



CALIFORNIA SCIENCE & ENGINEERING FAIR 2019 PROJECT SUMMARY

Name(s) Matthew Bedrosian	Project Number J1903
Project Title Which Type of Paper Tray Dehydrates Grapes the Fastest?	
<p style="text-align: center;">Abstract</p> <p>Objectives The Objective of my project is comparing various paper tray types: Wet Strength, Wet Strength Vented, Poly Coated, Poly Vented, and Poly Coated Slitted Vented to see which type dries grapes the fastest. My goal is to prove that Coated trays will have a faster drying time than the non-Coated trays. Also taking the coated trays benefit of protecting the grapes from rain into consideration.</p> <p>Methods The materials I used in my experiment were a scale, 2 picking knives, a wooden tray, 4 trays of each tray type, and a picking pan. The first step I took in doing my procedure was purchasing the different tray types from Michelson Packaging company in Fresno. The trays I purchased were the Wet Strength, Poly Coated, Poly Vented, and Poly Coated Slitted Vented paper trays. After doing this, I poked holes in the Wet Strength tray, with the following measurements: 13 rows, 16 holes in each row, 5 centimeters apart covering the entire tray to create the Wet Strength Vented tray. I then picked 8,165 grams of grapes for each tray. I had 5 tray types and 4 trays for each type, and had a total of 20 trays. Lastly, I let the grapes dehydrate for 7 days, and weighed the grapes on the different tray types. Repeated this procedure 7 days later for my final results for tray drying rate average.</p> <p>Results The result of my experiment showed that the Wet Strength tray had the highest impact on drying grapes; the final weight average of the tray was 1,719 grams. The 2nd best tray type was the Wet Strength Vented tray at 1,798 gram average. The third best tray type was the Poly Coated Slitted Vented tray with an average weight of 1,826 grams. The 4th best tray type was the Poly Coated tray at a weight of 2,090 gram average. The worst tray for dehydrating grapes was the Poly Vented tray type, at a 2,219 gram average. This information proves my Hypothesis was incorrect.</p> <p>Conclusions After Completing my investigation, I can conclude my Hypothesis was incorrect. My experiment Showed that both Non-Coated trays had a higher impact on drying than the Coated trays. Comparing the Wet Strength tray to the Poly Coated slitted vented, The Wet Strength had a 6% faster dehydration speed. Comparing The Wet Strength tray to the Poly Coated, I found that the Wet Strength tray had a 18% faster drying rate, which is significant. When comparing the Wet Strength tray to the Poly Vented tray, it dried 22% faster, which is also Significant. In a 40 acre Vineyard Wet Strength would cost \$2000 vs. \$3,800 for Poly Coated or Vented. Although, the Wet strength tray may have the best dehydration speed and cost the</p>	
Summary Statement The Wet Strength paper tray proved to dehydrated grapes the fastest with more crop risk, vs poly Coated trays with less crop risk.	
Help Received Mrs. Florence Peters, Ranch Owner ;Chad Gregerson , Michaelson Packaging Fresno, Salesman	