

A LOOK AT THE LIFECYCLE OF ALMONDS



Crunching into an almond, it's hard to imagine the journey that little nut took to make its way to your mouth. Here's the inside story on how almonds grow, start to finish.



A PERFECT HOME

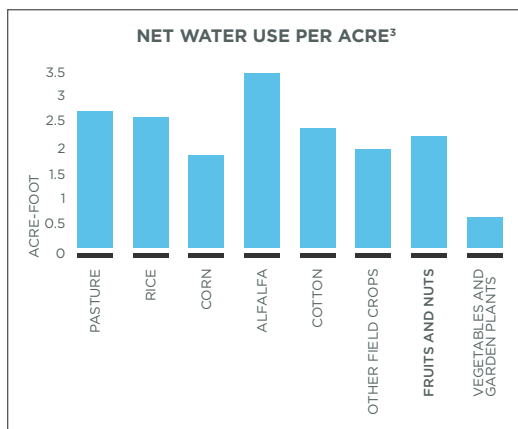
You can't grow almonds just anywhere. California is one of the few places on earth with the Mediterranean climate that's necessary for growing almonds. That climate, coupled with California's rich soils and infrastructure, make it the ideal place to grow a wide variety of fruits, nuts and vegetables. In fact, the state's Central Valley is the most efficient and productive almond-growing region in the world—**99% of the almonds eaten in the United States are from California, and more than 80% of the world's almonds are, too!**

WATER MATTERS

Almonds are extraordinary in many ways, except one: the amount of water they use. The fact is, an almond tree uses about the same amount of water as any other fruit or nut tree in California.



For decades, California Almond growers have been investing in scientific research and new technologies to drive water efficiency. From research on breeding almond trees that require less water, to the use of water-efficient irrigation systems and practices that decrease water runoff and more, these initiatives have helped growers cut the amount of water needed to grow a pound of almonds by 33% since 1994?



1. Almond Board of California and INC (International Nut and Dried Fruit Council), *The Cracker* 2014.
 2. UC Drought Management – Historical Almond ET and Goldhamer, David. 2012. Almond in Group Yield Response to Water. FAO irrigation and Drainage Paper No. 65, P. Steduto, T.C. Hsiao, E. Fereres, and D. Raes, eds. Food and Agriculture Organization of the United Nations, Rome, Italy, pp. 246-296.
 3. University of California Agricultural Issues Center. The Economic Impacts of the California Almond Industry. December 2014.
 4. Klein, 2007.
 5. Gene Brandt, President, American Beekeeping Federation.
 6. Marvinney, E., Kendall, A. and Brodt, S. (2015), Life Cycle-based Assessment of Energy Use and Greenhouse Gas Emissions in Almond Production, Part II: Uncertainty Analysis through Sensitivity Analysis and Scenario Testing. *Journal of Industrial Ecology*, 19: 1019-1029. doi: 10.1111/jiec.12333

THE BUZZ ON BEES

Did you know that one-third of global food production relies on pollinators, and that more than 90 crops are pollinated by commercial honey bees?⁴ Almonds are one of those crops, and in fact, almond trees bloom first each year, so they are the bees' first natural food source after the winter. The nutritious pollen from almond trees helps bees grow stronger, and, in turn, the bees turn almond blossoms into almonds.

Bee health has always been important to almond growers, who fund more honey bee health research than any other crop group⁵ Almond Board of California is committed to a number of efforts to help bees thrive.

THREE PARTS, MANY USES

Almond trees, and the water used to grow them, actually produce multiple products. In addition to the nutrient-rich almond nut itself, there's the almond hull, which is used to feed livestock, reducing the amount of land and water that would otherwise be used to grow other feed crops. Even the shells of almonds go to alternative farming uses, such as livestock bedding. All that adds up to minimal waste.



CARBON FOOTPRINT

Research shows that compared with other nutrient- and energy-dense foods, almonds have a light carbon footprint⁶ Almond trees are not only important for storing carbon, but the reuse of its co-products—the hulls, shells and woody material—is key to offsetting almond growers' carbon emissions and environmental impact. With further improvement in the way the co-products are used, California's almond industry could eventually become carbon neutral or even carbon negative.

