EcoFarm Conference
Reducing Plastics in the Produce Department

Speakers
Lisa Spicka
Sustainable Food Trade Association

Sara Lozano
Sambrailo Packaging

Katherine DiMatteo
Protect Our Breasts Safer Packaging Initiative

Discussion Leader
Melody Meyer
Organic Trade Association
IN SEARCH OF...
PLASTIC ALTERNATIVES

24. January, 2020
Today’s Agenda

The Balancing Game

Packaging Trends: What We’re Seeing

SFTA Thought Leadership
Our Mission

Build the capacity of the organic and natural products industry to transition to sustainable business models.
About SFTA

1. Build, Measure, Refine
   - Strategy & Reporting Tools
   - Materiality Assessments
   - Sustainability Resources
   - Climate Action Management

2. Thought Leadership
   - Sustainability Framework
   - Code of Conduct
   - Climate Collaborative
   - Organicology
   - ... Packaging Initiatives!
THE BALANCING GAME
What makes packaging “sustainable?”

Seeking to Minimize

- Marine Pollution
- Water consumption
- Use of mineral resources
- Fossil fuel use
- Greenhouse Gas Emissions
- Freshwater Eutrophication
- Freshwater Ecotoxicity
- Use of toxic chemicals
What packaging types help minimize impacts?

**Generally Desirable Attributes**
- Recyclable
- Bio-Based
- Recycled content
- Compostable (certified)
- Reusable
- “Renewable” feedstock
The Balancing Game
The Balancing Game

25% more waste created during manufacturing

= 500 tons/year!

500 tons less packaging/year!
Between **75-93% fewer** GHG emissions compared to other packaging types*

* Source: Cheer Pack, October 2018 LCA Study
The Balancing Game

Principles to Inform Sustainable Packaging Recommendations

- Materials Circularity
- Shared Responsibility
- Accelerating a Circular Market
- Transparency & Communication

Learn more & download the Principles at: https://www.asbcouncil.org/working-groups-task-forces
“The Produce Department”
WHAT WE’RE SEEING
What We’re Seeing

- Practical Steps
- Supply Chain Collaboration
- Vision & Innovation
Evolution of the bag
Bulking Up
Increased Recyclability

Increased Recycled Content
What We’re Seeing: **Practical Steps**

**Renewable Feedstock**
What We’re Seeing: Supply Chain Collaboration

Distribution Materials

- Replaced shrink wrap with mesh
  - Returned, re-used
  - Used by 30% of customers
- Collect/Recycle shrink wrap from customers
Market Trials

Source: The Packer, January 6, 2020: Starr Ranch switches plastic for corrugated for organic apples
Laser Labeling

- Saved 5000 km of plastic film
- 13 countries
- Thank you
- 32 customers
- 22 billion packaging units saved
- Eosta

where ecology meets economy
What We’re Seeing: Vision & Innovation

The Power of Vision

Plastic—Free Deli by 2022
SFTA Packaging Initiatives
SFTA Packaging Initiatives

**Plastic-Free Retailer Challenge**
- Reduce or eliminate plastic
- Focus on operational & product packaging
- Opens avenues for focused supply chain collaborations
- Recognition of accomplishments
- 2020: Leadership Input
- 2021: Full Launch

**Directory: Sustainable Packaging**
- Multi-sector tool
- Sustainable packaging guidelines
- Listings by major product categories
- Supplier information
- Reflect best practices

**Packaging Evaluation Software**
- Enable clarification of tradeoffs across packaging materials
- Establish social & environmental criteria
- Allow for weighted considerations
- Collaboration with HowGood sustainability software
- **Partners:** Climate Collaborative & OSC2
Lisa Spicka
Associate Director
lisa@sustainablefoodtrade.org
FAMILY OWNED + OPERATED SINCE 1923
CERTIFIED ORGANIC PACKAGING + RECYCLE
THE FIRST PACK OUT
A&A Organic Farms – Watsonville, CA
Coke Farm – San Juan Bautista, CA
Forbidden Fruit Orchards – Santa Barbara, CA

JUST LAUNCHED IN BAY AREA + LA COUNTY
Safer Packaging
Avoiding Chemicals that Migrate
WHAT BECOMES PART OF THE FOOD?
Some chemicals transfer from food packaging into the food. This process is called chemical migration. Packaging material, type of food, temperature, and storage time are factors affecting the migration of chemicals.

CONCERNS AND KNOWLEDGE GAPS
Consumers are constantly exposed to mixtures of chemicals migrating from food packaging. Some chemicals commonly found in food packaging have been associated with certain diseases. The toxicity of many chemicals used in food packaging is not completely understood or even not known at all.
Food contact article: yogurt cup

Food contact materials:
- Plastic(s)
- Metal
- Glass
- Paper
- Cardboard
- Coating
- Adhesives
- Printing inks
...and many more

Food contact substances:
- Monomers
- Polymers
- Oligomers
- Additives
- Pigments
- Solvents
- Impurities
- Reaction by-products
- Degradation products
...and many more

Chemicals include:
- Phthalates
- Bisphenols
- Perchlorate
- N-methyl pyrrolidone
- Benzophenone
- Styrene
- Tetramethyl bisphenol F
- Fluorinated chemicals (PFAS)
- BHA/BHT
- Toluene
- And many more....
Questions are being asked about the safety of a common substitute for the controversial compound bisphenol A (BPA). BPA is used to make certain plastics and a number of countries have banned its use in food contact items such as baby bottles as it is a known endocrine disruptor. Accumulating research suggests that bisphenol S (BPS) – a preferred substitute for BPA – has a very similar toxicological profile to BPA, and may be no less harmful.

- **Food Contact Materials** (substances) other than glass and ceramics are not inert.
  - Can coatings
  - Laminates in cartons or glass bottle closures
  - Adhesives
  - Paper and board
  - Plastics
  - Printing Inks

- Over 6,000 FCM substances on lists
  - Migration
  - Substitutes
  - Recycling
  - Mixtures
### Food Packaging Product Stewardship Considerations:

The following points apply:
- Legal requirements must first be followed for food contact materials, then the below best practices can be considered.
- The below best practices in many cases go beyond regulations, if there is a conflict, regulations must be followed.
- Packaging applications which have a higher risk due to use (e.g. ovenable/microwavable, etc) or sensitive target consumer (e.g. infant/toddler food, etc.) should have additional safety assessments and possibly more stringent requirements to be considered when developing.

#### Packaging Parts/Components

<table>
<thead>
<tr>
<th>Substance(s) / Topic(s)</th>
<th>Description</th>
<th>Protect Our Breaths Vetting Process</th>
<th>Should not use ever (where suitable alternatives exist)</th>
<th>Reference</th>
<th>Additional Information/References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phthalates (aka Plastics)</td>
<td>Phthalates should not be used as plasticisers and additives in packaging materials including inks, adhesives, plastics, etc; where suitable alternatives exist.</td>
<td>Phthalates MUST NOT be used.</td>
<td></td>
<td></td>
<td>Proplst, SVHC, Consumer interest</td>
</tr>
<tr>
<td>D-Phthalates (aka Phthalates)</td>
<td>D-Phthalates (aka Phthalates)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Di-ethylhexyl phthalate</td>
<td>Di-ethylhexyl phthalate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Di-ethyhexyl phthalate</td>
<td>Di-ethylhexyl phthalate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Di-ethylhexyl phthalate</td>
<td>Di-ethylhexyl phthalate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Di-ethylhexyl phthalate</td>
<td>Di-ethylhexyl phthalate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Di-ethylhexyl phthalate</td>
<td>Di-ethylhexyl phthalate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Di-ethylhexyl phthalate</td>
<td>Di-ethylhexyl phthalate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Di-ethylhexyl phthalate</td>
<td>Di-ethylhexyl phthalate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Di-ethylhexyl phthalate</td>
<td>Di-ethylhexyl phthalate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Di-ethylhexyl phthalate</td>
<td>Di-ethylhexyl phthalate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Di-ethylhexyl phthalate</td>
<td>Di-ethylhexyl phthalate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Di-ethylhexyl phthalate</td>
<td>Di-ethylhexyl phthalate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Di-ethylhexyl phthalate</td>
<td>Di-ethylhexyl phthalate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Di-ethylhexyl phthalate</td>
<td>Di-ethylhexyl phthalate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Di-ethylhexyl phthalate</td>
<td>Di-ethylhexyl phthalate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Di-ethylhexyl phthalate</td>
<td>Di-ethylhexyl phthalate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Di-ethylhexyl phthalate</td>
<td>Di-ethylhexyl phthalate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Di-ethylhexyl phthalate</td>
<td>Di-ethylhexyl phthalate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Di-ethylhexyl phthalate</td>
<td>Di-ethylhexyl phthalate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Di-ethylhexyl phthalate</td>
<td>Di-ethylhexyl phthalate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Di-ethylhexyl phthalate</td>
<td>Di-ethylhexyl phthalate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Di-ethylhexyl phthalate</td>
<td>Di-ethylhexyl phthalate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Di-ethylhexyl phthalate</td>
<td>Di-ethylhexyl phthalate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Di-ethylhexyl phthalate</td>
<td>Di-ethylhexyl phthalate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Di-ethylhexyl phthalate</td>
<td>Di-ethylhexyl phthalate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Information

- **Heavy Metals**
  - Must not be intentionally used in packaging materials, including inks and pigments/cosmetics.
  - Heavy Metals MUST NOT be used.

- **SVHCs**
  - Applicable to products for sale in Europe, must comply with regulation - see below "REACH comment and links for Regulation where applicable.
  - SWHCs MUST NOT be used.

- **California Proposition 65**
  - Applicable to products for sale in California, must comply with regulation - e.g. well below communication limits (MADL, NDIR) or absence.
  - Prop-65 chemicals MUST NOT be used.

- **Prop 65 chemicals**
  - All Biphenols MUST NOT be used unless pre-approved ie. tetramethyl BPA looks promising.
  - Prop65, SVHC, Consumer interest.
Key Chemicals of Concern in Food Packaging and Food Handling Equipment

EDF has identified chemicals in food packaging and food handling equipment where the potential health impacts from their migration into food raises serious concerns. These chemicals in virgin materials may also contaminate the recycling stream and undermine their recyclability. By ensuring future food packaging is free of these chemicals, companies can improve consumer trust while minimizing the impact of future regulations on their bottom line. In the tables below, we list key chemicals of concern in food packaging. Taking action today helps to protect consumer health now and in the future.

Intentionally added ingredients

<table>
<thead>
<tr>
<th>Chemical or class</th>
<th>CASRN</th>
<th>Health concerns</th>
<th>Authoritative citations</th>
<th>Role in virgin packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orthophthalates*</td>
<td>Various</td>
<td>Endocrine disruption, developmental toxicity, reproductive toxicity</td>
<td>California Prop 65, EU REACH Annex VI, and SVHC; EU Priority ED; CSPC</td>
<td>Primarily used in plastics but may be used in other products such as inks. High concern in virgin plastic and paper.</td>
</tr>
<tr>
<td>PFAS (per- and polyfluorinated alkyl substances)*</td>
<td>Various</td>
<td>Developmental toxicity, Persistence and bioaccumulation</td>
<td>Various</td>
<td>Grease-proofing agent in paper. High concern in virgin paper.</td>
</tr>
</tbody>
</table>

Residual processing aids

<table>
<thead>
<tr>
<th>Chemical or class</th>
<th>CASRN</th>
<th>Health concerns</th>
<th>Authoritative citations</th>
<th>Role in virgin packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPA and related compounds</td>
<td>Various</td>
<td>Endocrine disruption, developmental and reproductive toxicity</td>
<td>Various</td>
<td>Used to make epoxy lining in metal cans, polyethylene, and ink.</td>
</tr>
<tr>
<td>Toluene*</td>
<td>106-88-3</td>
<td>Reproductive toxicity</td>
<td>California Prop 65, EU REACH Annex VI</td>
<td>Solvent often used in printing inks and low concern in virgin plastic and paper.</td>
</tr>
<tr>
<td>Ethyl glycol (2-ethoxy ethanol)*</td>
<td>110-80-8</td>
<td>Reproductive toxicity</td>
<td>California Prop 65, EU REACH Annex VI, and SVHC</td>
<td>Solvent often used in printing inks and moderate concern in virgin plastic and paper.</td>
</tr>
<tr>
<td>Methyl glycol (2-methoxyethanol)*</td>
<td>109-85-4</td>
<td>Reproductive toxicity</td>
<td>California Prop 65, EU REACH Annex VI, and SVHC</td>
<td>Solvent often used in printing inks and moderate concern in virgin plastic and paper.</td>
</tr>
<tr>
<td>N-Methyl-2-pyrrolidone (NMP)</td>
<td>872-50-4</td>
<td>Reproductive and developmental toxicity</td>
<td>California Prop 65, EU REACH Annex VI and XVII, and SVHC</td>
<td>Solvent often used in printing inks and low concern in virgin plastic and paper.</td>
</tr>
</tbody>
</table>
Figure 2: Chemicals of Concern In Food Packaging Grouped by Material
Source: Safer Made
In general, any food contact material should not release chemicals into the food at quantities that can harm human health (see EU 1935/2004, Article 3 and US 21CFR174). In order to assess the health impacts related to food packaging it is therefore essential to (1) understand the chemical composition of the packaging material and (2) the levels at which these compounds can partition into foodstuffs, a process that is known as migration.

Please click on the primary packaging material of your interest for further information.

- Ceramics
- Glass
- Metal
- Paper and Board
- Plastics
- Printing Inks
- Wax
- Wood
SAFER AND SUSTAINABLE?

Considering Chemical Exposures as We Move to More Sustainable Options

- Recycled paperboard products may contain:
  - Phthalates and benzophenones from printing inks
  - Bisphenols from thermal receipt paper

- Recycled paperboard products are more likely to leach phthalates and other chemicals than products made from virgin fibers

- Molded fiber products contain fluorine which can end up in our food and compost

Claudis, Environ Health Perspect. 2012; Van den Markers et al., Chemosphere, 2015
Center for Environment Health, Avoiding Hidden Hazards - A Purchaser’s Guide to Safer Foodware, 2018
Way forward

- Know the starting materials
- Understand the manufacturing processes
- Analyze the final food packaging
- Communicate in the supply chain
Safer Packaging

Values: Safer packaging is a key B2B component of the information sharing provided through Protect Our Breasts to create a safer marketplace. Safer packaging will share new research and brand activities as they emerge, and make recommendations for the process of improving packaging as part of the Protect Our Breasts vetting process. As packaging companies become vetted, safer packaging will highlight the resource for brands.

Missions: to share information about concerning chemicals that migrate from packaging into products with brands and packaging companies in order to improve the safety of our everyday products.

Key Activities:
- Quarterly newsletters
- Continuous Facebook news postings
- Introductory talks and conduct for scientific talks
- Conduit for vetted safer packaging options
- Conduit for vetting barriers
Key concepts to address:
- Organic consumers demand transparency about what they are eating, and many are taking a critical eye to the packaging their food comes in. This is likely not going away.
- Policy plays an important role in protecting human health, but it can be slow moving & limited in scope. Private sector solutions are needed to ensure that the organic label continues to meet consumer demand.
- Major organic brands that are leaders in the organic sector can continue the charge as a driving force behind a cleaner packaging movement.
- Packaging manufacturers and suppliers will play a key role in helping brands act on cleaner packaging.
- Leading brands, retailers and packaging companies must work together and commit to measurable progress.
- By ensuring future organic food packaging is free of toxic chemicals, organic companies can improve consumer trust while minimizing the impact of future regulations on their bottom line.

Safer Packaging Initiative
- Task Force
- Voluntary Program
QUESTIONS?