

December 11, 2018

Case Study on Grapevines Treated with Unleash™



Unleash™-treated Grapevine in California

I. Introduction

Nearly all of America's table grapes are grown in California (99%). Because of the diversity of climates across California and the industry's grapevine breeding program, table grapes are harvested from May in Southern California until early December in the Central Valley. In order



for table grapes to sell, they must meet a large number of requirements including not just being unblemished (physical beauty), but also having good flavor, firm flesh, and a crisp crunch. This is particularly true for overseas markets which pay top dollar for table grapes, where grapes must maintain these characteristics throughout the shipping process. (National Grape & Wine Initiative; americanvineyardmagazine.com)

In 2018 a study was done by a major table grape grower to test the effect of Unleash™ treatment and compare it with two other products.

II. Test Process

- 2 total Unleash™ applications
 - May 10, 2018 – 1st application (0.5 liter/acre)
 - May 29, 2018 – 2nd application (0.5 liter/acre)
- The table grapes were harvested on October 8, 2018.
- Unleash™ was used to treat 0.17 acre (1/6 acre) at a farm belonging to a major table grape grower in the Central Valley of California.
- Two other products – Product A and Product B – were tested at the same time as Unleash™:

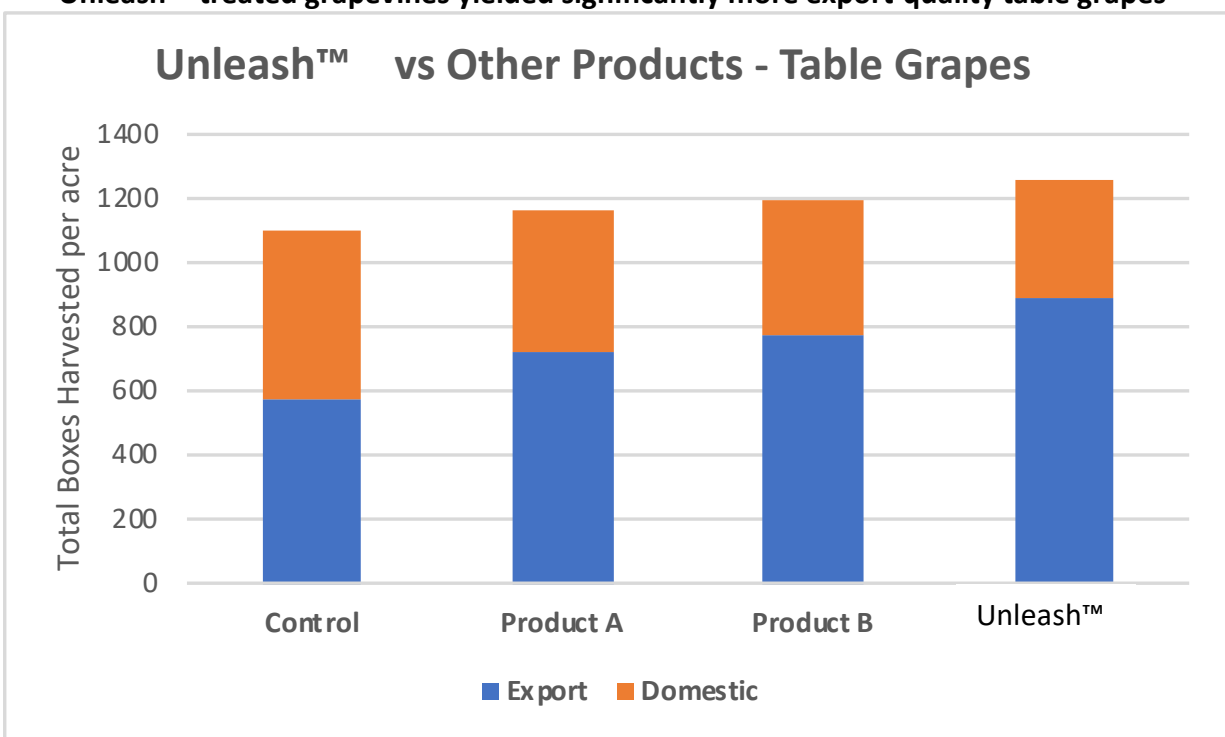
Treatment product	Amount per application	Total applications	Total amount applied per acre
Unleash™	0.5 liters	2	1 liter
Product A	4 gallons	6	24 gallons
Product B	0.375 gallons	3	1.125 gallons

- Trial was carried out by a third party (SynTech Research Inc.) for a major table grape grower.
- Results are separated into domestic and exported table grapes because the highest quality grapes are used for export, as they receive more money per box.



III. Results

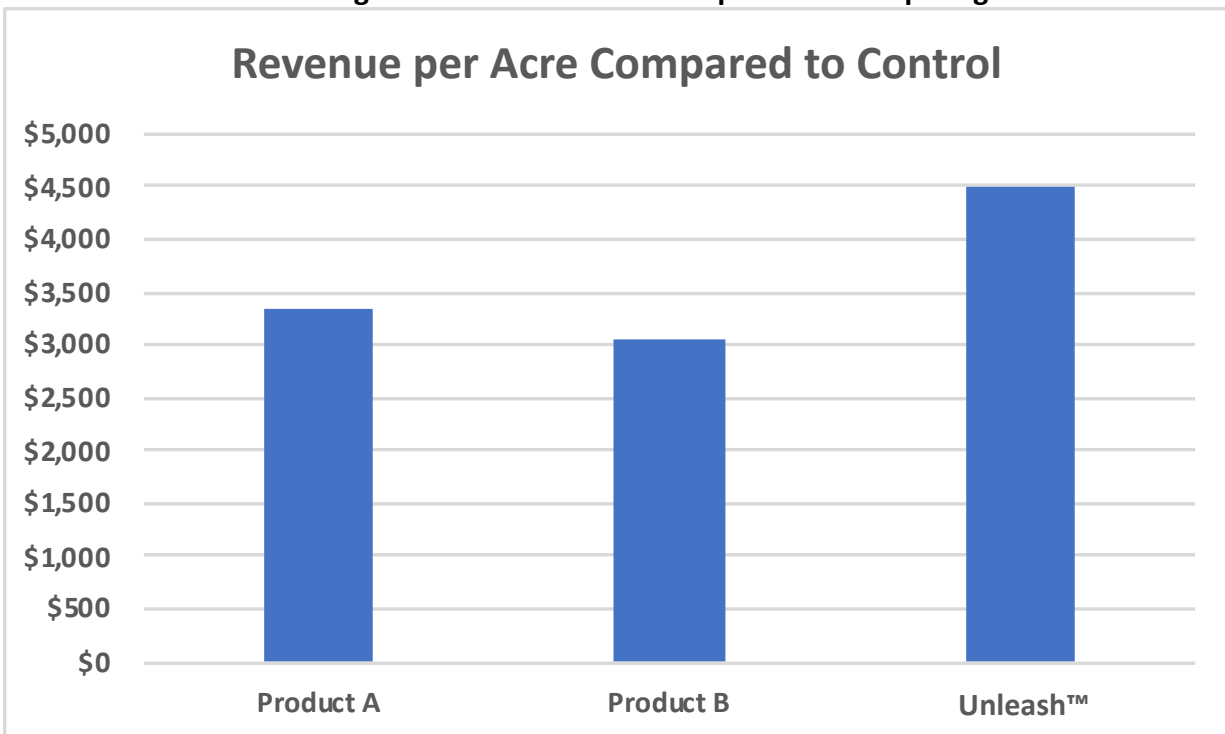
Unleash™-treated grapevines yielded significantly more export-quality table grapes



- Unleash™-treatment significantly increased yield of export quality table grapes vs competitors
 - Untreated Control (UTC) – 576 boxes
 - Unleash™ – 894 boxes, 55% increase
 - Product A – 723 boxes, 26% increase
 - Product B – 771 boxes, 34% increase



Unleash™ has a Higher Revenue for Table Grapes Than Competing Products



- Unleash™ treatment resulted in a \$4,500 increase in revenue per acre compared to the untreated control, an increase of 16.5%.
- Unleash™ treatment resulted in a \$1,164 increase in revenue per acre compared to Product A, an increase of 4.3%.
- Unleash™ treatment resulted in a \$1,458 increase in revenue per acre compared to Product B, an increase of 5.3%

IV. Conclusions

- Unleash™-treated acreage had a 55% higher yield of higher quality table grapes for export than untreated acreage.
- Unleash™-treated acreage had a higher yield of higher quality table grapes for export than Product A (55% vs 26% more than UTC); and Product B (55% vs 34%).



- Unleash™-treated acreage increased revenue per acre by \$4,500 – an increase of 16.5% – over the untreated control
 - Unleash™ treatment increased revenue per acre by \$1,164 compared to Product A (+4.3%)
 - Unleash™ treatment increased revenue per acre by \$1,458 compared to Product B (+5.3%)

- Note that the revenue per acre amounts do not account for the cost of the products and the increased labor costs for application.
 - Unleash™ has fewer applications per acre (2 total applications) than Product A (6 total applications) and Product B (3 total applications)
 - Far less Unleash™ is added per acre (1 Liter total) than Product A (24 gallons = 91 Liters total) and Product B (1.125 gallons=4.25 Liters total)
 - **Taken together, this means it is likely that the costs associated with Unleash™ treatment are significantly lower than the costs for Product A and Product B**