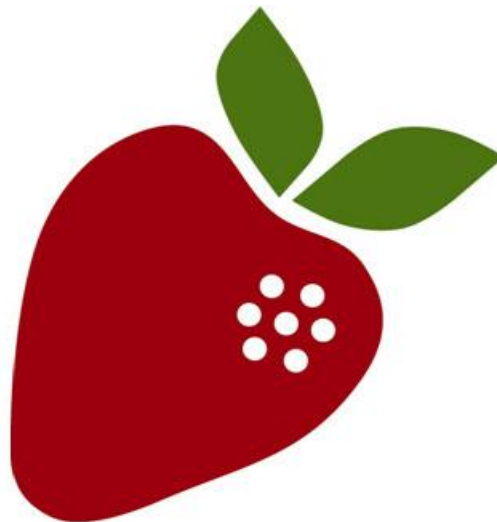




# Consumer Acceptance Study of California Fresh Strawberries

## Summary of Findings

March 2011, TransFRESH Corporation





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## EXECUTIVE SUMMARY

Over the course of 12 weeks (4/19/10 through 7/2/10), independent auditors visited 114 store in 39 cities in 3 Eastern marketing regions and rated store displays of California fresh strawberries for purchase intent. Next, auditors randomly selected and purchased 1,408 individual strawberry clamshells. Individual clamshells were then rated for purchase intent based on overall appearance. Finally, auditors scored individual strawberries in each clamshell for mold, dry-bruising, leaky spots, under-ripeness, over-ripeness and good fruit.

Results of this multi-retailer study show that strawberry clamshells shipped under TECTROL® modified atmosphere packaging (hereinafter "TECTROL" or "TECTROL® Atmosphere") have a higher overall purchase intent, more good strawberries inside the clamshell package and less decayed wet leaky berries than product shipped with open bag or other transit packaging.

### IN-STORE DISPLAY PURCHASE INTENT (SECTION 2.3)

When the primary store display contained TECTROL® treated strawberries, auditors would "definitely" or "would likely" purchase fruit from the TECTROL® treated strawberry displays 70% of the time. In displays built from non-TECTROL® strawberries, auditors would only "definitely" or "would likely" purchase from the non-TECTROL® displays 46% of the time.

### CLAMSHELL PURCHASE INTENT (SECTION 2.4)

After random purchases, auditors scored each clamshell for purchase intent based on external appearance of the fruit inside the clamshell. Auditors would "definitely" or "would likely" purchase 56% of TECTROL® treated strawberry clamshells versus 31.5% on the non-TECTROL® treated strawberry clamshells.

### FRUIT QUALITY (SECTION 2.5)

Auditors scored an average of 4.1% more good fruit in TECTROL® treated strawberries versus non-TECTROL® treated strawberries. Similarly, TECTROL® treated fruit had 3.4% less decay and 2.7% less wet leaky fruit.

### CONCLUSIONS (SECTION 3.0)

California shippers and retailers who utilize TECTROL® Atmosphere during transit of fresh strawberries can expect a significant increase in positive consumer perception of retail display quality, increasing the consumer's intent to purchase from the display. Similarly, the consumer will experience a significantly higher level of quality and product satisfaction through more good fruit and reduced decay and wet leaky fruit.



## 1.0 GENERAL METHODS

### 1.1 MARKETS, AUDIT PERIODS AND AUDITOR SELECTION

Three Eastern market regions were identified where TransFRESH has general knowledge of the shipping methods customarily utilized by California shippers and retailers. Based on TransFRESH knowledge of both shippers' (labels) and the retailers' acceptance of various shipping methods, auditors' observations were ultimately segregated into TECTROL® Atmosphere technology and open bag shipping methods.

**Note: No auditor had any knowledge about which technology or shipping method was customarily utilized by any retailer or strawberry label when purchasing or evaluating strawberries.**

Data was collected over a 12-week period to ensure data collected covered multiple portions of the California growing season; auditors were assigned to collect data during the last two weeks of April, May and June 2010.

Appendix A (RQA Store List) lists date, market and retail store visited by audit personnel. During the 12-week audit period, auditors collected data from 114 different stores in 39 different cities and market regions.

TransFRESH retained the services of RQA®, Inc. and its credentialed auditors to visit stores, evaluate strawberry displays, purchase and evaluate product. (Appendix C: RQA Certification.) RQA auditors collected and evaluated 70% of all clamshells sampled. Thirty percent of clamshells collected and audited were inspected by an employee retained by Nolan Network. Prior to store visits, TransFRESH provided inspection and scoring procedures based upon industry norms. TransFRESH also trained RQA and Nolan Network auditors on data collection and scoring procedures.

### 1.2 STORE DISPLAY EVALUATIONS

Auditors were first tasked with evaluating the primary retail display containing one pound strawberry clamshells. Auditors then purchased a random sample of strawberry clamshells from the primary display, subsequently evaluating strawberry clamshell purchase intent. Finally, individual strawberry quality inside the purchased clamshells were sorted and scored. (Appendix B: RQA Data Collection Sheet).

Auditors were instructed to go to the primary (and typically the largest) display of one pound strawberry clamshells. If there were several displays, the end cap or center of the department display was considered primary.

Upon arriving at the primary display, auditors recorded:

- The display fullness by visually assigning the display to one of four categories: 0-49%, 50-74%, 75-89%, 90-100%.
- The display purchase intent on a 1-5 scale as follows:
  - 5 = Definitely would purchase from the display
  - 4 = Likely would purchase from the display
  - 3 = Might purchase from the display
  - 2 = Likely would not purchase from the display



1 = Definitely would not purchase from the display

- The refrigeration status of the display
- Retail price of one pound clamshells
- Time of day of audit

### 1.3 CLAMSHELL PURCHASE SELECTION

Clamshells containing fresh strawberries were then selected for purchase based on the following procedure and count-off sequence to help assure that a random sample was selected from a display, regardless of individual clamshell quality or price point:

- The goal was to purchase 12 to 15 samples but no more than 20.
- First, the auditor estimated the number of one pound clamshells on display. If there were 150 or more clamshells present, the auditor started at the bottom left corner and counted 10 clamshells to the right or up and selected the 10th clamshell.
- From this position, the auditor would then count over or up to a second 10th clamshell and choose that one for purchase.
- This pattern was repeated throughout the entire display until 12 to 15 clamshells were collected.
- If the display was smaller than 150 units, the auditor would decrease the count-off number (i.e., every 5<sup>th</sup> clamshell) so that 12 to 15 samples were still collected.

### 1.4 CLAMSHELL PURCHASE INTENT, EXTERNAL APPEARANCE

After purchase, clamshells and strawberries were then examined and rated as quickly as possible. The Brand or label of each clamshell was recorded. Auditors evaluated each clamshell externally, rating the clamshell for Purchase Intent based upon external appearance only. Purchase intent was scored as follows:

- 5 = Definitely would purchase clamshell
- 4 = Likely would purchase clamshell
- 3 = Might purchase clamshell
- 2 = Likely would not purchase clamshell
- 1 = Definitely would not purchase clamshell

### 1.5 INDIVIDUAL STRAWBERRY QUALITY

After the overall clamshell purchase intent was recorded, each clamshell was opened and every strawberry removed and graded individually based upon the *most dominant or worst defect observed*. The category definitions are described as follows (worst to best):

- Decay, moldy and/or fuzzy berry = white or gray mold present or large wet and shiny lesion
- Wet leaky berry = bruised skin that is wet (wet leaky spot is diameter of a pencil eraser top or bigger)
- Over-ripe = color is almost a dark purple



- Dry bruise = sunken area the diameter of a dime or larger that is healed and appears dry
- Under-ripe = white tip or shoulder or overall light pink color
- Good berry = fresh in appearance with no defects, nice red color and green calyx

## 1.6. STATISTICAL ANALYSIS

Based upon TransFRESH management's knowledge of strawberry shipping practices using different transit methods in the survey markets, TransFRESH matched all audited labels (shippers) to that shipper's preferred shipping methods. Labels audited were sorted between known TECTROL® Atmosphere users and open bag users.

The entire database was then delivered to a third-party credentialed statistician. TransFRESH requested the statistician to independently analyze all data and report any statistical relationship between or among audit measures. TransFRESH also asked the statistician to verify that sample populations and measures were statistically valid.

**Note: The statistician had no prior knowledge and was not instructed as to potential differences among technologies or how the various labels and observations might interact.**

[See Appendix D for a summary of the Statistician Certification and Credentials.]



## 2.0 RESULTS

### 2.1 SUMMARY

Results of this multi-retailer study demonstrate that retail displays created from strawberry clamshells shipped under TECTROL® Atmosphere have higher overall consumer purchase intent. TECTROL® treated fruit also scored highest for more good strawberries inside the clamshell package with less decay and wet and leaky fruit than product shipped with open bags during transit.

### 2.2 STATISTICAL ANALYSIS

Statistical testing demonstrated that when audit populations were divided into TECTROL® Atmosphere shipped labels and open bag shipped labels, sample sizes in each group were sufficient for valid statistical analysis. Section 4.0 contains a complete statistical analysis report of all factors measured in this audit.

**Table 1** summarizes the statistically relevant results of audited measures comparing TECTROL® Atmosphere technologies versus open bag methods.

Purchase Decision and Quality Attributes of Clamshells Shipped in TECTROL® Atmosphere versus Open Bag		
	Means	
	TECTROL®	OPEN BAG
Mean Clamshell Intent to Purchase Decision	3.5% <sup>a</sup>	2.8% <sup>b</sup>
% of Moldy/Fuzzy/Decayed Berries	2.4% <sup>a</sup>	5.8% <sup>b</sup>
% of Wet Leaky Berries	9.6% <sup>a</sup>	12.3% <sup>b</sup>
% of Over-ripe Berries	7.5% <sup>a</sup>	8.8% <sup>a</sup>
% of Under-ripe Berries	16.0% <sup>a</sup>	20.8% <sup>b</sup>
% of Berries with Dry Bruises	22.0% <sup>a</sup>	13.9% <sup>b</sup>
% of Good Berries in Clamshell	42.5% <sup>a</sup>	38.4% <sup>b</sup>

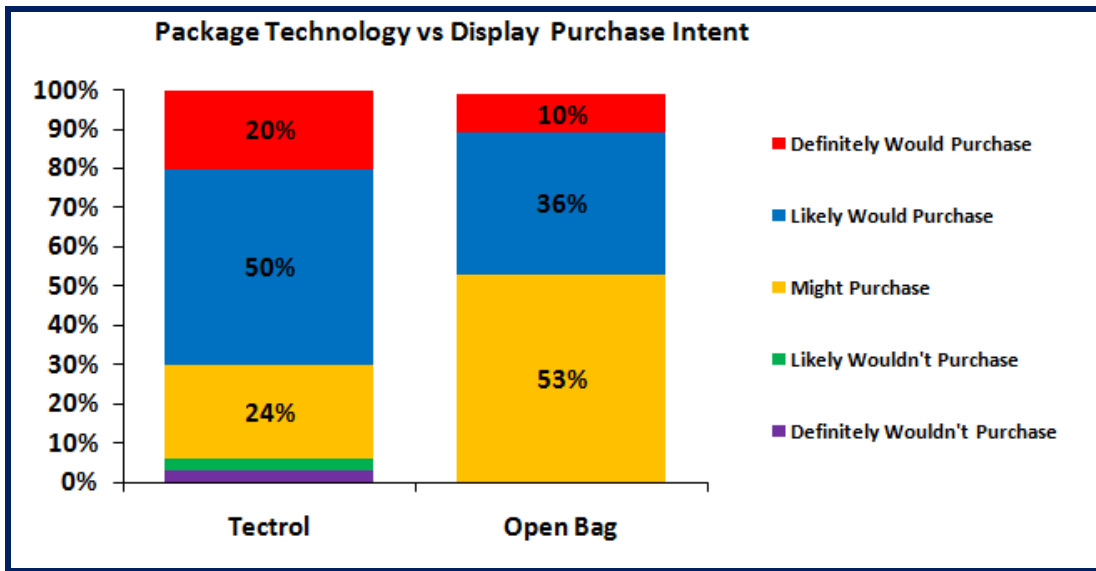
Means and percentages with different letters are significantly different (p<0.01) T-Test

**Table 1**

**Note:** Relevant data presented in Table 1 is copied from Table 4, section 4.8 of the statistical report.

### 2.3 IN-STORE DISPLAY PURCHASE INTENT

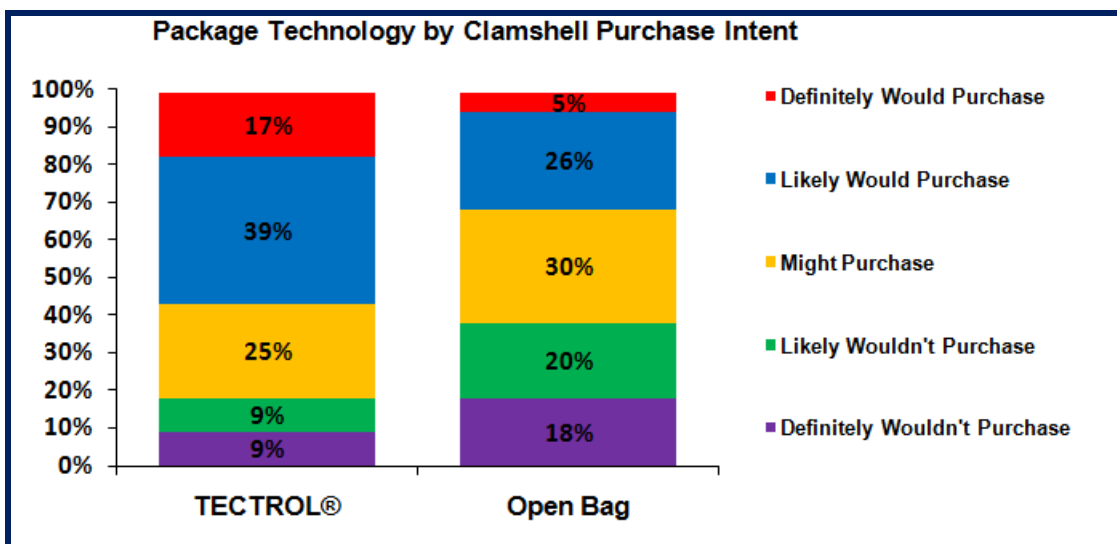
**Graph 1** shows that primary retail displays containing fresh strawberries in clamshells treated with TECTROL® scored highest for purchase intent. Auditors scored 70% of the stores using TECTROL® treated strawberries in displays as “Definitely” or “Would Likely Purchase” from display. This compared to only 46% (less than half of total display) of the non-TECTROL® treated strawberries displays. Differences are statistically different at the .01% level.



Graph 1

## 2.4 PURCHASE INTENT BY CLAMSHELL

Graph 2 shows that 56% of TECTROL® treated strawberry clamshells were rated in the top two purchase intent categories compared to only 31% of clamshells treated with alternate systems during transit. On the opposite end of the purchase intent spectrum, only 18% of TECTROL® clamshells were rated in the bottom two categories while 38% of non-TECTROL® treated strawberries in clamshells fell into those categories. Observed differences are statistically different at the .01% level.



Graph 2



## 2.5 INDIVIDUAL STRAWBERRY QUALITY, CONSUMER LEVEL

**Table 2** shows TECTROL® treated strawberries clamshells were statistically different to the open bag treated strawberries clamshells in almost all appearance and decay categories measured. TECTROL® treated clamshells averaged less than half the amount of moldy strawberries, a third fewer wet leaky berries, and a fifth fewer under-ripe strawberries compared to open bag treated strawberry clamshells. TECTROL® treated strawberry clamshells exhibited more dry-bruised berries, but that did not influence display or clamshell purchase intent.

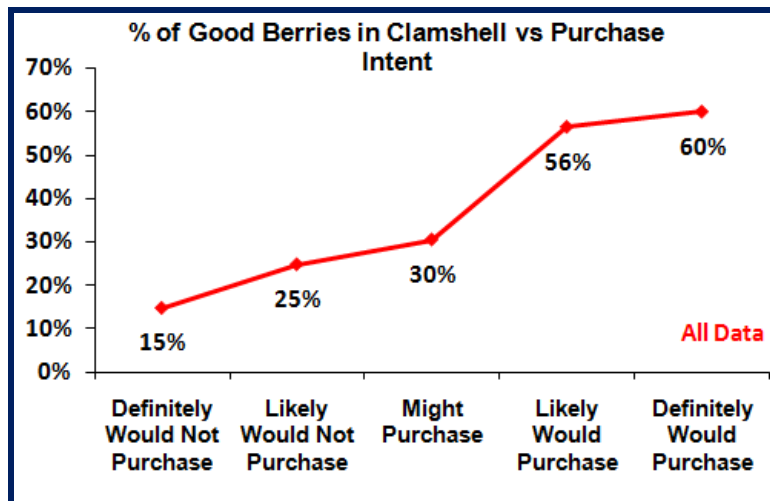
On average, 42.5% of strawberries in TECTROL® clamshells were scored as “good” (no defects and optimum ripeness) compared to only 38.4% of strawberries from alternate open bag clamshells. The only category that was not statistically different between open bag and TECTROL® clamshells was the percentage of over-ripe strawberries.

Quality Attributes of Clamshells Shipped in TECTROL® Modified Atmosphere vs Open Bag Method		
	Open Bag	TECTROL®
% Moldy/Fuzzy/Decayed Berries	5.8b	2.4b
% Wet Leaky Berries	12.3a	9.6b
% Berries with Dry Bruises	8.8a	7.5a
% Under-ripe Berries	20.8a	16.0b
% Over-ripe Berries	13.9a	22.0b
% "Good" Berries	38.4a	42.5b
Means and percentages with different letters are significantly different (p<0.01) T-Test		

**Table 2**

## 2.6 GOOD BERRIES VERSUS CLAMSHELL PURCHASE INTENT

There was a very high correlation between the number of good strawberries in an individual clamshell and purchase intent score. **Graph 3** demonstrates the high correlation between strawberry quality and clamshell purchase intent.





**Graph 3**

### **3.0 CONCLUSIONS AND DISCUSSION**

Retail displays built with strawberries treated with TECTROL® Atmospheres (Modified Atmosphere Packaging (MAP)) technologies were significantly more attractive and would encourage an actual purchase decision in 70% of the TECTROL® displays versus 46% positive impressions in displays built with open bag treated strawberries. Strawberries are a known "impulse purchase" item which further drives overall produce sales. Consumers shopping at store displays where strawberries are shipped under TECTROL® Atmosphere are more likely to purchase strawberries as well as additional produce items.

Consumers who purchased strawberries shipped in TECTROL® Atmosphere brought home strawberries with significantly less decay, less wet leaky strawberries and more good perfect fruit.

Based on these results, it can be expected that TECTROL® treated strawberries will sell at a higher velocity than non-TECTROL® treated strawberries. TECTROL® treated strawberries exhibit better retail display impressions. Since the actual quality of individual strawberries is significantly higher in TECTROL® treated product, the ultimate consumer experience will be superior.



## 4.0 STATISTICAL REPORT

Section 4.0 contains the complete statistical analysis report for all raw data submitted to the independent statistician. [See Appendix D, Statistician Certification and Credentials.] Section 4.0 is “as written” by the statistician.

### 4.1 OVERVIEW

### 4.2 TEST BACKGROUND

Independent auditors visited retail stores with the goal of rating the quality of the primary strawberry display in the store, the one-pound strawberry clamshells as a whole, and the individual berries in selected clamshells. These auditors were instructed to go to the primary display (typically the largest one). If there were several displays, the end cap or center of department display were considered primary.

Upon arriving at the primary display, auditors recorded:

- The display fullness by visually assigning the display to one of four categories: 0-49%, 50-74%, 75-89%, 90-100%
- The display purchase intent on a 1-5 scale as follows:
  - 5 = Definitely would purchase from display
  - 4 = Likely would purchase from display
  - 3 = Might purchase from display
  - 2 = Likely would not purchase from display
  - 1 = Definitely would not purchase from display
- The refrigeration status of the display

Clamshells were then selected for purchase based on the following criteria:

The auditor looked at the display and estimated the number of clamshells on display. If there were estimated to be 150 or more present, the auditor was to start at the bottom left corner and count 10 clamshells to the right or up and select the 10th clamshell. Then from that position he was supposed to go over or up another 10 clamshells and choose that one for purchase. This pattern was repeated throughout the entire display until 12-15 clamshells were collected. If the display was smaller than 150 to begin with, the auditor would decrease the count-off number so that 12-15 samples would still be collected. The goal was to purchase 12 to 15 samples, but no more than 20. Berries were then examined and rated as soon as possible following purchase.

Before opening and scoring the individual berries, each clamshell was rated for Purchase Intent on a 1-5 scale based solely on appearance and scored as follows:

- 5 = Definitely would purchase clamshell
- 4 = Likely would purchase clamshell
- 3 = Might purchase clamshell
- 2 = Likely would not purchase clamshell
- 1 = Definitely would not purchase clamshell

After the overall clamshell purchase intent was recorded, each clamshell was opened and every berry removed and graded individually based on the most dominant or worst defect



observed so that each berry was placed into only one category. The category definitions were as follows:

- Decayed, moldy, fuzzy berry = white or gray mold, shine wet spot
- Wet leaky berry = bruised skin that is wet (wet leaky spot is diameter of a pencil top or bigger)
- Dry bruise = sunken area the diameter of dime or bigger that has healed
- Under-ripe = white tip or shoulder or light pink color
- Over-ripe = almost a dark purple
- Good berry = no defects at all, nice red color and green calyx

Other parameters recorded included:

- Time of day
- Clamshell purchase price
- Brand

In addition to these “measured” parameters, auditors also recorded store name, city, date and time of audit.

Over the course of the 12-week study (4/19/10 – 7/2/10), auditors made a total of 114 separate store visits and rated 1,408 individual strawberry clamshells encompassing 21 different brand labels. Of the 1,408 clamshells examined, 355 were open bag and 1,053 were TECTROL®.

### 4.3 STATISTICS

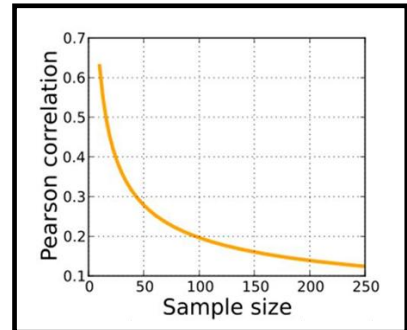
Basic descriptive statistics including mean (average), median, minimum, maximum and standard deviation were calculated on all numerical variables. Percentage of samples falling into each category was calculated for all categorical variables. A grouped category called “OK to Eat” was also created by combining the dry-bruised, under-ripe and good berries.

Different treatments (e.g., package type or brands) were compared using T-tests or Analysis of Variance (ANOVA) tests to determine mean difference significance and F-tests to determine variance difference significance. Results of these tests are shown in tables by use of p-Values, which is a measure of the probability that compared populations share the same mean or variance (i.e., are really the same population). While the results will be discussed in terms of statistical significance using the standard terminology of “significant” for p-Values  $\leq 0.05$  and “highly significant” for p-Values  $\leq 0.01$ , the actual p-Values are shown whenever possible in order to allow the reader to form his or her own conclusions as to level of significance of the data. Unless otherwise noted in this report, all T-tests were performed assuming equal variances and using two-tailed probabilities.

Pearson’s Correlation Coefficient ( $r$ ), and the Coefficient of Determination ( $r^2$ ), were calculated to determine the inter-relatedness of specific parameters (e.g., % of good berries in the clamshell versus purchase intent).

#### 4.4 CORRELATIONS BETWEEN VARIABLES

Pearson's Correlation Coefficient (PCC) and its squared here companion Coefficient of Determination (CoD) are ways to measure linear relationships between variables (although not causality). Pearson's accuracy depends on sample size as shown in the graph to the right. Every one of the data subsets used for correlation meets these minimum sample size requirements.



Pearson's values range from -1 to +1, but the value importance or significance is not proportional. In other words, the values themselves have no exact meaning, and a PCC of 0.5 is not twice as much as a value of 0.25. Because of this, there are lots of differing views in the scientific literature about what is a significant PCC value. These views differ depending on what is being measured. As general rule, PCC values comparing behavioral data and human perception (as much of the data in this study was) can be meaningful at much lower values than those in physical scientific studies. One example is given by Cohen, J. (1988). *Statistical Power Analysis For The Behavioral Sciences (2nd edition)* where 0.0 to  $\pm 0.1$  is considered no correlation,  $\pm 0.1$  to  $\pm 0.3$  is considered a small correlation,  $\pm 0.3$  to  $\pm 0.5$  is considered a moderate correlation, and anything over  $\pm 0.5$  is considered a large correlation. Based on past experience, this scale has been used but modified slightly for the purposes of this study to where the "no correlation" scale is 0 to  $\pm 0.2$ . The scale table used here is shown to the right.

Correlation	Negative	Positive
None	-0.2 to 0.0	0.0 to 0.2
Small	-0.3 to -0.2	0.2 to 0.3
Moderate	-0.5 to -0.3	0.3 to 0.5
Large	-1.0 to -0.5	0.5 to 1.0

Another way to look at the PCC is to square the results to get a Coefficient of Determination, which is proportional and additive and represents the proportion of the dependent variable which is accounted for by the independent variable. If the CoD is used along with the PCC scale shown above, then the CoD scale would be as shown.

Coeff of Det	Positive
None	0.0 to 0.04
Small	0.04 to 0.1
Moderate	0.1 to 0.25
Large	0.25 to 1.0

Correlation tests can only be performed on numerical data, so some categorical data variables such as Display Stocking Percentage, Display Rating and Clamshell Purchase Intent were converted to numerical formats with higher numbers representing better results so that the PCC directional components would be correct.

All factors tested are shown as follows in the Pearson's and Coefficient of Determination **Tables 1, 2 and 3.**



**STATISTICAL REPORT TABLE 1: ALL SAMPLES CORRELATION TABLES**

All Samples Pearson's Correlation Coefficient (r)	Time of Audit	1 lb. Strawberry clamshell price	Display Stocking %	Display Rating	% Moldy/ Fuzzy/ Decayed Berries	% Wet Leaky Berries	% Berries with Dry Bruises	% Under-ripe Berries	% Over-ripe Berries	% Good Berries	% "OK to Eat" Berries	Clamshell Purchase Decision
Time of Audit	1.00											
1 lb. Strawberry Clamshell Price	0.18	1.00										
Display Stocking %	-0.16	-0.04	1.00									
Display Rating	-0.07	0.02	0.33	1.00								
% Moldy/Fuzzy/Decayed Berries	0.05	0.00	0.02	-0.16	1.00							
% Wet/Leaky Berries	-0.04	-0.04	0.13	0.02	0.10	1.00						
% Berries with Dry Bruises	-0.08	-0.29	-0.08	-0.26	-0.08	-0.25	1.00					
% Under-ripe Berries	0.04	0.17	0.05	-0.12	-0.11	-0.20	-0.03	1.00				
% Over-ripe Berries	0.00	0.04	0.02	-0.15	0.04	0.08	-0.12	-0.16	1.00			
% Good Berries	0.04	0.12	-0.04	0.38	-0.21	-0.21	-0.57	-0.42	-0.28	1.00		
% "OK to Eat" Berries	0.00	0.00	-0.10	0.14	-0.46	-0.72	0.26	0.26	-0.65	0.38	1.00	
Clamshell Purchase Decision	-0.11	0.08	-0.10	0.41	-0.42	-0.27	-0.17	-0.02	-0.37	0.55	0.54	1.00
Legend:		Low correlation		Moderate Correlation			High Correlation					

All Samples Coefficient of Determination (r <sup>2</sup> )	Time of Audit	1 lb. Strawberry Clamshell Price	Display Stocking %	Display Rating	% Moldy/ Fuzzy/ Decayed Berries	% Wet Leaky Berries	% Berries with Dry Bruises	% Under-ripe Berries	% Over-ripe Berries	% Good Berries	% "OK to Eat" Berries	Clamshell Purchase Decision
Time of Audit	1.00											
1 lb. Strawberry clamshell price	0.03	1.00										
Display Stocking %	0.03	0.00	1.00									
Display Rating	0.00	0.00	0.11	1.00								
% Moldy/ Fuzzy/ Decayed Berries	0.00	0.00	0.00	0.03	1.00							
% Wet/Leaky Berries	0.00	0.00	0.02	0.00	0.01	1.00						
% Berries with Dry Bruises	0.01	0.08	0.01	0.07	0.01	0.06	1.00					
% Under-ripe Berries	0.00	0.03	0.00	0.01	0.01	0.04	0.00	1.00				
% Over-ripe Berries	0.00	0.00	0.00	0.02	0.00	0.01	0.02	0.03	1.00			
% Good Berries	0.00	0.01	0.00	0.15	0.05	0.04	0.33	0.17	0.08	1.00		
% "OK to Eat" Berries	0.00	0.00	0.01	0.02	0.21	0.51	0.07	0.07	0.42	0.14	1.00	
Clamshell Purchase Decision	0.01	0.01	0.01	0.17	0.18	0.07	0.03	0.00	0.14	0.31	0.29	1.00
Legend:		Low Correlation		Moderate Correlation			High Correlation					

**Table 1**



**STATISTICAL REPORT TABLE 2: TECTROL® and OPEN BAG CORRELATION TABLES**

<b>Tectrol Pearson Correlation Coefficients (r)</b>	Time of Audit	1 lb. Strawberry Clamshell Price	Display Stocking %	Display Rating	% Moldy/ Fuzzy/ Decayed Berries	% Wet Leaky Berries	% Berries with Dry Bruises	% Under-ripe Berries	% Over-ripe Berries	% Good Berries	% "OK to Eat" Berries	Clamshell Purchase Decision
Time of Audit	1.00											
1 lb. Strawberry Clamshell Price	0.13	1.00										
Display Stocking %	-0.19	-0.09	1.00									
Display Rating	0.00	0.09	0.38	1.00								
% Moldy/ Fuzzy/ Decayed Berries	0.01	-0.05	-0.01	-0.11	1.00							
% Wet Leaky Berries	-0.12	0.01	0.18	0.03	0.13	1.00						
% Berries with Dry Bruises	-0.07	-0.35	-0.07	-0.31	-0.06	-0.28	1.00					
% Under-ripe Berries	-0.03	0.00	-0.01	-0.10	-0.10	-0.19	0.01	1.00				
% Over-ripe Berries	-0.02	0.04	-0.01	-0.19	0.11	0.10	-0.12	-0.18	1.00			
% Good Berries	0.14	0.28	-0.01	0.40	-0.21	-0.18	-0.64	-0.40	-0.28	1.00		
% "OK to Eat" Berries	0.09	-0.01	-0.10	0.12	-0.45	-0.73	0.27	0.25	-0.68	0.34	1.00	
Clamshell Purchase Decision	-0.01	0.18	-0.08	0.40	-0.37	-0.26	-0.27	0.00	0.35	0.58	0.51	1.00
Legend:		Low Correlation			Moderate Correlation			High Correlation				

<b>Tectrol Coefficients of Determination (r2)</b>	Time of Audit	1 lb. Strawberry Clamshell Price	Display Stocking %	Display Rating	% Moldy/ Fuzzy/ Decayed Berries	% Wet Leaky Berries	% Berries with Dry Bruises	% Under-ripe Berries	% Over-ripe Berries	% Good Berries	% "OK to Eat" Berries	Clamshell Purchase Decision
Time of Audit	1.00											
1 lb. Strawberry Clamshell Price	0.02	1.00										
Display Stocking %	0.04	0.01	1.00									
Display Rating	0.00	0.01	0.15	1.00								
% Moldy/ Fuzzy/ Decayed Berries	0.00	0.00	0.00	0.01	1.00							
% Wet Leaky Berries	0.02	0.00	0.03	0.00	0.02	1.00						
% Berries with Dry Bruises	0.01	0.12	0.01	0.10	0.00	0.08	1.00					
% Under-ripe Berries	0.00	0.00	0.00	0.01	0.01	0.04	0.00	1.00				
% Over-ripe Berries	0.00	0.00	0.00	0.04	0.01	0.01	0.02	0.03	1.00			
% Good Berries	0.02	0.08	0.00	0.16	0.04	0.03	0.41	0.16	0.08	1.00		
% "OK to Eat" Berries	0.01	0.00	0.01	0.01	0.20	0.54	0.07	0.06	0.46	0.12	1.00	
Clamshell Purchase Decision	0.00	0.03	0.01	0.16	0.13	0.07	0.07	0.00	0.15	0.33	0.26	1.00
Legend:		Low correlation			Moderate Correlation			High Correlation				

**Table 2**



**STATISTICAL REPORT TABLE 3: TECTROL® and OPEN BAG CORRELATION TABLES**

<b>Open bag Pearson Correlation Coefficients (r)</b>	Time of Audit	1 lb. Strawberry Clamshell Price	Display Stocking %	Display Rating	% Moldy/ Fuzzy/ Decayed Berries	% Wet Leaky Berries	% Berries with Dry Bruises	% Under- ripe Berries	% Over- ripe Berries	% Good Berries	% "OK to Eat" Berries	Clamshell Purchase Decision
Time of Audit	1.00											
1 lb. Strawberry Clamshell Price	0.22	1.00										
Display Stocking %	-0.11	0.10	1.00									
Display Rating	-0.22	-0.15	0.17	1.00								
% Moldy/Fuzzy/Decayed Berries	0.00	0.02	0.06	-0.24	1.00							
% Wet Leaky Berries	0.14	-0.25	-0.02	0.00	0.02	1.00						
% Berries with Dry Bruises	0.20	0.16	-0.14	-0.13	-0.05	-0.08	1.00					
% Under-ripe Berries	0.12	0.55	0.18	-0.13	-0.18	-0.28	-0.14	1.00				
% Over-ripe Berries	0.02	0.03	0.09	-0.01	-0.08	0.03	-0.11	-0.14	1.00			
% Good Berries	-0.30	-0.44	-0.14	0.30	-0.24	-0.29	-0.30	-0.48	-0.30	1.00		
% "OK to Eat" Berries	-0.10	0.13	-0.06	0.13	-0.48	-0.67	0.14	0.35	-0.56	0.49	1.00	
Clamshell Purchase Decision	-0.18	-0.08	-0.16	0.39	-0.49	-0.25	0.00	0.01	-0.30	0.50	0.58	1.00
Legend:		Low Correlation			Moderate Correlation			High Correlation				

<b>Open Bag Coefficients of Determination (r2)</b>	Time of Audit	1 lb. Strawberry Clamshell Price	Display Stocking %	Display Rating	% Moldy/ Fuzzy/ Decayed Berries	% Wet Leaky Berries	% Berries with Dry Bruises	% Under- ripe Berries	% Over- ripe Berries	% Good Berries	% "OK to Eat" Berries	Clamshell Purchase Decision
Time of Audit	1.00											
1 lb. Strawberry Clamshell Price	0.05	1.00										
Display Stocking %	0.01	0.01	1.00									
Display Rating	0.05	0.02	0.03	1.00								
% Moldy/ Fuzzy/ Decayed Berries	0.00	0.00	0.00	0.06	1.00							
% Wet Leaky Berries	0.02	0.06	0.00	0.00	0.00	1.00						
% Berries with Dry Bruises	0.04	0.02	0.02	0.02	0.00	0.01	1.00					
% Under-ripe Berries	0.02	0.30	0.03	0.02	0.03	0.08	0.02	1.00				
% Over-ripe Berries	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.02	1.00			
% Good Berries	0.09	0.19	0.02	0.09	0.06	0.09	0.09	0.23	0.09	1.00		
% "OK to Eat" Berries	0.01	0.02	0.00	0.02	0.23	0.45	0.02	0.13	0.31	0.24	1.00	
Clamshell Purchase Decision	0.03	0.01	0.03	0.15	0.24	0.06	0.00	0.00	0.09	0.25	0.34	1.00
Legend:		Low Correlation			Moderate Correlation			High Correlation				

**Table 3**



#### 4.5 DISCUSSION OF CORRELATION TABLES

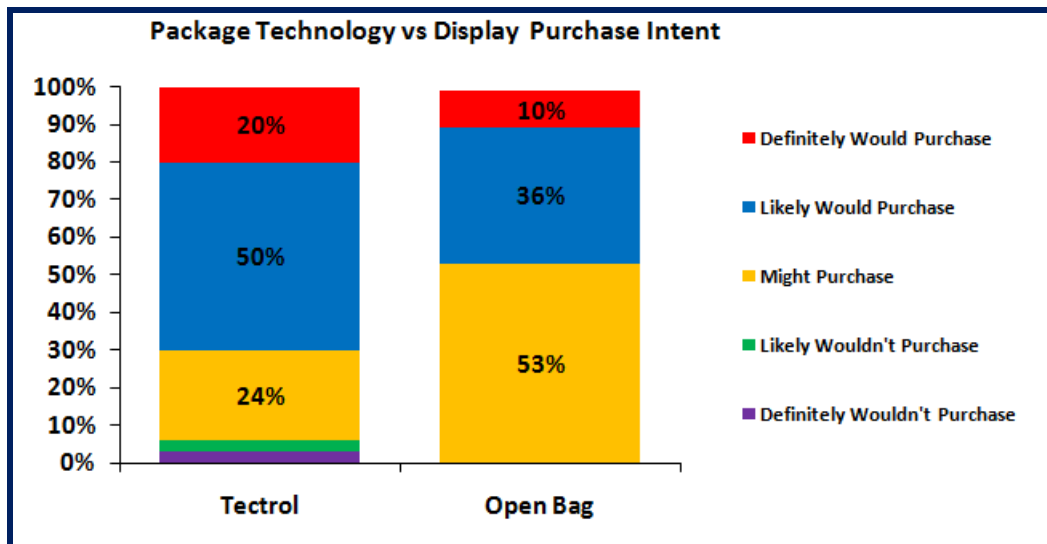
If the relative significance values shown in Tables 1, 2, and 3 in this section are used, the only variable showing a high correlation with Clamshell Purchase Intent (CPI) is the % of Good Berries, where approximately 31% of the CPI can be attributed to Good Berries. Moldy Berries shows a moderate negative correlation with CPI, but none of the other berry defect variables show any decent correlations with CPI. Display rating also shows a moderate positive correlation with Clamshell Purchase Intent.

It was expected that Good Berries would show a high negative correlation with all the berry defect variables since the fixed berry numbers in a clamshell guarantee that the more bad berries there are in a clamshell, the fewer good berries there would be, but that isn't the case. The only berry defect variable that shows a high correlation with Good Berries is Dry-Bruised Berries.

Time of Audit is not correlated with any other variable, nor should it be since ideally the time of the audit would be irrelevant. That is not to say, however, that there are not significant differences between certain variables at different audit times, just that no variable is linked with Time of Audit for its value. Section 4.8 details differences in purchase intent with Time of Day.

#### 4.6 IN-STORE DISPLAY PURCHASE INTENT

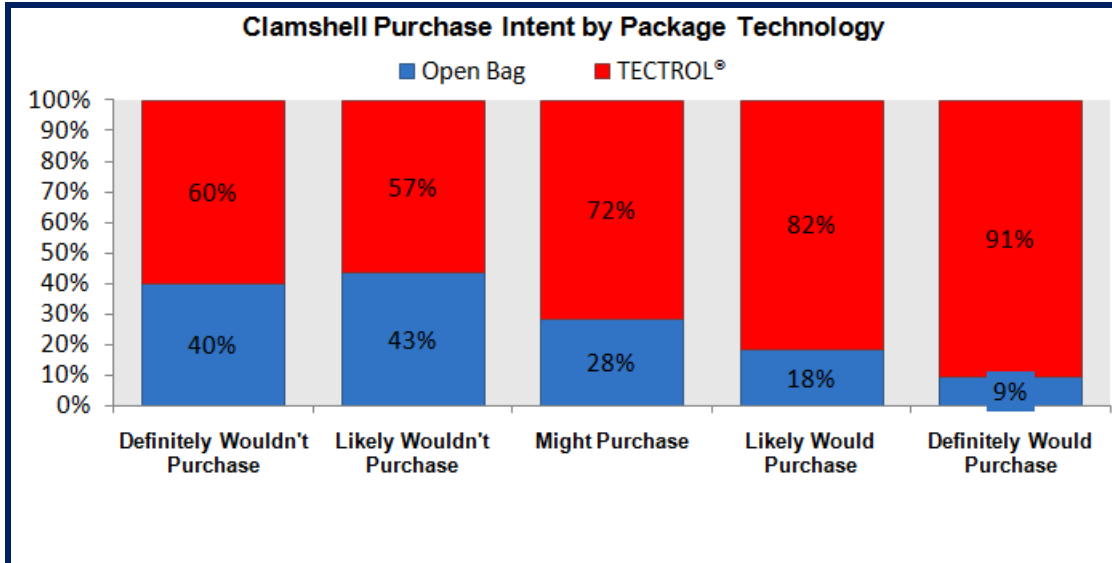
TECTROL® clamshell primary displays in the retail store also scored higher for purchase intent from the display than open bag displays. 7 of every 10 store strawberry displays rated by the auditors were scored as “Definitely” or “Likely Would Purchase from Display” compared to only 46% (less than half) of the open bag displays.



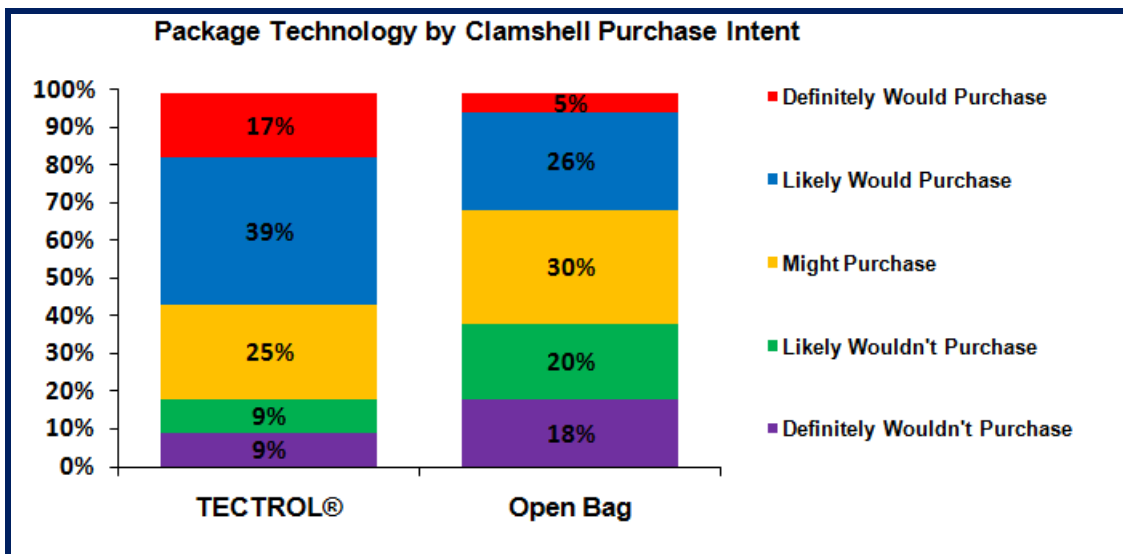


#### 4.7 PURCHASE INTENT BY CLAMSHELL

75% of all samples taken were TECTROL® clamshells. Although there were 3 times as many TECTROL® samples as open bag samples, the sample size for both data subsets was large enough to be statistically accurate for all tests.



TECTROL® samples make up 91% of the top purchase intent category and 82% of the second top category. In other words, TECTROL® clamshells are over-represented in the top purchase intent categories whereas open bag clamshells were over-represented in the 2 lowest purchase intent categories. Looking at the data another way, 56% of TECTROL® clamshells were rated in the top 2 purchase intent categories compared to only 31% of open bag clamshells. On the opposite end of the purchase intent spectrum, only 24% of TECTROL® clamshells were rated in the bottom 2 categories while 38% of open bag clamshells fell into those categories. Another stark difference is that over 3 times as many open bag samples were rated as “Would not purchase” than “Definitely would purchase”, while more TECTROL® samples fell into the “Definitely would purchase” category than the “Would not purchase” category.





#### 4.8 INDIVIDUAL STRAWBERRY QUALITY, CONSUMER LEVEL

Results of mean testing (**Table 4**) show that the TECTROL® clamshells were significantly superior to the open bag clamshells in almost all categories. TECTROL® clamshells averaged less than half the amount of moldy berries, a third fewer wet leaky berries, and a fifth fewer under-ripe berries. TECTROL® clamshells did exhibit significantly more dry-bruised berries, but that did not seem to influence purchase intent. On average, 42.5% of all berries in TECTROL® clamshells were reviewed as “good” (no defects and optimum ripeness) and 80.6% were rated as “OK to Eat” (not moldy, wet/leaky, or over-ripe) compared to only 38.4% of open bag samples which were rated as “good” and 73.2% rated as “OK to Eat”. Both of these differences are statistically significant. The difference in the Clamshell Purchase Intent means is also significant, proving that the auditors would be more likely to purchase TECTROL® clamshells than open bag clamshells. The one category that was not statistically different between open bag and TECTROL® clamshells was the percentage of over-ripe berries.

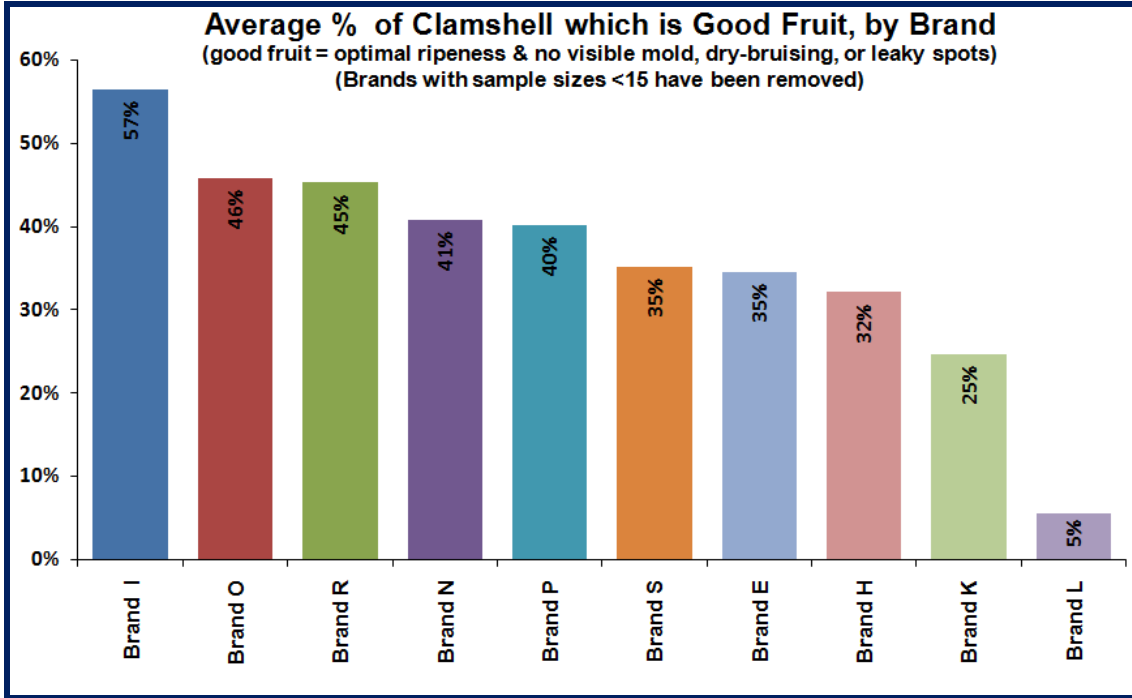
OPEN BAG vs TECTROL®	Means		p-Values	
	Open Bag	Tectrol®	T-Test	F-Test
Time of Audit	4:32 PM	2:54 PM	0.000	0.000
1 lb. Strawberry Clamshell Price	\$2.61	\$2.39	0.000	0.398
Display Stocking %	3.1	3.0	0.440	0.459
Display Rating	3.6	3.8	0.000	0.000
Clamshell Purchase Decision	2.8	3.5	0.000	0.361
% Moldy/Fuzzy/Decayed Berries	5.8%	2.4%	0.000	0.000
% Wet Leaky Berries	12.3%	9.6%	0.001	0.000
% Berries with Dry Bruises	13.9%	22.0%	0.000	0.000
% Under-ripe Berries	20.8%	16.0%	0.000	0.000
% Over-ripe Berries	8.8%	7.5%	0.079	0.000
% "Good" Berries	38.4%	42.5%	0.020	
% "OK to Eat" Berries	73.2%	80.6%	0.000	0.000
Highly Significant Difference (p<0.01)			Significant Difference (p<0.05)	

Table 4

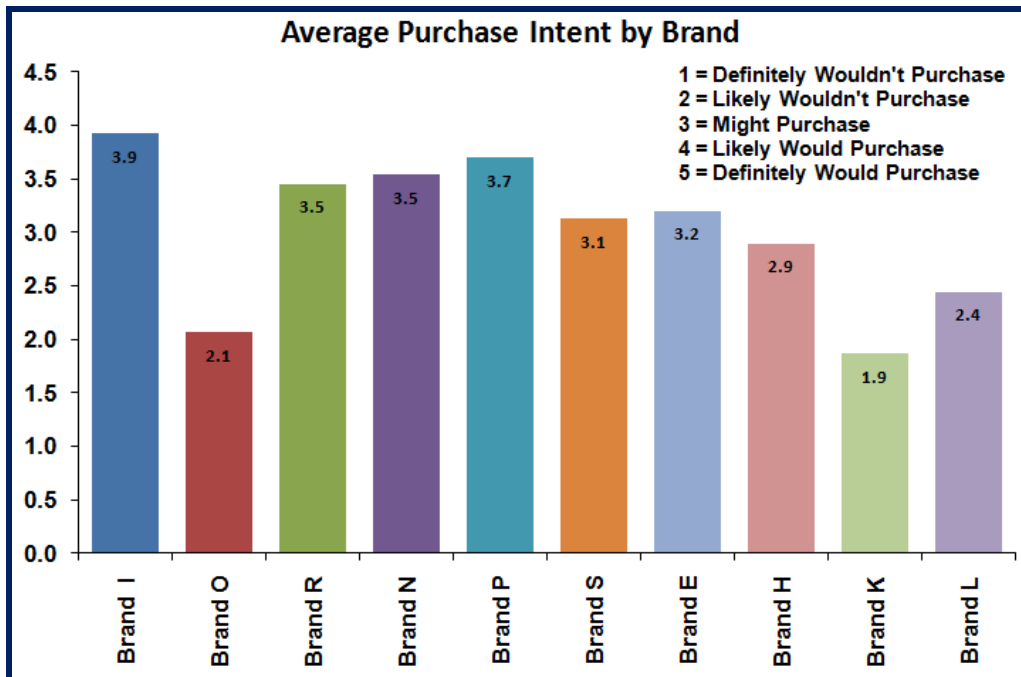


### 4.9 BRAND LABELS

Brand differences were observed in most categories, with the key differences being in berry quality and purchase intent. Detailed T-test tables comparing brands with respect to CPI and % Good Berries are shown in Table 5.



Brand I is also at the top of the major brands for average purchase intent.





**SATISTICAL REPORT, TABLE 5: BRAND LABEL T-TESTS for PURCHASE INTENT and % GOOD FRUIT**

(Yellow cells are highly significant ( $p < 0.01$ ); green cells are significant ( $p < 0.05$ ))

T-Tests Between Brands for Purchase Intent	Brand A	Brand B	Brand C	Brand D	Brand E	Brand F	Brand G	Brand H	Brand I	Brand J	Brand K	Brand L	Brand M	Brand N	Brand O	Brand P	Brand Q	Brand R	Brand S	Brand T	Brand U	
Brand A	1.000																					
Brand B	0.000	1.000																				
Brand C	0.000	0.000	1.000																			
Brand D	0.000	0.000	0.022	#DIV/0!																		
Brand E	0.002	0.174	0.357	0.088	1.000																	
Brand F	0.010	0.396	0.179	#DIV/0!	0.833	#DIV/0!																
Brand G	0.000	0.000	0.209	0.201	0.153	0.027	1.000															
Brand H	0.002	0.497	0.032	0.004	0.063	0.890	0.008	1.000														
Brand I	0.000	0.000	0.154	0.816	0.000	0.176	0.691	0.000	1.000													
Brand J	0.170	0.000	0.000	#DIV/0!	0.005	#DIV/0!	0.000	0.002	0.000	#DIV/0!												
Brand K	0.400	0.008	0.000	0.000	0.000	0.126	0.000	0.000	0.000	0.152	1.000											
Brand L	0.078	0.498	0.003	0.001	0.001	0.546	0.001	0.004	0.000	0.056	0.053	1.000										
Brand M	0.000	0.000	0.000	0.036	0.002	0.003	0.007	0.000	0.076	0.000	0.000	0.000	1.000									
Brand N	0.000	0.005	0.987	0.213	0.026	0.475	0.427	0.000	0.000	0.000	0.000	0.000	0.004	1.000								
Brand O	0.156	0.020	0.000	0.000	0.000	0.168	0.000	0.000	0.000	0.057	0.377	0.026	0.000	0.000	1.000							
Brand P	0.000	0.000	0.555	0.341	0.044	0.283	0.719	0.000	0.172	0.000	0.000	0.000	0.011	0.380	0.000	1.000						
Brand Q	1.000	0.008	0.000	0.000	0.073	0.095	0.000	0.067	0.000	0.272	0.620	0.305	0.000	0.007	0.410	0.002	1.000					
Brand R	0.000	0.003	0.716	0.053	0.412	0.422	0.188	0.025	0.031	0.000	0.000	0.001	0.001	0.728	0.000	0.304	0.002	1.000				
Brand S	0.000	0.091	0.104	0.007	0.686	0.845	0.020	0.091	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.002	0.012	0.133	1.000			
Brand T	0.033	0.000	0.000	#DIV/0!	0.000	#DIV/0!	0.000	0.000	0.000	#DIV/0!	0.031	0.004	0.000	0.000	0.004	0.000	0.052	0.000	0.000	#DIV/0!		
Brand U	0.005	0.347	0.112	0.035	0.622	1.000	0.035	0.741	0.001	0.007	0.004	0.160	0.000	0.087	0.002	0.030	0.078	0.169	0.661	0.000	1.000	

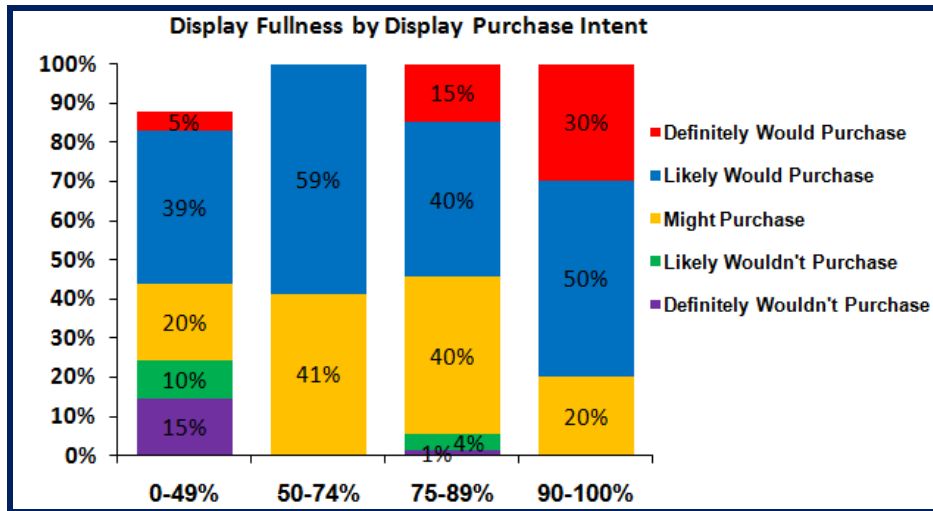
T-Tests Between Brands for % Good Fruit	Brand A	Brand B	Brand C	Brand D	Brand E	Brand F	Brand G	Brand H	Brand I	Brand J	Brand K	Brand L	Brand M	Brand N	Brand O	Brand P	Brand Q	Brand R	Brand S	Brand T	Brand U	
Brand A	1.000																					
Brand B	0.002	1.000																				
Brand C	0.000	0.684	1.000																			
Brand D	0.000	0.019	0.000	1.000																		
Brand E	0.004	0.637	0.925	0.003	1.000																	
Brand F	0.000	0.849	0.450	0.140	0.705	1.000																
Brand G	0.006	0.192	0.083	0.650	0.026	0.628	1.000															
Brand H	0.028	0.479	0.697	0.007	0.522	0.669	0.023	1.000														
Brand I	0.000	0.020	0.008	0.810	0.000	0.436	0.704	0.000	1.000													
Brand J	0.066	0.115	0.010	0.002	0.186	0.030	0.106	0.357	0.019	1.000												
Brand K	0.003	0.025	0.015	0.000	0.050	0.099	0.002	0.213	0.000	0.348	1.000											
Brand L	0.779	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.129	0.000	1.000										
Brand M	0.008	0.075	0.035	0.000	0.144	0.137	0.015	0.362	0.000	0.384	0.980	0.000	1.000									
Brand N	0.000	0.638	0.386	0.030	0.048	0.988	0.112	0.000	0.000	0.083	0.001	0.000	0.019	1.000								
Brand O	0.000	0.234	0.108	0.121	0.002	0.753	0.375	0.000	0.000	0.038	0.000	0.000	0.003	0.052	1.000							
Brand P	0.000	0.658	0.290	0.004	0.183	0.971	0.091	0.094	0.001	0.019	0.000	0.000	0.004	0.871	0.178	1.000						
Brand Q	0.229	0.364	0.211	0.034	0.453	0.506	0.268	0.624	0.097	0.791	0.837	0.086	0.853	0.270	0.167	0.147	1.000					
Brand R	0.000	0.328	0.130	0.120	0.062	0.771	0.456	0.042	0.087	0.044	0.001	0.000	0.007	0.409	0.921	0.320	0.189	1.000				
Brand S	0.032	0.779	0.999	0.038	0.895	0.810	0.097	0.430	0.000	0.331	0.129	0.000	0.263	0.076	0.007	0.369	0.574	0.179	1.000			
Brand T	0.494	0.001	0.000	0.000	0.001	0.001	0.002	0.008	0.000	0.046	0.000	0.795	0.002	0.000	0.000	0.000	0.151	0.000	0.041	1.000		
Brand U	0.000	0.051	0.009	0.000	0.134	0.029	0.011	0.356	0.000	0.206	0.990	0.000	0.989	0.018	0.002	0.002	0.817	0.004	0.256	0.000	1.000	

Table 5

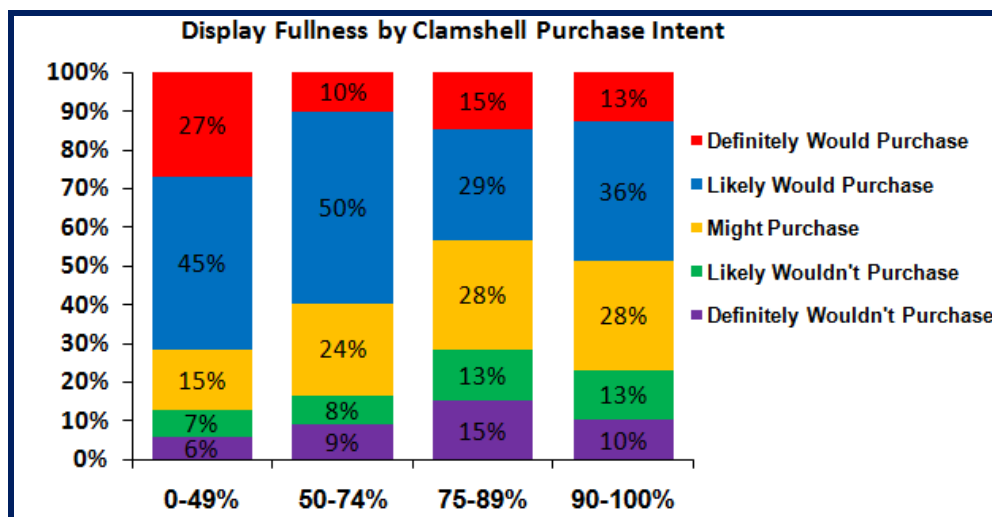


#### 4.10 DISPLAY STOCKING % (DISPLAY FULLNESS)

Purchase Intent was charted against Display Fullness to determine if a more highly stocked display would influence Purchase Intent. As would be expected, the Display Rating or Display Purchase Intent increases as the amount of strawberry clamshells in the display increases. Mean testing indicates that these observed differences are significant between every category except the 50-74% and the 75-89% categories.



An unexpected result is seen when individual Clamshell Purchase Intent is compared against Display Fullness. It appears that clamshells taken from displays which are more than half empty have a higher purchase intent rating. Mean testing confirms this: There is a significant difference between the lowest stocking category (0%-49%) and all other stocking categories in terms of purchase intent. There is also a significant difference between the 50-74% category and the 75-90% category in terms of Clamshell Purchase Intent. Since Clamshell Purchase Intent was supposedly reviewed in terms of what the clamshell looked like apart from the display, this would imply that it was more likely for the auditor to randomly grab a higher quality clamshell from empty displays than from full ones.



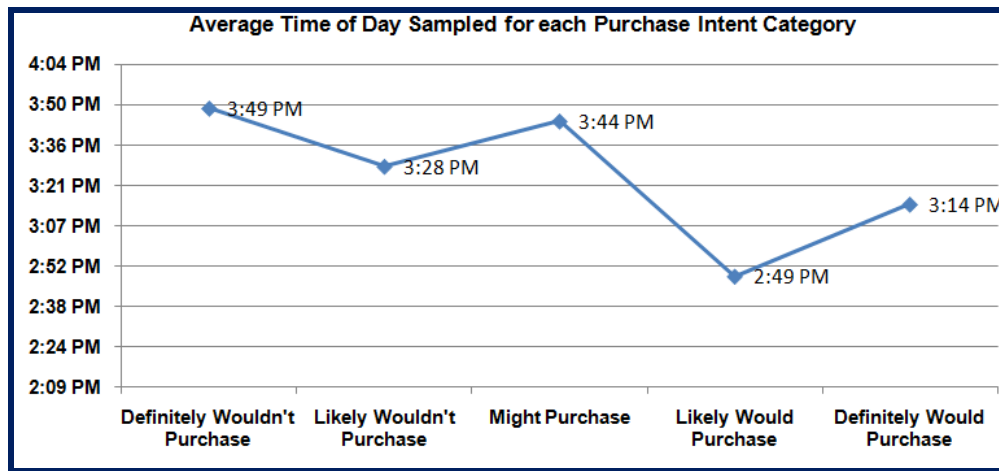


#### 4.11 AUDIT DAYPART AND TIME OF DAY

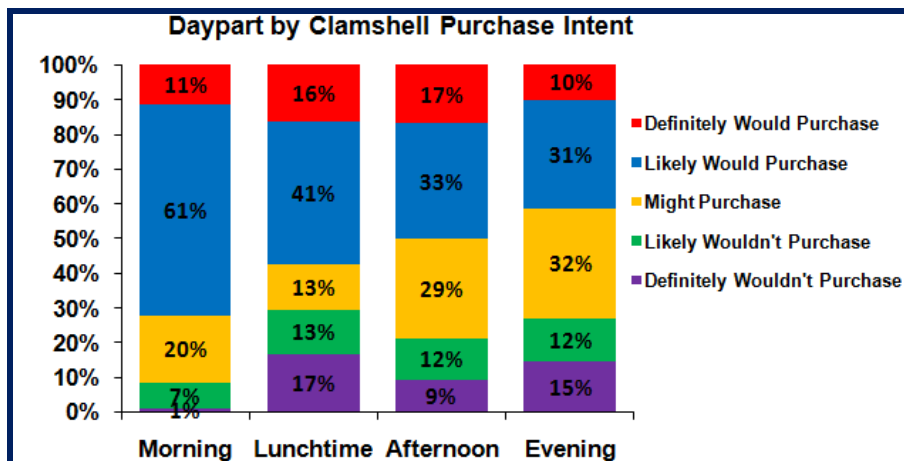
As seen previously, there was a statistically significant 1 hour 38 minute difference, on average, between the open bag samples and the TECTROL® samples, with the TECTROL® samples coming earlier in the afternoon.

When Clamshell Purchase Intent is charted against Sampling Time of Day, it appears that the highest 2 purchase intent categories are grouped earlier in the day than the bottom 3 intent categories.

In order to view this relationship in more detail, sampling times were grouped according to dayparts with the following definitions: Morning (8:00 am-11:30 am), Lunchtime (11:31 am-1:29 pm), Afternoon (1:30 pm-5:00 pm), Evening (5:01 pm-8:00 pm). All samples fell into one of these time slots.



Results of this daypart breakdown indicate that sampling times earlier in the day, especially before 11:30 am, result in higher purchase intents. Mean testing indicates that this difference is significant between the morning daypart and all other dayparts. Further analysis would have to be performed to determine whether this daypart effect resulted because better samples were randomly chosen earlier in the day or if this is a true effect and earlier sample times always lead to better looking fruit. Accordingly, TransFRESH requested further analysis reported in Section 4.12.





## 4.12 DAYPART VERSUS PACKAGE TECHNOLOGY

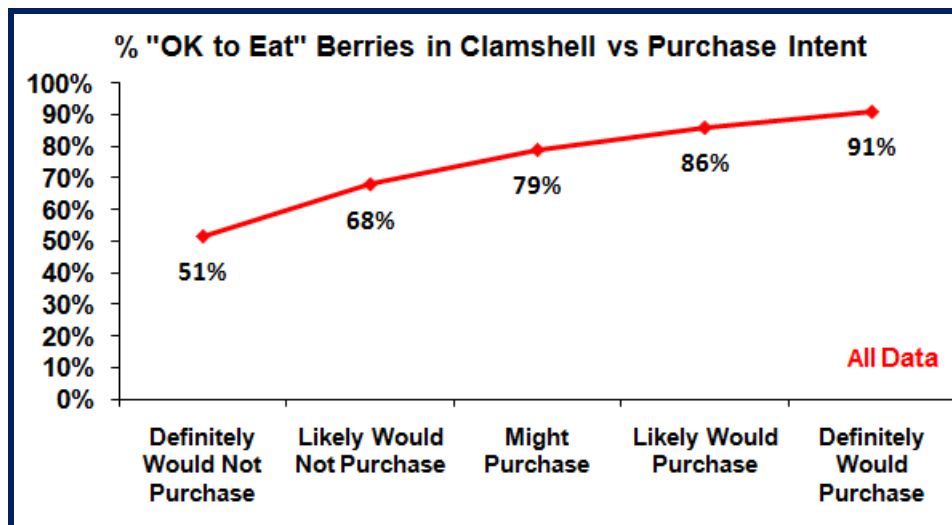
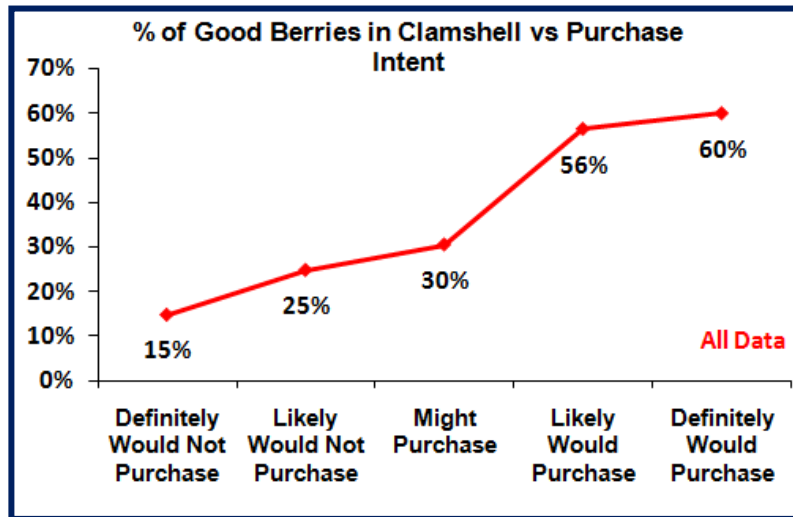
OPEN BAG vs TECTROL®	All Dayparts		Morning		Lunchtime		Afternoon		Evening		
	Open Bag	TECTROL®	Open Bag	TECTROL®	Open Bag	TECTROL®	Open Bag	TECTROL®	Open Bag	TECTROL®	
Clamshell Purchase Decision	2.8	3.5	4.3	3.7	3.3	3.3	2.8	3.5	2.7	3.4	
% Moldy/Fuzzy Berries	5.8%	2.4%	2.6%	2.4%	1.3%	2.1%	7.1%	2.5%	5.1%	2.6%	
% Wet Leaky Berries	12.3%	9.6%	6.9%	14.0%	17.8%	12.3%	10.2%	8.7%	14.1%	7.4%	
% Berries with Dry Bruises	13.9%	22.0%	15.0%	18.7%	10.3%	26.2%	10.9%	23.0%	16.4%	17.6%	
% Under-Ripe Berries	20.8%	16.0%	15.7%	10.5%	15.9%	20.5%	17.9%	14.9%	23.9%	16.0%	
% Over-ripe Berries	8.8%	7.5%	2.6%	6.4%	23.2%	9.2%	7.5%	6.4%	9.3%	8.3%	
% "Good" Berries	38.4%	42.5%	57.1%	48.1%	31.5%	29.8%	46.3%	44.5%	31.1%	48.1%	
% "OK to Eat" Berries	73.2%	80.6%	87.9%	77.2%	57.7%	76.5%	75.1%	82.5%	71.5%	81.6%	
Highly Significant Difference (p<0.01)				Significant Difference (p<0.05)							

During the morning daypart, Open Bag samples rate better in almost every category, including ranking statistically better for Purchase Intent and "OK to Eat" berries. By lunchtime, scores have evened out for purchase intent and TECTROL® has overtaken Open Bag for "OK to Eat" berry percentages. As the day continues, TECTROL® begins to rank significantly higher than Open Bag in more categories. This implies that Open Bag samples look better when the cases are first unpacked and placed on the shelf in the morning but that TECTROL® berries hold up better as the day progresses.



### 4.13 BERRY QUALITY

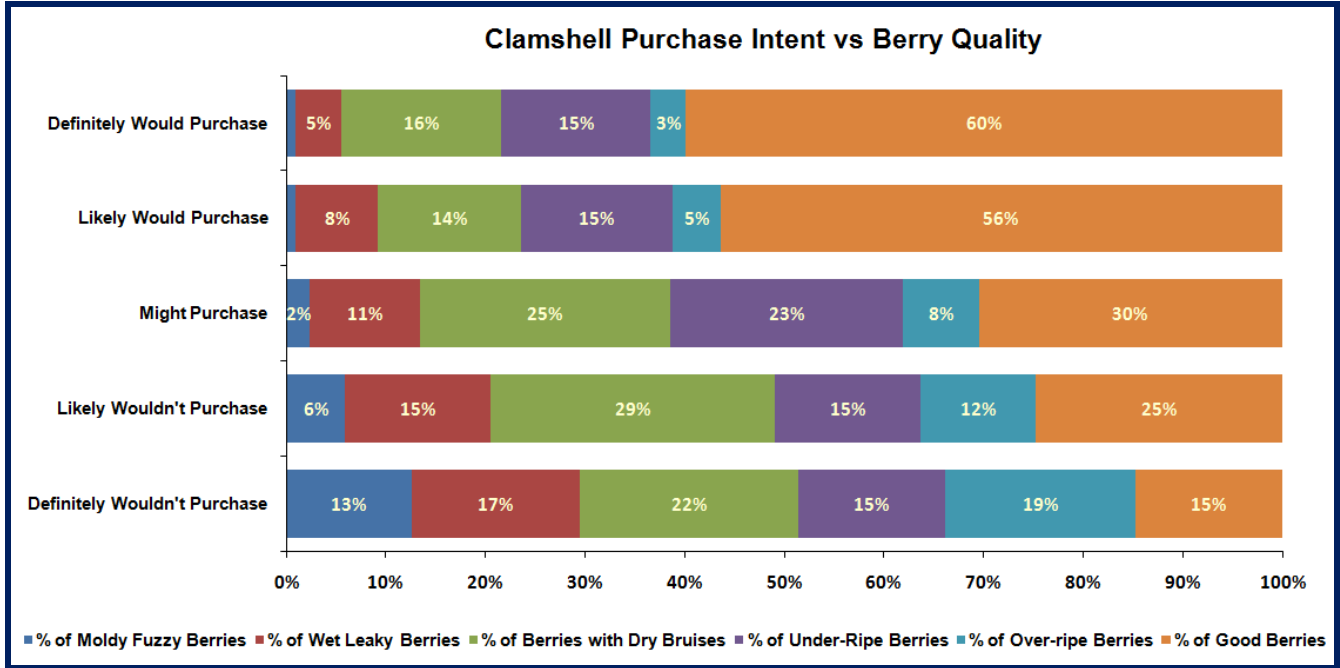
As seen previously, there is a high correlation between berry quality and purchase intent. This relationship can be seen graphically when the two variables are charted against each other. Clamshells that are rated higher for purchase intent contain more good berries.



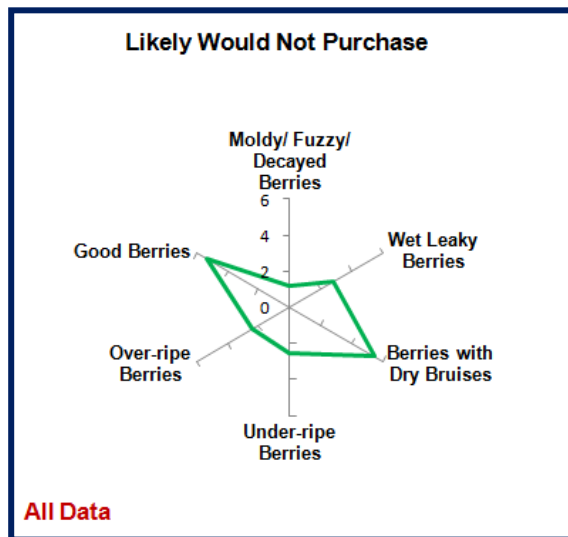
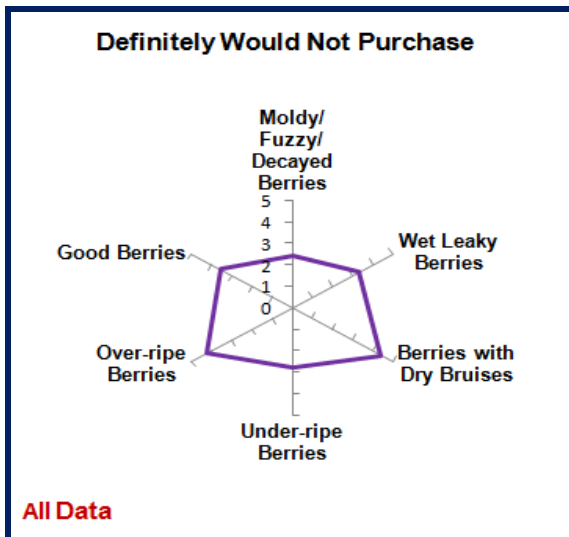


#### 4.14 CLAMSHELL PURCHASE INTENT V. BERRY QUALITY

The breakdown of all purchase intent categories versus all berry quality variables can be seen in the bar chart below. Good berries obviously have a positive linear relationship with purchase intent while moldy, wet leaky and over-ripe berries have a negative linear relationship with purchase intent. Under-ripe and dry-bruised berries have less of a linear relationship with purchase intent.

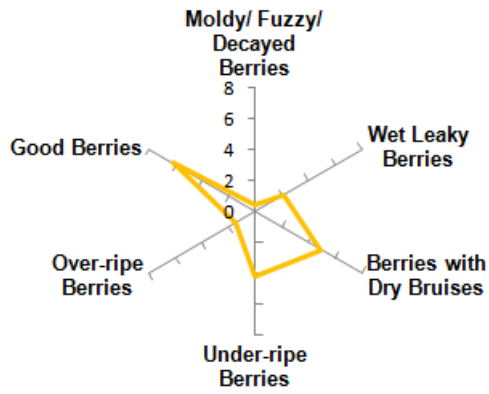


Radar plots (below) are a good way of viewing how the relationship of spoiled berries to good berries changes as the purchase intent increases. Clamshells with zero purchase intent show almost equal percentages of berries in every category. As purchase intent increases, the percentage of over-ripe and moldy berries decreases and the percentage of good berries increases. For the top 2 purchase intent categories, the good berries seem to comprise almost all the clamshell while all other categories appear very small.



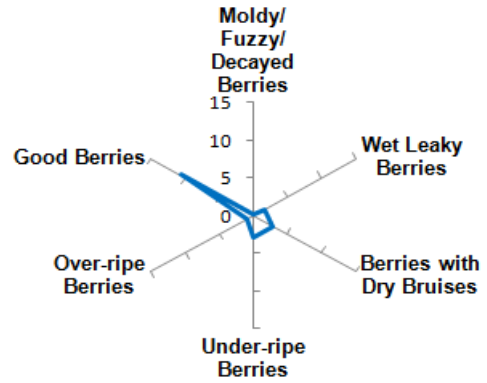


### Might Purchase



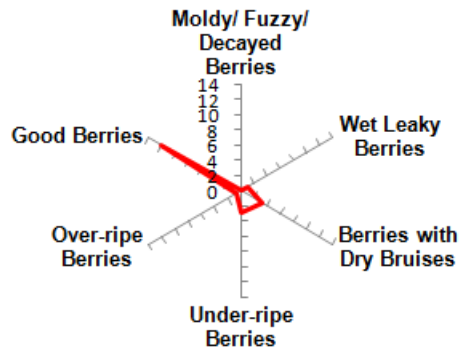
All Data

### Likely Would Purchase



All Data

### Definitely Would Purchase



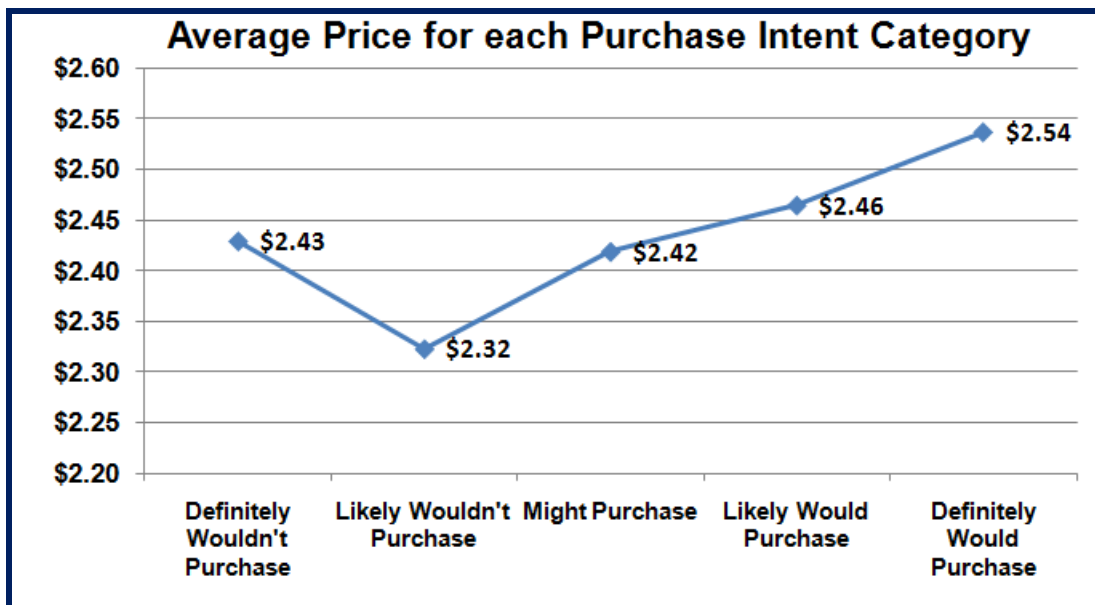
All Data



#### 4.15 PRICING

For most consumers price would have an impact on purchase intent. However, since purchase intent in this study was measured after buying the product and while looking only at the quality properties of the berries in the clamshell, it can be assumed price was not a primary consideration when rating purchase intent. Therefore, a direct price/purchase intent relationship would not be expected from this study.

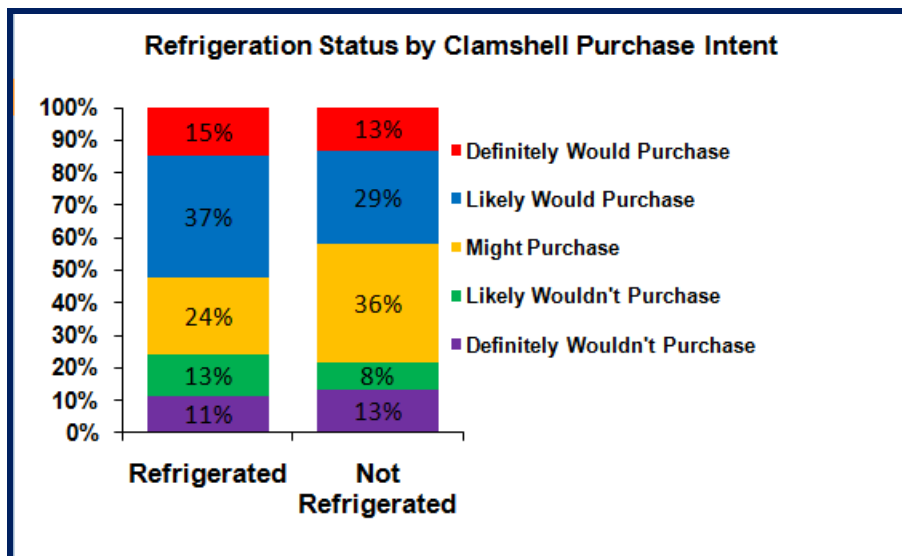
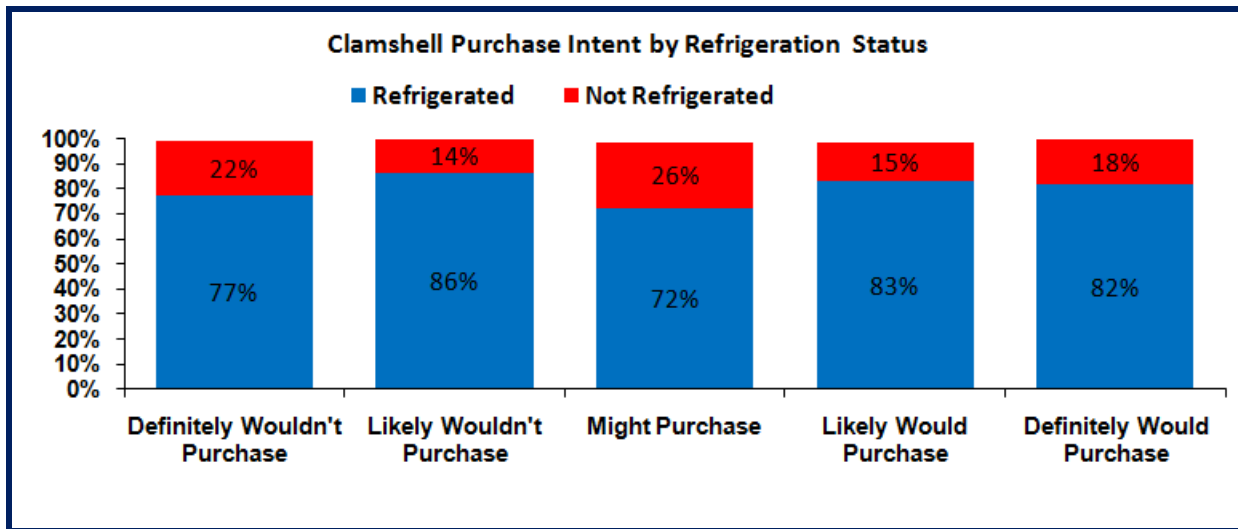
When the average price for a one pound strawberry clamshell in each purchase intent category is charted, the pricing seems to have a linear relationship with purchase intent despite the earlier caveat. However, this linear relationship is opposite of what would be expected (higher purchase intents with higher prices), and the correlation coefficients discussed earlier show that pricing isn't correlated with any other variable. Therefore it can be concluded that the observed results in the chart are an artifact of the way purchase intent was rated.





#### 4.16 REFRIGERATION STATUS

Four of every five samples examined were from a refrigerated display. Specifically, 79% of the TECTROL® samples and 86% of the open bag samples were refrigerated. When refrigeration status is compared to purchase intent, it is clear that refrigeration does not directly influence purchase intent. This finding is verified by means and variance testing which shows no significant difference between purchase intent means of refrigerated and non-refrigerated sample populations. Therefore, refrigeration status does not have any statistical influence on the observed differences between TECTROL® and open bag berries discussed in previous sections.





## 5.0 APPENDIX



## 5.1 APPENDIX A – RQA STORE LIST

Market City, State	Date	Store Name	Market City, State	Date	Store Name
Ashland, MA	5/21/10	Market Basket	Duluth, MN	6/21/10	Super One Foods
Ashland, MA	5/27/10	Market Basket	Duluth, MN	6/21/10	Cub Foods
Ashland, MA	6/20/10	Market Basket	Duluth, MN	6/23/10	Mount Royal Fine Foods
Ashland, MA	6/20/10	Shaws	Duluth, MN	7/1/10	Super One Foods
Ashland, MA	6/23/10	Market Basket	Duluth, MN	7/1/10	Cub Foods
Atlanta, GA	6/21/10	Walmart	Duluth, MN	7/2/10	Mount Royal Fine Foods
Atlanta, GA	6/21/10	Kroger	Duluth, MN	7/2/10	Paulson's SuperValu
Atlanta, GA	6/20/10	Publix	East Meadow, NY	5/22/10	Stop & Shop
Atlanta, GA	6/20/10	Kroger	Easton, MA	5/21/10	Shaws
Atlanta, GA	6/20/10	Walmart	Flushing, NY	5/27/10	Waldbaums
Atlanta, GA	5/25/10	Publix	Flushing, NY	6/21/10	Waldbaums
Atlanta, GA	5/25/10	Kroger	Foxborough, MA	6/22/10	Stop & Shop
Atlanta, GA	5/26/10	Publix	Foxborough, MA	5/28/10	Stop & Shop
Atlanta, GA	5/26/10	Walmart	Franklin, MA	5/23/10	Stop & Shop
Atlanta, GA	5/26/10	Walmart	Franklin, MA	6/20/10	Stop & Shop
Atlanta, GA	5/27/10	Kroger	Franklin, MA	6/20/10	Shaws
Atlanta, GA	6/18/10	Kroger	Glen Oaks, NY	5/23/10	Waldbaums
Atlanta, GA	6/18/10	Kroger	Glendale, NY	5/28/10	Stop & Shop
Atlanta, GA	6/18/10	Walmart	Howard Beach, NY	5/21/10	Waldbaums
Atlanta, GA	6/18/10	Publix	Inwood, NY	5/23/10	Stop & Shop
Atlanta, GA	6/19/10	Publix	Inwood, NY	5/24/10	Stop & Shop
Atlanta, GA	6/19/10	Walmart	Jackson Heights, NY	6/18/10	Waldbaums
Atlanta, GA	6/21/10	Walmart	Long Island City, NY	6/18/10	Stop & Shop
Atlanta, GA	6/22/10	Publix	Mansfield, MA	5/21/10	Shaws
Atlanta, GA	6/22/10	Walmart	Mansfield, MA	5/24/10	Shaws
Atlanta, GA	6/22/10	Walmart	Mansfield, MA	5/25/10	Stop & Shop
Atlanta, GA	6/23/10	Kroger	Mansfield, MA	5/28/10	Stop & Shop
Baldwin Harbor, NY	5/25/10	Waldbaums	Mansfield, MA	5/28/10	Shaws
Bayside, NY	5/26/10	Waldbaums	Mansfield, MA	6/22/10	Stop & Shop
Bayside, NY	6/21/10	Waldbaums	Maple Grove, MN	5/24/10	Rainbow
Bellingham, MA	5/25/10	Market Basket	Medway, MA	5/20/10	Shaws
Bellingham, MA	5/24/10	Market Basket	Medway, MA	6/22/10	Shaws/Star
Bellingham, MA	5/23/10	Market Basket	Merrick, NY	5/26/10	Waldbaums
Bellingham, MA	5/27/10	Market Basket	Milford, MA	6/1/10	Shaws



## RQA Store List - Continued

Market City, State	Date	Store Name	Market City, State	Date	Store Name
Bellingham, MA	6/20/10	Market Basket	Milford, MA	6/20/10	Stop & Shop
Bellingham, MA	6/24/10	Market Basket	Milford, MA	6/24/10	Shaws
Boston, MA	5/17/10	Stop & Shop	Milton, MA	5/23/10	Stop & Shop
Bronx, NY	6/22/10	Stop & Shop	New Hyde Park, NY	5/23/10	Stop & Shop
Bronx, NY	6/22/10	Stop & Shop	New York, NY	5/17/10	Stop & Shop
Carle Place, NY	5/28/10	Stop & Shop	Oceanside, NY	5/28/10	Waldbaums
College Point, NY	6/18/10	Waldbaums	Oceanside, NY	6/1/10	Stop & Shop
Duluth, MN	5/25/10	Super One Foods Kenwood	Plymouth, MN	5/1/10	Rainbow
Duluth, MN	5/20/10	Mount Royal Fine Foods	Plymouth, MN	5/2/10	Rainbow
Duluth, MN	5/21/10	Cub Foods	Raynham, MA	5/25/10	Market Basket
Duluth, MN	5/24/10	Super One Foods	Raynham, MA	5/21/10	Market Basket
Duluth, MN	5/26/10	Super One Foods Kenwood	Robbinsdale, MN	5/20/10	Rainbow
Duluth, MN	5/26/10	Mount Royal Fine Foods	Rockville Centre, NY	5/20/10	Waldbaums
Duluth, MN	5/26/10	Super One Foods	Rockville Centre, NY	5/20/10	Waldbaums
Duluth, MN	5/27/10	Cub Foods	Superior, WI	5/26/10	Walmart Super Center
Duluth, MN	5/27/10	Cub Foods	Superior, WI	6/21/10	Walmart
Duluth, MN	5/20/10	Mount Royal Fine Foods	Superior, WI	6/23/10	Walmart
Duluth, MN	5/22/10	Mount Royal Fine Foods	Superior, WI	7/2/10	Walmart Super Center
Duluth, MN	5/24/10	Paulson's Supervalu	West Hempstead	5/28/10	Stop & Shop
Duluth, MN	5/25/10	Super One Foods Burning Tree	West Springfield, MA	5/21/10	Stop & Shop
Duluth, MN	5/26/10	Super One Foods Kenwood	Westfield, MA	5/24/10	Stop & Shop
Duluth, MN	5/28/10	Super One Foods Kenwood	Westfield, MA	5/25/10	Stop & Shop
Duluth, MN	6/21/10	Paulson's Supervalu	Yonkers, NY	6/20/10	Stop & Shop



## 5.2 APPENDIX B – RQA DATA COLLECTION SHEET-SAMPLE

### Strawberry CQI - Retail Evaluation Form

Sample Information		1											
Date of Audit:	4/19/10												
Time of Audit:	1:30 PM												
Store Number	52												
Store Name	Store Name												
City Where Evaluated:	Atlanta												
1 lb. Strawberry clamshell price	\$2.99												
Store Display Observation													
Is display refrigerated? Yes or No	Y												
Display stocked: <b>A=90% or more</b> <b>B=89% to 75% C=74% to 50%</b> <b>D=less than 49%</b>	A												
Label(s) of 1 lb. Clamshells on display	Label												
Rate display as a whole (Scale 1-5) <b>1=Would purchase from display without hesitation</b> <b>2=Likely Would Not Purchase from the Display</b> <b>3=See defects, would need to search for good clamshell, may not purchase</b> <b>4=Likely Would Purchase from the Display</b> <b>5=Berries look over-ripe (dark purple) and/or moldy, would not purchase</b>	1												
1 lb. Strawberry Evaluation (Each clamshell evaluated should be in separate column)													
Clamshell Number	1	2	3	4	5	6	7	8	9	10	11	12	
Label	Label	Label	Label	Label	Label	Label	Label	Label	Label	Label	Label	Label	
Source Country	USA	USA	USA	USA	USA	USA	USA	USA	USA	USA	USA	USA	
1 lb. Clamshell Purchase Decision													
Clamshell Purchase decision (Scale 1-5) <b>1=Would purchase without Hesitation</b> <b>2=Likely Would Not Purchase</b> <b>3=See defects, would need to search for good clamshell, may not purchase</b> <b>4=Likely Would Purchase</b> <b>5=Berries look overripe (dark purple) and/or moldy, would not purchased</b>	1	1	1	1	1	1	1	1	1	1	1	1	
Individual berry evaluation A6 (score most dominant defect)													
Total number of moldy, fuzzy decayed berries?	0	0	6	1	0	0	0	0	2	0	2	1	
Total number of wet leaky berries? (Wet leaky spot is diameter of a pencil top or bigger.)	0	0	0	0	4	3	0	0	1	1	0	0	
Total number of berries with dry bruise(s)? (Sunken area the size of a pencil top to diameter of dime that has healed.)	2	6	3	3	8	12	7	12	4	2	4	2	
Total number of berries that have white shoulder and/or tip?	3	1	5	6	3		2	1	1	4	2	2	
Total number of overripe berries? (Almost a dark purple color.)	8	5	3	4	1		6	2	4	6	2	4	
Total number of good berries?	9	6	5	8	9	10	11	5	16	10	12	12	
Total number of berries in clamshell?	22	18	22	22	25	25	26	20	28	23	22	21	
Comments/Observations/Analysis													



## 5.3 APPENDIX C – RQA CERTIFICATION LETTER



**RQA, Inc.**  
7900 S. Cass Avenue  
Darien, IL 60561

Tel: 630.512.0011  
Fax: 630.512.0014

Re: TransFRESH Retail Quality Audits

To: Allen Moczygemba

RQA, Inc. is a global leader in strategic product development, quality assurance and crisis management services to the food, beverage, personal care and consumer products industries. Its powerful worldwide reach, responsiveness and commitment to unparalleled service quality combine to deliver superior client satisfaction.

RQA was founded in 1989 by its principal owner and President, Lawrence E. Platt. It is a privately held firm and operates in the United States and more than eighty countries worldwide. RQA's world headquarters are located in the Chicago area. (Federal Tax ID #36-3655961 / Dun & Bradstreet, #60-719-9635)

RQA has over 5,000 field personnel in the USA and Canada and over 8,000 field personnel worldwide. RQA field personnel have a variety of primary credentials and include food scientists, dieticians, and food industry professionals as well as personnel with credentials appropriate for the specific assignments. Field personnel are assigned to projects based on their background and qualifications, and they must meet specific training and experience requirements to qualify for work assignments. New personnel are required to complete a formal application and orientation process which includes employment credentials, background check and training for specific assignments. Detailed instructions are provided for each audit project and include procedures, package and product condition defect lists with descriptions and photos. Field personnel are often required to complete in-house training for on-going projects, which require specific client training procedures.

RQA maintains a quality monitoring system (REP RATING SYSTEM) for all field personnel for every project. RQA's project managers evaluate the performance for each field person and provide a project rating. The RQA management and the field personnel have access to the rating. Any issues or areas for improvement are addressed as needed. RQA is committed to provide well qualified and well trained personnel to perform all project work.

RQA is uniquely qualified to offer a cost effective solutions based on twenty years of retail audit experience. RQA's extensive professional field force, training protocols and quality assurance systems are designed to provide a high degree of accuracy and the capability to rapidly mobilize to meet our client's needs. RQA combines expert consultancy with a wide network of field personnel and other capabilities to provide comprehensive and customized solutions.

If you need any further assistance, please feel free to contact me.

**Kathleen Krieger**  
Project Manager, Quality Audits

**RQA, Inc.**  
Providing Solutions from Concept to Consumption  
7900 S. Cass Ave.  
Darien, IL 60561  
630-512-0011 x131  
k.krieger@rqa-inc.com

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Chicago ◊ Toronto ◊ London ◊ Sao Paulo ◊ Hong Kong ◊ Shanghai ◊ Sydney



## 5.4 APPENDIX D – STATISTICIAN CERTIFICATION AND CREDENTIALS



Jeff Boeger is a market research professional and business strategist with 18 years' experience gleaning key insights from scientific, financial, production, and market research data. He holds a B.S. degree from UC Davis and M.S. degree from Texas A&M University.

Jeff has worked in, and consulted for, the food safety and food production industries since 1992, including 7 years with PurePulse Technologies (R&D technology corporation manufacturing systems for food disinfection and medical/pharmaceutical sterilization), 4 years with SureBeam Corp. (food irradiation systems manufacturer and services provider) and 5 years with Chiquita Brands International. He has further performed contract data analysis and business operations consulting work for companies in the farm management, air purification, horticulture nursery, and food production industries.

Over the course of his career, Jeff has spoken at universities, scientific seminars, government research panels and industry conferences concerning research he has performed. This includes:

- Presentation on high-intensity pulsed light for pharmaceutical sterilization at the 1999 A<sub>3</sub>P Pharmaceutical Conference in Barritz, France,
- Panel member at the 1999 IFT/NCFST Food Safety Symposium in Chicago where he discussed the application of high-voltage pulsed-electric fields for liquid food decontamination.
- Keynote speaker at a 2003 Penn State University agribusiness management program seminar discussing food irradiation science, applications and regulations.

Specific examples of Jeff's work include but are not limited to:

- Identified ways to cut input costs and increase efficiency through new SOP's, a new training program, capital improvements to reduce labor and a redesign of the inventory management system for a greenhouse nursery client.
- Consulted for a farm management client on scientific and regulatory issues that had been presented before the California Rice Commission, such as, genetically modified rice production and shipment of foreign rice into California. Advised on future direction of tax and investment positions based on past performance. Charted long-term trends in agricultural production and used them to advise on future direction.
- Performed a statistical quality analysis for a foodservice company on a key product component proving that a new variety of produce was significantly preferred by customers and franchisees over the old variety.
- Developed a statistical argument for a food manufacturer proving that a fuel surcharge was justified and necessary for them to implement in order to avoid raising product prices.
- Developed a model to estimate the consumer dollar value of various lettuce varieties on restaurant sandwiches using consumer panel data and restaurant menu data.