

Guarantee®

Seaweed Extract Program

Reduces Bitterpit Improves Red Fruit Color Increases BRIX

CROP

Jonagold apples

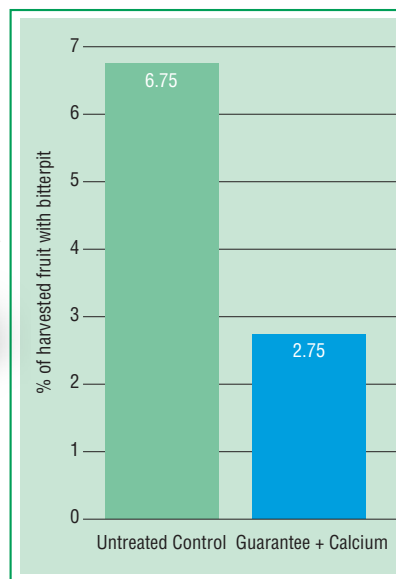
STUDY OBJECTIVES

- Evaluate a pre-harvest Ocean Organics® seaweed program on apples. The program included Guarantee® Seaweed Extract and a Bio-Gro, Inc. foliar calcium.
- Measure impact on:
 - bitterpit incidence
 - fruit color
 - firmness
 - BRIX
- Evaluate physical compatibility of Guarantee and foliar calcium in tank mix.
- The Ocean Organics program was compared to an untreated control (UTC).



Bitterpit Results

- Guarantee plus foliar calcium program reduced bitterpit incidence by 59%.
- Bitterpit pressure was very high in western New York in 2016, with near record heat and parched conditions.



sample size per rep = 100 fruit

LOCATION/SCIENTISTS

Ontario, NY

Investigator: Jeff Alicandro, agr.assistance, North Rose, NY
Study Director: Sarah Williams, Ph.D. and Greg Cosman, BSc. Agr., Ocean Organics Corp.

TREATMENTS AND RESULTS

Guarantee® was applied at 3 pints/acre, along with a calcium product called NUE Cal-8, provided by Bio-Gro (Mabton, WA). The calcium was applied at 1 gallon/acre. The Guarantee + calcium program was compared to an untreated control (UTC), and applied at petal fall (6/01), 1C (6/15), 2C (7/01), 4C (8/01), 5C (8/14), and pre-harvest (9/13). The products were applied via foliar applications. ReTain® PGR was also applied to both the Guarantee + Calcium treatment and untreated control at 0.37 lbs ReTain/acre on 9/23/16.

Fruit Firmness and BRIX at Harvest

- Fruit firmness at harvest was improved with Guarantee + Calcium.
- Soluble solids levels (BRIX) at harvest were improved with Guarantee + Calcium.

	Fruit firmness at harvest PSI	Fruit soluble solid levels at harvest BRIX level
1 UTC (Untreated Control)	15.65	12.70
2 Ocean Organics Guarantee® + Calcium	16.30	13.15

Fruit Firmness and % Bitterpit after Cold Storage

- Fruit firmness out of cold storage (34° F) was improved with Guarantee + Calcium.
- Bitterpit incidence out of cold storage was improved with Guarantee + Calcium.

	Fruit firmness after 34°F cold storage (PSI)	% of fruit with bitterpit after 34°F cold storage
1 UTC (Untreated Control)	14.45	14.75
2 Ocean Organics Guarantee® + Calcium	15.03	6.75

continued

Fruit Color Evaluations at Harvest

- Jonagold red fruit color development was improved in apples treated with Guarantee plus calcium, as compared to the untreated control.
- For additional data showing Guarantee alone improves color, please reference our other studies.

2016 agr.assistance Evaluations on Jonagold Apples

variety: Jonagold; **harvest date:** 10/12/16; **location:** Ontario, NY; **age:** 15+ years;
rootstock: M26; **trees/acre:** 250; **2016 crop load:** moderate-900 bu/acre; **2016 fruit size:** VERY good

Harvest date: 10/12/16	Fruit color evaluation at harvest % of fruit (by fruit number) with:				Fruit soluble solid levels at harvest BRIX level
	less than 50% red color	between 50-75% red color	greater than 75% red color	total greater than 50% red color	
1 UTC (Untreated Control)	21.25	70.25	8.50	78.75	12.70
2 Guarantee + foliar calcium	15.00	68.50	16.50	85.00	13.15

Other Observations

- No phytotoxicity symptoms were observed.
- Fruit finish was good in all treatments; no differences were measured between the treatments.
- No tank-mix compatibility issues were observed with the Ocean Organics program.
- Pre-harvest fruit drop was not an issue in any treatments or the UTC.

RED SIDE OF FRUIT



Guarantee® + foliar calcium



UTC

GREEN SIDE OF FRUIT



Guarantee® + foliar calcium



UTC

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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