

Guarantee®

Seaweed Extract

Improves Strawberry Yields

Ocean Organics Guarantee® Seaweed Extract produces increases in strawberry:

- Yields
- Total Return Per Acre

CROP

Garden strawberry, local common variety

STUDY OBJECTIVES

To monitor growth and production in strawberries when treated with an Ocean Organics seaweed program. This trial was performed on winter production strawberries.

LOCATION/SCIENTISTS

Ventura County

Investigator: David Holden

Study Director: Sarah Williams, Ph.D.

STUDY DESIGN

This trial was set up as a completely randomized strip trial with completely randomized data collection of six replicates conducted during the growing season. At planting, all treatments received controlled-release fertilizer and in-season applications of N-P-K, along with seasonal foliar pest control as needed. All materials were applied through the grower's in-field drip irrigation system. No problems with phytotoxicity were noted through the use of any of Ocean Organics materials.

Guarantee seaweed extract was applied at 2 quarts/acre every 15 days in the drip system. The first application was two weeks post-plant. Production was measured over time with 24 sampling periods over 12 weeks during the peak season production. The impact of Ocean Organics **Guarantee** seaweed extract



Guarantee® increased net returns for the season by \$3,252 per acre compared to the Grower Standard.

on growth patterns over time was measured. Two leaf samples were taken (mid and late season timings). Ocean Organics seaweed treatments were compared to a Grower Standard (GS). Picks commenced on December 7, 2017 and ended March 26, 2018.

RESULTS

The summary below is based on a report provided by Holden Consulting.

Production

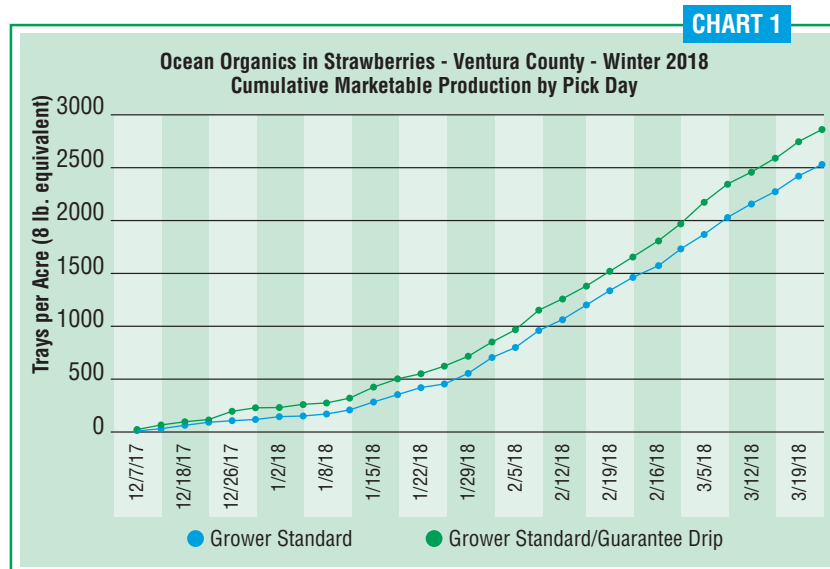
The chart below shows the marketable production in extrapolated calibrated

trays per acre for each pick day on a cumulative basis. **Guarantee** produced more flats of strawberries during the trial period over the Grower Standard with 2822 extrapolated flats per acre compared to 2512 flats per acre for the Grower Standard (an increase of 12%).

Net Returns

A different perspective on how the rated production affected final grower returns is shown below. Based on this data, **Guarantee** delivered a numerical cumulative seasonal increase to the grower's return over the Grower Standard. According to the report, there was "a nice numerical return noted with a cumulative total of \$24,859 per acre for **Guarantee** and \$21,607 for the Grower Standard program alone."

With an approximate cost to the grower of \$112/acre for the season for **Guarantee**, the return on investment (ROI) was 28 to 1. Every dollar invested in **Guarantee** yielded \$28.00 in return.

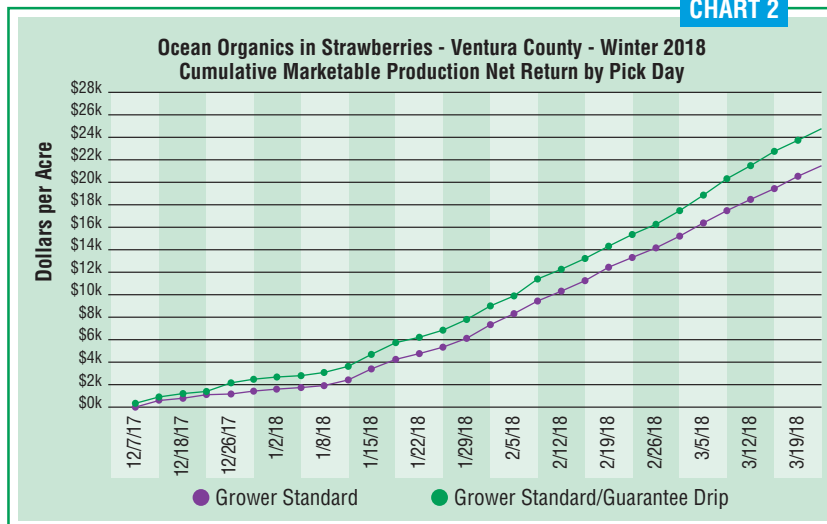


Continued

The chart below shows the net differential in returns to the farm for each pick day for the treatment programs over the grower standard, which in this case was **\$3,252 per acre more for the season with the Ocean Organics *Guarantee* seaweed program.**

The daily marketable returns are based on USDA Shipping Point Market Prices found at marketnews.usda.gov/portal for each pick day. This data represents the net to grower after costs of approximately \$6.00 per tray (which represents picking labor, carton and tray costs, transportation to the cooler, and cooling costs associated with picking the strawberries) were deducted.

CHART 2



The researcher also measured the daily market utilization for the berries picked during the season (data not shown). This is the percent of marketable berries compared with the total weight of berries picked, with **Guarantee** showing a 88.3% utilization on average, compared to the grower standard at 81.9%.

OTHER RESULTS

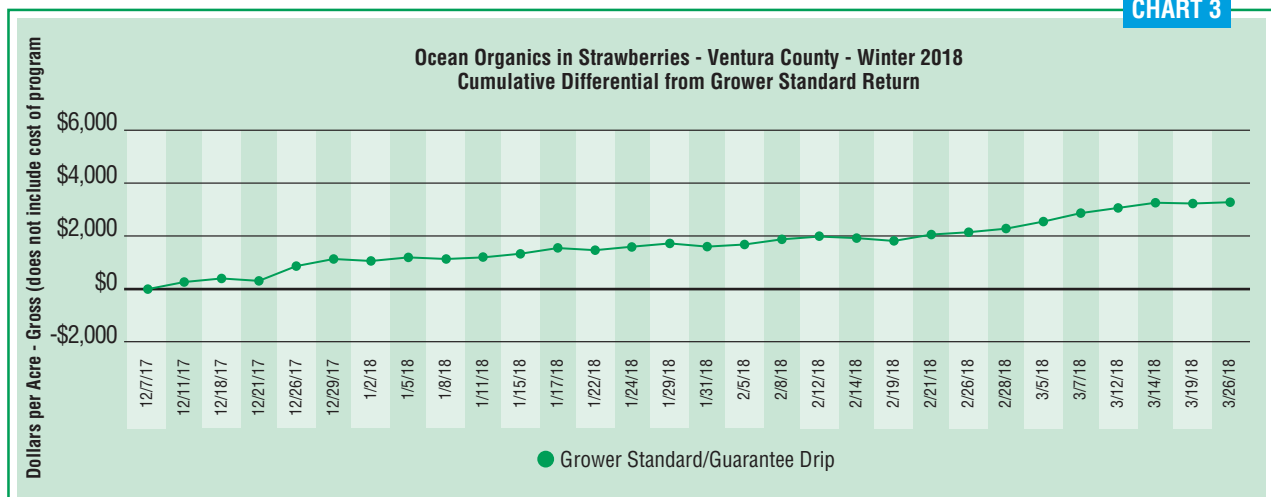
Very similar levels of nitrogen, phosphorus, potassium, and zinc were found in all Ocean Organics treatments. Vigor readings did not show statistically significant differences in favor of one treatment over another. Canopy width and percentage was similar between all treatments.

CONCLUSION

From the report provided by Holden Consulting: "Based on the data collected in this trial, the Ocean Organics program added very nice numerical returns to the pack outs and grower dollar returns per acre based on the sampling data collected during the course of this trial."

Note: Ocean Organics has been involved in four strawberry trials with Holden Consulting with similar positive results. **Guarantee Hi K**, as well as formulator versions of our extract, have been tested and produced similar increased yields and net returns. On average over all the trials, yields were increased roughly 15%.

CHART 3



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.



Ocean Organics®

Manufacturing

Waldoboro, Maine • 888-312-0106

Administration

Ann Arbor, Michigan • 800-628-GROW (4769)
oceanorganics.com