

# PLANT HEALTH SOLUTIONS



## CROPS:

-  Grapes
-  Melons
-  Berries
-  Almonds
-  Tomatoes
-  And many more.



**HAVEN** defends crops by decreasing heat and sun stress resulting in an increase in yield and plant health benefits.



**UBP-110** is engineered to enhance the plant's all-around healthiness by providing optimized nutrient delivery which improves energy economy, and stress durability.

## ABOUT THE COMPANY

**Marrone Bio Innovations (MBI)** leads the movement to a more sustainable world through the discovery, development, and sale of innovative biological products for crop protection and plant health. MBI has screened over 18,000 microorganisms and 350 plant extracts leading to over 400 issued and pending patents, and more than ten commercial products, with more in the pipeline.

MBI's Finland-based subsidiary, **Pro Farm Technologies**, employs a proprietary technology derived from paper production by-products to stimulate plant growth and improve plant health, resulting in improved yields and crop quality. Products include UBP-110, Lumibio Kelta™, Ympact®, and others.



[www.marronebio.com](http://www.marronebio.com)



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PROFARM

# UBP-110

**UBP-110** is a new type of organo-mineral fertilizer, designed for foliar treatment. Principal ingredient is a molecular level complex of an organic acid backbone bonded with nutrients.

**UBP-110** brings essential micro-nutrients to the plant through the leaves and increases their uptake due to better root development.

## MAIN BENEFITS OF UBP-110 ON PLANTS

### LEAF

Enables energy conserving nutrient absorption, mobility and consumption through the leaves.

### STEM

Stronger and more durable stem.  
Prevents lodging which improves yield.

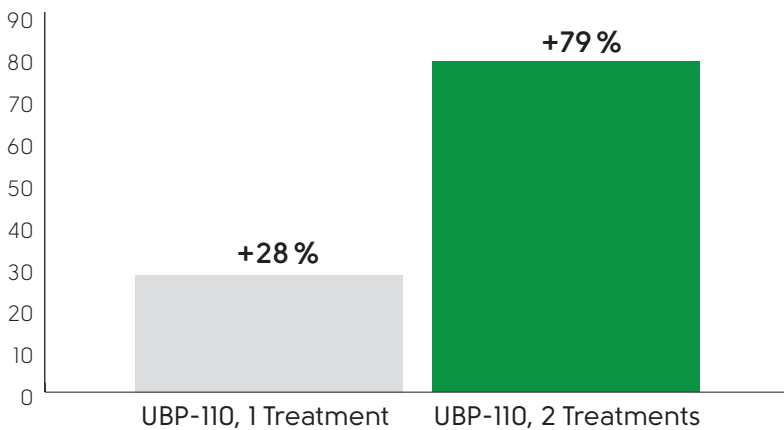
### ROOTS

Healthier and stronger roots with increased nutrient uptake.



## TOMATO - YIELD RESULTS

Yield Increase Compared to Untreated Control



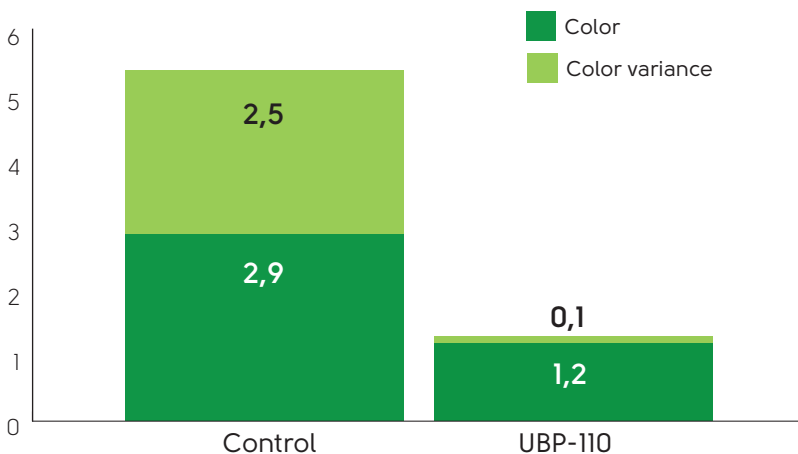
2 UBP-110 applications significantly improved tomato yield under warm conditions.

1st treatment	3 days after transplanting
2nd treatment	17 days after transplanting

Maharashtra, India – 2016

## TABLE GRAPES - QUALITY RESULTS

Seedless Color Scoring



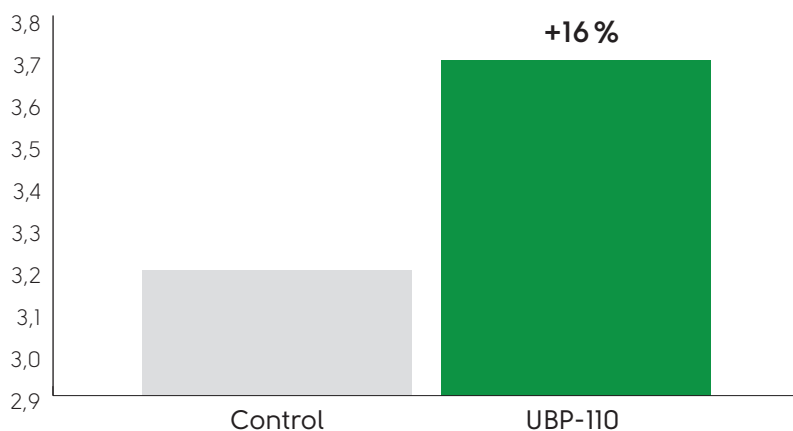
UBP-110 showed a color enhancement and provided excellent brix/acid ratio, and a favorable table grapes taste.

	Brix	Acid	Brix/Acid Ratio
UBP-110	17,0	5,14	3,31
Control	15,8	5,77	2,74

Wellington, South Africa – 2016/2017

## WINTER GARLIC - YIELD RESULTS

Garlic Commercial Yield (t/ha)



UBP-110 application improves marketable yield on Winter Garlic.

Treatment	Spring/Summer 2017
UBP-110	Spraying 3 Times 150g/ha

Estonia – 2016/2017



HAVEN proactively protects plants from the negative impacts of heat and sun and provides a strong ROI, averaging 8:1 across multi-year field trials.



Higher profits and return on investment



Increased marketable yield in grapes



Higher Brix in wine grapes

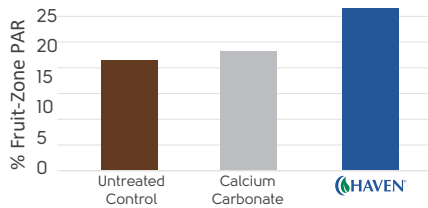


Easy to mix and apply

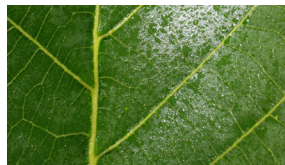
## FEATURES



Increases Photosynthesis



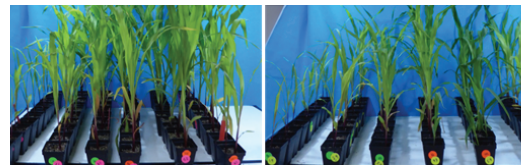
No Residue



Haven Treated Leaf



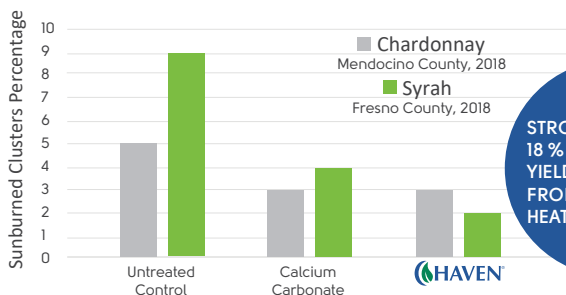
More Chlorophyll in Nitrogen-Deficient Soils



Haven vs Untreated Control

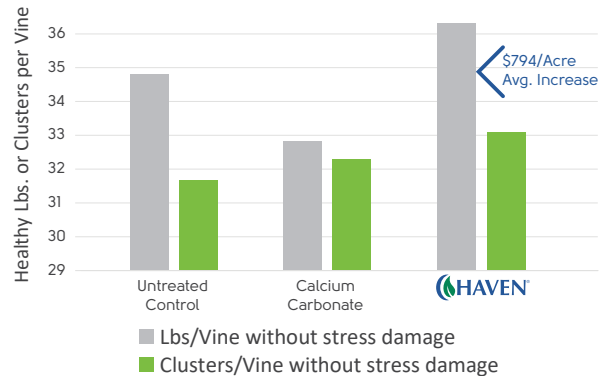
## PERFORMANCE ON GRAPES

Greater Value with Haven: Less Sunburn



**STRONG ROI OF 6:1: 18% MARKETABLE YIELD INCREASE FROM SUN AND HEAT PROTECTION**

California Fresh: Pounds/Vine and Clusters/Vine Were Highest with Haven



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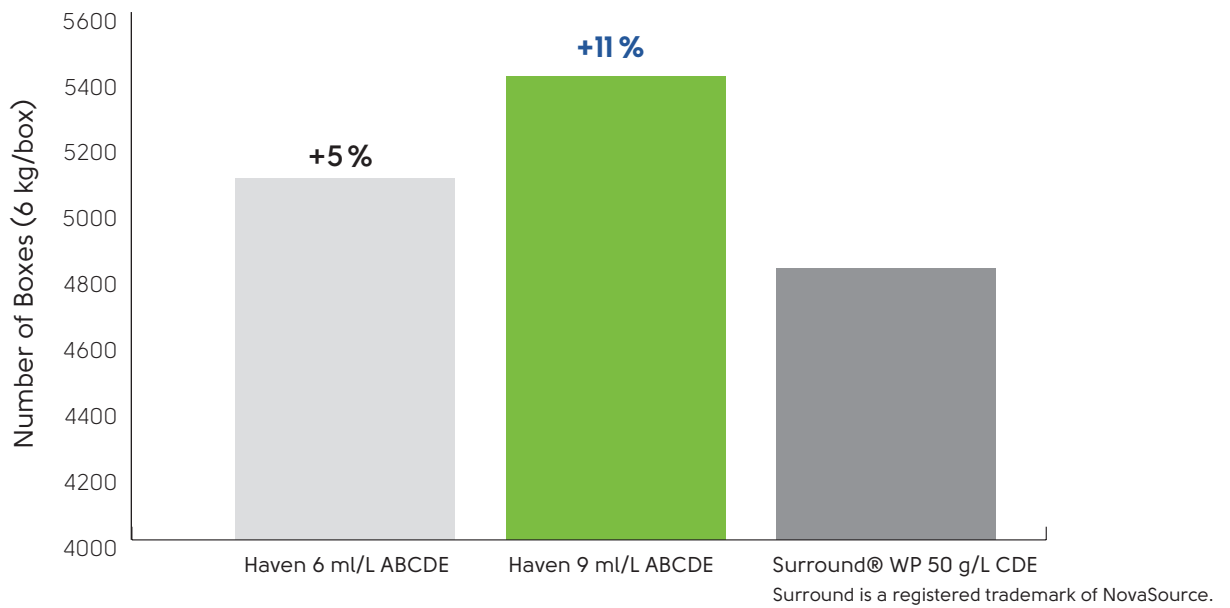


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## PERFORMANCE ON MELONS

+11% Marketable Yield vs. Standard



Finca San Roque, Nandayure. Guanacaste, Costa Rica, 2019 (Consagri S.A.)

## SUN PROTECTION

Haven provides superior sun protection compared to the Market standard.

### KEY BENEFITS

- Season-long sunburn protection
- Increased yield from fewer culls
- No residue, unlike alternatives

Incidence and Severity of Sunburn Damage at 63 Days After Planting.



Market Standard: Sun damage and residues.



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