

Supply Chain Strategies for Perishable Products: The Case of Fresh Produce

Abstract

This paper examines supply chain design strategies for a specific type of perishable product—fresh produce, using melons and sweet corn as examples. Melons and other types of produce reach their peak value at time of harvest; product value deteriorates exponentially post-harvest until the product is cooled to dampen the deterioration. Using the product's *marginal value of time*, the rate at which the product loses value over time in the supply chain, we show that the appropriate model to minimize lost value in the supply chain is a hybrid of a responsive model from post-harvest to cooling, followed by an efficient model in the remainder of the chain. We also show that these two segments of the supply chain are only loosely-linked, implying that little coordination is required across the chain to achieve value maximization. The models we develop also provide insights into the use of a product's marginal value of time to develop supply chain strategies for other perishable products.