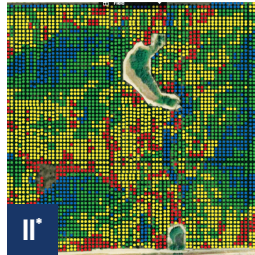


## ALMOND ORCHARD 2025 GOALS

REDUCING THE AMOUNT  
OF WATER NEEDED TO  
GROW A POUND OF  
ALMONDS BY 20%



# WATER



**WORK IN PROGRESS:**  
THESE PROJECTS AND  
PRACTICES ILLUSTRATE  
THE CALIFORNIA  
ALMOND COMMUNITY'S  
COMMITMENT TO  
WATER STEWARDSHIP.

### I. MOBILE FIRST:

Many in-field sensors (soil moisture, weather, etc.) report data directly to farmers' phones and tablets, sharing real-time performance and reducing the need to visit each field to observe conditions. More advanced systems allow farmers to turn off and on irrigation systems remotely, increasing precision.

### II. WATER STRESS MAPPING:

Using a mix of aerial imagery and other inputs, some farmers are taking a high-tech approach to monitoring irrigation system performance and tree health. Maps help farmers spot stress zones in their orchards, illustrating where adjustments can be made for improved efficiency and yields.

### III. IRRIGATION SYSTEM MAINTENANCE:

In partnership with local Resource Conservation Districts, the extension arm of California's Department of Conservation, ABC is helping farmers get back to basics, ensuring their irrigation systems are performing efficiently, without leaks and delivering water evenly across the farm.

### IV. ON-FARM SUPPORT:

ABC's Field Outreach and Education team provides boots-on-the-ground support for California almond farmers, meeting one-on-one to provide training and technical information and share best practices. ■

## ON-FARM IMPROVEMENTS

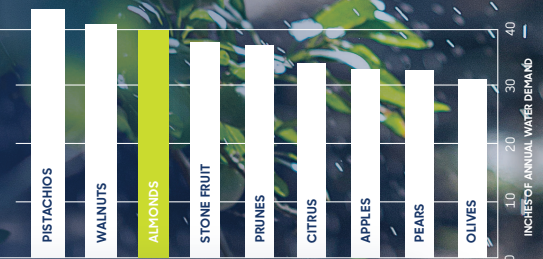
With its Mediterranean climate, California is one of the five places on earth where almonds can grow, so it's our responsibility to use water in the most sustainable way possible. California is our home, too, and we are committed to taking care of it.

That's why, between the 1990s and 2010s, we reduced the amount of water used to grow each pound of almonds by 33% thanks to improved production practices and adoption of efficient microirrigation technology<sup>1</sup>. Today, 85% of California almond farms use microirrigation<sup>2</sup> nearly two times the rate of California farms overall<sup>3</sup>.

We know there is still more to be done, and that's why we're doing it. In addition to a commitment to an additional 20% reduction, the almond community is also working to improve groundwater sustainability for all Californians. Research has shown that 675,000 acres of California almond orchards have soil suitable for groundwater recharge<sup>4</sup>. Combined with access to excess stormwater in wet years, these farms would be good sites for replenishing underground aquifers, California's largest water storage system. ■

## ANNUAL WATER NEEDS OF CALIFORNIA TREE CROPS<sup>5</sup>

All food takes water to grow, and **ALMONDS** are no exception.



While almond trees use around the same amount of water as other fruit and nut trees<sup>5</sup>, **plants require more energy, and thus more water, to create protein than sugars**<sup>6</sup>. So though nuts need more water than fruits and vegetables, they are also rich in essential nutrients, good fats and protein.

### MEET LINDA MARKARIAN GAVORIAN ALMOND FARMER, FOWLER, CA

"While my family has been farming for generations, I'm new to almonds. ABC's Field Outreach and Education team came out to check our irrigation system. We were having issues with our water efficiency, but after a few small changes, we had systemwide improvements."



Document #2020CN0134  
© 2020 Almond Board of California

\* Imagery provided by Ceres Imaging

1. University of California, 2010. Food and Agriculture Organization of the United Nations, 2012. Almond Board of California, 1990-94, 2000-14.  
2. California Almond Sustainability Program, November 2020. 3. California Department of Water Resources, California Water Plan Update, 2013.  
4. Land IQ, Groundwater Recharge Suitability Analysis, November 2015. 5. Larry Schwankl, et al. Understanding your orchard's water requirements. University of California, Division of Agriculture and Natural Resources, Publication 8212, 2010. 6. Nathalie Munier-Jolain, et al. Are the carbon costs of seed production related to the quantitative and qualitative performance? An appraisal for legumes and other crops. Plant, Cell & Environment, Volume 23, Issue 11, 2005.