

# PACKAGING TECHNOLOGY & RESEARCH

WHO WE ARE  
WHAT WE DO  
HOW WE DO IT



# Dr. Claire Sand thinks “all food packaging all the time”

## About our Problem Solving & Technical Consulting capabilities



Claire’s mission is to enable a more sustainable food system with science and value chain innovations that more sustainably increases food shelf life and prevents food waste

- 35+ years of food packaging experience
- Ranks innovative packaging science and value chain solutions to extend shelf life
- Generates implementation roadmaps and aligns business cases
- IFT Fellow, Riester-Davis-Brody life-time achievement in food packaging award recipient
- Doctorate in Food Science and Nutrition at University of Minnesota
- MS and BS in Packaging at Michigan State University

### Owner



### Adjunct Professor



### Monthly Columnist



### Current Leadership & Editorial Boards



### Recent Awards



# What We Do

Provide tailored packaging  
**science & value chain**  
solutions to the  
**food & packaging industry**





**Future of  
Food  
Packaging**



**Active  
Packaging**



**Intelligent  
Packaging**



**Value Chain  
Drivers**



**Material  
Science**



**Process &  
Package  
Interactions**



**Migration  
Complexities**



**Global  
Research  
Institutes**



**Food Waste**



**Consumer  
Research on  
Sustainability**



**More  
Sustainable  
Packaging**

**Our solutions are  
tailored to client  
needs**



# Realizing the future of food packaging



**Our solutions are tailored to client needs**



# Selected Clients



## Food Industry



## Packaging Industry



## Associations





## More Sustainable Packaging

We help clients achieve more sustainable packaging with packaging solutions that are Rational, Defensible, and Achievable.

**CLIENTS:** PACKAGING AND FOOD COMPANIES AND ASSOCIATIONS

## Increase Shelf Life & Prevent Food Waste

PTR's science-based packaging solutions increase food shelf life and prevent food waste.

**CLIENTS:** PACKAGING AND FOOD COMPANIES AND ASSOCIATIONS

## Food Packaging Innovations

PTR helps businesses identify and enact meaningful packaging innovations that meet business goals.

**CLIENTS:** PACKAGING AND FOOD COMPANIES AND ASSOCIATIONS

## Food Package Optimization & Problem-Solving

We fine-tune food packaging using material science, deep value chain, and cost-savings experience.

**CLIENTS:** PACKAGING AND FOOD COMPANIES AND ASSOCIATIONS

## More Sustainable Packaging

Dr. Claire Sand is a food packaging expert with 35+ years in industry and 18+ cases as an Expert Witness.

**CLIENTS:** ATTORNEYS WORKING ON FOOD AND BEVERAGE, PACKAGING & LABELING OR PATENT & INTELLECTUAL PROPERTY LITIGATION AND LAWSUITS

Learn more at [www.PackagingTechnologyandResearch.com](http://www.PackagingTechnologyandResearch.com)



# Client Work: More Sustainable Food System



A More Sustainable Food System involves optimizing more sustainable packaging to prevent food waste and is:

## RATIONALE

Actually be more sustainable and not reduce product shelf life

## DEFENSIBLE

Be communicated to retailer, consumers, and post-consumer handlers in a meaningful manner

## ACHIEVABLE

Uses what is viable in 1,3,5 years within defined constraints

## LINKED

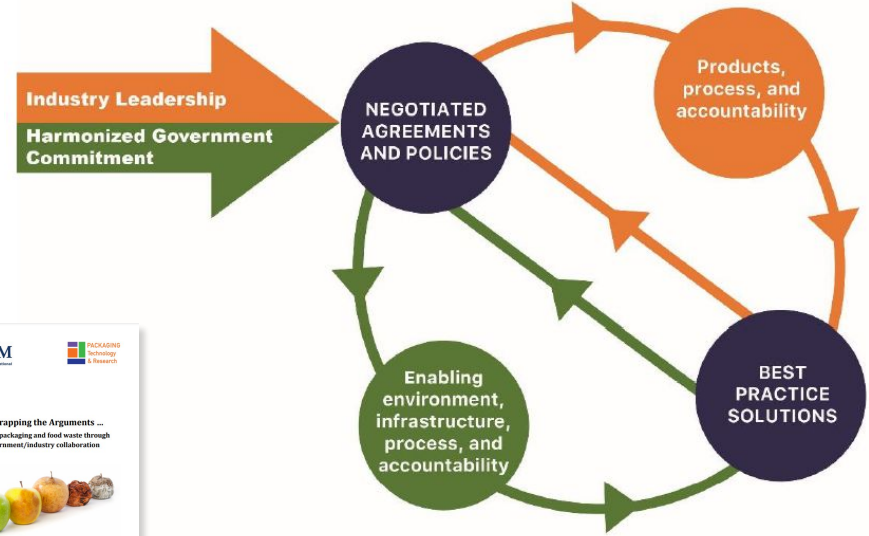
Aligns with retailer, consumers, and post-consumer handler needs and targets

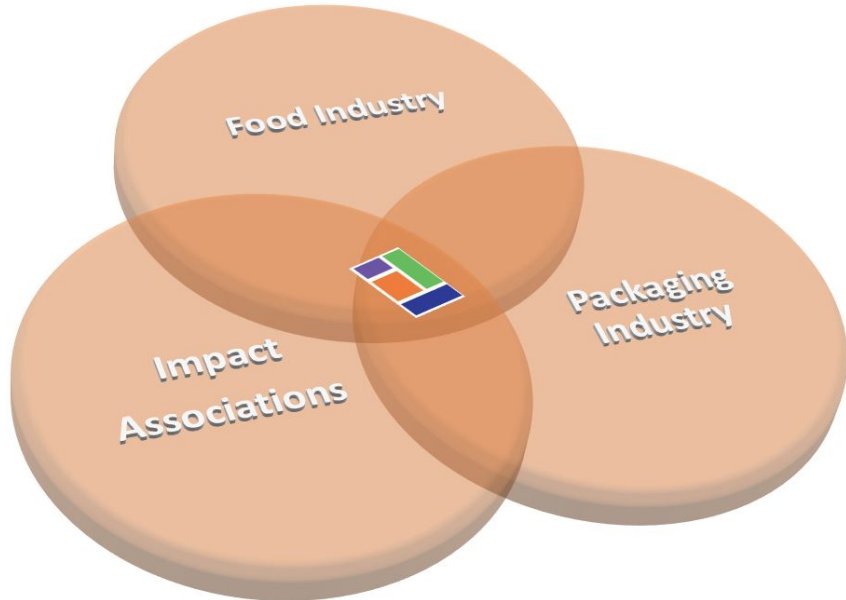
**PTR has the blend of value chain, food and packaging science to achieve a more sustainable food system**

# THOUGHT LEADERSHIP Addressing Packaging Bans

- Hammer policies **villainize** plastics
- Government hammer policies will increase GHG emissions
- **Effective packaging** and resultant less FLW would lead to a:
  - 10 % reduction in FLW
  - 50 % reduction in landfilled FLW
- **Viable solutions to reduce both GHG and FLW**

Industry leads with support from sound government policies & regulations





**Companies we have worked with come in all shapes and sizes!**

From startups to high volume global companies



## Global food company

### SITUATION

Factory Acceptance Test (FAT) on new machine was underway and was limiting client to 5 film options

### SOLUTION

- **Optimal materials selection** - PTR specified 5 from 25 film options
- PTR worked with existing supplier **to develop optimal films** for store-drop-off recyclable compatibility

## RESULTS

- ✓ **Smooth path forward for SAT**
- ✓ **Assurance that cost reduced film options remain viable**
- ✓ **Optimization**





# Client Work | Resealable Packaging Conversion



Food Waste



Material Science



Value Chain Drivers



## Global Food Company

### SITUATION

Reseal options were unknown for a high fat content product

### SOLUTION

- Developed rubric to **assess reseal options**
- **Identified, screened and ranked viable** aligned reseal options for all skus
- Spearheaded **informed decision-making** effort based on the rubric, mockups, and competitive threats
- Managed consumer testing, production trials and implementation

## RESULTS



**Clear reseal solution identified and in pipeline**



**Business case and resource allocation defined for implementation of reseal**



**Reseal contingency plan in place for rapid response to competitive threat**



## European packaging company

### SITUATION

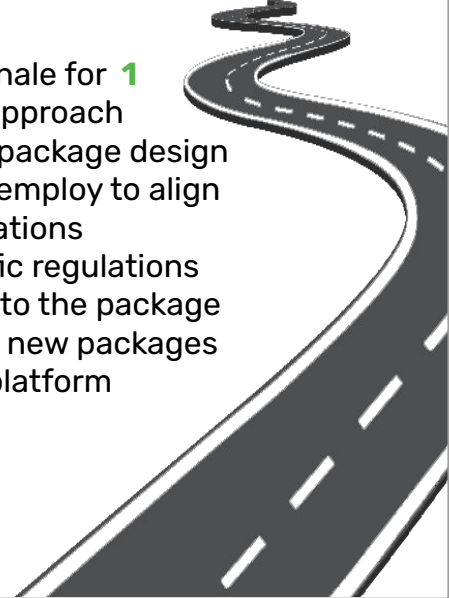
Entry into USA market presented unknown regulatory and food safety hurdles

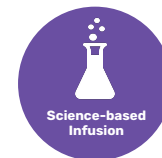
### SOLUTION

- PTR provided **clear direction** on 2 scenarios/approach of delivery
- PTR **recommended package design changes** for compliance

## RESULTS

- Clear rationale for **1** scenario/approach
- **5** Specific package design factors to employ to align with regulations
- **10+** Specific regulations that apply to the package
- **3** Ideas for new packages from this platform





## Global packaging company

### SITUATION

A viable alternative to EtO package sterilization was needed to enable investment

### SOLUTION

- **Identified and screened** 30 alternatives
- PTR provided **clear direction** on top 6 alternatives
- Determined cost-benefit of alternative sterilization methods including the ability to act as a out-source if access capacity existed
- Defined an **implementation plan forward**

## RESULTS



**Clear costs  
and path on EtO  
alternative**



**Solution viable to  
potential buyers**



## Food copacker

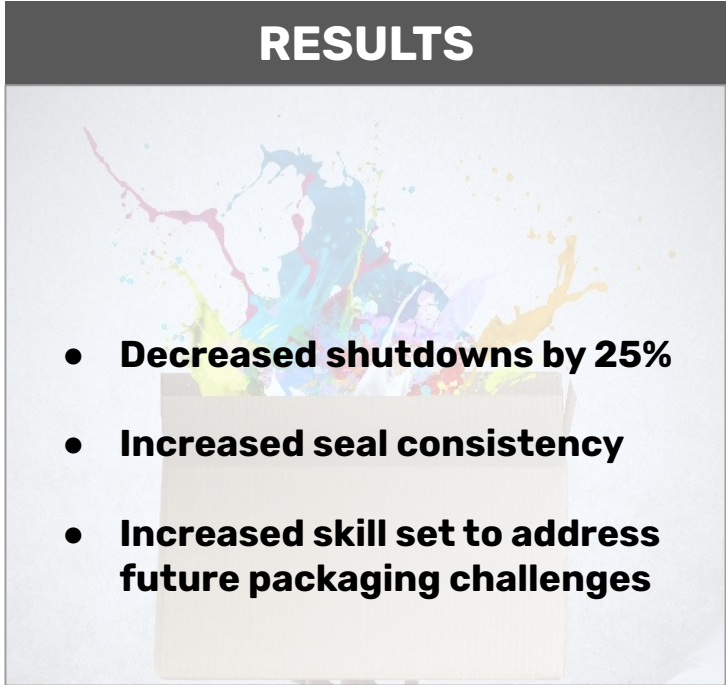
### SITUATION

Copacker, brand, and packaging company could not identify source of leaks

### SOLUTION

- PTR **assessed seals** on-site
- PTR **identified solutions that resolved seal issues** using:
  - Machinery and manufacturing controls
  - Material
  - Cold seal adhesive
  - Testing
  - Statistical sampling using identified seal testing equipment
  - Warehousing

## RESULTS

- 
- **Decreased shutdowns by 25%**
  - **Increased seal consistency**
  - **Increased skill set to address future packaging challenges**



## European packaging company

### SITUATION

Novel materials – Ovenable bags and CO<sub>2</sub> emitting coolers - required legal food contact assessment and approval for North American market

### SOLUTION

- **Defined required testing** need for USA and Canada
- PTR reviewed data to determine if materials were in **compliance**
- Assessed value chain for risk and means to **mitigate risk**

## RESULTS

- ✓ **Scientific assurance** of material offering **compliance**
- ✓ **Science-based risk mitigation** methods





## Global food company with 1 billion in sales

### SITUATION

Entry level food packaging minorities and women required technical and leadership support

### SOLUTION

- Provided **technical support** on demand to allow for rapid decision making
- PTR upgraded teams existing knowledge on **polymer science** via 3 days of **tailored training** ached packaging minorities and women on career progression and options

### RESULTS

- ✓ **Faster** problem solving
- ✓ **More** confident problem solving
- ✓ **Upgraded** polymer science knowledge
- ✓ **Improved** burst strength
- ✓ **Ability to** improve burst strength on the packaging because of upgraded polymer science knowledge
- ✓ **Advancement** of women and minorities in packaging



**Food company needing to grow sales via e-commerce**

### SITUATION

A soft business case was crippled due to a due to the high food safety risk, costly packaging and disconnect with consumers on sustainability for e-commerce.

### SOLUTION

- Defined cold chain package options vs shelf stable package options based
- PTR quantified the comparative environmental impact of options in the entire value chain plus tangential factors such as altered distribution and production runs and packaging and shipping costs associated with shelf stability versus refrigeration
- PTR connected stance on sustainability to ecommerce packaging and **expanded consumer market**

## RESULTS



**Clear  
package  
direction for  
ambient and cold  
chain**



**Package  
sustainability  
alignment  
to brand**

## Vertical Farming startup

### SITUATION

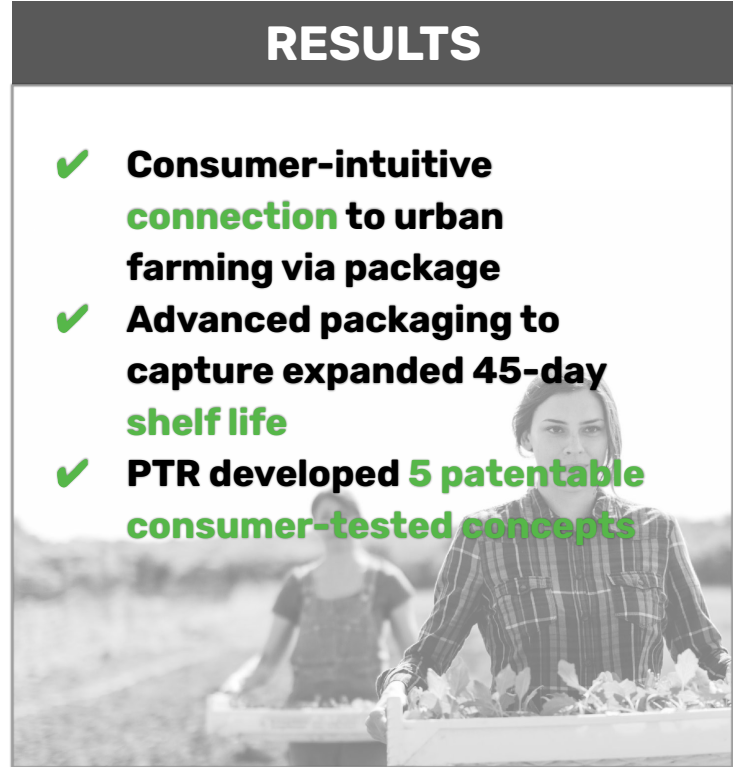
Package design and science needed to both communicate the unique offering and capitalize on the potential 45-day shelf life of urban greenhouse products

### SOLUTION

- Defined what was needed to **breakthrough the market and connect with consumers** on the complex topic of urban farming
- PTR identified **key packaging technologies** to maintain shelf life
- **Managed production mold** supplier relations and consumer testing protocols

### RESULTS

- ✓ **Consumer-intuitive connection to urban farming via package**
- ✓ **Advanced packaging to capture expanded 45-day shelf life**
- ✓ **PTR developed 5 patentable consumer-tested concepts**





# How can I help you?

## Free

## By Project

### My Website

*Stay current with the hottest food science and food packaging trends & insights*



### My Newsletter

*Sign up and stay informed!*



### My Network

*Let's Connect!*



### My Presentations

*Check out my presentations on SlideShare*




### Everything Else

*Stay current with the hottest food science and food packaging trends & insights*





## Dr. Claire Sand

 001-612-807-5341

 [claire@packagingtechnologyandresearch.com](mailto:claire@packagingtechnologyandresearch.com)

 [PackagingTechnologyandResearch.com](http://PackagingTechnologyandResearch.com)

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