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# Growing the Upcycled Food Economy



# Panelists

## **Turner Wyatt**

CEO and Co-founder, Upcycled Food Association

## **Anna Hammond**

Founder and CEO, Matriark Foods and Upcycled Food Association Board Member

## **Jon Deutsch**

Director, Drexel Food Lab and Upcycled Food Foundation President

# Agenda

- State of the Upcycled Food Movement
- Business leaders who are building the food upcycling economy
- Research and key challenges with upcycling food waste
- How upcycling is different than other methods of diverting wasted food

# State of the Upcycled Food Movement

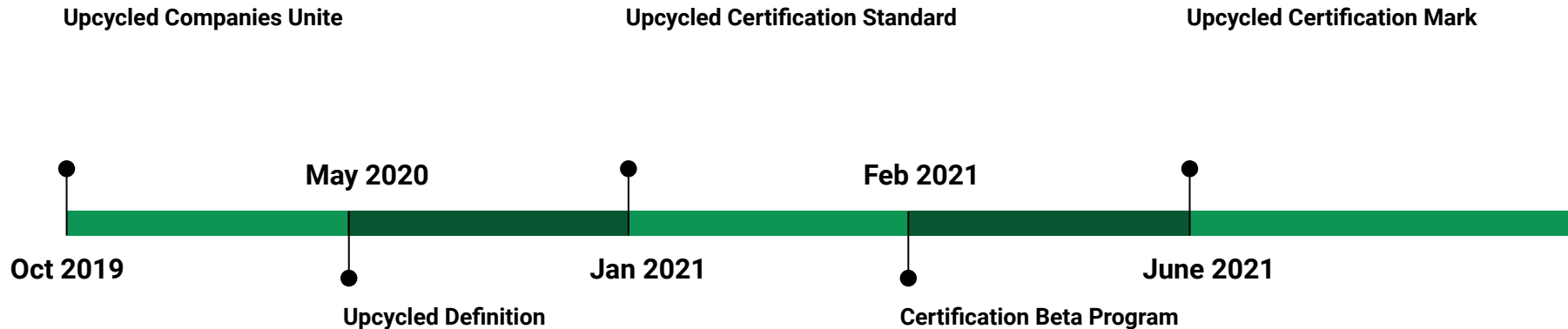
**Turner Wyatt**  
CEO and Co-founder, Upcycled Food Association



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# Building a better food system

We envision a food system built by conscious consumers and innovative businesses, where all food reaches its highest and best use



# A necessary shift in priorities.



**20%** of freshwater

**25%** of arable land

**8%** of greenhouse gasses

are all used to make food that's wasted or lost.

# Consumer Purchasing Power

Upcycled food is a way that anyone can prevent food waste via the products they buy.



Preventing food waste is the single most effective solution to prevent global warming of more than 2 degrees celsius



Roughly 30% of all food is wasted, about one billion tons, and one trillion dollars, per year



This waste accounts for approximately 6% of human-caused greenhouse gas emissions



Food waste is the main contributor to solid waste landfills



95% of consumers felt it was important to do their part to reduce food waste in their own lives

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# Mission

We are working hard to prevent food waste by growing the upcycled food economy in 2021.

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**1** Improve the upcycled food network to more than 300 businesses

**2** Increase demand and consumer awareness by 10%

## GOALS

**4** Improve the upcycled food supply chain

**3** Attract \$50M financial investment to industry





# Upcycled foods are trending

Upcycled food gives consumers the ability to participate in the greatest solution to climate change everytime they shop and is a growing trend. Predicted as a major food trend by:

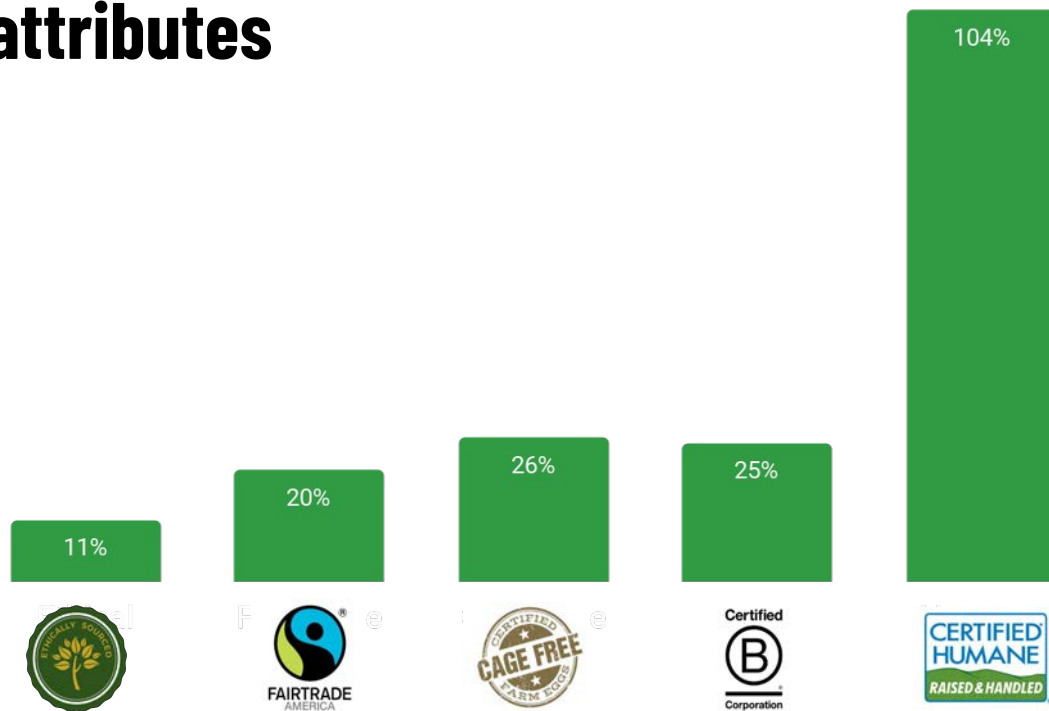


## 6. Upcycled Foods

Pasta and shrimp have come a long way from the compost bin. We're seeing a huge rise in packaged products that use neglected and undersold parts of an ingredient as a path to reducing food waste. Upcycled foods, made from ingredients that would have otherwise been food waste, help to maximize the energy used to produce, transport and prepare that ingredient. Dig in, do good.



# Consumers are purchasing more snacks with sustainable marketed attributes



Source: IRI Integrated Fresh - 52 Weeks Ending 12/27/20 vs YAGO - \$ % Chg  
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# Business Leaders

**Anna Hammond**

Founder and CEO, Matriark Foods and Upcycled Food Association Board Member



Upcycled  
vegetable  
remnants

Upcycled  
farm  
surplus



Manufacturing

Consumption

# Research and Challenges

**Jon Deutsch**

Director, Drexel Food Lab and Upcycled Food Foundation President



#### DREXEL FOOD LAB

**A student-driven, faculty-mentored interdisciplinary  
food product design and culinary innovation research lab  
solving real-world problems in three focus areas:  
sustainability, health promotion, and food access.**

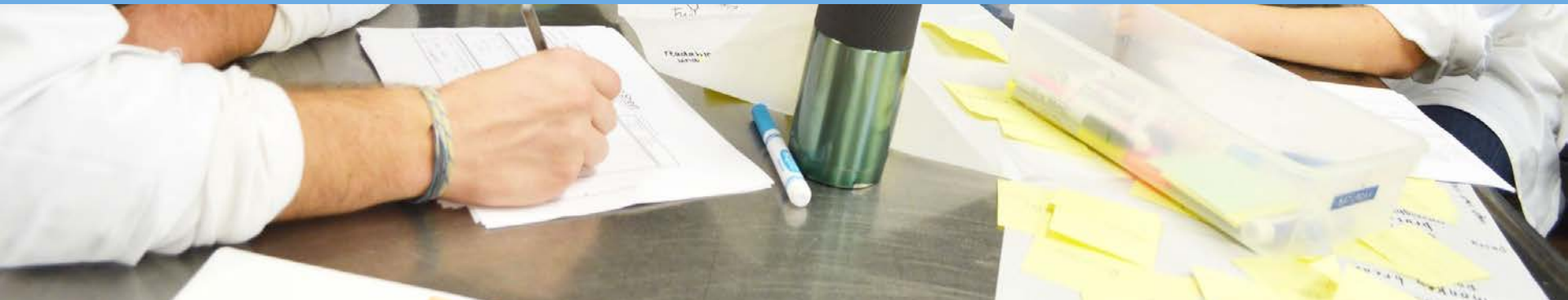






## OUR MISSION

**Develop the next generation of food industry leadership**  
through learning experiences that create a healthier,  
more sustainable, and more equitable food system.



# Food Lab Principles

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## DO GOOD

Work on projects that  
improve the food system

## FEED WELL

Make products that are tasty  
and desirable to consumers

## KEEP GOING

Develop market-driven, sustainable  
solutions that can stand on their  
own





# Retail Introduction

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# Reveal

## AVOCADO SEED BREW

CLIENT	Beverage company founded by Drexel Food Lab graduate students with a mission to reduce food waste
OPPORTUNITY	Develop sustainable, upcycled food product to combat food waste in a meaningful way
ACTION	Market research, product development, and formulation refinement along with restaurant partnerships and assistance with GRAS process
OUTCOME	Line of FDA GRAS certified beverages made from avocado seeds complete with antioxidants

Read more:

<https://campusphilly.org/2020/04/06/this-team-of-drexel-grads-is-innovating-the-drink-industry-with-upcycled-avocado-seeds/>



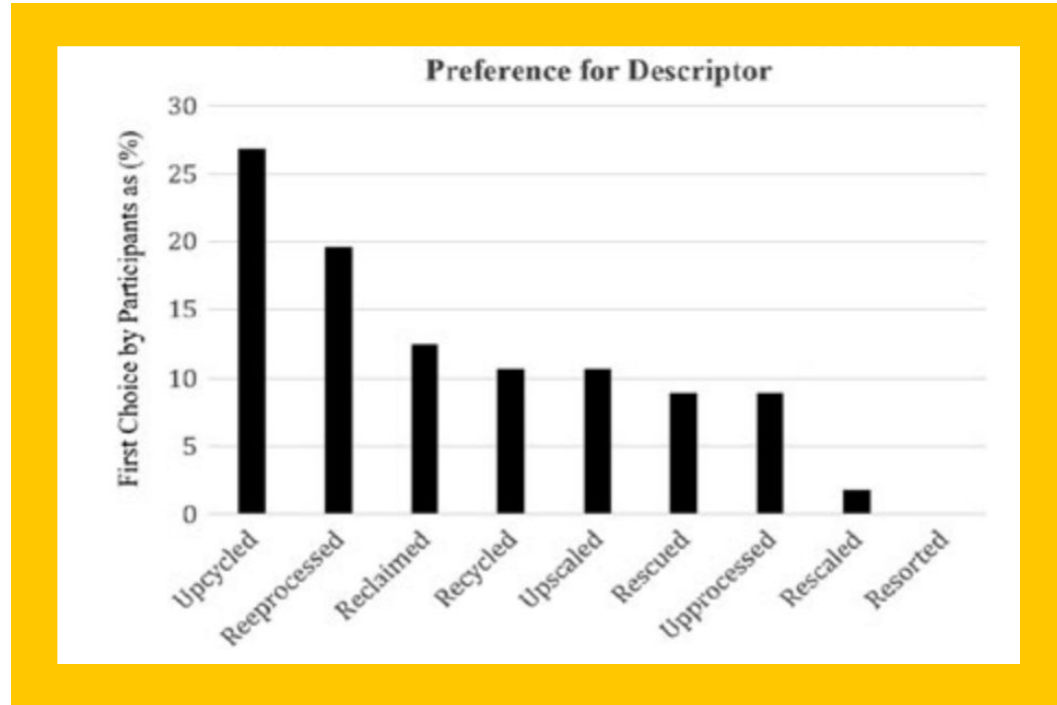
Philadelphia Magazine & Hidden Gems Beverage Company

# VASP Research | Consumer Preference Study

"FROM FOOD WASTE TO VALUE-ADDED SURPLUS PRODUCTS (VASP): CONSUMER ACCEPTANCE OF A NOVEL FOOD PRODUCT CATEGORY" (BHATT ET AL., 2017)

Consumers prefer the term "Upcycled Food"

Explored the extent of consumer discrimination between conventional, organic, and upcycled



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VALUE-ADDED SURPLUS PRODUCTS  
(VASP): CONSUMER ACCEPTANCE OF  
A NOVEL FOOD PRODUCT  
CATEGORY" (BHATT ET AL., 2017)

Examined whether benefits  
to self or benefits to others  
have greater influence on  
consumers' perceptions

VASP seems to fall between  
“conventional” and “organic”

Perceptions	Food category					
	VASP		Organic		Conventional	
	Mean	SD	Mean	SD	Mean	SD
Being helpful to the environment	5.20	1.99	6.26	1.96	4.64	2.16
Being conventional	6.48	1.32	6.68	1.67	7.24	1.46
Being organic	5.61	2.11	6.29	2.05	4.04	2.25



# Upcycling + Research

## Phase I: Defining Upcycled Foods (UF)

“Use ingredients that otherwise would not have gone to human consumption, are procured and produced using verifiable supply chains, and have a positive impact on the environment”

## Phase II: UF Certification/Verification

Logo Design  
Consumer Testing

## Phase III: Consumer Attitudes Toward UF

Rich body of new research

Read more: <https://sway.office.com/f8vo7BX3A2NfDiSL?ref=Link>

## Sustainability



## Selected Research and Scholarship

### Articles



Have you heard about Upcycled

N	Valid	153
	Missing	0

## Have you heard about Upcycled Food?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Definitely yes	4	2.6	2.6	2.6
	Probably yes	21	13.7	13.7	16.3
	Might or might not	36	23.5	23.5	39.9
	Probably not	33	21.6	21.6	61.4
	Definitely not	59	38.6	38.6	100.0
	Total	153	100.0	100.0	

# Next, participants were shown:

There are different categories of foods being sold in the market.

**UPCYCLED** foods are manufactured from ingredients that are byproducts from producing another food product.

A minority of foods are produced in this manner.

Upcycled foods are safe for consumption.

Examples:

An upcycled muffin may use ingredients such as flour milled from the leftover grain from beer brewing.

A soup made from carrot peels and scraps would be considered upcycled food.

**Are you aware of any Upcycled Food such as those described above available in the market?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Definitely yes	11	7.2	7.2	7.2
	Probably yes	24	15.7	15.7	22.9
	Might or might not	17	11.1	11.1	34.0
	Probably not	51	33.3	33.3	67.3
	Definitely not	50	32.7	32.7	100.0
	Total	153	100.0	100.0	

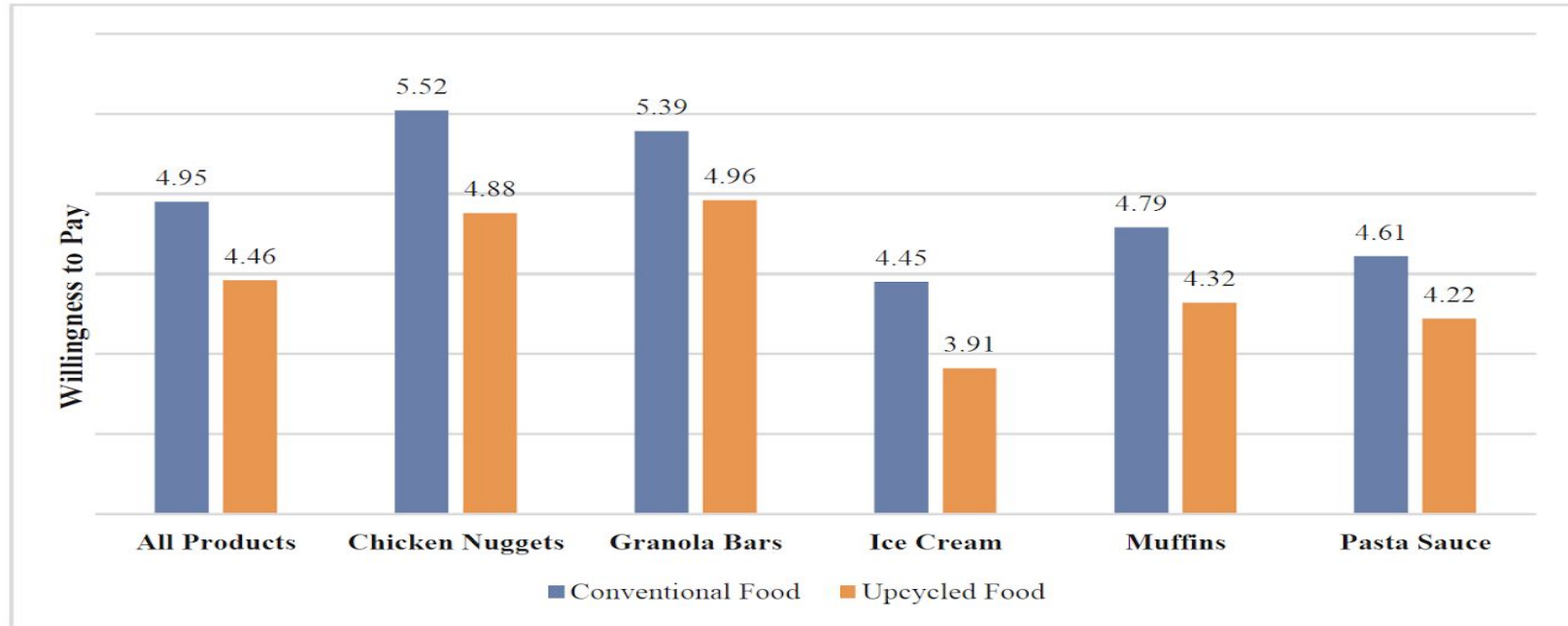


## Have you ever consumed any Upcycled Food?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Definitely yes	8	5.2	5.2	5.2
	Probably yes	25	16.3	16.3	21.6
	Might or might not	40	26.1	26.1	47.7
	Probably not	45	29.4	29.4	77.1
	Definitely not	35	22.9	22.9	100.0
	Total	153	100.0	100.0	

# Consumers' Willingness to Pay

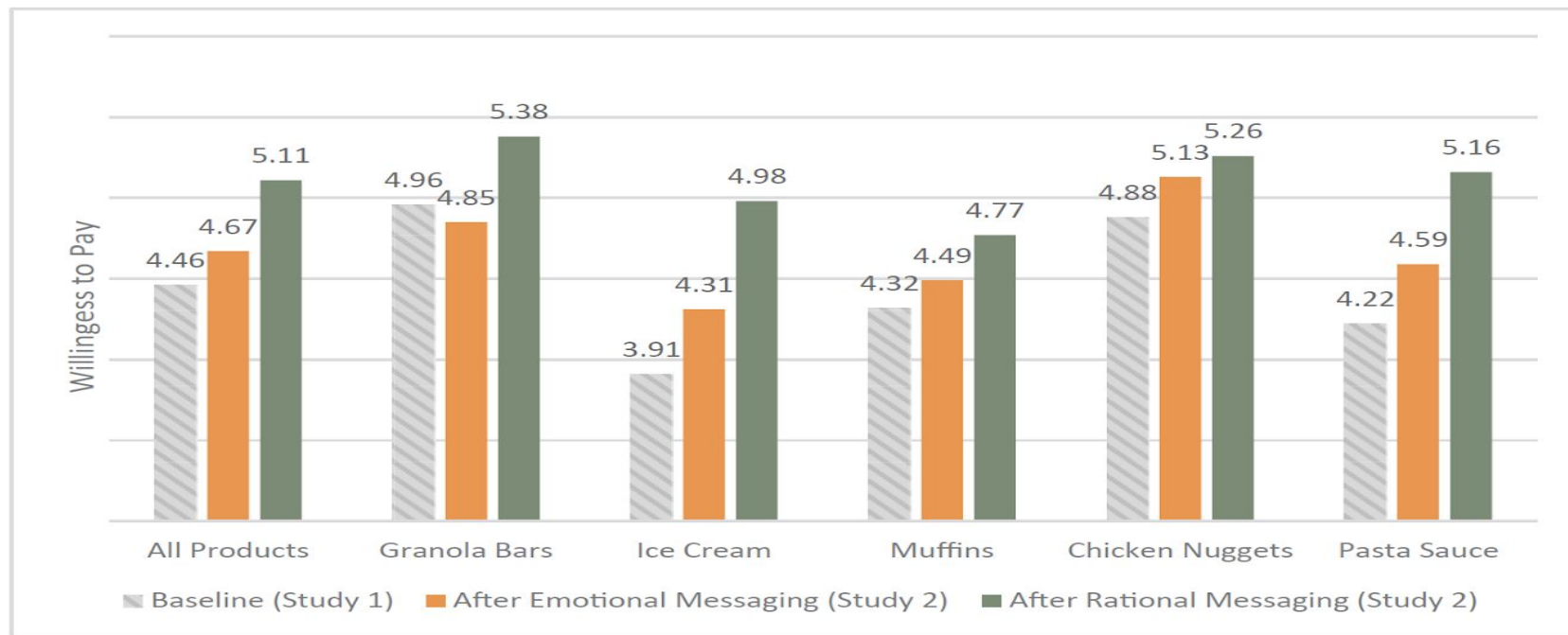
## Study 1 - Findings



**Fig. 1.** Willingness to Pay for Conventional and Upcycled Foods (Study 1)

# Increase in Consumers' Willingness to Pay

## Study 2 - Findings



**Fig. 2.** Increase in Willingness to Pay for Upcycled Foods (Study 2)

# Significance of Findings

Consumers are willing to pay less for upcycled foods

Appropriate messaging around these foods can increase willingness to pay

Rational messaging is more effective than emotional messaging

Our findings align with other research on upcycled foods that suggests an industry potential

However, more research on how to make these foods acceptable to consumers is needed

# Upcycled Differentiation

**All panelists**

# Q & A

Please enter any questions in the Q & A box.

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# THANK YOU!

UpcycledFood.org #BuyUp

**UPCYCLED**<sup>TM</sup>  
**FOOD ASSOCIATION**

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# Appendix

UpcycledFood.org #BuyUp

**UPCYCLED**<sup>TM</sup>  
**FOOD ASSOCIATION**



# Mattson 2021 Study on Food Waste

An online survey was conducted to **understand consumers' perception** on Food Waste and Upcycled Foods



Completed by a general population national panel in the United States



Participants = 207

Fielded February, 2021



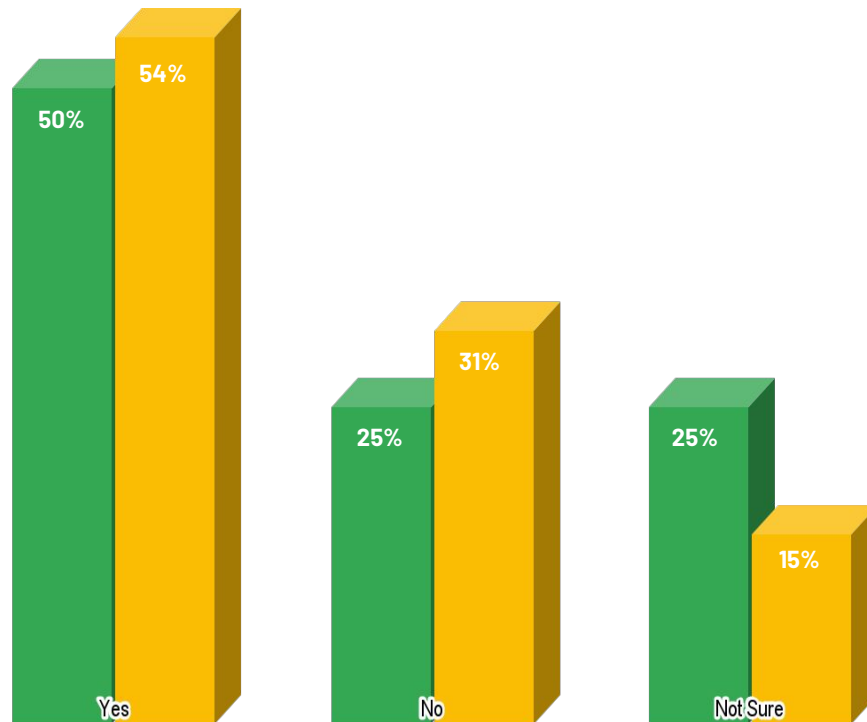
# Consumer Awareness

## Are you familiar with the....

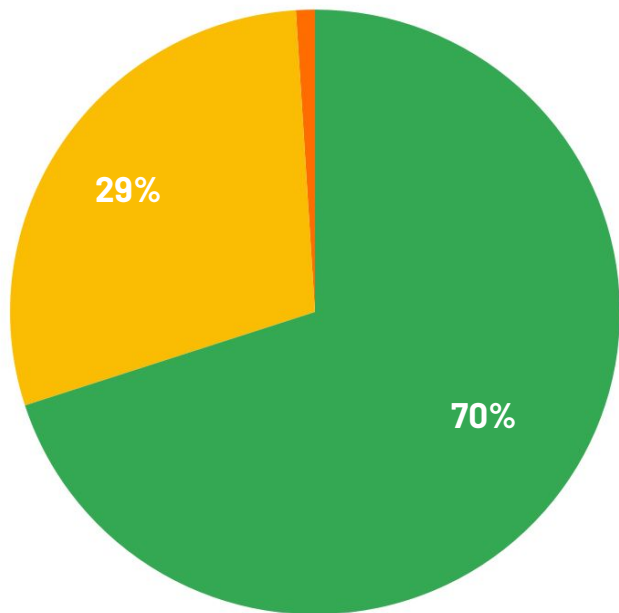
-  food waste prevention movement
-  term “upcycling”

Over half of consumers recognize  
the term **UPCYCLING**

More than those who are familiar  
with the food waste prevention  
movement







## Q: Food waste as an issue in the United States is...



**99%** of consumers saw food waste as an issue

Almost **ZERO** people who feel food waste isn't important

-  Extremely big issue
-  Somewhat of an issue
-  Not really an issue
-  No issue at all

# Q: How much do you agree with these statements...

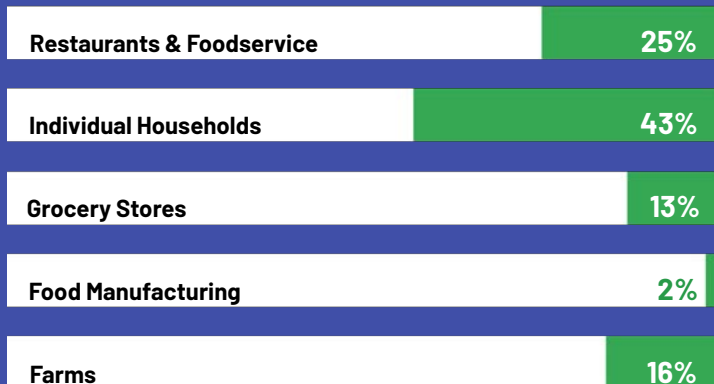


# The Consumer Disconnect

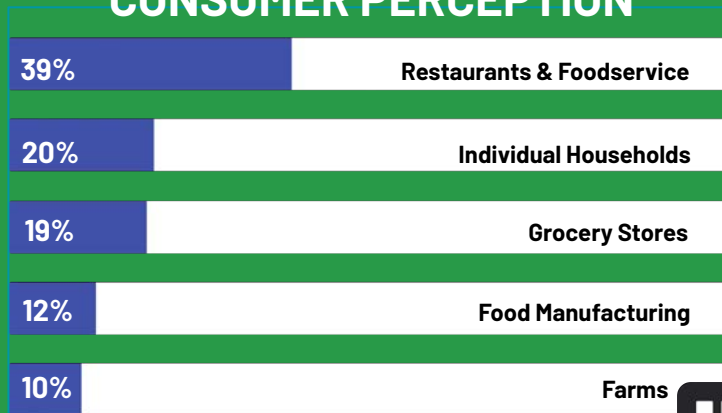
**95%** of consumers think it's important to do their part to reduce food waste, however they don't realize **they** are the largest cause of food waste.

Which area contributes the most to food waste?

## REALITY



## CONSUMER PERCEPTION



**Almost everyone we surveyed plans to buy more upcycled food/beverage products in the next year.**

**57%** BUY MORE  
**37%** BUY ABOUT THE SAME  
**0%** BUY FEWER  
**6%** DO NOT PLAN TO BUY

Between 2019-2021, **MORE** people say they will buy **MORE** upcycled products in the next year.

Source: Mattson 2021 Study on Food Waste



**Almost everyone we surveyed plans to buy more upcycled food/beverage products in the next year.**



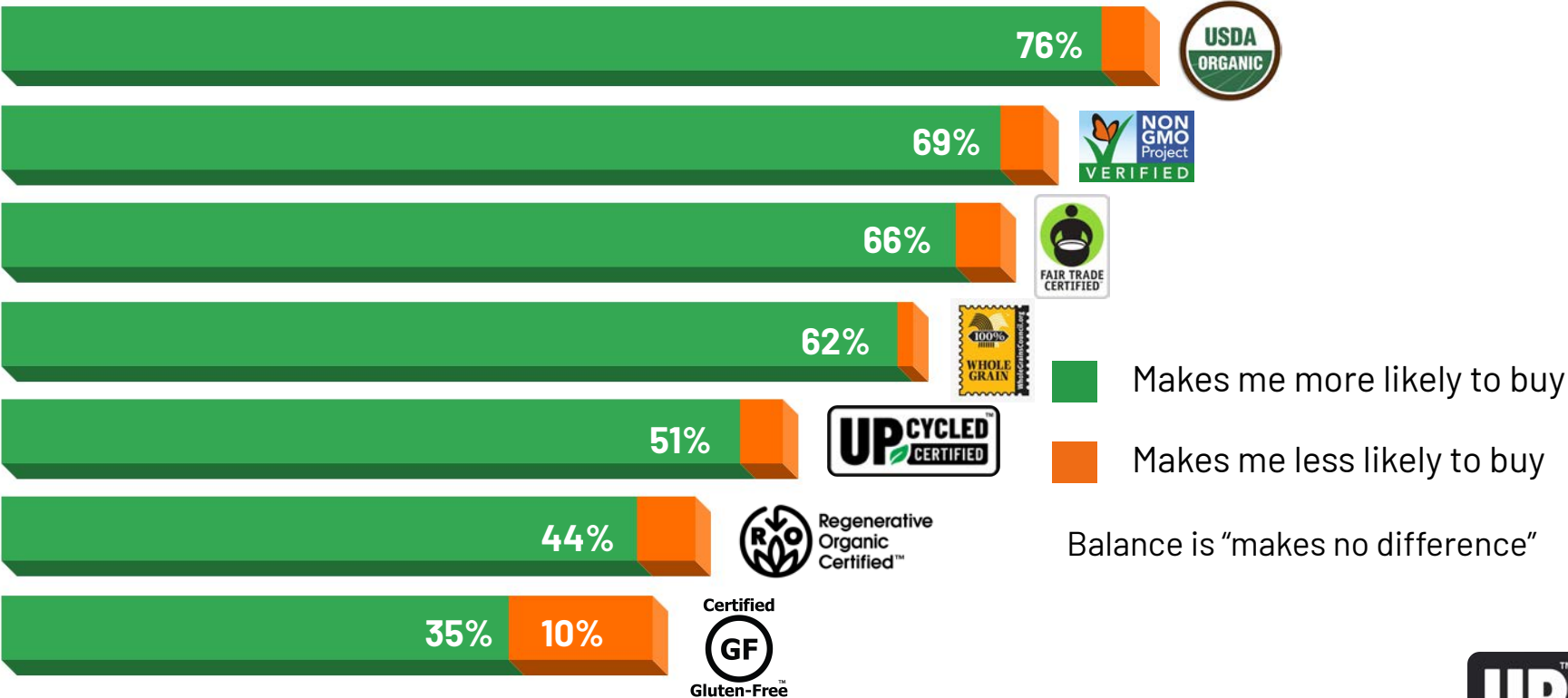
**37%** Buy About the Same

**57%** Buy More

**6%** Do Not Plan to Buy

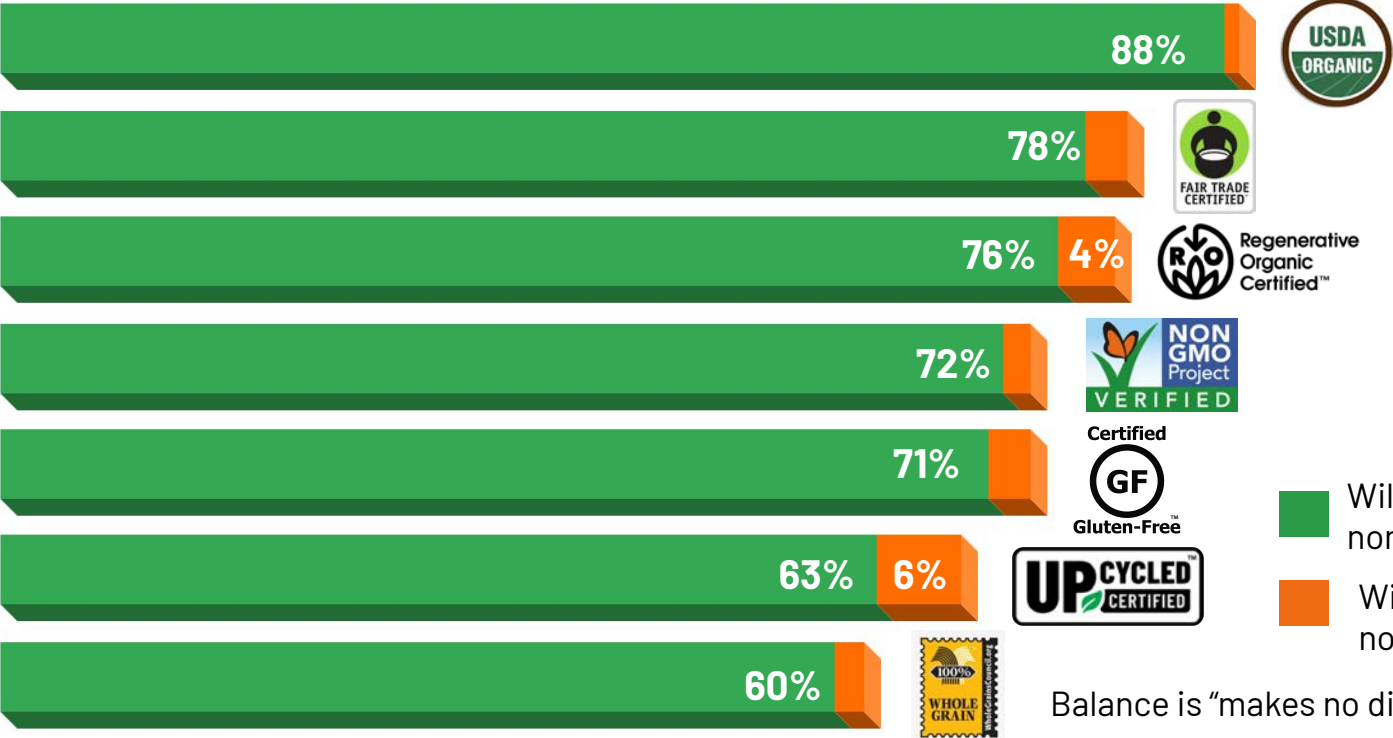
**0%** Buy Fewer

# Certification Mark Impact on Decision To Buy...





# Certification Mark Impact on COST...

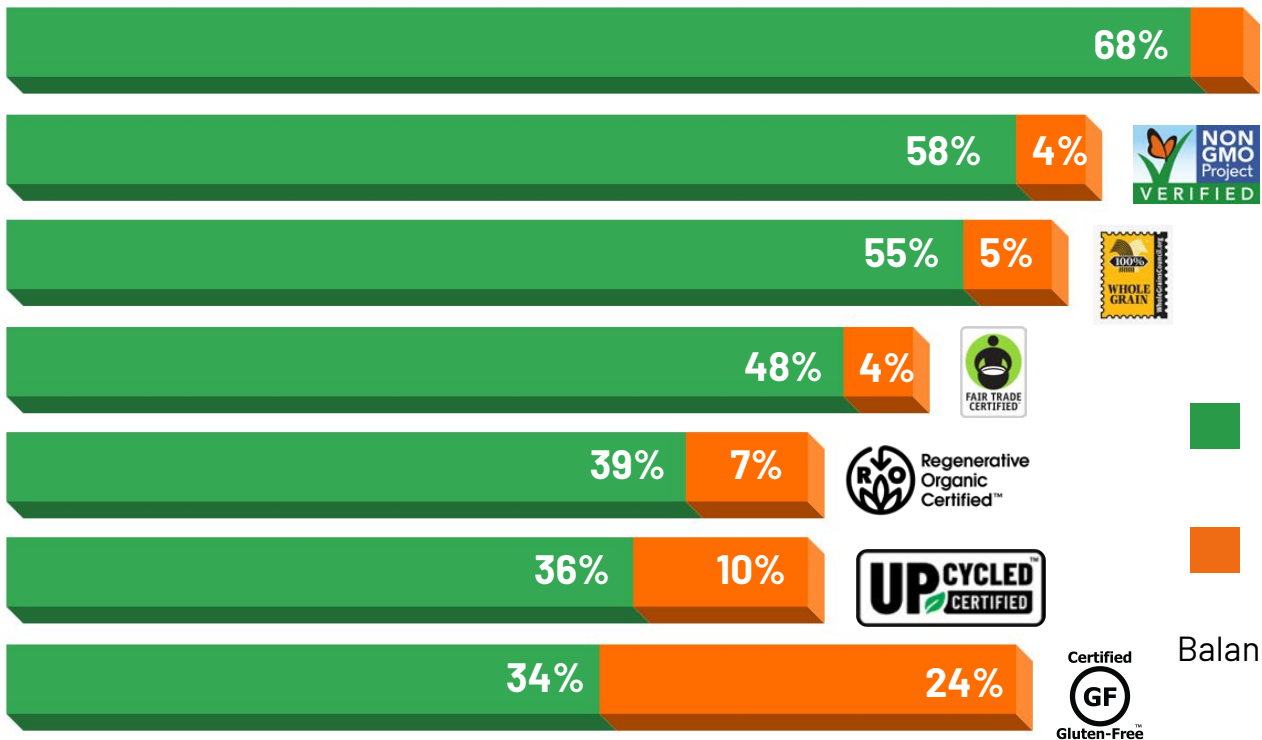


Will cost more than similar non-certified products

Will cost more than similar non-certified products

Balance is “makes no difference”

# Certification Mark Impact on TASTE...



- Will taste better than similar non-certified products
- Will taste worse than similar non-certified products

Balance is “makes no difference”

# When you see this logo, what descriptors come to mind?

