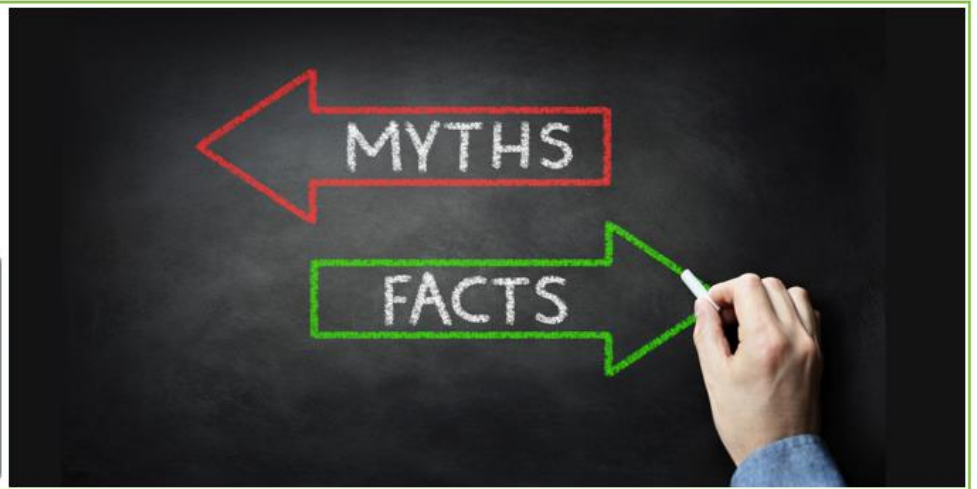




WHITE PAPER



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Freshness Myths

False Beliefs That Lead to Food Waste

A Short True or False Test

Please consider your answers to these questions:

1. The cause of produce waste occurs at the store. (True or False?)
2. Visual quality control inspections can determine the actual days of freshness remaining before the product expires. (True or False?)
3. All product harvested on the same day from the same location has the same remaining days of freshness. (True or False?)
4. All product is ideally handled, maintained with optimal temperatures through the entire cold supply chain. (True or False?)
5. Quality and freshness are most accurately managed at the trailer level - if one pallet is bad, the whole trailer load is bad. If one pallet is good, they're all good as well. (True or False?)
6. Harvest Date labels are an accurate metric of freshness. (True or False?)
7. There is limited opportunity to eliminate or reduce waste with the industry's technology; waste is just a cost of doing business. (True or False?)
8. All of the above are "false" statements. (Hint: The answer to this one is "true")

Debunking the Myths

In the above test, questions one through seven represent popular myths in the fresh food industry. Let's debunk them.

The cause of product waste occurs at the store – is among the most common myths and perhaps the single largest challenge associated with solving the waste problem. Produce often looks fresh when it arrives at the store and therefore promotes a widely-accepted misconception that spoilage results from something done at the store.

Because the product's lack of sufficient shelf-life manifests itself at the store that's where many think the problem lies. This is simply not true.



In reality, the causes of waste start at the beginning of the fresh food supply chain. In fact, the primary impact to the shelf-life of fresh produce occurs in the first 48 hours after harvest – in the field and at the pack house. Zest Labs collected data about California strawberries harvested in August and September of 2017 and the data showed the strawberries' optimum "freshness capacity" (or total maximum shelf-life) was 14 days. In ideal conditions, strawberries that are properly refrigerated and handled from the time of harvest would reach "end-of-life" at 14 days, however these optimal conditions rarely occur due to the complexities of the fresh food supply chain. There are many variables that need to be managed and accounted for to maintain freshness of the product and avoid waste.

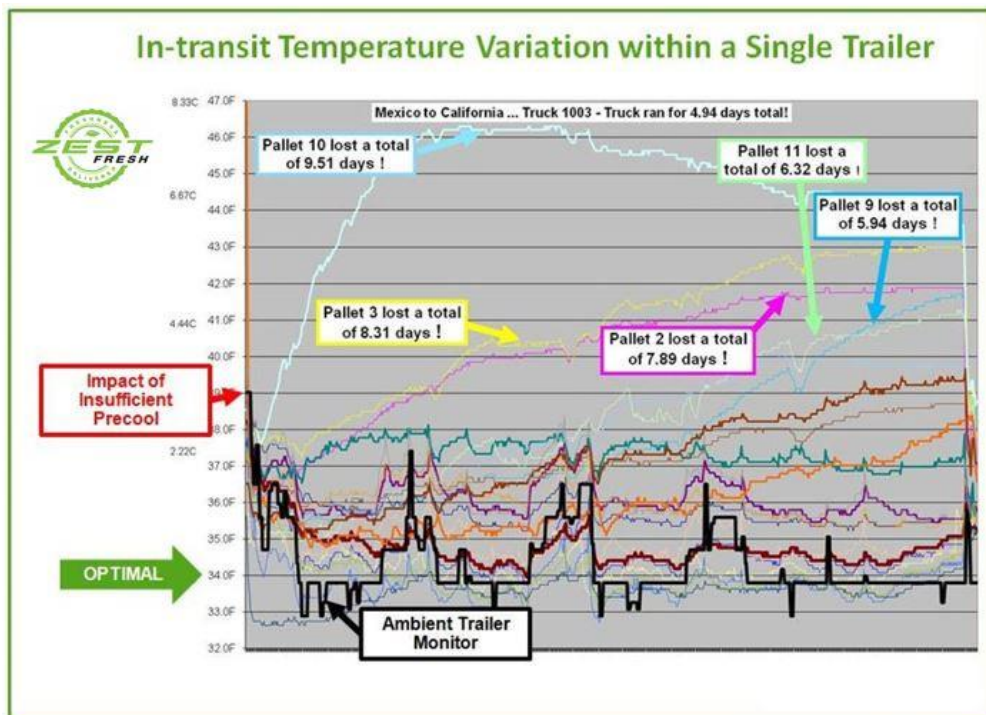
Unfortunately, the lack of visibility across the fresh food supply chain poses a challenge in identifying the causes of waste that happen earlier in the supply chain.

Another problem is that **visual inspections are not accurate indicators of the remaining shelf life of produce.** Visual inspections of produce at the distribution center and the store don't reveal signs of waste. Many of us have bought produce one day and it looked fresh only to have it spoil by the next day. Grocers experience the same issue. Product appears fine until the very end of its life, when it quickly changes and spoils. As such, visual inspections are a trailing – not a leading – indicator of freshness.

The belief that **all pallets harvested from the same field on the same day will have the same remaining freshness** or shelf life is also a myth. Variation in remaining freshness due to the combination of harvest quality, initial processing and distribution decisions impacts freshness up to several days. Though good processes and objectives to minimize waste may be in place already, circumstances can affect the shelf life of food. For example, equipment can break down, lack of laborers can slow down harvest and unexpected weather can occur. As a result, **consistent temperature is not always maintained throughout the supply chain from harvest to store and can impact the freshness of product.**

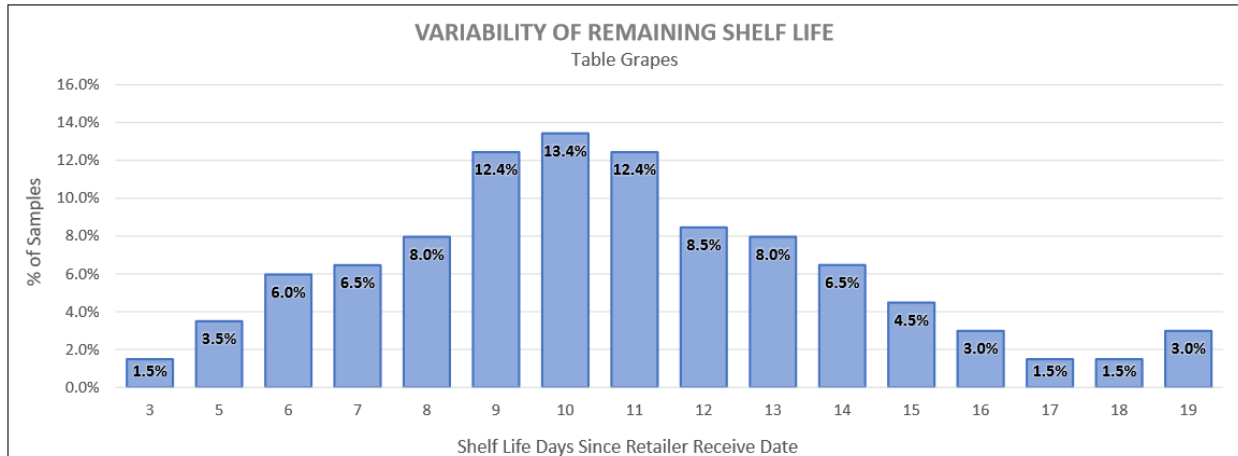
Is **managing temperature at the trailer level sufficient to ensure freshness?** Many people believe monitoring the temperature of the trailer carrying the produce is adequate for ensuring freshness and quality or cold chain integrity, but this is also not true.

Temperatures – and the impact on freshness – can vary significantly from pallet-to-pallet on a single trailer. In one study, blackberries shipped from Mexico to California on a five-day trip, five out of 26 pallets (about 20 percent) experienced extreme variations in temperature significantly impacting shelf-life in one pallet by as much as 9.5 days! If one pallet of bad product is sampled, the entire shipment may be rejected. On the other end, if one good pallet is sampled, up to five pallets with a high risk of spoilage maybe accepted.



Is the “Harvest Date” an accurate reflection of freshness? Sadly, no. The variability in freshness from harvest to store is not reflected in the “harvest date.” Even though two pallets bear the same harvest date, the actual freshness may vary by several days and leads to shrink that appears later in the product’s shelf life (at the store or with the consumer). This unmanaged waste leads to lost profits, out-of-stocks, mark-downs and unhappy customers.

The chart below shows the shelf-life variation in pallets of grapes being delivered to a retail distribution center. If 10 days of shelf-life was the retailer’s goal, then almost 38 percent of the product (those with less than 10 days) would spoil prematurely even though they have the same harvest date.



Managing for Freshness Capacity Reduces Waste

Grocers and growers have faced this waste problem for years and have tried various techniques to reduce waste including trailer-level data loggers, visual inspection and pulping. Yet the waste continues unabated. This is because these legacy approaches are **reactive** and do not proactively provide accurate dynamic information about shelf-life. Instead, they identify a problem only after the fact, when it is too late to take action. Once a product spoils, the only action you can take is to waste it. We need to prevent the waste before it occurs.

Waste no longer has to be a cost of doing business! By proactively managing for and reducing waste, you can immediately improve retail profitability – profitability that spans the supply chain.

We can reduce waste by proactively managing the variability in freshness capacity at the pallet level, helping growers and retailers reduce waste and deliver an improved customer experience.

By applying pallet-level temperature management and cloud-based analytics to enable intelligent pallet-routing, growers gain the ability to identify and ship each pallet based on its actual remaining freshness, matching it to the specific retailer’s needs. For example, a pallet with 12 days of remaining freshness could be shipped across country, whereas a pallet with eight days of remaining freshness should be shipped locally. As a result, each retailer receives product with adequate

By proactively managing the fresh-food supply chain at the pallet level we can reduce waste by 50% or more and improve product margins by 6% or better!

remaining freshness for distribution to the store and sell-through, while still ensuring five days of remaining freshness for the customer.

Using this approach, growers and retailers will gain the insight into the dynamic remaining freshness of their produce in real-time to more intelligently route product to prevent waste and ensure happy customers. This works for most all fresh and perishable products as well. And it's a great way to quickly improve your profit margins and customer loyalty.

Waste is an Avoidable Cost – Proactively Prevent It

In today's business environment, businesses can't afford to waste 30, 20 or even 10 percent of produce. With the advent of new discount competitors, increased freight costs and changing customer buying preferences, we need to maximize margins. Zest Labs can help retailers, grocers and produce businesses assess and address shelf-life variability.

Our solution can provide the data that demonstrates if produce has uniform freshness or if the product that seemingly has eight days of shelf-life only has three. Zest Labs helps customers improve their supply chain and implement intelligent pallet routing. This approach pays for itself times over and dispenses with the waste myths. You can learn more about Zest Fresh [here](#).

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