



# Why does food get wasted?

COLLECTING CONSUMER DATA  
TO MAKE BETTER DECISIONS



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# Introduction

The United States discards 80 billion pounds of food every year.<sup>1</sup> That's roughly 30-40% of our nation's food supply that goes uneaten. Food production itself creates carbon emissions, then landfill waste results in methane that worsens climate change. It's a problem that harms the economy, too — surplus food costs the country \$408 billion annually.<sup>2</sup>



**ReFED**

Uneaten food consumes 14% of all U.S. freshwater use, 18% of all cropland use and 24% of all landfill inputs<sup>2</sup>


1| <https://www.rts.com/resources/guides/food-waste-america/>

2| <https://refed.com/food-waste/the-challenge/#overview>



# Introduction

With all the stakeholders responsible for getting groceries to consumers, opportunities to improve abound. Too often, food partners are hands-off, instead pushing responsibility onto others:



The supply chain must be more efficient getting products from farm to table.

Consumers want less packaged food, but don't appreciate how packaging reduces food waste.

Retailers should look for ways to move food out of warehouses and off shelves faster.

Manufacturers have to prioritize innovation for keeping products fresher for longer.



Quad partnered with Walmart and the Sustainable Packaging Coalition (SPC) to study how consumers view and respond to sustainability messages on product packaging.

The data from this first in a series of research studies gives insights into how suppliers, vendors, manufacturers and retailers can all collaborate to reverse the worsening food waste trend.



# Summary

Quad conducted a series of national surveys to identify consumer pain-points around food waste and packaging.

Research asked participants about:

**Frustrations** with food waste

**Perceptions** of where food waste occurs

**Experiences** with food insecurity

**Feelings** about which groceries spoil fastest

**Beliefs** for how packaging maintains freshness

**Habits** for repackaging foods in-home for freshness

Based on responses, researchers chose two grocery categories to study in the Quad Shopper Lab's retail environment — bread and grab-and-go prepared salads.

Packaging experts worked with Walmart and SPC to devise on-pack messaging to inform consumers of packaging improvements for freshness.

The team then used eye-tracking technology to quantify consumer interest in and attention to this proposed on-pack sticker.



Researchers used common answers to national survey questions to inform the labels' copy. Respondents often expressed desire for packaging with air-tight seals and moisture absorbers. Researchers collaborated with SPC for verbiage and product categories that made the most sense.

This study phase's stickers focused on "freshness" as a call-out with highly relevant products to make the greatest impact. Future phases can incorporate other messaging and categories.

# OUR ULTIMATE GOAL?

Use data to spark packaging innovations that reduce food waste.



There's more to learn and much more work to do. Still, this initial study's data gives us two clear takeaways:

## Consumer decisions matter most.

The end-user will either purchase or not, and will in the end eat the food or dispose of it. Those who create, produce, package and sell the products should empower them to make better decisions.

## Collaboration up front is critical.

Data points to where everyone can improve. For freshness labels to be most effective, retailers and CPG brands must work closely together on product displays, messaging, consumer education, marketing and production.

# Methodology

“Eye-tracking” describes the techniques that measure a person’s point of gaze, giving us insight into what attracts an observer’s attention and cognitive processes.

Participants comfortably wear a sophisticated eye tracking device as they would a pair of eyeglasses.

The technology follows the subject’s exact eye movements while looking at an object or area, even as the subject may not be aware of how their gaze moves and focuses across products. The Lab’s technology tracks precisely where the subject looks and when at a rate of 50 times per second.

Researchers collect eye-tracking information and draw conclusions about different areas of interest on the package. Packaging designers aggregate the data to show which areas of the package attract the most attention — and where attention is void.



# Methodology

Eye-tracking is critical since 90% of consumers will make their purchase decision after looking at only the front of a package. And 85% will purchase an item without picking up any competitive products.



## People buy with their eyes.

This indicates that visual stimuli present at the point of sale will influence the consumer's decision to purchase.

Designers and product developers use eye-tracking to differentiate and maintain relevancy with market demands, and to analyze how consumers shop within the grocery store. Our research findings reference the following metrics:



### PURCHASE DECISION (PD)

Measures how many participants chose to buy the item.

*The higher the number, the better the package performed.*



### TIME TO FIRST FIXATION (TTFF)

The time, in seconds, from when a product first enters a participant's field of view until they fixate on it.

*The lower the number, the better the package performed.*



### TOTAL FIXATION DURATION (TFD)

The time, in seconds, spent on average by participants fixating on this item.

*The higher the number, the better the package performed.*



### FIXATION COUNT (FC)

The total number of times a participant's scan of the planogram crossed into a particular area of interest.



# Planograms & Heatmaps

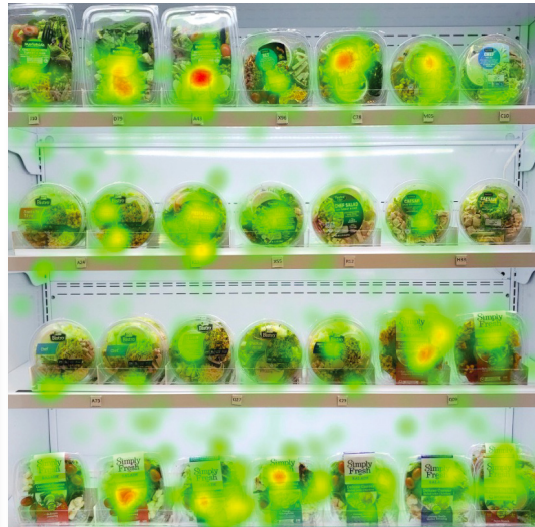
GROUP A  
NO STICKER



GROUP B  
FRESH-SEAL  
STICKER

# Planograms & Heatmaps

**GROUP A**  
NO STICKER



MOISTURE WICK PACKAGE  
**FRESHNESS  
EXTENDER**  
KEEPS FRESH LONGER

**GROUP B**  
FRESHNESS EXTENDER  
STICKER



# Data Analysis

Even though the subject may not be aware of how their gaze moves and focuses on different areas, researchers can collect eye tracking information and look at data trends of visual attention across a population.

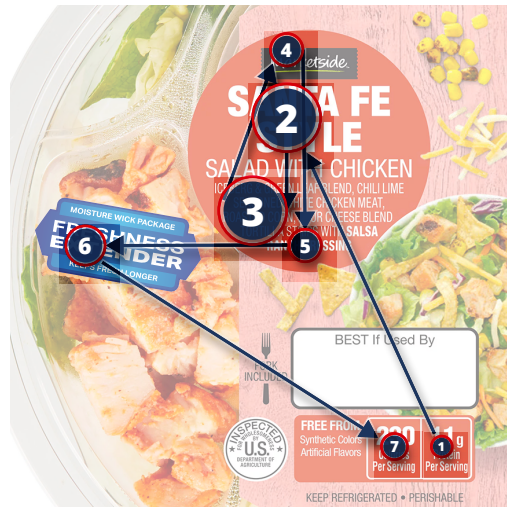
Circle size indicates duration of attention on an element.

*Larger circle = consumers paid attention for longer.*

Researchers then aggregate this data to show which areas of the package attract the most attention and, equally as important, where attention is void.

Number indicates sequence of attention.

*Lower number = element caught consumer attention quicker.*



# Demographics

The initial survey included 1,236 U.S. consumers. To qualify, participants had to agree with the statement:

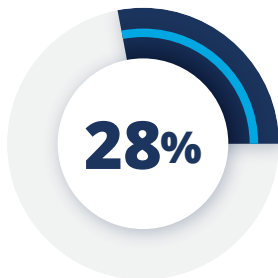
**“Food Waste is a frustrating problem that I have personally experienced.”**



were in households of fewer than three people



had a household income of less than \$75K



had experienced (or had a close family member who experienced) food insecurity in the previous 12 months



# Demographics

Our eye-tracking study at the Quad Shopper Lab consisted of 69 participants divided into two groups.

Group A (34 participants) shopped products without any test stickers,

Group B (35 participants) shopped with freshness stickers added.

To qualify, participants had to self-report eating both salads and sandwiches or toast several times each month.



GROUP A

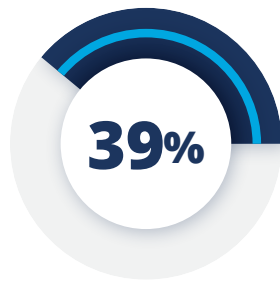


GROUP B

were in households of fewer than three people



GROUP A



GROUP B

had a household income of less than \$75K



GROUP A



GROUP B

were under 55 years old

## BREAD & SALAD

# Qualitative Results

When asked why they repackaged food, participants stated it was to better preserve freshness, make consumption more convenient and prevent freezer burn.

As for how they thought packaging could be improved so they don't have to do this, they suggested resealable packages, individual serving sizes, a dry absorber for moisture and transparent materials.



said they have specific products in mind that regularly spoil or go uneaten.

**Participants named produce and bread most commonly.**



said packaging could make food more convenient to consume before they have to discard it.

**Participants widely suggested smaller portion sizes and air-tight seals.**



said they generally repackage certain products after opening.

**Participants most often said meat, along with cheese, produce & baked goods.**



said they sometimes had leftovers in the fridge, with **32%** saying it was unintentional.

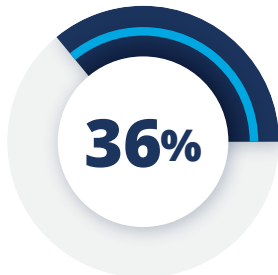
**Participants said they had to cook more than needed due to portion sizes of packaged ingredients.**

BREAD & SALAD

# Quantitative Results



of shoppers who saw the bread's freshness sticker purchased it



of shoppers who saw the salad's freshness sticker purchased it



in GROUP B bought the stickered brand

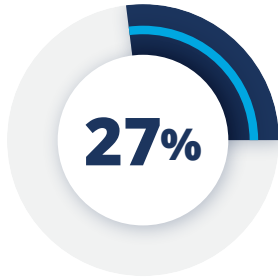
**vs.**



in GROUP A (no sticker)

SALAD

# Quantitative Results



in **GROUP B** remembered seeing the sticker



in **GROUP B** said the sticker affected their purchase decision



in **GROUP A** said if they had seen the sticker, it would have affected purchase



in **GROUP B** said if they had seen the sticker, it would have affected purchase

There was very little difference between Groups A & B for which salads they selected. The eye-tracking didn't clearly differentiate fixation — though the salads had much more information to absorb and freshness doesn't factor into single-serve salad as much as bread.



Still, while very few people said they saw the freshness sticker on the salad, 41% in Group A and 62% in B said it would have influenced their decision. Feedback was mixed, as shoppers said they appreciate crisp lettuce and would like to know it will last longer, some stated they didn't know what it meant or what the point was.



# Conclusions

While gains in labels weren't statistically significant, they were noticeable in bread. Grab-and-go salads are typically eaten immediately, with freshness not being as important as groceries that sit at home longer.

We can discern a few things immediately from our study, specific to these grocery categories:







Although we did see improved visual attention and purchase for both the bread and salad SKUs with new sustainable messaging, they were not statistically significant gains in either case.

There is a willingness and interest in these kinds of food waste measures.

Salad PDP can be “busy” with lots of information to digest. Simplifying the hierarchy of messaging can open up opportunities for more targeted information like this.



Bread bag ends are a much simpler visual, so an additional callout is easier to accommodate.

# Conclusions

Still, our industry can learn a lot from the first phases of this study. Everyone benefits from having all stakeholders involved early on — this allows partners to see the food waste problem from more angles.

## Retailers

can tell packaging and display designers how consumers will see product in-store.

## Marketers

should collaborate to arrive at the best messaging that carries across channels and partners.

## CPG brands

must work with suppliers and vendors for innovative ways to keep food fresh.

Future studies will look at other categories, with new messages and tactics. But until we learn more, we can prioritize what the consumer wants and how all partners can give it to them — with greater return on investment and for the greater good.

Quad ®