

# Economic Impact of Postharvest Treatments

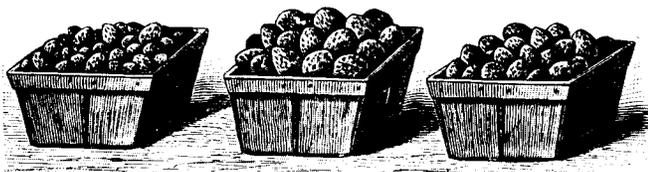
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Industry is very familiar with what should be done to maintain quality of fresh perishables. Research and experience has shown over and over again that if we want the “best quality” we must harvest and handle product in very specific ways. However, in the commercial world we are often confronted with the expense of doing it exactly right versus the compromise of what will get us by. The real world question becomes, what is it worth?

Measuring the commercial, economic benefit of a specific postharvest practice, in general, is difficult. Typically, a postharvest treatment is considered a success if the shippers claims or adjustments are reduced on delivery of his product. The problem is that the economic benefit goes beyond the receiving dock, all the way through to the consumer. For example, the California Tree Fruit Agreement has been able to demonstrate increased retail sales and consumer satisfaction if retailers do not leave their stone fruit in the “killing zone” of 36°F to 48°F.

Transfresh supplies the produce industry with Tectrol Controlled (marine containers) and Modified Atmospheres (pallet units) which are typically applied during transit. Since our service adds cost to the product, much of our marketing efforts are directed toward defining the benefit of our atmosphere treatments. Several years ago, we carefully defined the retail benefit to fresh strawberries when our modified atmosphere was applied during the transit portion of distribution. In doing a commercial evaluation several critical factors were necessary.

Our experiment design acknowledged real



world conditions. Matched lots of strawberries were selected, half were placed in atmosphere treatments and the other half was non-treated. For a given shipment, treated and un-treated pallets were loaded in

the same transit truck. For each demonstration, a sequence of 3 to 8 truckloads of matched product were shipped to a single retail distribution center. Using multiple shipments spread out over several weeks of harvest allowed our observations to include a variety of quality conditions as well as real world handling nuances. Product temperatures, transit temperatures, truck conditions, loading patterns and atmosphere conditions were all recorded.

Once at the retail distribution center, test product was kept separate and then shipped to pre-selected retail stores. Half of the selected stores received inventories of only the atmosphere treated fruit, half received only non-treated fruit. Considerable effort was made to keep the test strawberries in the same rotation sequence as the distribution center’s regular inventories.

At store level, rotation sequence again was maintained. On the day the test berries were to go on display, every berry that was discarded due to unsatisfactory quality (decay) prior to display was captured. Similarly, every berry that was removed from the display was also captured. On completion of at least a two- week cycle, it was possible to compare the retail shrink experienced by stores receiving Tectrol atmosphere treated strawberries versus those that received non-atmosphere treated strawberries.

*Table 1 summarizes data collected at retail. The final exercise was to translate the measured retail shrink into dollars.*

Strawberries Discarded at Retail			
Days after arrival*			
Atmosphere	1	2	3
Tectrol	8.6%	9.2%	12.9%
Air	11.8%	13.4%	20.3%

*\*Matched lots shipped with and without Tectrol, 4 to 5 days transit, bag removed on arrival*

*Table 2 shows the economic benefit to the retailer of investing in Tectrol Atmosphere postharvest technologies.*

<b>Net Return, Tectrol Treated Strawberries</b>			
Reduced Shrink	Retail Price		
	\$.99/pt	\$1.29/lb*	\$1.49/lb*
2%	\$82	\$202	\$337
4%	\$631	\$1,010	\$1,348
8%	\$1,730	\$2,695	\$3,369

*\*Assumptions: \$.23 / flat, bulk, 2912 flats per load. \*.24 / flat, clam shell 1 lbs pack, 2808 flats per load*

Clearly, this type of work is time consuming. It requires cooperation from the shipper through to the retailer. It must be done carefully, scientifically and with integrity. By investing our time in this type of activity, Transfresh has been successful in building a solid business. Retailers are able to identify a specific cost and a specific dollar benefit to a specific post harvest treatment.