



# Taking a whole systems approach to reducing plastic in the supply chain

The Organic Center has engaged stakeholders from across the organic sector to identify where plastic plays critical roles in organic food production, where non-plastic alternatives to these tools exist, and which swaps can make the biggest impact for the least amount of effort.

## Conversations Across the Supply Chain

### Organic Confluences 2023

The event held May 2023 in tandem with the Organic Trade Association's Organic Week D.C., brought together a diverse audience comprising farmers, researchers, policymakers, and industry leaders. The organic industry is highly motivated to reduce its reliance on plastic tools and the industry's innovation can guide other farmers who aim to be sustainable and regenerative. This conference was funded in part by the USDA NIFA OREI program, Award #2021-51300-34891. Here are key topics discussed and feedback shared from this impactful gathering.

### Plastic tools used in organic farming and the suitability of plastic-alternatives

While the use of synthetic materials such as plastics is at odds with traditional organic values, the lack of suitable non-plastic tools has led to plastic's use being common throughout the organic supply chain from farm to table. Conference sessions focused on the human and environmental health and justice needs to reduce plastic, as well as the paradox farmers face when they are trying to maintain yields that are often achieved by using plastic tools. The role of policy in relieving pressure on organic farmers was highlighted, and innovative plastic-alternatives and pathways for improved recycling and reuse were also presented.

### Collaboratively building a roadmap that reimagines plastic use across the supply chain

Breakout and discussion sessions allowed different sectors of the supply chain to learn about others' experiences and needs and collaboratively set priorities and develop the next steps to start making change.

### Challenges in reducing plastic in the different areas of the supply chain:

- Cost and feasibility of implementing substitutes
- Lack of research on the impacts of the substitutes (e.g. hidden effects of biodegradable plastic)
- Conflicts of substitute use and organic policy (e.g. biodegradables in organic compost disqualifying compost as organic compliant; no commercially available biodegradable mulch meets organic standards, SOE is increasing the need for tamper-evident plastic packaging to reduce the potential of fraud)
- Substitutes do not as effectively fulfill the function of the plastic tool
- Innovation of substitutes is taking too long
- In some parts of the supply chain, there are concerns that non-plastic tools increase food safety risks
- Recycling options are much more limited than most people realize

### Recommended top research priorities to help reduce plastic use:

#### Broad recommendations for research development

- Large-scale, complete supply chain assessment of what plastic tools that currently exist, pros and cons of the plastic tools and their alternatives, including human health and environmental impacts
- Identify low-hanging fruits where an easy substitution will make a big difference, and where harder solutions need a better roadmap to substitution
- Cross-industry collaboration, including a range of farmers (small + BIPOC) to set priorities
- More funding to support plastic reduction research (make this a priority for USDA programs)

#### Topical research recommendations

- Identification of safe substitutes
- Index of toxicity
- Hemp fiber as an alternative component of biodegradable products
- Organic weed and pest control to reduce reliance on plastic as an effective control tool
- Assessment of recycling programs and opportunities for circular economy
- Research that links plastic along the supply chain to public & environmental health, and opportunities for innovation
- Research on the effectiveness of substitutes for maintaining the integrity of products

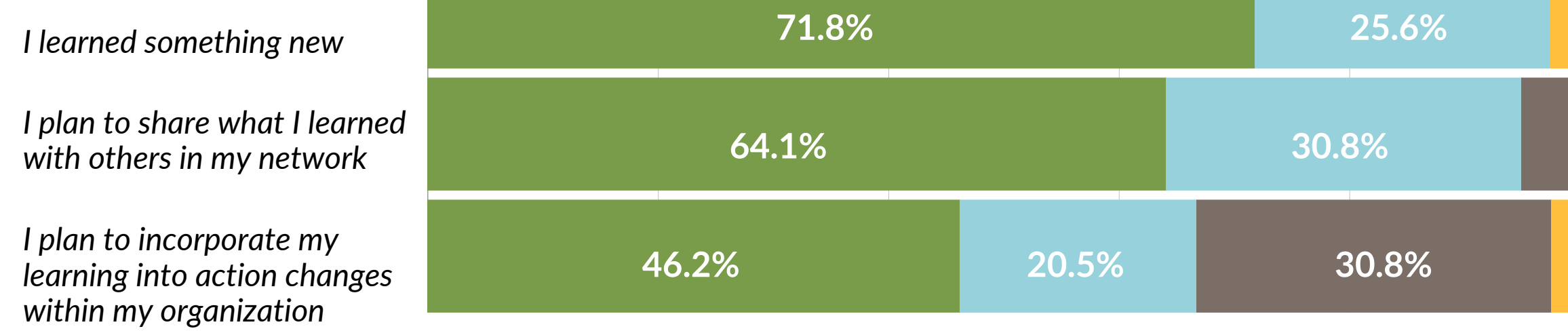
#### High-level strategies to reduce plastic

- Public education about the plastic crisis: highlight stories of those communities that are directly impacted and make companies accountable
- Use education and a positive approach to offer hope and inspiration vs fear-mongering
- Disincentivize the creation of plastic by taxing plastic manufacturers, while using those funds to help remove/recycle plastics, and invest in R&D of better alternative materials
- Make companies take responsibility for their own pollution and plastic use
- Optimize packaging vs. Product ratio
  - (e.g. bigger package sizes in stores like quart versus pint clamshells etc.)
- Regulate where the functionality of plastic pros outweigh the cons
  - i.e. single-use vs medical use
- Partnerships between like-minded partners to go to government together and share their experiences to push for policy change
- Improve recycling programs and reduce single-use, which will require retailer involvement and consumer behavior changes

## Feedback

We surveyed attendees and got an overwhelmingly positive response. Overall, people learned something and will share what they learned:

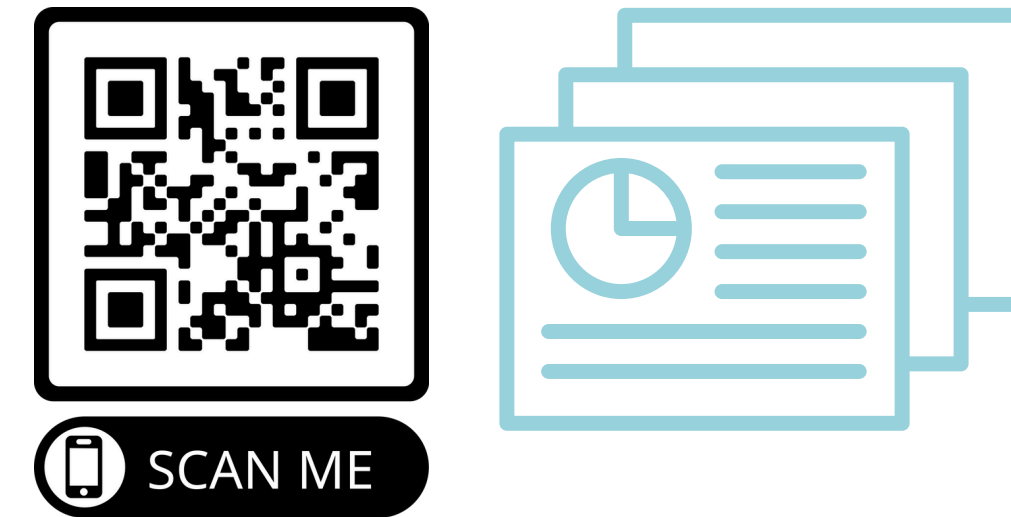
● Strongly Agree ● Agree ● Neutral ● Disagree ● Strongly disagree



## Ways we reduced plastic and waste at Organic Week 2023

- Seed paper nametags
- Reduced signage
- Digital program
- Tables without synthetic (plastic polymer-based) tablecloths
- All food and beverage served with reusable tableware
- Sustainable amenities, linen-less hotel
- Composting

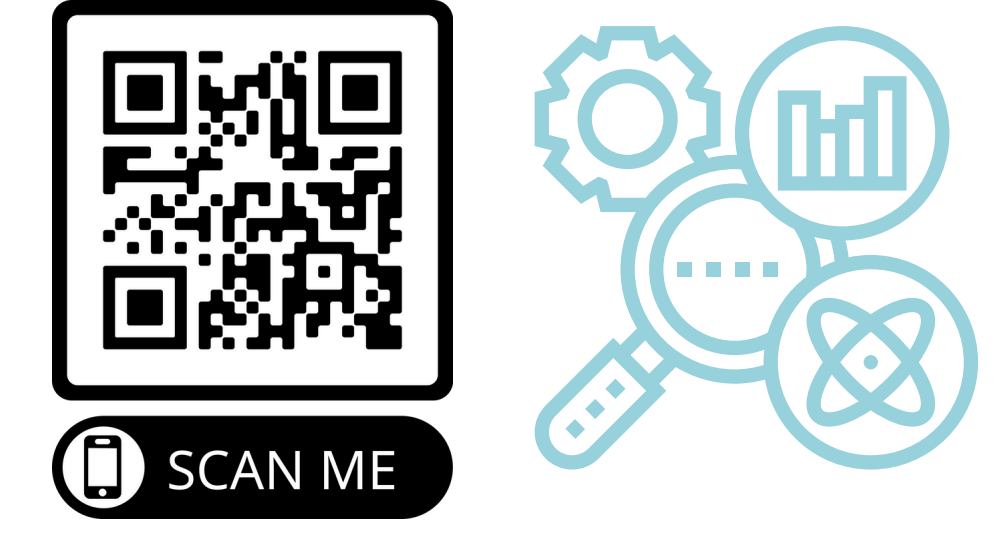
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## PARTNERSHIPS + INDUSTRY WORK

### Collaborations



- The Food and Agriculture Organization (FAO): Building a relationship to guide regional assessments of plastic sustainability
- USDA Foreign Ag Service (FAS): Incorporating the organic sector's plastic reduction journey into the broader ag sector
- OTA Produce and Sustainability Councils: Incorporating the organic sector's plastic reduction journey into the broader ag sector

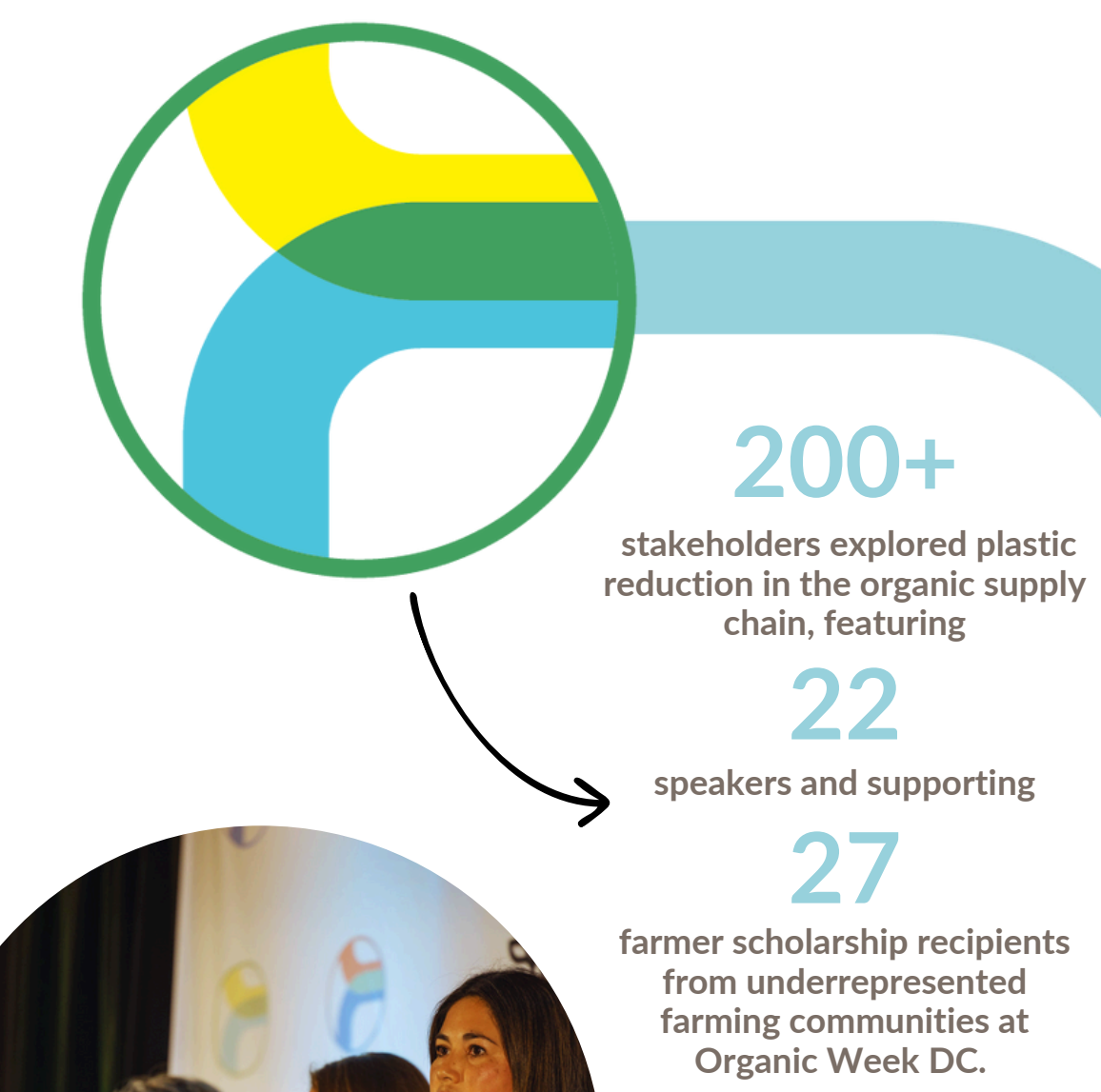
- **Organically Grown Company:** Co-developing conference programming in 2024 and will help them develop a plastics component for their upcoming conference, Organicology 2.0, 2025
- **Organic Association of Kentucky (OAK):** Developed conference programming to include the topic of plastic in 2024, *Addressing the use of Plastics in Organic Agriculture*
- **New Hope Network:** Expo East and Expo West incorporated this topic of reducing plastic into their own educational content and visual displays at the largest natural foods and products trade shows in the US

- **Artists who repurpose used plastic into sculptures that start conversations with the public, including Cynthia Minet and Plastic-Free Philly**



## ORGANIC CONFLUENCES

### Reducing Plastic Along the Entire Organic Supply Chain



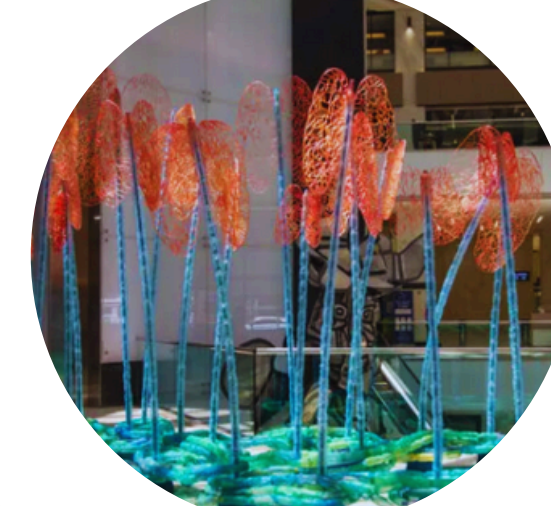
Panel during 2023 Organic Confluences



Dr. Amber Sciligo, TOC Director of Science Programs during 2023 Organic Confluences



2023 Organic Confluences Breakout Sessions



Kate Dadd, "Forest" installation displayed during Expo East 2023



Cynthia Minet, "Elephant, 2013" art piece at the 2023 TOC Fundraiser during Expo West



Cynthia Minet and her "Packing Caravan, 2013" art piece during An Organic Night Out at Expo West 2024



## Current Research

### Enhancing Efficacy of Protective Netting for Climate and Pest Resilience

The collaborative project, "Expanding Resilient Climate and Pest Protection Systems for Diversified Organic Specialty Crop Producers," led by Dr. David Gonthier at the University of Kentucky, also involving researchers from Cornell University and Iowa State University, aims to advance organic fruit and vegetable production in the Southeast, Midwest, and Northeast regions of the United States by exploring the use of protective row covers.

The goals of this research project are to:

1. Identify which vegetable crops gain the most benefit from using row covers
2. Develop strategies for integrating row covers in diversified vegetable rotations to maximize the benefits received from this investment.
3. Explore balancing environmental concerns and plastic usage in protective netting systems.

Organic farmers are dependent on some plastics to reduce water use, restrict weeds, increase food safety, and, in the case of protective row covers, decrease organic pesticide use. Protective row covers are made of plastic polymers, like those used in t-shirts or skinny jeans, but we know little about the risks associated with these types of plastic uses. To address this, researchers will explore these risks and use surveys and interviews to understand the perceptions of organic farmers, consumers, and industry around this practice. This research is funded by the USDA NIFA OREI program, award # 2023-51300-40855.



## FUTURE OUTCOMES



Virtual events that convene stakeholders to share their challenges and successes with reducing plastic in their operations.



Work with industry to develop an interactive database that helps stakeholders identify plastic alternatives, avenues for recycling and ways to reuse.

"Plastic tools used in organic farming and the suitability of plastic-alternatives" Workshop at Organicology (Portland, OR | March 2025)

