

Guarantee® Hi K

Seaweed Extract

Improves Yield and Fruit Size in Hass Avocados

Guarantee® Hi K Seaweed Extract Produces Increases in Hass Avocado:

- Yield
- Fruit size

Guarantee® Hi K is approved for organic use.



It should be noted that avocados have a tendency to alternate bear, producing a large crop one year and a small crop the following, with this being the down year in production.

There were no significant differences noted in average fruit set per tree between treatments.

“The orchard utilized for this demonstration is very vigorous. To see a nice product response in a healthy orchard was, to say the least, impressive.”

— report from Holden Research and Consulting

CROP

Hass avocados

STUDY OBJECTIVES

- To evaluate an Ocean Organics seaweed program on production of Hass avocado trees.
- To measure impact on plant health and vigor.

LOCATION/SCIENTISTS

Ventura County, CA

Investigator: David Holden

Study Director: Sarah Williams, Ph.D., Ocean Organics

STUDY DESIGN

This trial measured the impact of Guarantee® Hi K on health and production of Hass avocado trees as compared to a grower standard. This trial was set up as a Random Complete Block Designed (RCBD) study of six replicates.

The study was overlaid on the grower standard. Two applications were made (2 qt/acre): the first was foliar-applied (late May) and the second was soil applied under the sprinklers (July). In-season growth and vigor data were collected.

RESULTS

Based on the report provided by David Holden.

Fruit Size and Set

Data show a statistically significant positive response in terms of fruit sizing.

Guarantee® Hi K increased fruit weight on both sampling dates, with the average weights evening out somewhat in December. Figure 1 shows the average weight per two fruit sub-sample as fruit increased in size throughout the fall.

Figure 1a: Fruit Weight. Guarantee® Hi K statistically increased fruit size in Hass avocados.

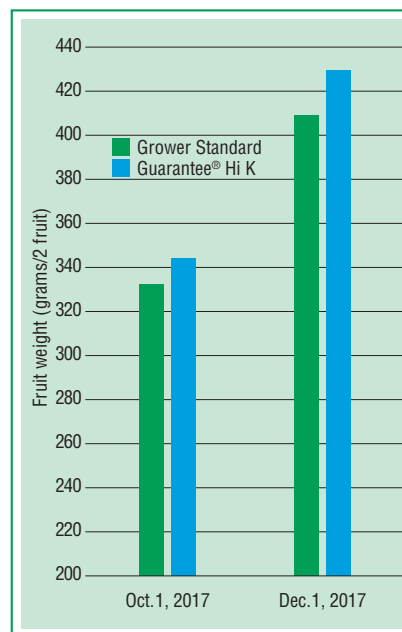


Figure 1b: Fruit Weight (grams/2 fruit)

	October	December
Guarantee® Hi K	344 a	429 a
Grower Standard	333 b	410 a
Incremental Increase in Fruit Weight between Trees Treated with Guarantee® Hi K and Grower Standard	+11	+19

Continued

Yield

Average production based on fruit weights and set numbers were utilized to come up with an extrapolated yield for this orchard for this year and an extrapolated yield based on the average production for this region (both shown in table below). Average production for Ventura County for mature trees is about 8000 pounds per acre. Per the report provided by David Holden:

the extrapolated yield data based on regional production “shows a nice statistical rate response.”

Figure 2a: Extrapolated Yield. Guarantee® Hi K increased extrapolated yield with data showing a statistical rate response.

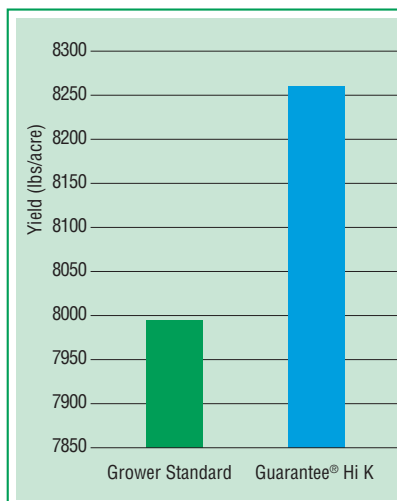


Figure 2b: Extrapolated Yield

	Extrapolated yield for this orchard (lbs/acre)	Extrapolated yield based on the average production for this region (lbs/acre)
Guarantee® Hi K	4691 a	8260 a
Grower Standard	4591 a	7992 b
Incremental Increase in Yield between Trees Treated with Guarantee® Hi K and Grower Standard	+ 100	+268



Photo credit: David Holden

Plant Health and Vigor

Late-season leaf analysis reports were supplied by A&L Western Labs. Tissue analysis as reported on September 19, 2017 shows little variation in leaf nitrogen levels, generally in the ample range, along with ample supplies of phosphorus and potassium at this time for all treatments. **It should be noted that both the potassium and zinc levels for the Ocean Organic treatment were generally above the grower standard level. This is important since both of these elements have a tendency to be deficient in most California avocado growing regions.**

No significant differences or changes in vigor were noted between treatments on any of these rating dates. SPAD readings of relative leaf chlorophyll content were also taken in season. No significant differences were noted between any of the treatments. In general, this orchard was very vigorous and healthy.

At no time during the course of this trial were any adverse or phytotoxic effects observed on this crop.

Conclusion

A program that included two applications of Guarantee® Hi K improved fruit size and yield in Hass avocado trees. From the report provided by Holden Research and Consulting: “The orchard utilized for this demonstration is very vigorous. To see a nice product response in a healthy orchard was, to say the least, impressive. If it could be duplicated in an on-production year, that would be interesting to see.”

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 with 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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