

December 10, 2018

Case Study on Grapevines Treated with TerraBella®



TerraBella-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 TerraBella® treatment and compare it with two other products.

II. Test Process

- 2 total TerraBella® 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.
- TerraBella® 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 TerraBella:

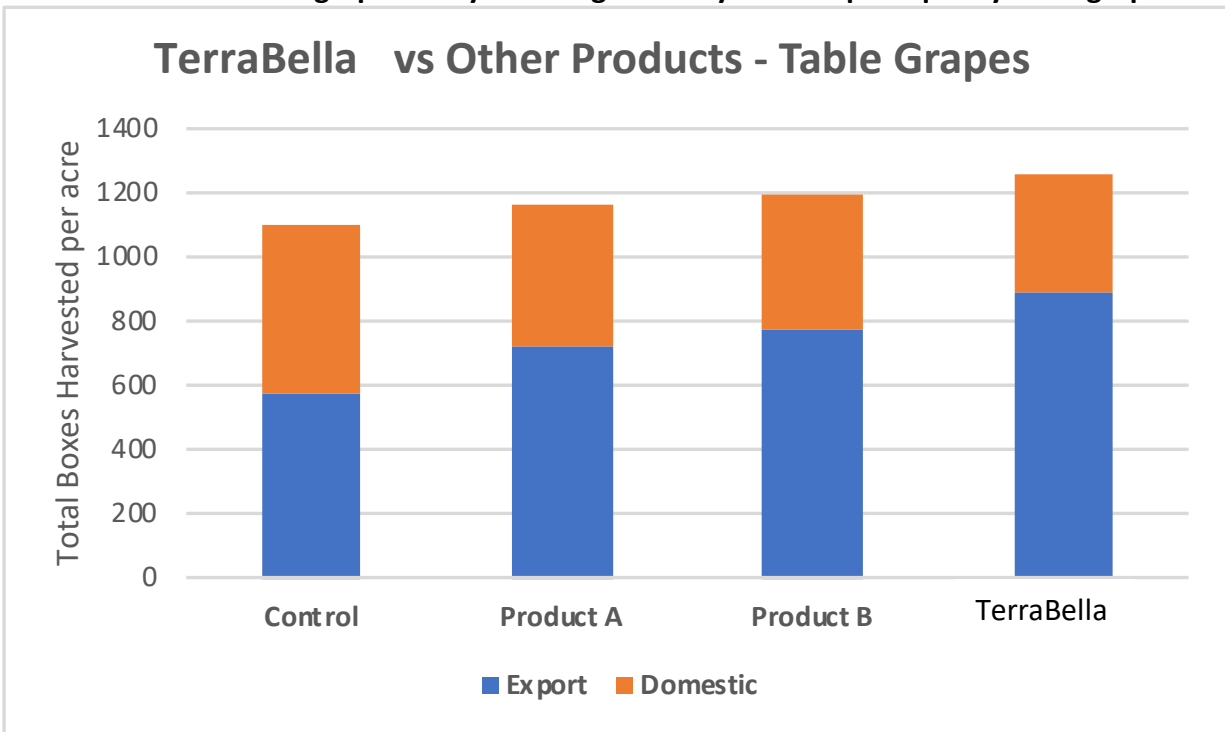
Treatment product	Amount per application	Total applications	Total amount applied per acre
TerraBella	0.5 liters	2	1 liter
Product A	4 gallons	6	24 gallons
Product B	0.375 gallons	3	1.125 gallons

- 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

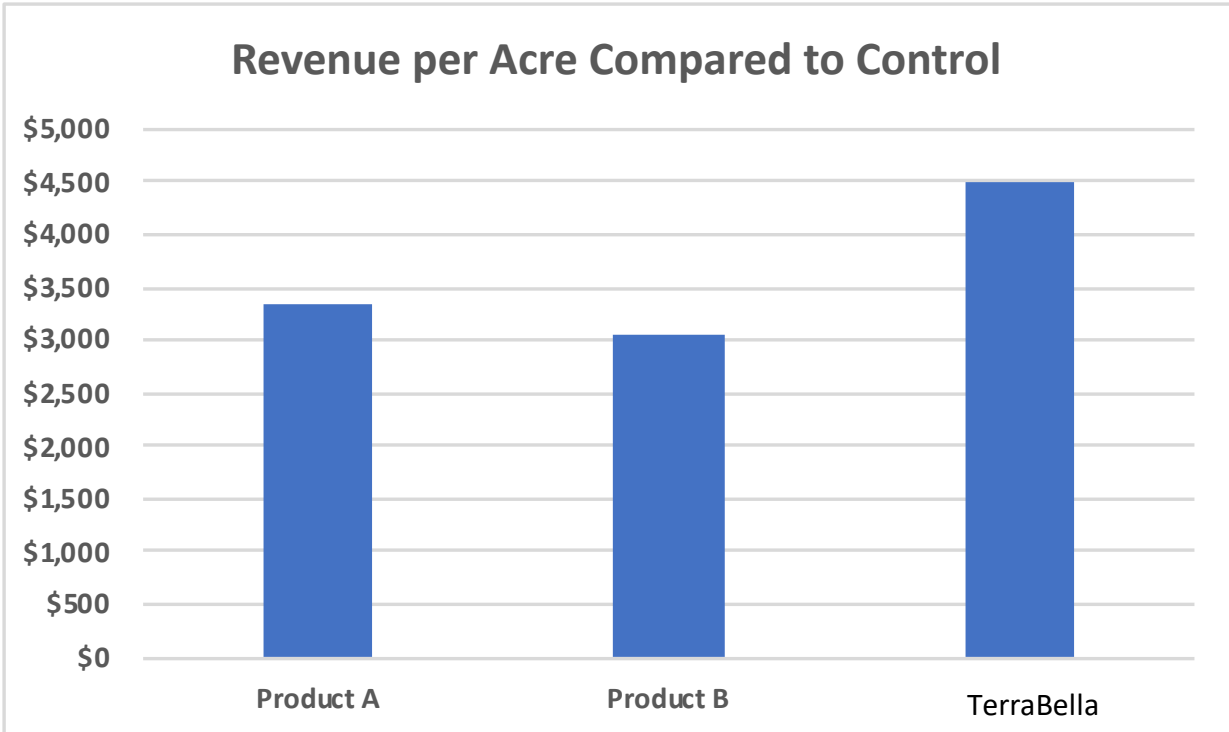
TerraBella®-treated grapevines yielded significantly more export-quality table grapes



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



TerraBella has a Higher Revenue for Table Grapes Than Competing Products



- TerraBella treatment resulted in a \$4,500 increase in revenue per acre compared to the untreated control, an increase of 16.5%.
- TerraBella treatment resulted in a \$1,164 increase in revenue per acre compared to Product A, an increase of 4.3%.
- TerraBella treatment resulted in a \$1458 increase in revenue per acre compared to Product B, an increase of 5.3%

IV. Conclusions

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



- TerraBella-treated acreage had \$4,500 per acre higher revenue than untreated acreage
- TerraBella-treated acreage had \$1,164 per acre higher revenue than Product A-treated acreage
- TerraBella-treated acreage had \$1,458 per acre higher revenue than Product B-treated acreage
- Note that all revenue per acre amounts does not account for the cost of the products and the increased labor costs for application.
 - TerraBella has fewer applications per acre (2 total applications) than Product A (6 total applications) and Product B (3 total applications)
 - Far less TerraBella 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 TerraBella treatment are significantly lower than the costs for Product A and Product B**