



Case Study

Almonds

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This case study examines results from 2 years of a full AEA program at a California almond orchard.

Key Achievements:

- **40% reduction** in water use, with no detrimental effect on yield
- **Reducing annual pesticide applications** from 7 to 2
- **Eliminating synthetic nitrogen applications**; replacing with manure



Background

This study is based on a family farm in California's Central Valley. The family owns about 200 acres and manages another 11,000 acres. They grow a variety of crops, including almonds, pistachios, walnuts, citrus, and forage crops for dairy cattle. They use AEA management programs to a varying degree on a number of acres, but the full AEA program is used on 37 of their owned acres.

As a farming family with young children, they were worried about the negative health effects of pesticide exposure, and approached AEA to help them reduce their pesticide use, while increasing their yields.

The farm started working with AEA in the fall of 2022. They applied Soil Primer that fall, and have steadily increased their AEA program since.

Pre-AEA

Before beginning work with AEA, the grower's almonds were on a standard conventional management program, including:

- 2-3 fungicide applications around bloom
- 2 miticide sprays
- 2 hull split applications for navel orange worm

In total, at least 6-7 pesticide sprays each year.

They also applied 160 units per acre of synthetic nitrate to their almond orchards.



AEA Protocols

The farm's program with AEA involves:

- 2 Soil Primer applications, in spring and fall
- 4 targeted foliar applications based on sap analysis
 - Applied at bud break, flowering, cell division, and post-harvest
- An additional foliar at fruit fill, if budget allows and the crop is large enough to justify it
- Manure at 8 tons (160 units N) per acre



Results

Pesticide and Fertilizer Reduction

After 2 full years on the AEA program, the grower has **cut their pesticide use by 2/3** and **completely replaced synthetic fertilizers with manure**.

In 2024, they applied:

- 1 fungicide application (for rust)
- 1 hull-split application for navel orange worm
- 0 miticide sprays
- 0 synthetic nitrogen

Water Use Reduction

The grower typically irrigated their almond orchards with 2 inches of water per week during the summer. In 2024, the grower faced unexpected water use restrictions and was forced to cut back their water use by 40%, to 1 ¼" per week. In spite of this, they experienced **no detrimental effect** on yield, which they attributed to the **increased water-holding capacity** of their healthier soils, and the ability of the plants to use available water more efficiently.



Conclusion

The growers have been very pleased with the reduction in synthetic inputs and pesticides. While yields have been similar to the conventional program, our next goal is to surpass those yields next year. With more time on the AEA management program, we hope to see an increased yield resulting from healthier, nutritionally-balanced trees.

About Advancing Eco Agriculture

Advancing Eco Agriculture (AEA) helps farmers succeed by empowering them to grow crops that are more productive, resilient and profitable. We provide data-based agronomic consultation and a range of powerful liquid mineral nutrition and biological products.

AEA is dedicated to a whole-systems approach to revitalizing soil and plant health, looking beyond symptoms by diagnosing root causes and providing treatments. This approach, informed by more than 18 years of data and on-farm experience, increases yields and crop performance, reduces or eliminates the need for pesticides and fertilizers, and generates immediate economic returns for farmers.

(800) 495-6603
hello@advancingecoag.com
advancingecoag.com

