


INDUSTRY OVERVIEW



CALIFORNIA WALNUTS AND HEALTH

Walnuts are one of the few whole foods that contribute many beneficial nutrients to the diet. For example, walnuts are a source of good polyunsaturated fat (PUFA) which includes essential alpha-linolenic acid (ALA), the plant form of omega-3 fatty acid. One serving of walnuts contains 18 grams of total fat, of which 13 grams are PUFA and 2.6 grams are ALA. To date, clinical research has been conducted in the areas of: heart health, diabetes, cognitive function, cancer and bone health. More information on these studies can be found at www.walnuts.org.



Walnuts and Antioxidants

According to evidence-based review, antioxidants help to protect from certain chronic diseases of aging, including cardiovascular, neurological and anticarcinogenic ailments due to their ability to control free radicals—known to negatively influence healthy aging.³ Walnuts contain several antioxidants including selenium, melatonin, gamma-tocopherol (a form of vitamin E) and several polyphenols. In a 2006 study, 1113 different foods were tested and walnuts ranked second only to blackberries in terms of antioxidant content.⁴

Another study examining the levels of antioxidants in various foods, reported at least 10 different antioxidants present in walnuts (802 mg GAE of total phenols per ounce). According to the study, a handful of walnuts has significantly more phenolics (antioxidants) than a glass of apple juice (117 mg), a milk chocolate bar (205 mg), or a glass of red wine (372 mg).⁵

Beneficial Nutrients

In addition to antioxidants and essential ALA/omega-3 fatty acids, an ounce of walnuts provides 2 grams of protein and 8% of the recommended daily intake of fiber. Walnuts are also a good source of magnesium (44.79 mg/oz) and phosphorus (98.09 mg/oz).

¹ J Nutr. 2004 Nov;134(11):2991-7.

² Including Walnuts in a Low-Fat/Modified-Fat Diet Improves HDL Cholesterol-to-Total Cholesterol Ratios in Patients With Type 2 Diabetes. Diabetes Care. 2004 Dec;27(12):2777-83.

³ Functional foods, herbs and nutraceuticals: towards biochemical mechanisms of healthy aging. Biogerontology. 2004;5(5):275–89.

⁴ Content of Redox-active Compounds (ie, antioxidants) in Foods Consumed in the United States. Am J Clin Nutr. 2006 Jul;84(1):95–135.

⁵ Walnut Polyphenolics Inhibit J Nutr. 2001 Nov;131(11):2837-42.

GROWING AND PROCESSING

Each step in the process from propagation, to harvest, to packer, and finally to market is handled with care and attention. Walnut production takes commitment and patience, and orchards are dedicated only to walnut production. After a walnut sapling is planted, it takes five to seven years for it to grow into an adult tree suitable for harvesting. Although many varieties of walnuts are grown in California, six account for over 75 percent of total production: Hartley, Chandler, Serr, Vina, Franquette and Howard. Harvesting begins in late August when the drying green hulls start to split allowing the inshell walnuts to be removed and continues until late November. First the orchard floor is swept clean. Mechanical shakers vigorously shake each tree and thousands of walnuts fall to the ground. The walnuts are carefully swept into windrows to allow mechanical harvesters to pick them up for cleaning.

Processing

The outer green husk is removed by a huller and the nut is mechanically dehydrated (air dried) to optimum 8.0 percent moisture level. This prevents deterioration of the nut and protects its quality during storage. Walnuts are stored until needed for cracking. California walnuts are protected from contamination because of the nut’s double envelope of hull and shell while on the tree.

Walnut Packing

Walnuts are transported to a packing plant where they are graded into two distinctive markets, inshell and shelled.

Inshell Walnuts

Following drying, sizing of the inshell nut occurs. Inshell walnuts are sized as jumbo, large, medium, or baby according to USDA standards.

California Walnuts Meet Strict Quality Control Standards

California walnuts are produced under stringent quality controls that exceed California inspection standards, reputed to be the world’s toughest. Handlers also meet individual customers’ standards and specifications. Many cutting-edge technologies are harnessed during the process in a sustained effort to bring consumers walnuts of uncompromising quality. The walnuts are grown and processed under the strict regulation of the California Walnut Board, USDA/DFA and the US Food and Drug Administration (FDA). A food safety control program and quality control regime (HAACP) is in place that meets the standards imposed by all regulatory authorities.

Packaging

California walnuts are produced in a wide variety of sizes, color grades and combinations of sizes and colors to meet the specifications of any industrial formulation. Commercial product meets the same high standards of quality as those sold directly to the consumer. As a general rule, pieces and halves are available in 25 lb. (11.25 kg) corrugated boxes with or without polylined bags. Smaller kernel sizes are usually available in 30 lb. (13.25 kg) boxes. Suppliers also ship in 1,000–2,000 lb. (907–1814 kg) containers, #10 tins, and other industrial sizes.

Storage

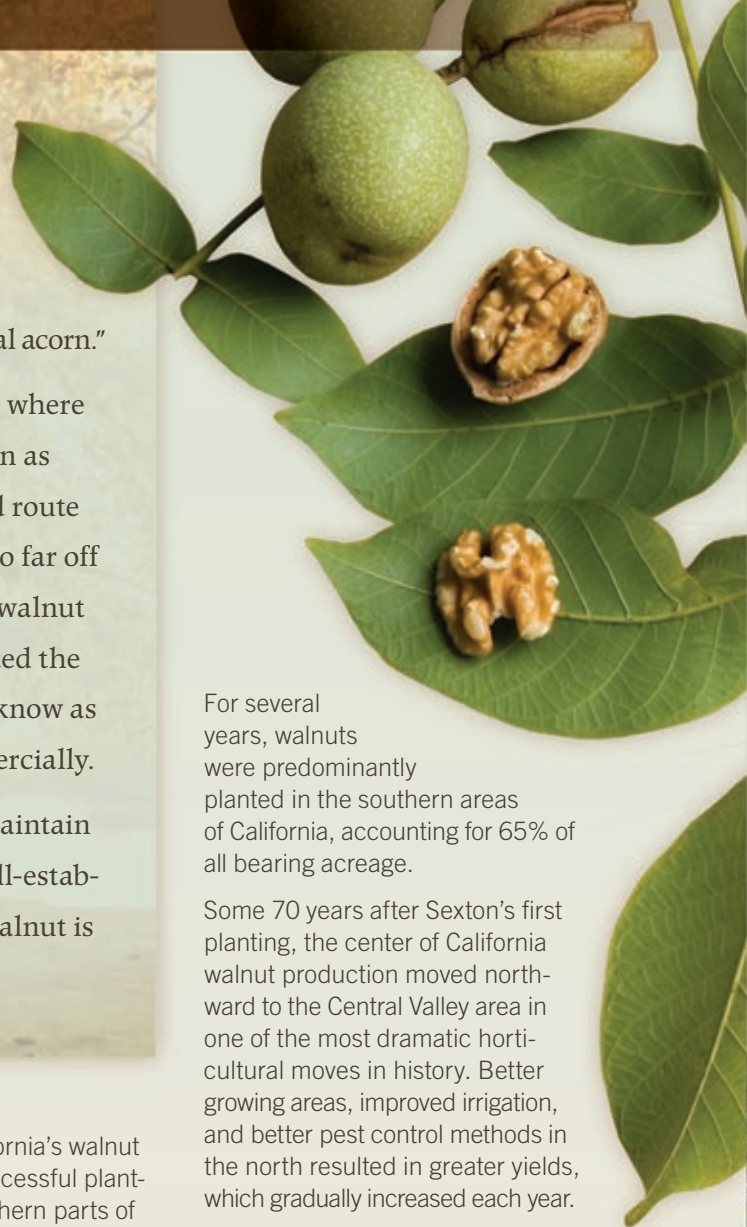
Store walnuts in low moisture, (55 to 65 percent relative humidity), and low temperature 32–38 degrees F (0–3.3 degrees C) conditions. To ensure maximum shelf life and freshness, keep walnuts in an odor-free environment. Walnuts keep well in refrigerated conditions away from excessive heat, moisture and light.

WALNUT HISTORY: THE ROYAL NUT

Walnuts are the oldest tree food known to man, dating back to 7000 B.C. The Romans called walnuts *Juglans regia*, "Jupiter's royal acorn."

Early history indicates that walnuts came from ancient Persia, where they were reserved for royalty. Thus, the walnut is often known as the "Persian Walnut." Walnuts were traded along the Silk Road route between Asia and the Middle East. Caravans carried walnuts to far off lands and eventually through sea trade, the popularity of the walnut spread around the world. English merchant marines transported the product for trade to ports around the world and they became known as "English Walnuts." England, in fact, never grew walnuts commercially.

The outer shell provided a natural protective layer helping to maintain the quality of the nut. Today the nut trade continues to be a well-established, ordered, and structured business, and the California walnut is well known as the top quality walnut for the world.



For several years, walnuts were predominantly planted in the southern areas of California, accounting for 65% of all bearing acreage.

Some 70 years after Sexton's first planting, the center of California walnut production moved northward to the Central Valley area in one of the most dramatic horticultural moves in history. Better growing areas, improved irrigation, and better pest control methods in the north resulted in greater yields, which gradually increased each year.

Today, the Central Valley of California is the state's prime walnut growing region. Its mild climate and deep fertile soils provide ideal growing conditions for the California walnut.

California walnuts account for 99 percent of the commercial US supply and two-thirds of world trade.

California Origins

The walnut was first cultivated in California by the Franciscan Fathers in the 1700s. The earliest walnuts to enter California were known as "mission" walnuts. Unlike today's walnuts, these first entries were small with hard shells.

The trees flourished in the Mediterranean-like climate zones of California, and by the 1870s modern walnut production had begun with orchard plantings in southern California, near Santa Barbara. In the next

70 years the center of California's walnut production shifted with successful plantings in the central and northern parts of the state. Many of today's improved cultivars are descendants of early plantings.

California Walnut Industry

The first commercial plantings began in 1867 when Joseph Sexton, an orchardist and nurseryman in the Santa Barbara County town of Goleta, planted English walnuts.

Non-Discrimination Statement

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California Walnut Board and
California Walnut Commission
101 Parkshore Drive, Suite 250
Folsom, CA 95630
Telephone (916) 932-7070
Fax (916) 932-7071

www.walnuts.org | Email info@walnuts.org