

Guarantee® Hi K

Seaweed Extract

Increases Almond Yields in Two-Year Trial

Ocean Organics Guarantee® Hi K (Organic) Increases Almond:

- Yields
- Total return per acre

CROP

Sweet Almond (*Prunus dulcis*)

STUDY OBJECTIVES

- To monitor growth and production in conventionally-grown almonds when treated with two rates of **Guarantee® Hi K** 0-0-6 seaweed extract.
- To compare production in almonds when treated with **Guarantee Hi K** versus a competitive seaweed extract commonly used in the marketplace.

LOCATION/SCIENTISTS

Westley, CA

Investigator: Barat Bisabri, Ph.D.,
Bisabri Ag Research & Consulting

Study Director: Sarah Williams, Ph.D.

RESULTS

2019 Results

As shown in Figure 1, treatment with 2 pints/acre of **Guarantee Hi K** seaweed extract statistically increased almond meat per acre by 307 pounds (an increase of 14%) as compared to the untreated control. Estimating the value of almond meat to the grower at roughly \$2/pound, this would result in a \$615/acre increase in return. Based on an approximate cost of \$8/acre for a 2-pint application of **Guarantee Hi K**, the ROI ratio would be 8. In this trial year, the 2-pint/acre rate resulted in a higher yield increase than the 4 pint/acre rate (Figure 1).



Key Results

Guarantee Hi K

- Increased almond yield both years of the trial
- 10% in 2018
- 14% in 2019
- Outperformed a key competitor

As shown in Figure 2, **Guarantee Hi K** seaweed extract was compared to a commonly used seaweed extract at that product's label rate. Both **Guarantee Hi K** and the competitive seaweed product are extracts of *Ascophyllum nodosum*.

Guarantee Hi K at 2 pints/acre showed a higher yield increase compared to the competitive seaweed extract at 3 pints/acre.

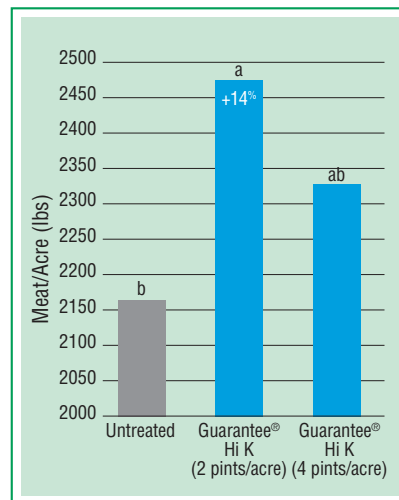


Figure 1: Guarantee® Hi K seaweed extract statistically increased almond meat/acre in 2019. Yield in treated trees increased by 307 lbs (2 pt/ac rate) and 160 lbs (4 pt/ac rate) compared to the untreated control.

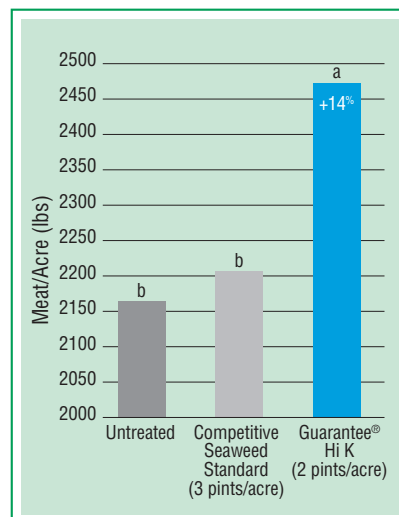


Figure 2: Treatment with Guarantee® Hi K seaweed extract produced a yield that was 307 lbs/ac higher than the untreated control, and 271 lbs/ac higher than a commonly used seaweed extract standard from a different company.

RESULTS CONTINUED

2018 Results

As shown in Figure 3, treatment with 4 pints/acre of **Guarantee Hi K** seaweed extract numerically increased almond meat per acre by 260 pounds (an increase of 10%) compared to the untreated control. Estimating the value of almond meat to the grower at roughly \$2/pound, this would result in a \$520/acre increase in return. Based on an approximate cost of \$16/acre for each 4-pint application of **Guarantee Hi K**, the ROI ratio would be 5.5.

In this trial year, the 4 pint/acre rate resulted in a higher yield than the 2 pint/acre rate (Figure 3). However, with the lower cost of the 2 pint/acre application, the ROI ratio for the lower rate was still 4.9, not far off from the ROI for the higher rate.

As described in the 2019 results, this researcher compared **Guarantee Hi K** seaweed extract to a commonly used seaweed extract at that product's label rate of 3 pints/acre (Figures 2 and 4). In 2018, as well as 2019, **Guarantee Hi K** showed a favorable yield increase compared to the competitive seaweed extract.

**Guarantee Hi K
0-0-6 is Approved
for Organic Use.**

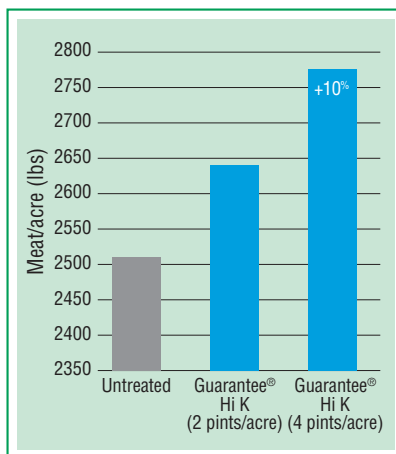


Figure 3: Guarantee Hi K seaweed extract increased almond meat per acre by 260 pounds (4 pints/acre) and 118 pounds (2 pints/acre) compared to the untreated control in 2018.

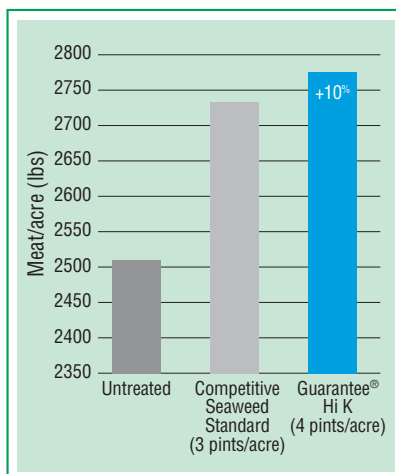


Figure 4: Guarantee Hi K seaweed extract showed a higher yield increase compared to a commonly used seaweed extract, reflecting a favorable increase in a similar rate window.

STUDY DESIGN

This trial was set up as a completely randomized strip trial with completely randomized data collection of six replicates maintained during the growing season. **Guarantee Hi K** seaweed extract was applied at two different rates: 2 pints/acre and 4 pints/acre

and compared to an untreated control, as well as a competitive seaweed standard. The application amount was 100 gallons/acre with a mix size of 25 gal (total for 6 plots).

In 2018, foliar applications were made on March 8, March 29, May 15, June 29, and October 9. Harvest data were taken on Aug 22, 2018.

In 2019, six foliar applications were made on Feb 20 (pink bud), March 12 (full bloom), March 25 (early leaf), April 13 (nut dev.), July 15 (hull split), and Sept 27 (post harvest). In addition, three soil applications were made on Feb 12 (pink bud), April 14 (nut dev.), and Sept 27 (post harvest). Harvest data was taken on Aug 21, 2019.

CONCLUSIONS

In this two-year trial, **Guarantee Hi K** increased almond yield (meat per acre) compared to the untreated control two years in a row. Given the fact that the return on investment (ROI) was similar for both the 2 and 4 pint/acre rates in 2018, and that the lower rate outperformed the higher rate in 2019, we recommend using the 2 pint/acre rate for the best ROI. **Guarantee Hi K** also outperformed an industry standard seaweed extract in this trial; in 2019, applying the 2 pint/acre rate of **Guarantee Hi K** resulted in a 12% higher yield than the competitive seaweed extract.

It should be noted that preliminary 2017 trial data from the same researcher showed Ocean Organics seaweed producing a 12% increase in almond yield compared to the untreated control. In conclusion, we now have three years of data that support the use of Ocean Organics seaweed to increase almond yield.

Ocean Organics has been processing seaweed and formulating fertilizers for over 40 years. Our innovative processing technology yields products richer than others yet with fewer solids and lower viscosity. This means our extracts can be used with a broader range of materials, which have better blending, mixing and stability characteristics. Our seaweed-based fertilizers, plant health materials and soil conditioners lead the industry in quality, effectiveness, cost efficiency and environmental sustainability.



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