



Almond Board of California

ALMOND ALMANAC 2015



AT YOUR FINGERTIPS

Almond Board of California (ABC) is an agricultural promotion group made up of almond growers and handlers who work together to educate consumers and to research, innovate and promote California Almonds. The Almond Almanac is ABC's annual report, which highlights the latest statistics, programs, news and facts about California Almonds that power the industry toward meeting its vision.

The Almond Almanac is prepared by ABC on a crop-year basis, spanning August 1 through July 31, and the statistical analysis includes both current and comprehensive historical information about almond production, acreage and varieties, as well as shipment and market information. The statistical content is compiled using various handler forms required by the industry's Federal Marketing Order. Additional data, including crop estimates and farm price, are supplied by the USDA National Agricultural Statistics Service, Pacific Region Field Office (NASS/PRO).



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STRATEGIC PRIORITIES + SUPPORTING OBJECTIVES 2015

Invest in programs and research that make almonds a Crop of Choice for California

- Promote the sustainability* of California Almonds
- Enhance industry-wide quality and food safety
- Support basic and applied research to advance production and processing efficiencies
- Demonstrate water-use efficiency and supply implications
- Enhance leadership position in bee health research, education and outreach

Invest in programs and research that build market demand for almonds, making them the Nut of Choice

- Expand the science-based foundation for the health benefits and functional attributes of almonds in dietary patterns and healthy lifestyles
- Increase consumers' perceived value of almonds
- Implement actions that mitigate trade and regulatory barriers
- Use market research and performance analysis for strategy development and resource allocation
- Establish a proactive public relations stewardship program

Build an Almond Board organization that optimizes its effectiveness in establishing and executing goals

- Ensure that Almond Board representatives understand and adhere to fiduciary responsibility standards
- Implement Board of Directors' development initiatives
- Optimize staff and committee structures and processes
- Provide fact-based information to support industry advocacy efforts
- Enhance the relationship with and education of the growers and almond community

*Please see page 26 for the Almond Board of California definition for sustainability.



VISION

To bring great taste, health and vitality to people around the world through the enjoyment of California Almonds.

MISSION

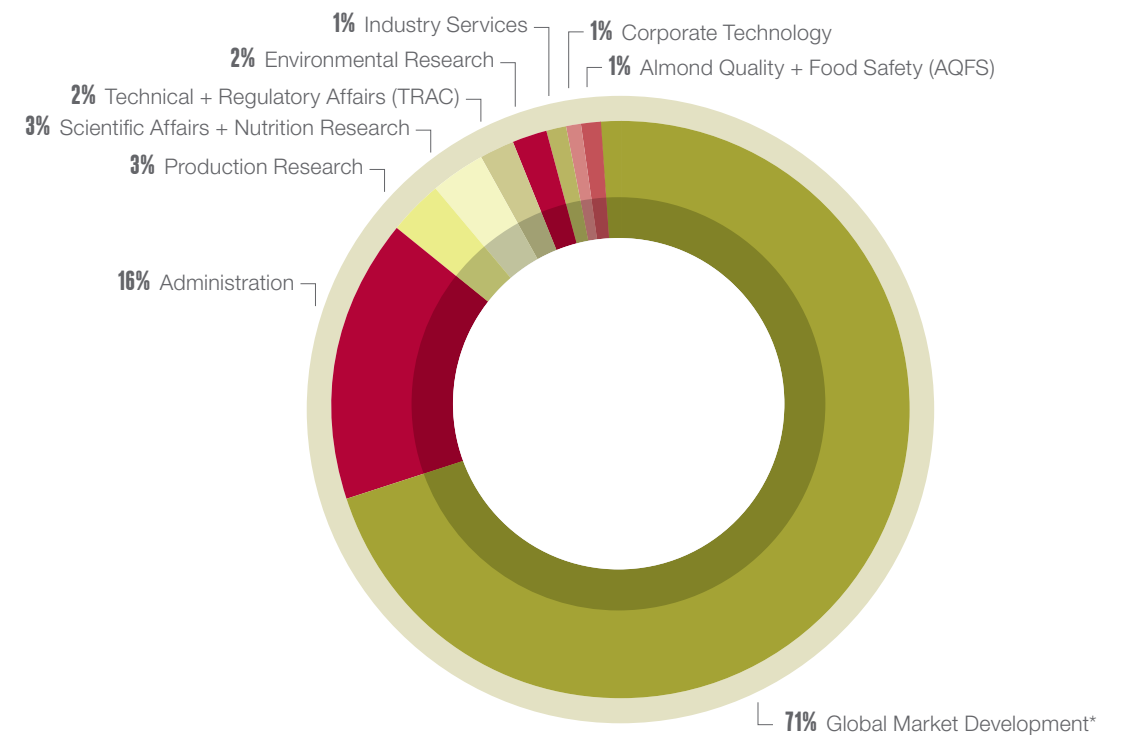
To make California Almonds essential to customers and consumers worldwide through innovative research, market development and industry support.

ALMOND BOARD OF CALIFORNIA PROGRAMS + BUDGET

Almond Board of California (ABC) programs are funded by a handler assessment placed on each pound of almonds produced. Each year, the ABC Board of Directors, made up of both almond growers and handlers, approves the budget allocation allotted to each program area.

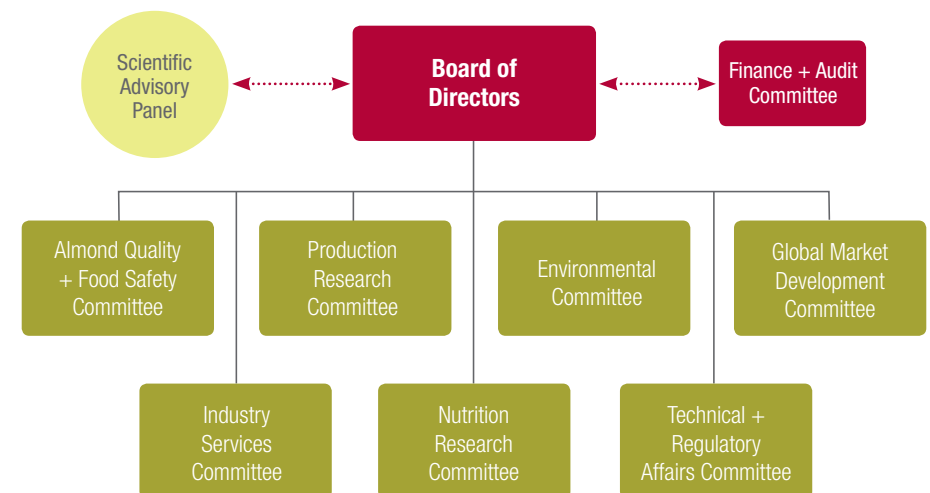
ABC programs are broken out into key areas and work together to educate consumers and to research, innovate and promote almonds in order to help meet the almond industry's vision and mission. These areas are broken down in the Program Budget Allocation chart below and program details can be found on the following pages.

Program Budget Allocation 2014/15



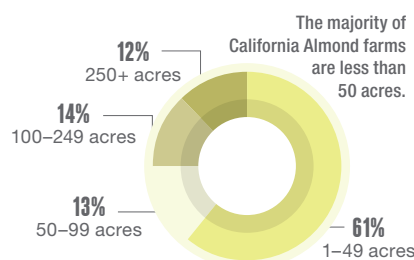
*North America is the largest portion of the Global Market Development budget at nearly 50%. Remaining markets include China, India, South Korea and the EU3 (United Kingdom, France and Germany).

Committee Structure



CALIFORNIA ALMOND GROWERS

With its ideal growing conditions, including a mild climate, rich soil and abundant sunshine, California is the world's largest producer of almonds, supplying about 80% of the global demand.

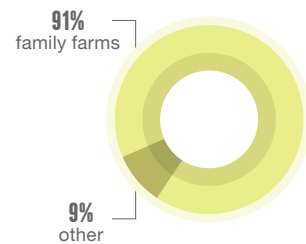


The majority of California Almond farms are less than 50 acres.

Source: USDA 2012 Census of Agriculture.

Many California Almond growers are multigenerational farmers who live on their land and expect to pass it along to their children and grandchildren.

They understand that near-record production has to be matched by an unprecedented commitment to sustainability, especially as they depend on natural resources for their livelihood.



Source: USDA 2012 Census of Agriculture.

Almond growers and processors are part of the fabric of their local communities, providing direct and indirect employment and supporting local schools, businesses and civic and religious organizations.

Almond growers have continued to invest in research and make advances in water efficiency, promote the health of honey bees and other pollinators, use pesticides responsibly and protect the quality and safety of California Almonds.



The California Almond growing community is driven by family farmers.

According to the 2012 USDA Agriculture Census, there are around 6,800 California Almond farms. Of those, 91% are family farms, many of which are owned and operated by third- and fourth-generation farmers.



CALIFORNIA ALMOND INDUSTRY OVERVIEW

Global shipments of California Almonds continued to be strong in crop year 2014/15. In fact, the industry shipped 1.81 billion pounds worldwide, which accounted for 97% of California's total production.

U.S. Shipments

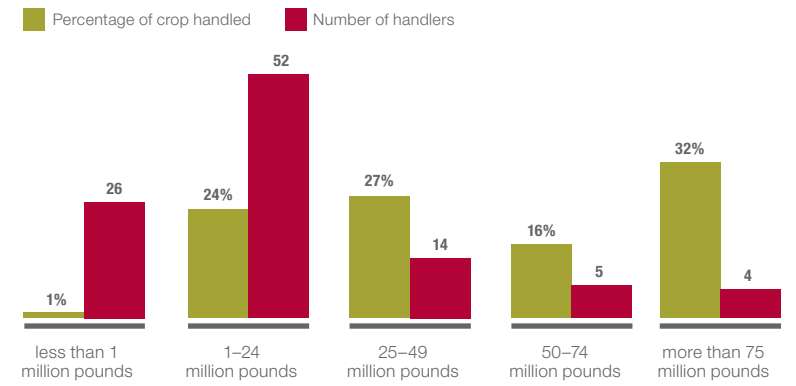
- At 35% share of shipments, the U.S. remained the top world destination.
- 2014/15 was the second highest on record, representing 639 million pounds.
- In the last five years, U.S. consumption has risen by 33%.

Export Shipments

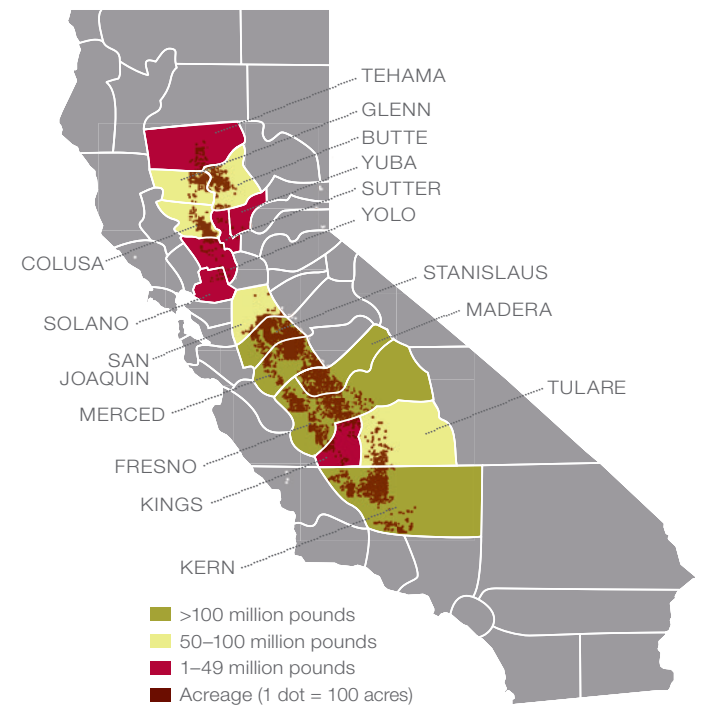
- Export shipments were destined for over 90 countries.
- Spain continued to be the top export market.
- India surpassed Germany as the third highest export destination.
- For the sixth year in a row, more than 1 billion pounds were exported.
- The top five export destinations account for approximately 50% of total exports.

Distribution of Crop by Handler Size 2014/15

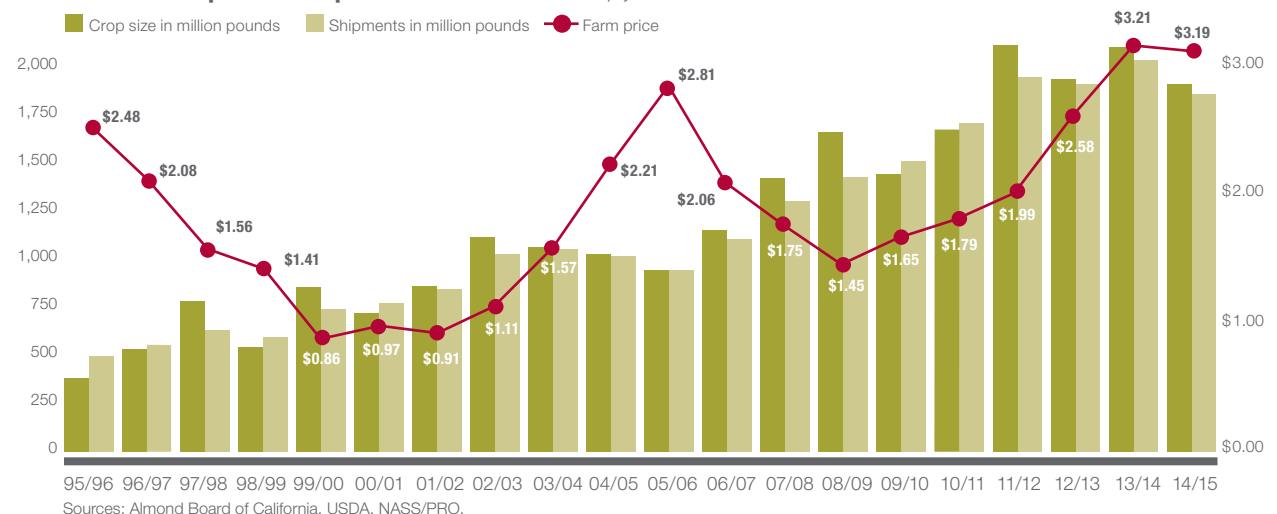
101 total handlers



Almond Production by County 2014/15



Historical Crop Size + Shipments vs. Farm Price



Sources: Almond Board of California, USDA, NASS/PRO.

WHAT A DIFFERENCE A YEAR MAKES

2015 Has Been a Year of Significant Milestones



in 2015

The Future of Almond Farming

Several record-breaking achievements were reached, but the industry continued to face many challenges. The progress made last year demonstrates how effective the industry can be when working toward common goals.

A comprehensive Life Cycle Assessment (LCA) study from UC Davis on growing California Almonds was published and shows that with the reuse of coproducts like hulls, shells, prunings and biomass, almond orchards have the potential to be carbon neutral or even carbon negative if policy changes and production advancements work hand in hand!



A GROUNDWATER RECHARGE PROGRAM was launched in partnership with

SUSTAINABLE CONSERVATION

which, with research from University of California, will determine the feasibility of using almond acreage to increase overall ground-water sustainability.

In a joint effort with the Environmental Defense Fund and others, ABC is participating in a new USDA-funded pilot project designed to give

BOTH GROWERS GREATER ACCESS TO GREENHOUSE GAS MARKETS

like those under California's cap-and-trade program.

This project is part of the USDA CONSERVATION INNOVATION GRANT PROGRAM to help farmers and ranchers implement practices that will make their operations more resilient to climate change.

Driving Industry Improvements

Since their release in the fall of 2014, ABC and leading stakeholders have presented Honey Bee Best Management Practices for California Almonds at over 50 meetings with more than 7,000 copies distributed.

ABC's Board of Directors APPROVED THE ACCELERATED INNOVATION MANAGEMENT (AIM) PROGRAM laying the groundwork for THE FUTURE OF CALIFORNIA ALMONDS.

Sharing Our Sustainability Journey

More than ever, almond growers are proudly engaging the media to expand the dialogue about how almonds are grown. Almond Board of California worked with the media to correct misinformation about almonds and to highlight the important initiatives that are moving the industry forward.



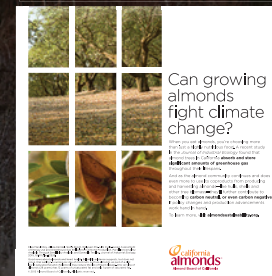
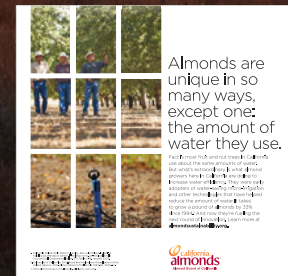
advertising program targeted to California residents to

SPREAD THE FACTS

ABOUT HOW ALMOND TREES

USE ABOUT THE SAME AMOUNT OF WATER

AS MOST CALIFORNIA FRUIT AND NUT TREES¹



THE EU APPROVED THE PRE-EXPORT CHECKS PROGRAM



A new campaign and toolkit were launched to aid growers in managing dust at harvest.



California's Unprecedented Drought

- In 2015, California entered the fourth year of its historic drought. California residents are more concerned than ever about the drought.
- In fact, research conducted in 2015 shows almonds as the food Californians most associated with the drought and as the fourth most associated food with the U.S. general population.
- For the first time in history, California implemented mandatory urban water-use reduction targets.
- On average, California farmers saw a nearly 50% decrease in normal surface water availability.²
- All Californians—farmers, local communities, urban areas and the environment—continue to be equally impacted by groundwater issues.
- Almond growers continue to make life-changing decisions on how to irrigate their orchards as well as their other crops.

SURVEYED CONSUMERS REPORT THAT ALMONDS ARE THE TOP NUT Americans associate with snacking, & THE #2 SPECIFIC FOOD they associate with nutritious snacking, after apples.³

The UC Agricultural Issues Center published a report on the economic impacts of the California Almond industry, noting that almonds contribute⁵:

- 104,000 jobs to California employment opportunity, 97,000 of which are in the Central Valley.
- \$21.5 billion of industry output to California economic activity, including purchases from supporting industries.
- \$11 billion of value added to the California Gross State Product.

1. 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*. July 2015. 2. UC Davis Center for Watershed Sciences. Economic Analysis for the 2015 Drought for California Agriculture. August 2015. 3. Almond Board of California, North America Consumer AAU, 2015. 4. Larry Schwankl, et al. Understanding Your Orchard's Water Requirements. University of California, Division of Agriculture and Natural Resources. Publication 8212. February 2010. 5. University of California Agricultural Issues Center. The Economic Impacts of the California Almond Industry. December 2014.

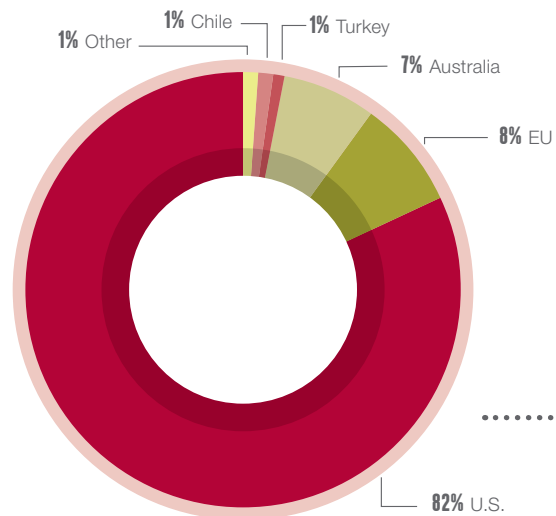
POSITION REPORT OF CALIFORNIA ALMONDS in million pounds

Crop Year	Redetermined Marketable	Carry-in	Reserve	Total Salable Supply	Domestic Shipments	Export Shipments	Total Shipments	Salable Carryover
1996/97	489.3	92.8	N/A	582.1	137.5	395.8	533.3	48.3
1997/98	736.8	48.3	N/A	785.1	159.6	452.4	612.1	172.0
1998/99	492.4	172.0	N/A	664.4	167.0	405.5	572.5	91.8
1999/00	795.5	91.8	0.0	887.3	209.6	503.0	712.6	174.7
2000/01	672.4	174.7	0.0	847.1	211.2	528.7	739.8	107.3
2001/02	794.8	107.3	N/A	902.1	239.3	581.8	821.1	80.9
2002/03	1,063.5	80.9	N/A	1,144.4	291.7	690.6	982.4	162.0
2003/04	1,011.1	162.0	N/A	1,173.1	312.2	712.1	1,024.3	148.9
2004/05	972.8	148.9	N/A	1,121.7	331.6	652.5	984.1	137.7
2005/06	888.7	137.7	N/A	1,026.4	303.9	610.4	914.2	112.2
2006/07	1,087.8	112.2	N/A	1,200.0	368.3	697.8	1,066.1	133.9
2007/08	1,358.3	133.9	N/A	1,492.2	394.8	866.4	1,261.2	231.2
2008/09	1,571.9	231.2	N/A	1,803.1	411.0	978.4	1,389.4	413.7
2009/10	1,379.0	413.7	N/A	1,792.7	449.5	1,022.0	1,471.5	321.3
2010/11	1,600.3	321.3	N/A	1,921.6	489.7	1,177.9	1,667.6	254.0
2011/12	1,979.9	254.0	N/A	2,233.9	546.7	1,351.9	1,898.6	335.2
2012/13	1,848.4	335.2	N/A	2,183.6	588.4	1,278.0	1,866.5	317.2
2013/14	1,970.0	317.2	N/A	2,287.2	641.8	1,295.6	1,937.4	350.6
2014/15	1,838.6	350.6	N/A	2,189.2	639.4	1,173.1	1,812.5	376.6
2015/16*	1,764.0	376.6	N/A	2,140.6	597.3	1,212.7	1,810.0	330.6

Source: Almond Board of California. Note: Totals may not add precisely due to rounding. *Estimated.



WORLD ALMOND PRODUCTION 2014/15

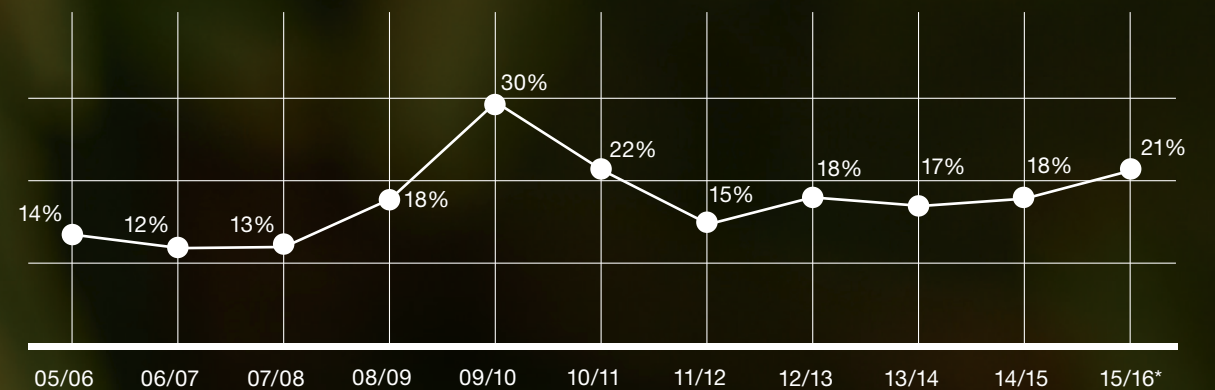


CALIFORNIA'S CENTRAL VALLEY

is one of the few places in the world, and the only place in the U.S., with an ideal almond-growing climate due to its mild winters and abundant sunshine.

CARRY-IN AS A PERCENTAGE OF PRIOR YEAR SHIPMENTS

2005/06–2015/16

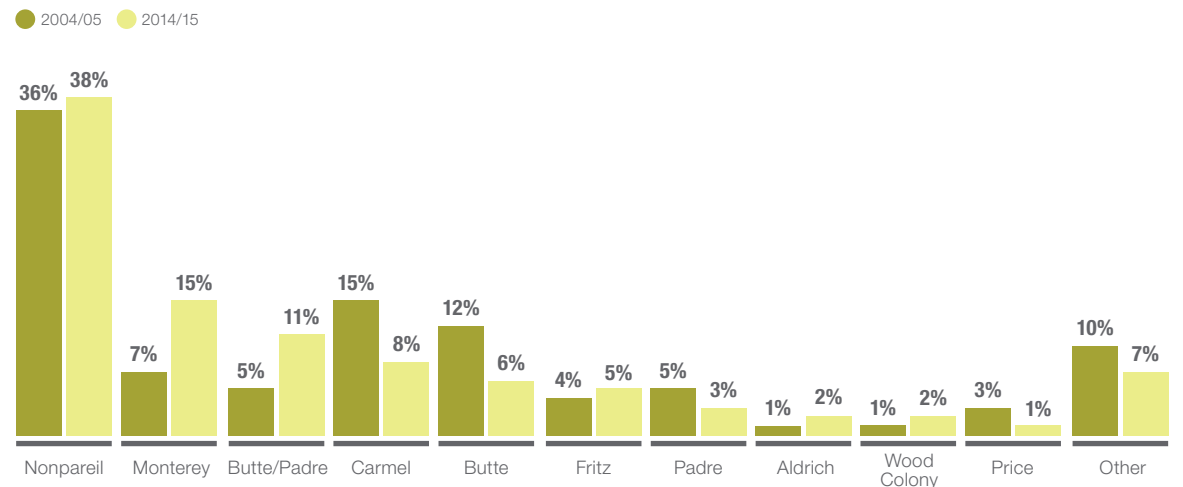


Source: Almond Board of California. *Estimated.



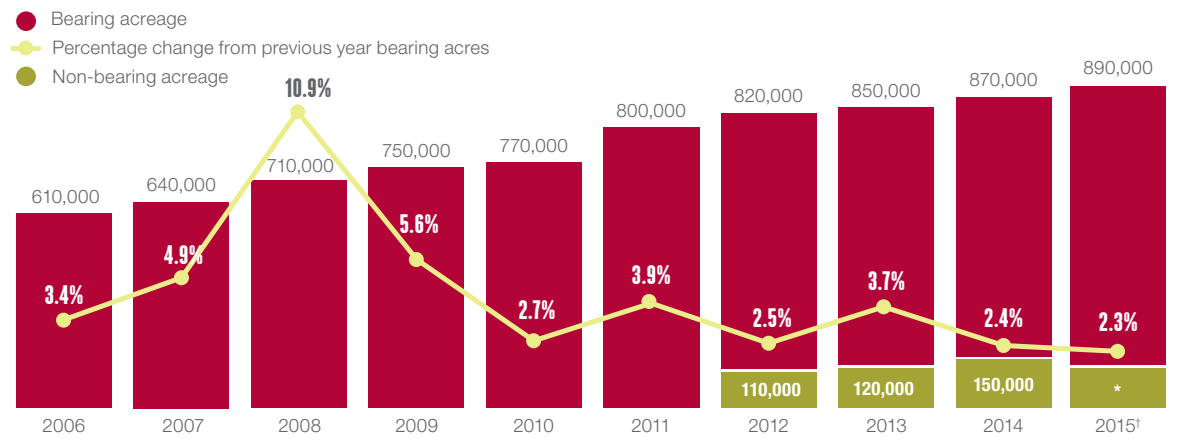
**2015/16 Forecasted:
890,000 bearing acres**

TOP TEN ALMOND-PRODUCING VARIETIES



Source: USDA Incoming Receipts from FV193 certificates reported to Almond Board of California.

CALIFORNIA ALMOND ACREAGE



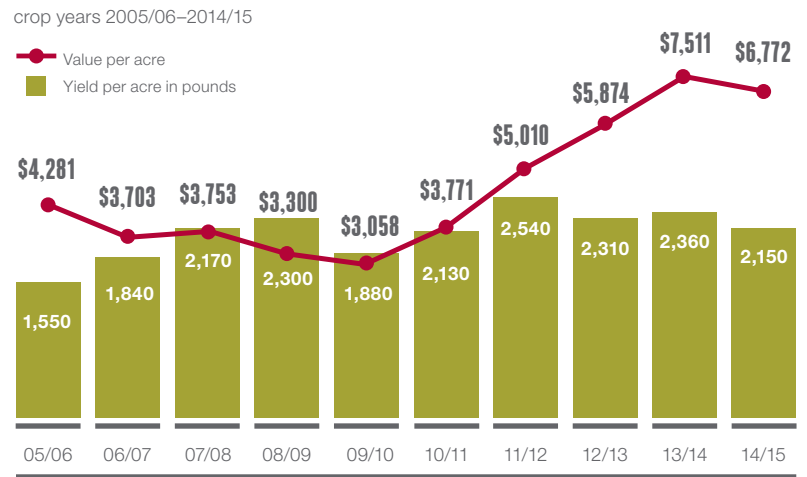
Source: USDA, NASS/PRO 2014 Acreage Report. *Non-bearing acreage available in April 2016. †Estimate.

CALIFORNIA ALMOND ACREAGE + FARM VALUE

CROP YEAR	ACREAGE					YIELD		VALUE IN DOLLARS		
	Bearing	Non-Bearing	Total	New Plantings	Average Trees/Acre	Bearing Acre Yield (lbs.)	Production* (million lbs.)	Farm Price	Farm Value (\$1,000)	Value per Bearing Acre
2004/05	570,000	70,000	640,000	26,420	103.0	1,760	998.0	\$2.21	\$2,189,005	\$3,840
2005/06	590,000	110,000	700,000	34,033	104.0	1,550	911.7	\$2.81	\$2,525,909	\$4,281
2006/07	610,000	145,000	755,000	31,970	105.0	1,840	1,116.7	\$2.06	\$2,258,790	\$3,703
2007/08	640,000	125,000	765,000	14,381	105.0	2,170	1,383.0	\$1.75	\$2,401,875	\$3,753
2008/09	710,000	115,000	825,000	21,678	107.0	2,300	1,614.6	\$1.45	\$2,343,200	\$3,300
2009/10	750,000	90,000	840,000	18,264	108.0	1,880	1,405.9	\$1.65	\$2,293,500	\$3,058
2010/11	770,000	85,000	855,000	13,362	108.0	2,130	1,628.2	\$1.79	\$2,903,380	\$3,771
2011/12	800,000	75,000	875,000	14,960	111.0	2,540	2,020.3	\$1.99	\$4,007,860	\$5,010
2012/13	820,000	110,000	930,000	12,269	112.0	2,310	1,885.0	\$2.58	\$4,816,860	\$5,874
2013/14	850,000	120,000	970,000	11,105	112.0	2,360	2,009.7	\$3.21	\$6,384,690	\$7,511
2014/15†	870,000	150,000	1,020,000	19,868	114.0	2,150	1,870.0	\$3.19	\$5,891,930	\$6,772
2015/16†	890,000	+	+	+	114.0	2,020	1,800.0	†	†	†

Source: USDA, NASS/PRO. Note: Almond Board does not track prices. *Production numbers provided by Almond Board of California. †Estimated as of July 1, 2015. ‡Not available at time of publication.

CROP VALUE + YIELD PER BEARING ACRE



Source: USDA, NASS/PR 2014 Acreage Report. 1. University of California Agricultural Issues Center. The Economic Impacts of the California Almond Industry. December 2014.

DID YOU KNOW:

The almond industry is especially important to jobs in the Central Valley of California where almond production and processing are located. The almond industry supports 104,000 total jobs in the state of California, about 97,000 of which are in the Central Valley. These jobs are vital in a region that has long had high unemployment.¹

CALIFORNIA ALMOND PRODUCTION BY COUNTY in million pounds

crop year 2014/15

Crop Year	Central Valley Growing Regions															All Others	Total
	Northern							Central			Southern						
	Colusa	Glenn	Butte	Yolo	Tehama	Sutter	Solano	Stanislaus	Merced	San Joaquin	Kern	Fresno	Madera	Tulare	Kings		
2004/05	38.0	37.2	45.0	4.7	6.9	4.6	1.7	163.9	127.6	51.0	215.8	173.5	93.4	20.4	13.0	1.1	997.9
2005/06	40.3	42.6	50.4	5.6	8.4	4.6	1.7	132.2	102.1	41.8	210.1	160.1	82.4	15.9	12.0	1.1	911.4
2006/07	50.8	38.4	41.8	6.3	7.7	4.9	2.5	163.6	124.6	55.6	247.8	232.7	100.1	21.5	17.7	1.3	1,117.3
2007/08	66.2	51.8	66.7	10.0	11.4	5.6	4.3	223.3	172.9	75.2	271.0	253.8	125.3	26.7	17.9	0.0	1,383.6
2008/09	86.0	48.6	56.9	10.4	9.7	5.3	4.1	240.6	187.3	82.1	354.3	322.2	142.7	36.2	23.4	1.0	1,611.0
2009/10	75.7	52.7	49.2	12.4	10.9	5.2	3.7	198.8	156.7	70.7	317.9	281.9	112.3	32.6	20.6	1.2	1,402.6
2010/11	83.0	55.8	47.1	13.6	11.7	4.9	4.4	202.5	164.2	68.0	403.5	344.2	149.7	42.4	29.9	1.6	1,626.6
2011/12	85.5	59.7	49.0	17.9	11.9	6.9	5.1	269.7	216.7	87.9	472.6	443.0	206.1	44.5	39.0	1.6	2,017.2
2012/13	85.1	57.9	50.9	18.1	12.5	7.0	5.4	261.8	201.4	91.5	393.4	413.6	203.5	49.1	30.7	2.1	1,884.1
2013/14	103.6	69.7	56.0	22.5	14.7	7.3	6.0	284.9	213.8	95.9	427.2	398.1	216.9	55.8	32.6	1.9	2,006.9
2014/15	90.2	58.7	55.2	18.1	13.3	7.7	5.1	274.4	198.2	94.3	390.3	370.5	202.9	57.0	31.9	1.9	1,869.7

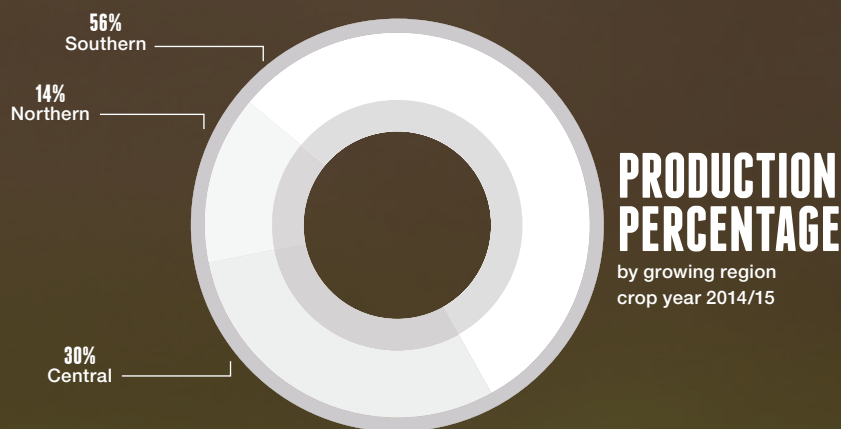
Source: USDA Form FV193, Report of Inedible Content of Almond Receipts.

CALIFORNIA ALMOND RECEIPTS BY COUNTY + VARIETY

crop year 2014/15

Counties	Percentage Crop	Nonpareil Lbs.	Monterey Lbs.	Butte/Padre Lbs.	Carmel Lbs.	Butte Lbs.	Fritz Lbs.	All Others Lbs.	All Varieties Lbs.
NORTHERN									
BUTTE	2.95%	22,417,461	2,745,659	2,506,878	5,312,808	4,148,953	593,887	17,516,351	55,241,997
COLUSA	4.82%	39,013,862	8,617,801	1,598,359	9,807,622	12,509,892	4,612,271	14,040,357	90,200,164
GLENN	3.14%	27,891,407	3,033,317	1,481,794	6,625,500	6,960,854	741,907	11,962,561	58,697,340
SHASTA	0.01%	2,946	0	0	12,855	58,433	0	59,192	133,426
SOLANO	0.27%	2,712,207	252,946	186,002	283,033	785,860	6,228	851,617	5,077,893
SUTTER	0.41%	2,155,773	473,887	821,685	678,842	791,398	69,161	2,719,077	7,709,823
TEHAMA	0.71%	5,802,309	269,771	1,204,257	1,805,276	1,878,270	808	2,328,519	13,289,210
YOLO	0.97%	7,065,318	1,984,544	504,303	1,530,297	2,439,413	449,955	4,173,906	18,147,736
YUBA	0.07%	649,528	122,712	17,334	90,516	6,256	61,689	358,169	1,306,204
TOTAL	13.36%	107,710,811	17,500,637	8,320,612	26,146,749	29,579,329	6,535,906	54,009,749	249,803,793
SOUTHERN									
FRESNO	19.81%	135,065,206	70,231,441	51,067,986	20,081,939	25,010,665	16,570,215	52,434,372	370,461,824
KERN	20.88%	146,116,040	78,025,055	41,023,550	12,267,521	28,728,329	35,468,580	48,685,020	390,314,095
KINGS	1.71%	11,285,544	4,614,823	7,165,423	574,961	996,267	2,177,145	5,100,589	31,914,752
LOS ANGELES	0.00%	0	0	0	10,874	0	0	0	10,874
MADERA	10.85%	75,517,893	41,910,469	27,283,920	14,390,323	7,519,176	10,074,639	26,159,735	202,856,155
TULARE	3.05%	22,411,640	12,318,305	6,454,289	1,434,748	2,729,773	5,543,262	6,104,070	56,996,087
TOTAL	56.30%	390,396,323	207,100,093	132,995,168	48,760,366	64,984,210	69,833,841	138,483,786	1,052,553,787
CENTRAL									
CALAVERAS	0.00%	0	0	0	0	0	0	17,840	17,840
CONTRA COSTA	0.00%	0	0	0	0	7,146	0	0	7,146
MARIPOSA	0.01%	64,876	52,640	0	0	0	0	28,989	146,505
MERCED	10.60%	71,621,824	22,187,269	23,100,520	25,289,427	11,641,245	9,464,079	34,940,186	198,244,550
MONTEREY	0.01%	0	46,965	0	189,750	0	0	0	236,715
SAN JOAQUIN	5.04%	38,210,906	4,532,776	13,488,746	16,098,516	3,665,234	5,442,990	12,867,279	94,306,447
STANISLAUS	14.67%	102,214,040	23,825,460	34,871,502	41,473,891	11,611,376	11,478,598	48,879,075	274,353,942
TUOLUMNE	0.00%	20,581	0	0	0	0	0	19,601	40,182
TOTAL	30.34%	212,132,227	50,645,110	71,460,768	83,051,584	26,925,001	26,385,667	96,752,970	567,353,327
GRAND TOTAL	100.00%	710,239,361	275,245,840	212,776,548	157,958,699	121,488,540	102,755,414	289,246,505	1,869,710,907

Source: USDA Form FV193, Report of Inedible Content of Almond Receipts.



Almonds grow on **13%** OF CALIFORNIA'S IRRIGATED FARMLAND

but use **9%** OF THE STATE'S AGRICULTURAL WATER¹ or less than 4% of the state's total managed water

California's total managed water is shared between:
10% URBAN // 40% AGRICULTURE // 50% ENVIRONMENT

¹ USDA, 2012 Census of Agriculture, May 2014. California Department of Water Resources, California Water Plan Update 2013: Volume 1, October 2014. USDA-NASS, 2014 Almond Acreage Report, April 2015.

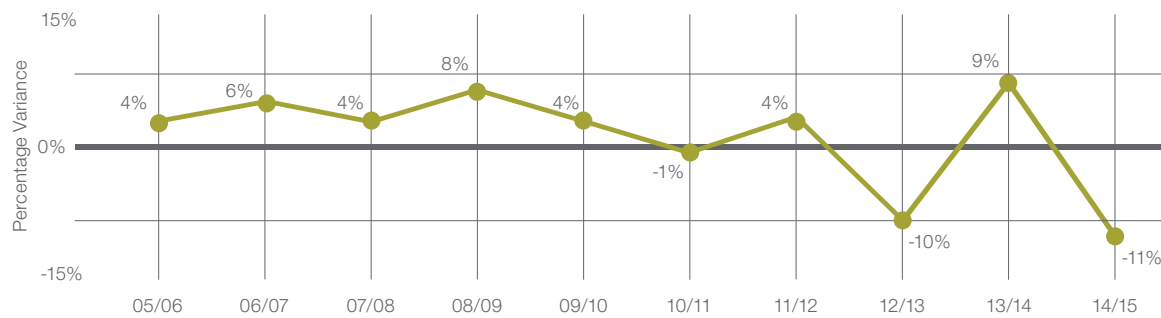
CALIFORNIA ALMOND CROP ESTIMATES VS. ACTUAL RECEIPTS

in million pounds

Crop Year	Objective Forecast	Handler Receipts	Loss and Exempt	Redetermined Marketable Weight	Pounds Rejects in Receipts
1996/97	530.0	507.5	18.2	489.3	13.0
1997/98	680.0	756.5	19.7	736.8	14.3
1998/99	540.0	517.0	24.6	492.4	14.9
1999/00	830.0	829.9	34.4	795.5	9.3
2000/01	640.0	698.4	26.0	672.4	15.7
2001/02	850.0	824.1	29.3	794.8	16.7
2002/03	980.0	1,083.7	20.2	1,063.5	8.2
2003/04	1,000.0	1,032.9	21.8	1,011.1	19.8
2004/05	1,080.0	998.0	25.2	972.8	14.5
2005/06	880.0	911.7	23.0	888.7	16.0
2006/07	1,050.0	1,116.7	28.9	1,087.8	24.0
2007/08	1,330.0	1,383.0	24.7	1,358.3	17.2
2008/09	1,500.0	1,614.6	42.7	1,571.9	13.9
2009/10	1,350.0	1,405.9	26.9	1,379.0	19.6
2010/11	1,650.0	1,628.2	27.9	1,600.3	18.1
2011/12	1,950.0	2,020.4	40.5	1,979.9	16.1
2012/13	2,100.0	1,884.0	35.6	1,848.4	23.1
2013/14	1,850.0	2,009.7	39.0	1,970.7	21.0
2014/15	2,100.0	1,867.9	29.3	1,838.6	23.4
2015/16	1,800.0	*	36.0	1,764.0†	*

Source: Almond Board of California. Objective forecast provided by USDA, NASS/PRO. *Not available at time of publication. †Estimate.

California Almond Receipts Variance from Objective Forecast crop years 2005/06–2014/15

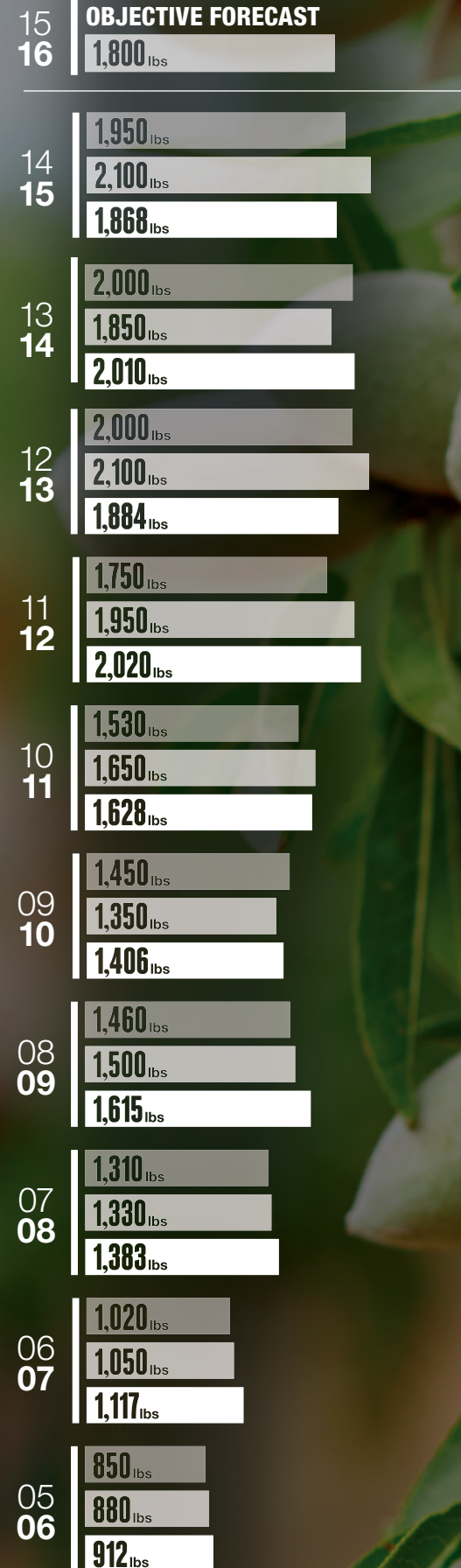


Source: Almond Board of California. Note: Objective forecast provided by USDA, NASS/PRO.

California Almond Crop Estimates vs. Actual Receipts

crop years 2005/06–2014/15, in million pounds

Subjective forecast Objective forecast Actual production



ALMONDS ARE CALIFORNIA'S MOST VALUABLE INDIVIDUAL AGRICULTURAL EXPORT COMMODITY

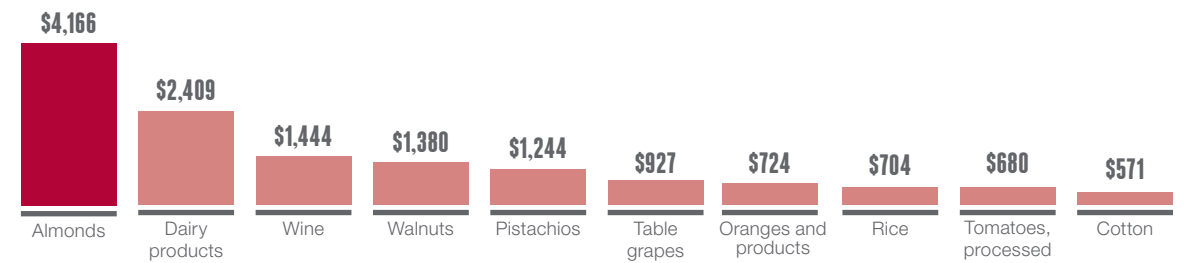
Almonds were worth approximately \$4.2 billion in export value in 2013; a 23% increase from 2012*

*University of California Agricultural Issues Center. The Economic Impacts of the California Almond Industry. December 2014.

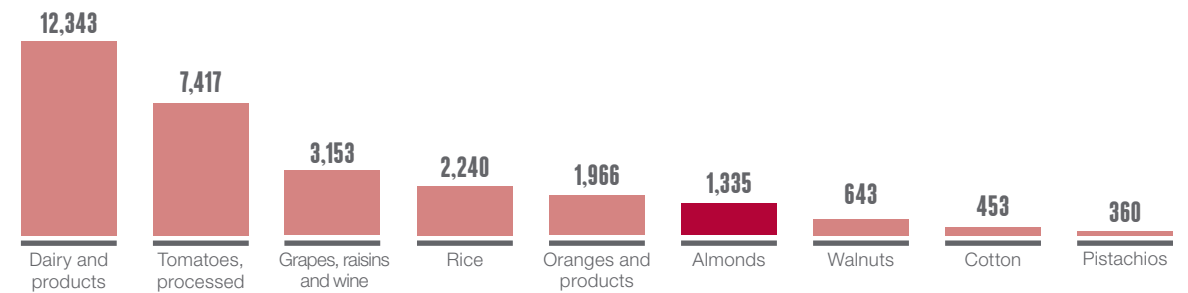


TOP CALIFORNIA AGRICULTURAL EXPORTS 2013*

By Value millions USD



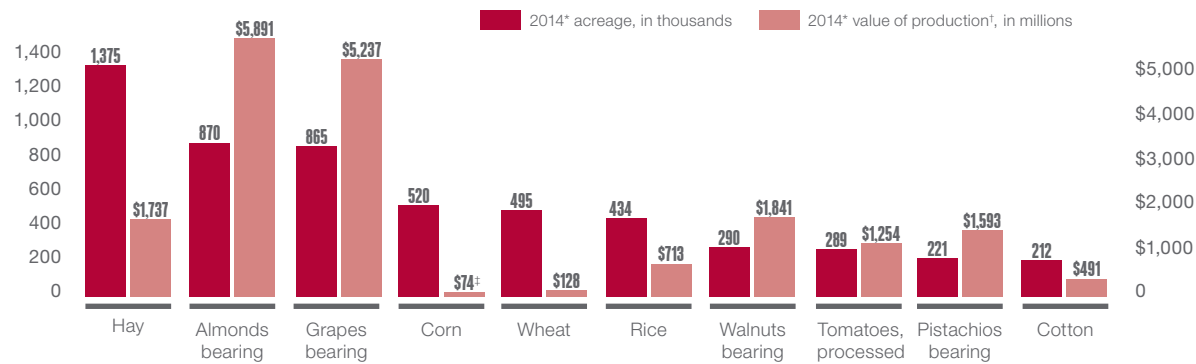
By Volume millions of pounds



Note: This graph shows export volumes in comparable converted weights, measured in pounds. Volumes include fresh products and fresh equivalent of processed products that were converted to farm-fresh quantities using conversion factors published by USDA ERS.

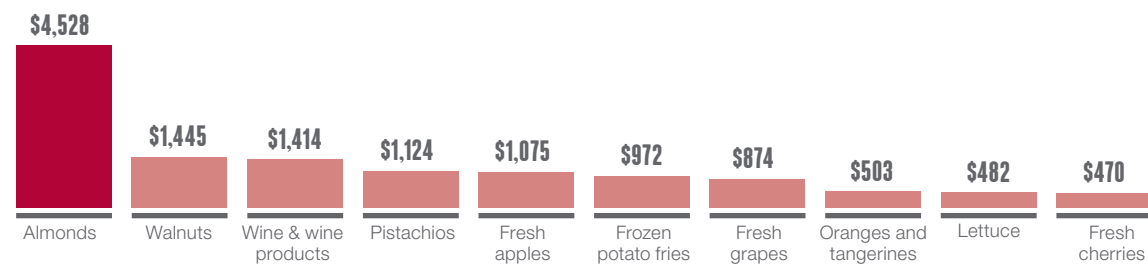
Source: University of California, Agricultural Issues Center. *Calendar year January through December 2013.

TOP TEN CALIFORNIA CROP ACREAGE



Source: USDA, NASS. *Calendar year January through December 2014. †Value based on farm-gate prices. ‡This is the corn for grain value. The corn for silage value for 2014 was not available at time of publication.

TOP TEN U.S. SPECIALTY CROP EXPORTS BY VALUE 2014,* in millions

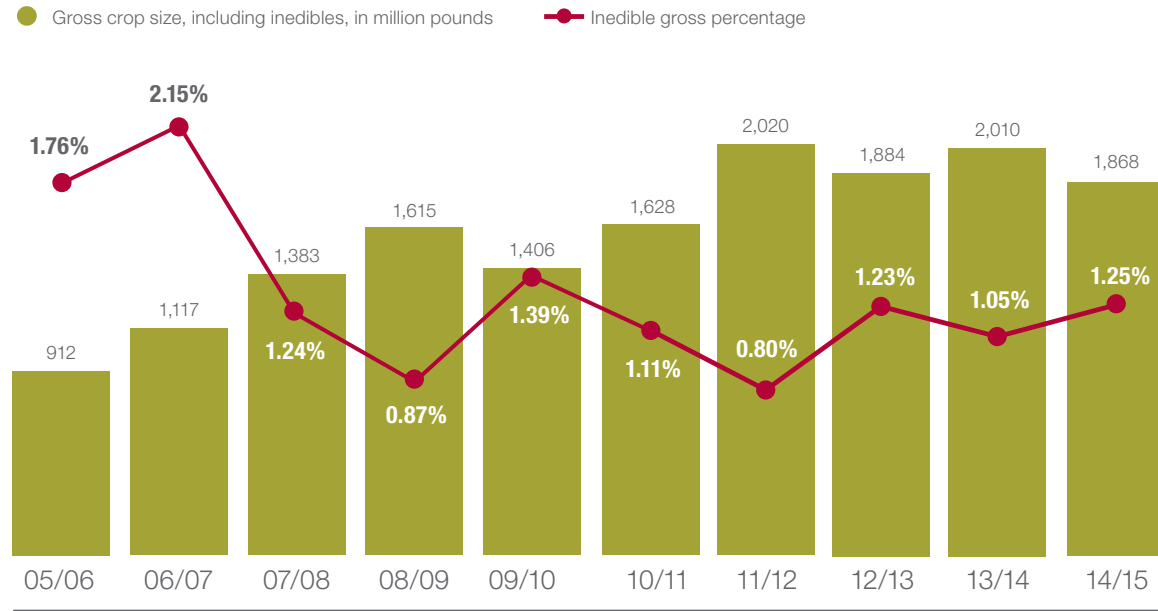


Source: Bureau of the Census, U.S. Department of Commerce, Foreign Trade Statistics. *Calendar year January through December 2014.

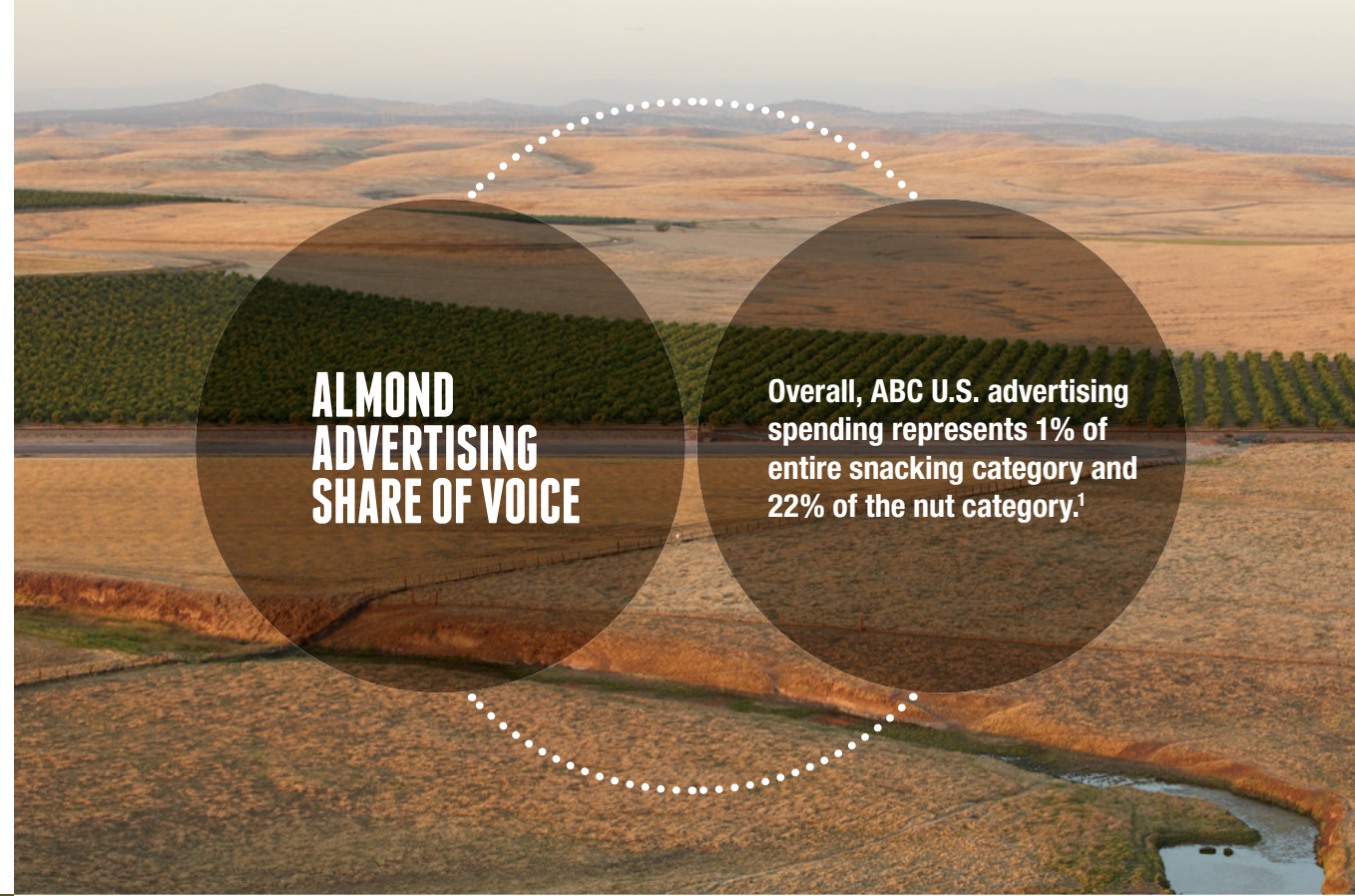


CALIFORNIA ALMOND CROP-SIZE HISTORY VS. INEDIBLE PERCENTAGE

crop years 2005/06–2014/15



Source: Almond Board of California.



**ALMOND
ADVERTISING
SHARE OF VOICE**

Overall, ABC U.S. advertising spending represents 1% of entire snacking category and 22% of the nut category.¹



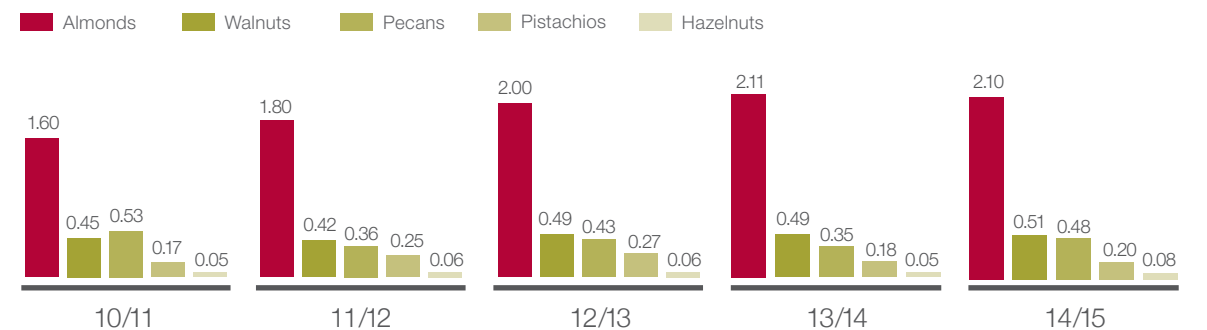
THE U.S. TREE NUT CATEGORY

U.S. Marketable Production and Imports of Tree Nuts 2005/06–2014/15, in million pounds (shelled basis)

CROP YEAR	ALMONDS		WALNUTS		HAZELNUTS		PECANS		PISTACHIOS		OTHER NUTS*	
	Crop	Imports	Crop	Imports	Crop	Imports	Crop	Imports	Crop	Imports	Crop	Imports
2005-06	888.7	9.2	288.2	1.1	20.0	12.1	125.3	75.4	139.0	0.9	51.4	334.9
2006-07	1,087.8	8.1	294.6	2.3	36.4	13.5	91.4	57.0	119.0	1.4	27.8	358.8
2007-08	1,358.3	7.1	295.0	9.0	28.6	13.4	180.3	79.9	207.0	0.9	16.4	378.3
2008-09	1,571.9	4.2	395.5	2.0	26.2	10.0	94.3	61.9	135.4	0.9	32.7	360.4
2009-10	1,379.0	5.6	381.5	3.2	37.4	8.0	127.5	80.1	174.8	1.3	19.1	366.4
2010-11	1,600.3	8.1	436.8	0.5	21.3	11.0	140.4	82.8	250.1	0.5	18.2	379.5
2011-12	1,979.9	15.9	399.8	4.9	29.1	9.7	124.6	74.6	222.0	0.9	22.3	339.0
2012-13	1,848.4	39.4	441.2	8.0	27.7	15.2	141.0	79.3	278.3	1.2	23.1	371.9
2013-14	1,970.0	33.9	436.8	11.9	36.7	14.5	130.8	92.5	234.5	0.5	18.6	425.7
2014-15†	1,838.6	31.3	501.5	21.2	27.2	10.9	128.1	97.8	256.0	0.9	20.9	564.0

Source: USDA, Economic Research Service, *Fruit & Tree Nut Situation and Outlook*. *Other Nuts includes Brazil nuts, macadamia nuts, pine nuts, chestnuts, cashews and mixed nuts. †Preliminary. Note: Marketable production is utilized production minus inedibles and noncommercial use.

Domestic Per Capita Consumption of Tree Nuts 2010/11–2014/15, pounds per capita



Source: USDA, Economic Research Service, *Fruit & Tree Nut Situation and Outlook*. Almond Board of California. 1. U.S. Nielsen AdViews. Note: All brands, including Almond Board of California, are reported based on Nielsen reported spending for 2013 not actual negotiated spending.

INVITING CONSUMERS AND CUSTOMERS ON OUR SUSTAINABILITY JOURNEY

As California's historic drought entered its fourth year in 2015, local and national media continued to speculate about who was using more than their fair share of the state's managed water, calling out "villains" of the drought.

While almond trees use roughly the same amount of water as other fruit and nut trees, they quickly became a target in the conversation about the drought. The media coverage, often fueled by misinformation and lacking important context, included sensational headlines and criticism of California Almonds.

The ongoing debate about water use in California presented Almond Board of California with an opportunity to tell the almond community's sustainability journey, highlighting the important research that has been conducted over the past several decades, and discussing the long-standing commitment to sustainable agricultural practices that protect the environment and support our local communities.

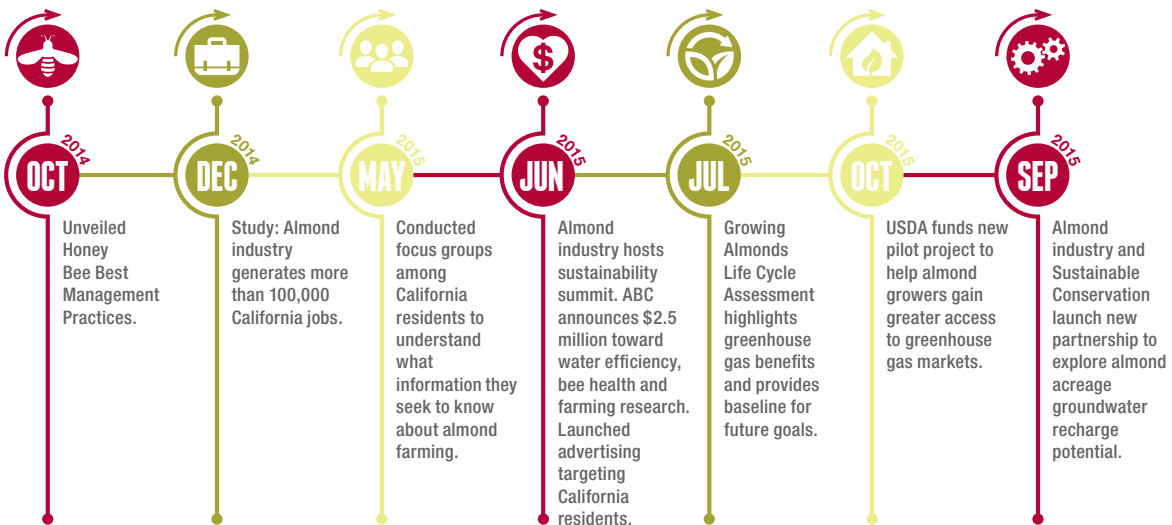

Together, almond growers have been progressive and continuously challenge themselves to do more. Over the past year, Almond Board and many members of the

almond-growing community have made a concerted effort to expand the dialogue. They are proudly engaging the media to not only correct misinformation about how almonds are grown, but also highlight important initiatives that move the industry forward and lay the foundation for the next generation of growers. These activities have resulted in a more nuanced and robust discussion, including the benefits of almond production for California and consumers, while exploring opportunities for increasingly sustainable farming practices.

Almond Board of California is excited for the future of the industry. There's a lot of work ahead, but as we look forward, ABC will continue its efforts to research and improve for a lower environmental impact and engage in an ongoing dialogue with our consumers, the media and our neighbors throughout California. Almond Board will do this by further expanding its efforts to share fact-based information, fast-tracking innovation advancement driven by the Accelerated Innovation Management (AIM) program, building influential relationships with like-minded organizations (see page 23 + 24) and working with growers to share their perspectives with a visible public presence.



Sustainability Initiatives

Almond Board to take part in \$960,000 environmental project

MODESTO - The Almond Board of California and the Environmental Defense Fund (EDF) will join with other partners to take part in a USDA-funded pilot project that will give almond and corn growers greater access to greenhouse gas markets like those under California's cap-and-trade program.

cvbj.biz

THE ALMOND INDUSTRY
has a great story to tell about

SUSTAINABILITY

but we strive for continuous improvement and challenge ourselves daily to improve our environmental impact. As we do more, with help from many partners, we will continue to tell our story.

Almond Board of California has long been a research-based organization, funding production, environmental, almond quality and food safety, and nutrition research that has contributed to continuous improvements across the almond industry. In recent years, ABC has placed a greater emphasis on sustainability research and initiatives.

ABC's Board of Directors continues to support traditional research and sustainability initiatives, but is now placing greater emphasis on agricultural innovation that will lead the almond industry into the 22nd century. This year the Board established the Board of Directors' task force, charged with overseeing the Accelerated Innovation Management program with the purpose of identifying sustainable and innovative almond-farming practices that will be required to meet the future needs of the consumer, the community and the planet.

WATER MANAGEMENT AND EFFICIENCY:

Focuses on accelerating the transition of growers up an irrigation improvement continuum with the adoption of more efficient irrigation and scheduling and management practices, resulting in the maximization of "crop per drop." This initiative includes a range of activities from working with growers to fine-tune techniques to adopting more advanced water management technologies.

SUSTAINABLE WATER RESOURCES:

Explores how best to leverage a unique strength of the industry, its acreage, for increasing groundwater recharge in aquifers, which collectively are California's largest water storage system. Water recharged through this program will benefit all Californians, not just growers. This initiative is bolstered by ABC's partnership with Sustainable Conservation, research conducted by the University of California, Davis, and almond orchard mapping and spatial analysis conducted by Land IQ. A second part of this initiative will look for opportunities to recycle municipal waste water and other degraded water as a way of increasing overall water availability for farmers and all Californians.

22ND CENTURY AGRONOMICS:

Recognizes that we need to better understand and then adopt the technologies that will lead California Almond farming into the 22nd century. The ABC's Board of Directors' task force is open to considering all options as to what innovations and technical "leap frogs" will be needed to sustainably farm in the future. Each component of almond farming will be considered, from land preparation and varietal development to equipment and processing.

AIR QUALITY:

California's Central Valley has some of the most exacting air quality standards in the world. In order to do our part to help meet these standards, the Board of Directors' task force is delving into the various ways almond production impacts air quality as well as evaluating options to decrease emissions. From analyzing industry fossil fuel use to small- and large-particle pollutants, all components of almond farming that impact air quality are under scrutiny. This initiative will identify alternatives that will result in cleaner air for all those who live in California's Central Valley: farmers, their families and surrounding communities.

1. More on Almond Board's research initiatives can be found on pages 28-33. 2. More on ABC's CASP and sustainability initiatives can be found on pages 26 and 27.

CREATING MORE SUSTAINABLE ALMONDS THROUGH COLLABORATION

Partnerships play a key role in the Almond Board of California mission. When it comes to growing sustainable almonds, all of us are in this together. It's achieved through collaboration among a range of remarkable partners, including universities, nonprofits, trade associations, local communities and allied agriculture businesses. Success is achieved jointly as we mutually leverage each organization's strength and circles of influence.

Over the years, progress has been made and our collaborations have produced tangible results, helping to develop state-of-the-art farming and production practices and establish almonds as national leaders in sustainable agriculture.

These collaborations are supported and strengthened on both sides with funding, in-kind donations, subject-matter expertise, sponsorships, almond grower education, research and unique perspectives. A sampling of collaborations include:

- Honey Bee Health Coalition
- Project Apis m.
- Bee Informed Partnership
- California State Beekeepers Association
- American Beekeeping Federation
- American Honey Producers Association
- North American Pollinator Protection Campaign
- Environmental Defense Fund
- Sustainable Conservation
- SureHarvest
- Land IQ
- Coalition for Urban Rural Environmental Stewardship
- California Farm Water Coalition
- California Roundtable for Agriculture and the Environment
- Almond Hullers and Processors Association
- University of California Division of Agriculture and Natural Resources
- USDA Agricultural Research Service
- USDA Foreign Agricultural Services
- International Dried Fruit and Nut Council
- FRUCOM
- International Tree Nut Council Nutrition Research & Education Foundation
- European Snacks Association
- China Chamber of Commerce of Foodstuffs and Native Produce
- Peanut and Treenut Processors Association
- Codex International Food Standards
- Ag Transport Coalition
- Ag Trade
- Ag in the Classroom Foundation
- Sierra Vista
- American Society for Nutrition
- International Union of Food Science and Technology
- National Food Industry Association: Specialized Committee for Nuts and Roasted Seeds of China



ABC has partnerships with USDA Agricultural Research Service, University of California Division of Agriculture and Natural Resources (which includes both researchers and farm advisors), as well as several local, state and federal government agencies, all of which work with the California Almond community to ensure the continued success of California Almonds.



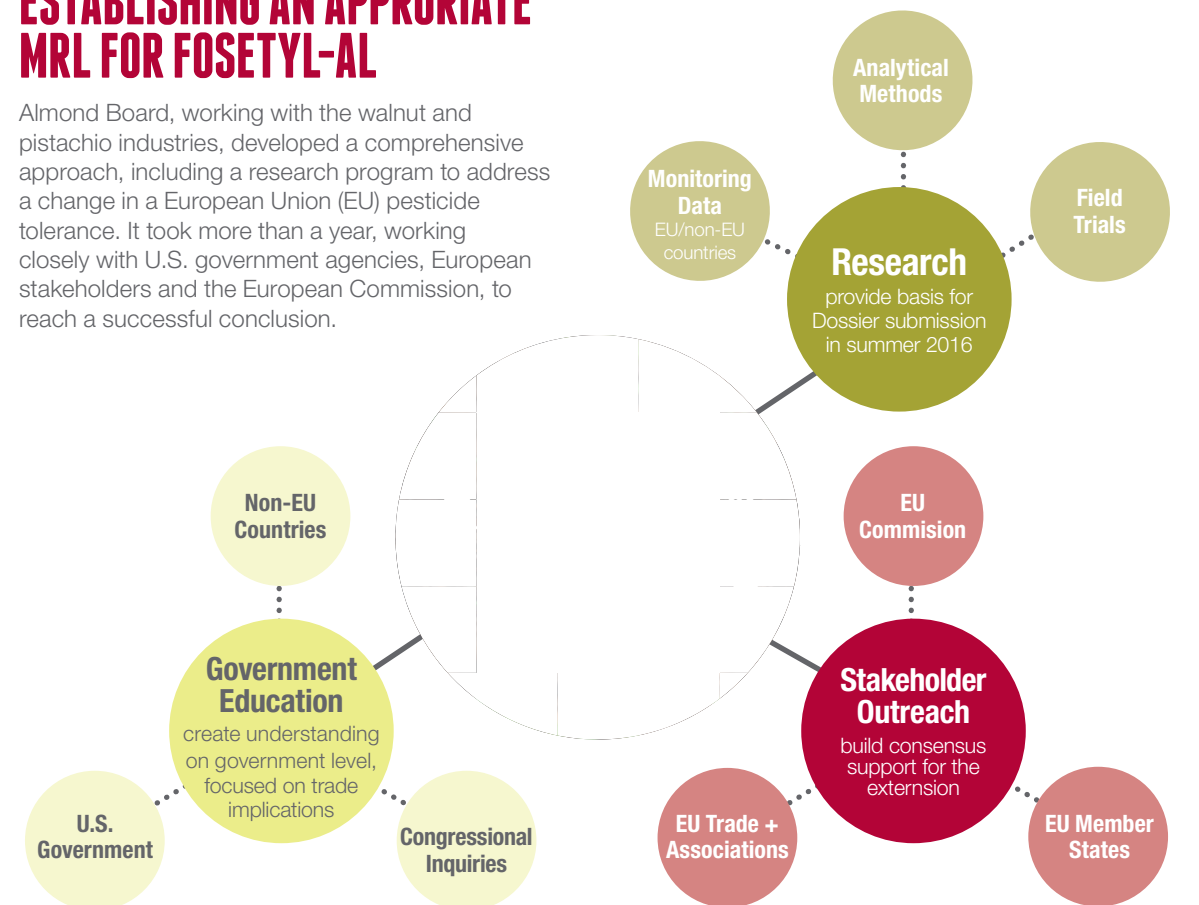
GLOBAL TRADE + REGULATORY AFFAIRS

GTRA has been addressing a variety of issues, many of which cannot be resolved without an integrated approach, leveraging technical information, stakeholder alliances and government partnerships.



ESTABLISHING AN APPROPRIATE MRL FOR FOSETYL-AL

Almond Board, working with the walnut and pistachio industries, developed a comprehensive approach, including a research program to address a change in a European Union (EU) pesticide tolerance. It took more than a year, working closely with U.S. government agencies, European stakeholders and the European Commission, to reach a successful conclusion.



1. Food Safety Modernization Act. 2. Almond Hullers and Processors Association.

GROWING UP SUSTAINABLE



About Sustainability¹

As illustrated in the chart above, sustainability for California Almonds is interconnected and crosses all aspects of the almond life cycle, inside the orchard and beyond. Underlying the advancement and innovation in each of these categories is **over \$50 million in Almond Board-funded research**.

The product of over 40 years of investment, this research has led to improvements in the management and protection of vital natural resources, practices that protect

neighbors and surrounding communities, and increased understanding of the nutritional benefits of consuming almonds. Together these advancements continue to pave the way for almonds to be an economically, environmentally and socially responsible crop for California.

¹ What defines California Almond sustainability? Sustainable almond farming utilizes production practices that are economically viable and are based upon scientific research, common sense and a respect for the environment, neighbors and employees. The result is a plentiful, nutritious, safe food supply. ² Kendall, et al. Life Cycle-based Assessment of Energy Use and Greenhouse Gas Emissions in Almond Production. *Journal of Industrial Ecology*, July 2015.

Life Cycle Assessment

The Growing Almonds Life Cycle Assessment (LCA) evaluated energy and greenhouse gases over an almond orchard's productive life, comprehensively examining the many interrelated elements, from land preparation and planting the tree through the life of the tree and its eventual removal. The first of three phases of life cycle assessments, this research will be followed by similar studies about processing and consuming almonds.

Funded in part by Almond Board of California and recently published in the *Journal of Industrial Ecology*, the LCA study by University of California, Davis, researchers shows that

ALMOND TREES ACCUMULATE AND STORE SIGNIFICANT AMOUNTS OF GREENHOUSE GAS over the course of their **25-YEAR LIFE CYCLE²**



PRODUCING + HARVESTING ALMONDS
IS KEY TO THE INDUSTRY'S ENVIRONMENTAL IMPACT and further reducing **CARBON EMISSIONS**

Should policy changes and production advances work



the California Almond industry has the potential to be **CARBON NEUTRAL** OR EVEN **CARBON NEGATIVE** with respect to greenhouse gases

Consider if California's Central Valley was home to

ADVANCED BIOENERGY SYSTEMS

IMPORTANT TO MORE EFFECTIVELY TRANSFORM ALMOND COPRODUCTS INTO ALTERNATIVE ENERGY

“Almond orchards capture and store a significant amount of carbon both above and below the surface over their 25-year life cycle. This carbon storage provides a climate benefit not considered in conventional carbon footprints.”

- Dr. Alissa Kendall, UC Davis Department of Civil and Environmental Engineering

California Almond Sustainability Program

When it comes to following sustainable agricultural practices, California Almond growers and handlers continuously challenge themselves to do more. One of the most important tools available to the California Almond community is the California Almond Sustainability Program (CASP).

CASP was established in 2009 to both educate participants about sustainable practices and continuous improvement as well as better understand the ongoing sustainability practices of growers and handlers related to their operations.

Whether it's reducing the amount of water needed to grow almonds or investing in clean energy and production



20+ CASP GROWER WORKSHOPS
3 NEW MODULES IN 2015

practices to reduce our carbon footprint, almond growers and processors use a variety of research-based tools and strategies to ensure an environmentally sound, economically viable and socially responsible future for California agriculture.

To learn more about the California Almond Sustainability Program and how to participate, visit Almonds.com/Growers/Sustainability.



ROOTED DEEP IN RESEARCH

Production Research Committee

Pest Management/Entomology, Horticulture/Crop Research, Plant Pathology/Nematology, Bee Health/Pollination

Founded in 1973. Total investment to date over \$21.7 million, 316 projects funded.

Nutrition Research Committee

Heart Health + Beyond, Diabetes/Metabolic Syndrome, Weight Management, Satiety/Gut Health, Cognition, Composition

Founded in 1995. Total investment to date over \$21.5 million, 87 projects funded.

Almond Quality + Food Safety Committee

Prevalence/Monitoring, Almond Safety/Quality

Founded in 2001. Total investment to date over \$6.2 million, 82 projects funded.

Environmental Committee

Water Quality, Air Quality, Stewardship/Crop Protection

Founded in 2003.* Total investment to date over \$5.5 million, 51 projects funded.

Scientific Advisory Panel

Made up of senior-level scientific and regulatory experts

SAP counsel is used to help guide strategic initiatives in the four key areas of research for the California Almond industry to help achieve maximum effectiveness and impact.

The California Almond industry is a leader in California agriculture and has a long-standing history of research investment to support the quality of our crop and food product. Any practice that a grower chooses to use will have trade-offs in terms of impact on economics, the environment and our neighbors. It is essential to support these good agricultural and manufacturing practices with sound science. By working with top researchers from a variety of California, U.S. and foreign universities and state and federal research centers, the California Almond industry will continue to ensure the sustainability of California Almonds by increasing production efficiencies, optimizing the use of natural resources and minimizing environmental impacts.

*Environmental research was underway prior to the initiation of this committee through activities conducted under the Production Research Committee.

THE BUZZ ON BEES + ALMONDS

Committed to Honey Bee Health

The California Almond community is acutely aware of honey bee health concerns and continues to take extraordinary steps to ensure bees remain safe and healthy, both inside their orchards and throughout the year.

LEARN MORE @ ALMONDS.COM/POLLINATION



Almond Board funds more honey bee health research than any other crop group!

BMPs have been presented at over **50** INDUSTRY MEETINGS more than **7,000** COPIES have been distributed.



The Almond Board's Honey Bee Best Management Practices (BMPs) are having an on-the-ground impact on protecting honey bees in the orchard and beyond.



\$2 MILLION in honey bee health research **100** HONEY BEE HEALTH PROJECTS since 1995



Almond Board of California participated in White House meetings on the recently released *National Strategy to Promote the Health of Honey Bees and Other Pollinators*.

“BMPs GO FAR BEYOND THE ALMOND ORCHARD also providing important insights for all crops when it comes to PROMOTING HONEY BEE HEALTH.”

- Eric Mussen, Apiculturist Emeritus, University of California Cooperative Extension



ABC has taken a leadership position engaging and collaborating with universities, government agencies, nonprofits and beekeeping groups to communicate, educate and inform honey bee research, policy, education and outreach. See page 24 for a list of partnerships.

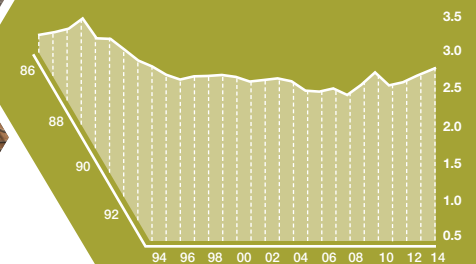
Almonds + Honey Bees are Essential to Each Other

1. Hives arrive in California Almond orchards just before the trees blossom.
2. As the trees blossom, bees forage for pollen and nectar in the orchard.
3. When the bees move from tree to tree, they pollinate almond blossoms along the way. Each fertilized flower will grow into an almond.
4. Almonds are bees' first natural food source after winter. The nutritious pollen helps hives grow stronger so that after almond bloom, many beekeepers split hives to grow their apiaries.
5. After almonds, honey bees move throughout the United States, pollinating over 90 other crops and making honey.



The number of honey bee colonies in the U.S. is at a 20-year high?

Yet, at the same time, summer and overwintering hive losses continue and are of concern, requiring beekeepers to work harder to keep a healthy apiary.



HONEY-PRODUCING BEE COLONIES IN THE U.S. 1986-2014 IN MILLIONS*

1. Gene Brandt, Vice President, American Beekeeping Federation. 2. USDA-NASS. Honey Production Report. 1986-2014.

THE BIGGER PICTURE: CALIFORNIA, ALMONDS + WATER

OVER
50%
of the nation's
**FRUITS
VEGETABLES
+ NUTS**
are
grown in
CALIFORNIA

Why Grow Food In California?

**CALIFORNIA IS NOT A DESERT—IT FALLS MOSTLY WITHIN
① OF THE WORLD'S ⑤ MEDITERRANEAN CLIMATE ZONES.**

GLOBAL MEDITERRANEAN CLIMATES



California's cool, wet winters and hot, dry summers offer ideal growing conditions for many diverse crops, including almonds.



Prolonged drought affects all Californians. **BUT IT'S IMPORTANT TO REMEMBER THAT THE STATE IS NO STRANGER TO DROUGHT.**

Some have suggested that the shift toward higher value permanent crops has led to an increase in ag water use. But according to the Department of Water Resources, the total amount of ag water has held steady since 2000 and actually declined over a longer period.¹

CALIFORNIA'S MEDITERRANEAN CLIMATE MEANS IT EXPERIENCES BOTH



THE KEY IS HOW THOSE EXTREMES ARE MANAGED.

Research, Innovation + Efficiency

California Almond growers are leaders in water-use efficiency, largely due to years of Almond Board-funded research and innovation.

Almond Board has funded nearly
**100 IRRIGATION RESEARCH
PROJECTS, OVER 30 YEARS**
—BY INDEPENDENT THIRD PARTIES—



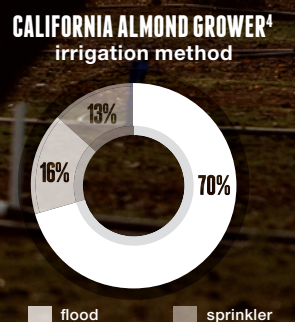
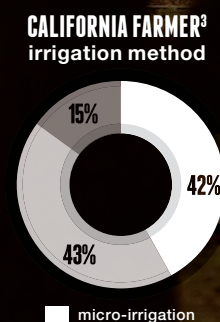
Almond growers have adopted efficient micro-irrigation **FAR ABOVE THE AVERAGE RATE REPORTED FOR CALIFORNIA.**

**WATER-SAVING
MICRO-IRRIGATION
TECHNOLOGIES**

have helped farmers
REDUCE
the amount of water it
takes to grow

1LB of 
by
33%
SINCE 1994²

70% OF ALMOND
GROWERS
use micro-irrigation
80% use **DEMAND
BASED**
irrigation
scheduling⁴



1. California Department of Water Resources. California Water Plan Update 2013: Volume 4. February 2015. 2. University of California, 2010. Food and Agriculture Organization of the United Nations, 2012. Almond Board of California, 1990-94, 2000-14. 3. California Department of Water Resources. California Water Plan Update 2013. October 2014. 4. California Almond Sustainability Program. January 2014. 5. Larry Schwankl, et al. Understanding Your Orchard's Water Requirements. University of California, Division of Agriculture and Natural Resources. Publication 8212. February 2010.

Next-Generation Sustainable Solutions

Almond growers are part of the fabric of their local communities, often living on the land that their families have farmed for generations. They understand and share the concerns of all Californians about the sustainability of our vital water resources.

To support the future generations of almond growers and Californians alike, Almond Board of California is launching forward-thinking initiatives to spur advancements, not just in growing almonds, but in agriculture as a whole.

1 Water Management + Efficiency: To accelerate the adoption of even more efficient and precise irrigation practices, ABC is working with growers to fine-tune techniques and adopt cutting-edge technologies, moving irrigation management in almonds into the next century.

2 Sustainable Water Resources: To address the sustainability of California's groundwater resources, ABC is in collaboration with Sustainable Conservation, University of California researchers and others, investigating the potential of using almond orchards for groundwater recharge to return water to underground aquifers.

For more information on the initiatives, see page 23.

**Almonds are unique in so many ways,
except one: the amount of water they use.**

Most fruit and nut trees in California use about the same amount of water as almonds⁵



DID YOU KNOW...

Water grows more than just the almond kernels we love to eat. Almond hulls are valuable livestock feed, and shells are used in generating alternative energy.

NUTRITION RESEARCH: DISCOVERING THE HUMAN HEALTH AND WELLNESS IMPACT OF CALIFORNIA ALMONDS

STUDY FEATURE: The Heart-Smart Snack

Almonds have long been recognized for their heart-health benefits. New research¹ suggests that they may also reduce waist circumference, a known risk factor for cardiovascular disease.

1 MUFFIN VS. 1.5 OZ. ALMONDS

A new study by researchers at Penn State University¹ recently compared the effects of snacking on almonds vs. a high-carbohydrate muffin on body composition and other heart disease risk factors.

52 healthy adults with elevated LDL cholesterol levels consumed a cholesterol-lowering diet for 12 weeks.



THE ALMOND SNACK
DECREASED TOTAL CHOLESTEROL BY 5.1MG/DL
more than the muffin snack



THE ALMOND SNACK
DECREASED LDL (BAD) CHOLESTEROL BY 5.3MG/DL
more than the muffin snack



THE ALMOND SNACK
DECREASED NON-HDL (BAD) CHOLESTEROL BY 6.9MG/DL
more than the muffin snack



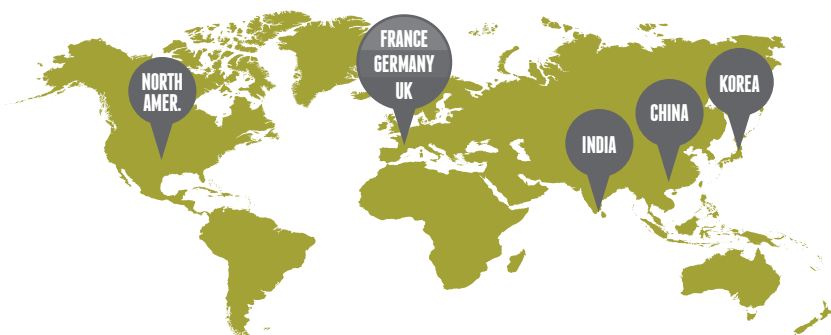
THE ALMOND SNACK
REDUCED
waist circumference by
0.31 INCHES
MORE THAN THE
MUFFIN SNACK.

Nearly two decades of research shows that almonds can help maintain a healthy heart.



Global Impact

The results of our research projects help educate consumers, health professionals, food professionals, government officials and many others so they can make informed choices and recommendations. Most of our studies generate healthy-eating messages around the world.



2015 U.S. Dietary Guidelines Advisory Committee Recommendations

"A diet higher in **plant-based foods**, such as vegetables, fruits, whole grains, legumes, nuts and seeds, and lower in animal-based foods is more **health promoting** and is associated with **lesser environmental impact** than is the current average U.S. diet."²

STUDY FEATURE: Is a Calorie a Calorie?

Research published in the *American Journal of Clinical Nutrition* showed that the number of calories actually digested and absorbed from whole almonds is 20% less than originally thought.³ Researchers used a new method to more accurately measure calories based on bioavailability. Additional studies are underway to examine how this technique for measuring calories could potentially affect calorie counts for other foods.

Researchers at King's College London investigated the mechanism behind this phenomenon.

15 HEALTHY SUBJECTS
CHEWED
— EITHER —
NATURAL ROASTED ALMONDS



The chewed samples were then examined for cell wall integrity using microscopy⁴

IT WAS FOUND THAT ALMONDS ARE NOT COMPLETELY BROKEN DOWN DURING CHEWING.



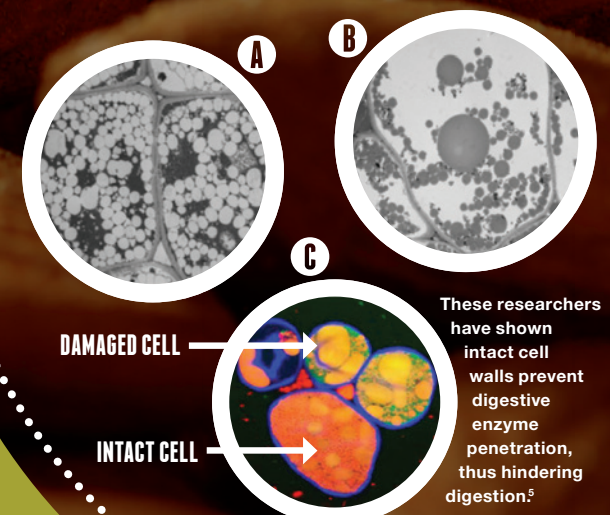
The research showed that the **INTACT CELL WALLS IN THE**



RESEARCH SHOWED THAT DURING **SIMULATED DIGESTION, INTACT ALMOND CELL WALLS ARE NOT BROKEN DOWN**

PREVENTING THE **RELEASE AND ABSORPTION OF LIPID**⁵ This study was done to help better understand the results of almond digestion studies in humans. Human digestion is a complex and dynamic process that may not be entirely replicated by simulated digestion.

BELOW: Transmission Electron Microscopy images of chewed almond boluses. Image **A** shows intact cells and their content. Image **B** shows the ruptured cells; note the merged lipid bodies. Image **C** shows Intact vs. Damaged cells when exposed to lipid-breaking enzymes (fluorescent green).



These researchers have shown intact cell walls prevent digestive enzyme penetration, thus hindering digestion⁵

Together these studies help explain earlier findings that the calories on the label may not necessarily be calories in your body.⁴

Scientific evidence suggests but does not prove that eating 1.5 ounces per day of most nuts, such as almonds, as part of a diet low in saturated fat and cholesterol may reduce the risk of heart disease.

1. Berryman CE, West SG, Fleming JA, Bordini PL, Kris-Etherton PM. Effects of Daily Almond Consumption on Cardiometabolic Risk and Abdominal Adiposity in Healthy Adults with Elevated LDL-Cholesterol: A Randomized Controlled Trial. *Journal of the American Heart Association* 2014; doi: 10.1161/JAHA.114.000993. 2. Scientific report of the 2015 Dietary Guidelines Advisory Committee, Advisory report to the secretary of Health and Human Services and the Secretary of Agriculture, First print, February 2015. 3. Novotny JA et al. Discrepancy between the Atwater factor predicted and empirically measured energy values of almonds in human diets. *Am J Clin Nutr.* 2012;96:296-301. 4. Grundy MML et al. Effect of mastication on lipid bioaccessibility of almonds in a randomized human study and its implications for digestion kinetics, metabolizable energy, and postprandial lipemia. *Am J Clin Nutr.* 2015;101:25-33. 5. Grundy MML et al. The role of plant cell wall encapsulation and porosity in regulating lipolysis during the digestion of almond seeds. *Food & Function.* 2015;DOI: 10.1039/C5FO00758E.

ALMOND QUALITY + FOOD SAFETY

How Packaging Can Extend Almond Shelf Life

Almond quality research is one of the four strategic priorities established by the Almond Quality and Food Safety Committee in 2014. Shelf-life studies funded by ABC continue to expand our understanding of almond quality during storage under different conditions.



Kernels sealed in the plastic **POLYPROPYLENE BAGS** had a **SIGNIFICANTLY LONGER SHELF LIFE**

than kernels packed in unlined cartons, at all storage conditions studied

SHELF LIFE INCREASED BY 4-18 MONTHS depending on temperature and humidity

The Benefits of Using Polypropylene Bags

A long-term study recently completed at the University of Georgia reveals the beneficial effects of plastic packaging over cardboard cartons on almond shelf-life extension. The study was rigorously conducted on pasteurized raw and light-roasted Nonpareil kernels in various packs, which were assessed for up to two years. Product was stored at controlled temperature and humidity conditions.

Roasted kernels in sealed high-barrier (e.g., multilayer foil laminate) or polypropylene bags stored at 40-77°F achieved a minimum



Almond quality + shelf life is influenced by:

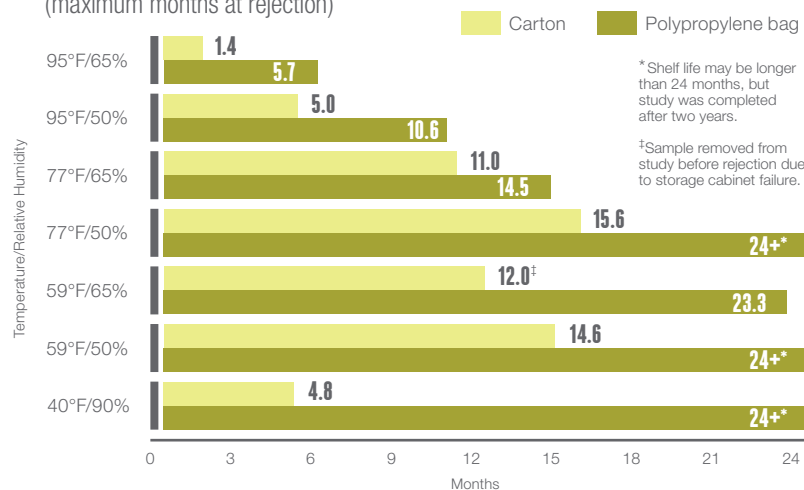
- 1 PRODUCT CHARACTERISTICS
- 2 ENVIRONMENT DURING DISTRIBUTION AND STORAGE
- 3 PACKAGING

BENEFITS OF USING POLYPROPYLENE BAGS ARE:

- extended shelf life
- infestation prevention
- slow down moisture migration
- may maintain two-year shelf life for raw almonds at a temperature up to 77°F
- may be adequate for roasted almonds for more than one-year shelf life

Shelf Life of Pasteurized Almond Kernels

(maximum months at rejection)



GLOBAL MARKETING OVERVIEW

As an agricultural promotion group, Almond Board of California (ABC) invests in research and programs that ultimately are intended to build confidence in almonds as a crop that's great for California and one of the best foods in the world for people to eat. To that end, a vital role of the Global Marketing team is to listen carefully to external audiences, and then, in turn, help ABC respond to what people want in a crop or a food, ensuring our industry is relevant to their needs or—even better—one step ahead.

ABC's own market research is the foundation that helps us identify the most suitable markets and target audiences that will provide the greatest return on investment. This market research also helps us to develop communication strategies that are most compelling and beneficial to that country and target. Across the globe, ABC conducts marketing activities in five key markets: North America (United States and Canada), EU3 (United Kingdom, France and Germany), India, China and South Korea. The marketing mix in these countries varies, but includes activities such as advertising, public relations and social media to convey the benefits of almonds. Additionally, we ensure ongoing research is in place to track the results and optimize our marketing efforts.

In recent years, consumers around the world have expressed increased interest in knowing where their food comes from and how it's grown. Our marketing programs, in turn, have come to focus more on how almonds get from the orchard to consumers' hands. In many cases, our target audiences don't know that almonds are grown on trees or that almond trees bloom each year and require bees to pollinate them. In addition to providing general education, we are also educating the media about the almond industry's ongoing sustainability-related research and initiatives in areas such as water management, coproduct reuse and bee health. Our goal is to ensure people in key markets around the world are aware of how the almonds they get from California are high quality, nutritious, safe and responsibly grown, with an industry committed to innovating for the future.

1. Innova Market Insights, Global New Products Database, 2014.

ALMONDS remain the **#1 nut**

in global new product introductions since 2007¹



GLOBAL MARKETING

NORTH AMERICA

NA Consumer

In North America, consumers like almonds and believe they're a smart snack. Americans, especially, love to snack, and they have many ways to snack on almonds, with many forms and creative products.

Overall, our marketing program illustrates the benefits of almonds' powerful nutrition and crunch, along with their versatility at snack time.¹



The Crunch On ad campaign continued to focus on almonds as the powerful snack that helps consumers live vibrant lives.



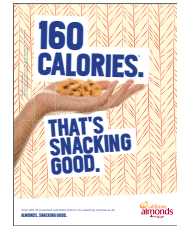
We focused in 2015 on almonds as the smart choice to counter "mindless munching" on empty calories at snack time.



EUROPE

UK | France | Germany

In Europe, consumers are looking for natural convenient snacks, and almonds naturally fit the bill. Almonds are in their pantries, but they don't often think of them as a snack. That's why the emphasis in Europe is on getting almonds out of the baking cupboards and into daily snacking scenarios.



NEW UK Snacking Good Print Campaign Launched September 2015



An Amnesiac, a Situational or a Super?
Take our quiz to find out what type of snacker you are... and how to stop your bad nibble habits

Snack amnesiacs are mindless munchers who subconsciously snack. Situational snackers have busy schedules and are often stressed out. Super snackers plan ahead and nibble only when their body tells them to.

By registering on the almonds website, you can receive a free e-book.

Support this marketing in an important way: by controlling your snacking, and when you would like to snack, you can help to improve your health. It's a healthy choice. Instead of eating a handful of almonds, think about how you can use almonds to help you reach your goals. And if you need the biggest boost, would you like to try almonds from our new 'Snacking Good'?



#WinATin video post:

- Over 100 comments
- Over 70 likes
- Over 13,000 views
- A reach of over 28,000

GLOBAL

Surveyed consumers from around the world reported almonds as the #1 ingredient that they would select in their ideal chocolate bar.²



Revised our ad campaign targeting food professionals.

CHINA

Consumer

In Asia, there are centuries-old traditions with food and how food impacts health and vitality. From Chinese traditional medicine to Ayurvedic texts, there is a place for almonds. And it's not all about serious health concerns; food is an integral part of socializing, celebrating, indulging, the beauty regime and fun as well.

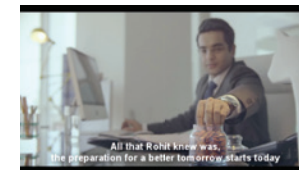
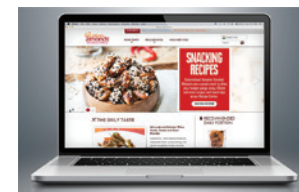


INDIA

Consumer

Launched their first-ever website in July.

Our Tomorrow Begins Today Ad campaign continued to focus on mother and child, working men and women.



GENERATED OVER **68** BILLION ADVERTISING AND PR IMPRESSIONS COMBINED

SOUTH KOREA

Consumer

The content using the hashtag #AlmondsOnTour received high level of engagement (likes, shares and comments) among ABC Korea's Facebook fans. While the reach for general content was about 400-700, the reach for content with the hashtag #AlmondsOnTour peaked 1,000, about 40% more.



1. A one-ounce handful of almonds has 13 grams of unsaturated fat and only 1 gram of saturated fat. 2. SRG, Global Chocolate Study, 2014.





Korea Case Study: California Almonds on the ROAD

To strengthen the positioning of almonds as the perfect mid-morning snack while creating a special occasion to reach out to a broader range of consumers the South Korea team operated a fully branded food truck in the five hottest spots in Seoul. The event focused on providing personal mid-morning almond experiences to consumers while educating them on the benefits of almond snacking by presenting almond snack packs, almond tins and All About Almond brochures. Online events, such as image sharing and hashtag events, were integrated for more effective consumer engagement and deeper brand experiences on the brand's social media channels.

The event reached out to over 2,000 consumers during the five-day offline food truck sampling event and garnered over 252 million media impressions. Over 5,160 people engaged in the almond food truck campaign for the mobile and Facebook advertising, totaling more than 21 million digital reach.



GLOBAL MARKETING CASE STUDIES

India Case Study: Fitness Media Sessions

The India team contracted with local fitness instructors and nutritionists to host fitness and nutrition education sessions with target media in select cities (Lucknow, Chennai and Bhopal) to gain media visibility on health benefits of almonds.

The sessions started out with dissemination of nutrition benefits of almonds to key media representatives, followed by active participation of media in an "easy to incorporate in daily life" fitness session conducted by a professional fitness expert.

The campaign resulted in over 3.9 million media impressions and 52 clips.



EU3 Regional Case Study: Snack Happy Challenge

A vibrant campaign, aimed at showing how almonds can bridge many nutrition gaps in a busy mom's diet, as well as help to keep them on track during their busy day.

The campaign included research into the nation's snacking habits as well as support from celebrity ambassador Zoe Ball and expert nutritionist Lucy Jones. Zoe spread the word about almonds to six of her celebrity friends in a series of branded YouTube videos.

The campaign achieved over 400 million media impressions and 100% of the coverage featured key messaging and was positive in tone. In addition, there were 18,943 views of the hero videos and 5,246 views of the Mums Off Air videos.



China Case Study: Taste the Sunshine

In 2015, the China program launched a new consumer communications platform and advertising campaign under the theme Taste the Sunshine. Consumer research conducted early in 2015 pointed out that consumer perceptions toward almonds had shifted as they are receiving a lot more nutrition information and concerned about what is in their food. Chinese consumers also spoke a lot about the environmental stresses they have every day, whether it be from pollution or even just sitting in front of a computer screen all day. This led Almond Board to explore messaging about the origin of almonds from California, a place that has a positive image for its sunny, warm, fresh environment and easygoing, vibrant lifestyle. Chinese consumers responded positively to a concept that followed the almond journey from beautiful California and ending up in China for consumers to enjoy. The theme Taste the Sunshine is the payoff that the Chinese will enjoy almonds because they are getting a bite of California sunshine or, in other words, almonds embody the California experience.

Almond Board developed new advertising executions depicting this journey by following the petals from the almond blossoms. The advertising is targeted in the priority cities of Beijing and Shanghai, with some national reach as well. Almond Board's objective for the new advertising campaign is raising awareness for almonds above other nut and seed choices, making almonds a preferred nut because they come from beautiful, sunny California and they are an excellent source of vitamin E.

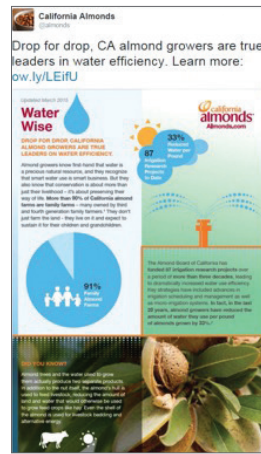


North America Case Study: It's About More Than Just Health

Many Americans are talking more than ever about how to eat in a way they can feel they're doing the right thing. That means not only thinking about health, but also about other people and about the planet.

California's severe drought brought questions about the water needed to grow almonds and led to a more prominent discussion about almond growers' decades-long story of sustainability, gaining water efficiency, promoting bee health and taking strides to become carbon neutral or even carbon negative.

Gaining interest in plant-based diets also provided the opportunity to emphasize almonds' 6 grams of plant-based protein per serving, along with their other many nutrients.



ENGAGING WITH ALMOND GROWERS

Industry Relations is more than just service to our industry; a big part of its evolved goal is for growers and handlers to join in and participate.

North America Case Study: Shark Week

In partnership with the ever-popular Shark Week on the Discovery Channel, we posed the question: what if a shark started snacking on almonds instead of surfers and seals? The result was, of course, a far more vibrant and accomplished life ashore, illustrated in a video and online campaign with creative social media extensions.



Industry Relations develops and manages an industry communications and education program with a focus on motivating almond growers and handlers to continually improve current practices that help the bottom line—engaging industry members in the board, committees, The Almond Conference, California Almond Sustainability Program and as Almond Ambassadors who tell the industry's story.

HIGHLIGHTS FROM 2015

Leadership Program

In its seventh year, more than 115 industry members have graduated from the Almond Leadership Program. After the year-long program, graduates are prepared to take leadership roles within the industry and their communities; understand current social, political, scientific, organizational and economic issues facing the industry and how to effect change; develop interpersonal relationship and communication skills; and have the opportunity to network.

Life Cycle Video

Shows the journey almonds take from tree to table. It includes all the stages and an abundance of natural beauty.

Managing Dust at Harvest

The campaign included outreach events, radio, ag media news articles, Almond Board of California (ABC) communications and tools to help growers and custom harvesters reduce dust during harvest. The "Managing Dust at Harvest Quick Guide" features specific strategies to minimize harvest air-quality impacts. In addition, a "Harvest Dust Toolkit" offers quick tips to keep dust at a minimum.

Ag in the Classroom

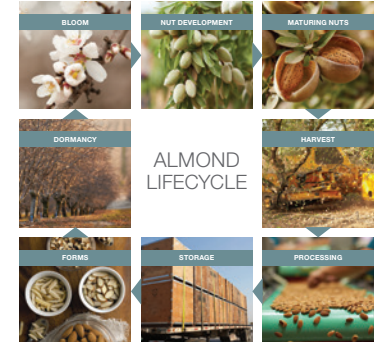
ABC is committed to providing accurate information about almond production and the almond industry to children across the state. "An Almond Story" activity book and DVD gives students a glimpse of the journey almonds take from orchard to table. To further strengthen this program, Almond Lesson Plans were released in December. Since 2009, ABC has shared more than 60,000 copies of "An Almond Story" activity book to students across the Central Valley and will continue to expand the program into schools statewide.

Join in!

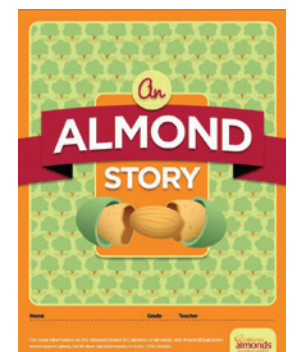
If you're not already involved with ABC, you're missing an opportunity to lead the industry and help develop the future of California Almonds. With 10 committees, Almond Ambassador programs, the Almond Leadership Program, California Almond Sustainability Program and task force groups, there's never been a better time to join in!



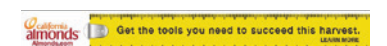
2015 Almond Leadership Program participants at orientation in January.



New Almond Life Cycle video shows the journey almonds take from tree to table.



New Almond Lesson Plans build upon the success of "An Almond Story" activity book.



The Managing Dust at Harvest education campaign was developed with ABC-funded research findings that can help reduce dust at harvest.





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Document #2015IR0169
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Printed in Modesto, California