

..... Ocean  Organics®

Guarantee®

Seaweed Extract

Increases CELERY Yields

The Ocean Organics Guarantee® line of products produces statistically significant increases in celery:

- Yields
- Plant size
- Plant vigor
- Total return per acre

CROP

Commercially-grown celery for fresh market production (2013-2014 season).

STUDY OBJECTIVES

To compare the growth and production effects from the use of a standard grower program to one enhanced with various products and a 21% reduction in grower standard soil-based nitrogen.

LOCATION/SCIENTISTS

Ventura County, CA

Investigator: David Holden, agronomist, Holden Research

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

DATA COLLECTED

Measured plant and root sizing over time. Collected production data through randomized sub-samples of replicated plots.

OCEAN ORGANICS TREATMENTS AND RESULTS

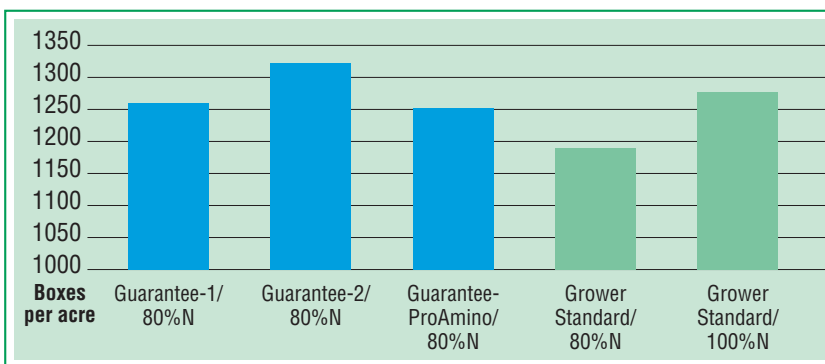
Twenty different products or programs – grown under drip tape – were evaluated for final production results in this block demonstration trial with randomized data collection. The individual products were applied in conjunction with a reduced nitrogen program (80% N). They were compared to controls consisting of a grower standard nitrogen program (100% N)



Photo of celery crop with reduced Nitrogen and Ocean Organics' Guarantee taken in Ventura County, CA, on March 25, 2014.

Guarantee® Natural seaweed extract produced increases in yields and total return per acre.

Total Number of Boxes Per Acre



Guarantee® Increases Total Number of Boxes per Acre.

Guarantee Natural produced statistically significant increases in yields, as compared to both the grower standard program (100% N) and the 80% N program. All data rated as significant was done so utilizing the New Duncan's Multiple Test Range at a 90% confidence level.

and a grower standard reduced nitrogen program (80% N). Ocean Organics' seaweed extract Guarantee® Natural was tested (two slightly different versions, referred to as Guarantee-1 and Guarantee-2) at 2 quarts/acre in the drip line. In addition, we included an Ocean Organics experimental product consisting of Guarantee Natural enhanced with a proprietary blend of amino acids (referred to as Guarantee with ProAmino Technology).

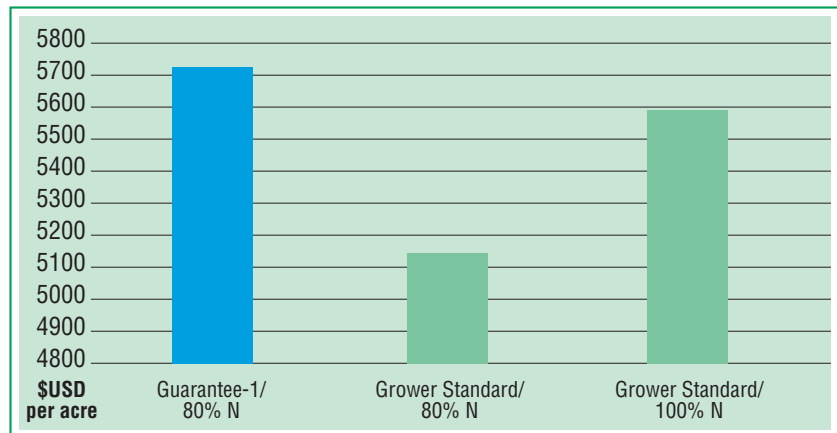
In addition to increasing plant yields and plant size, Guarantee® with ProAmino® Technology showed the highest plant vigor out of all twenty treatments.

Plant Vigor (scale from 0-5)

	3/10/14	3/14/14
Grower Standard/100% N	2.3g	3.0f
Grower Standard/80% N	3.8cd	4.2cde
Guarantee-1/80% N	4.3bc	4.5abc
Guarantee-2/80% N	4.5ab	4.2b-e
Guarantee-ProAmino/80% N	5.0a	5.0a

The Guarantee® products statistically improved plant vigor (scale of 0-5, 0 being dead, 5 being perfect looking plants). **Guarantee-ProAmino produced the most vigorous looking plants with a perfect score of 5.**

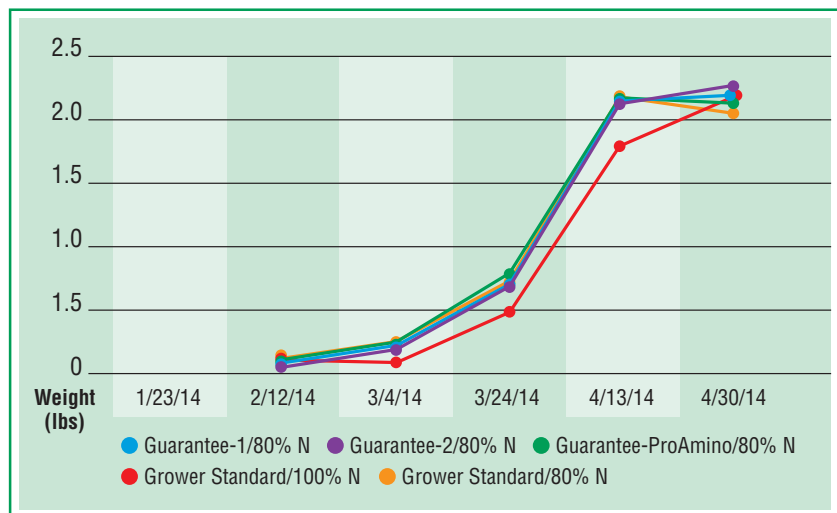
Total Return Per Acre (\$)



Guarantee® Increases Total Return Per Acre.

Total return per acre was \$600 higher when Guarantee-1 was used, compared to the 80% N program without Guarantee. Furthermore, Guarantee-1 in conjunction with 80% N actually produced a higher return per acre than the 100% N Grower Standard program (without Guarantee).*

Whole Plant Sizing



Guarantee® Increases Whole Plant Sizing Weight in Pounds.

All Guarantee treatments produced larger plants compared to Grower Standard 80% N rate. Guarantee-2 with 80% N actually produced larger plants than the Grower Standard with 100% N. Weights included roots for first two sample dates, other three sample dates are tops only.

*Extrapolated Net Return per acre based on \$6.00 per box harvest cost removed from these numbers. Guarantee-2 and Guarantee-ProAmino increased the Total return per acre compared to the grower standard by \$143 and \$148 respectively. Total return per acre is dependent on demand for certain celery sizes at time of harvest.

Ocean Organics is a manufacturer of high performance, scientifically proven seaplant-extract based biostimulants, plant growth materials and granular fertilizers. Our state-of-the-art products contain unique and proprietary constituents. Founded in 1977, we are the developers and manufacturers of the Emerald Isle foliar fertilizers and biostimulants, now owned and distributed to professional turf and ornamental markets by Lebanon Turf Products. Our materials have been tested in over 25 universities and independent laboratories.



Ocean Organics®

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