RPN Webinar
Compostable Service Ware with the Sustainable Biomaterials Collaborative

May 12, 2011
Agenda

• Welcome and Introduction
• Brenda Platt, the Sustainable Biomaterials Collaborative (SBC)
• Alicia Culver, the Responsible Purchasing Network (RPN)
• Susan Kinsella, Conservatree and RPN
• Wrap-up & Q&A
Welcome and Introduction

**RPN Mission**

“Promote and practice responsible purchasing by identifying best practices, developing effective purchasing tools, educating the market, and using our collective purchasing power to maximize environmental stewardship, protect human health, and support local and global sustainability.”
RPN Members

Appx. 200 members

- State and local governments
- Federal agencies
- Colleges and universities
- School districts
- Faith-based organizations
- Non-profit organizations
- Businesses
RPN Resources

• Responsible Purchasing Guides for 15 product categories
• Webinars on “green” procurement issues
• Monthly newsletter highlighting “green” purchasing activities and resources
• Sustainable purchasing policies and specifications
• Model Responsible Purchasing Report
• Calculators and other tools
Contents:

• Overview
• Social and Environmental Issues
• Best Practices
• Cost, Quality, and Supply
• Policies
• Specifications
• Standards
• Definitions
• Case Studies
• Calculators
Product Categories:

- Bottled Water
- Carbon Offsets
- Cleaners
- Computers
- Copy Paper
- Fleet Vehicles
- Fluorescent Lights
- Food Services
- LEDs
- Graffiti Remover
- Green Power
- Office Machines
- Paint
- Toner Cartridges
- Tires, Wheel Weights
Previous:

- Purchasing for Climate Protection
- RPN Trends Report
- ENERGY STAR Certifications
- Changes Q&A
- Tracking and Reporting

Webinars

In the works:

- Compostable Serviceware
- Saving Green Guide
- Purchasing for LEED
- … and many more!
Other Publications

- Purchasing for Climate Protection Factsheet
- Cooperative Contracts Factsheet
- Annual Responsible Purchasing Trends Reports
Contact RPN

Responsible Purchasing Network
1201 Martin Luther King Jr Way
Oakland, CA 94612
info@responsiblepurchasing.org
510.547.5475
Compostable biobased food service ware

Brenda Platt
SBC Co-Chair
Institute for Local Self-Reliance
May 12, 2011
Responsible Purchasing Network Webinar
Resource Conservation Hierarchy

Most Preferable

Avoid & Reduce

Reuse

Recycle & Compost

Treat

Dispose

Least Preferable

Source: U.S. EPA
Overview

- Why use compostable food service ware?
- Understanding difference between biobased vs biodegradable vs compostable
- Programs utilizing compostable products
- Compostable alone ≠ sustainable
- Criteria for environmentally preferable biobased food service ware
U.S. municipal waste disposed

160.9 million tons in 2009

Benefits of Biobased Alternatives

- Can replace many harmful conventional plastics
- Can be fully biodegradable (capable of being utilized by living matter)
- Can be made from a variety of renewable resources
- Can be composted locally into a soil amendment
- Can help capture food discards
- Can complement zero waste goals
- Creates a rich nutrient-filled material, humus,
- Increases the nutrient content in soils,
- Helps soils retain moisture,
- Reduces or eliminate the need for chemical fertilizers,
- Suppresses plant diseases and pests,
- Promotes higher yields of agricultural crops,
- Helps regenerate poor soils,
- Has the ability to cleanup (remediate) contaminated soil,
- Can help prevent pollution and manage erosion problems.

BLACK GOLD
How Exposure to Polystyrene Affects the Human Body

- Polystyrene is made from the monomer styrene (vinyl benzene)
- Styrene remains present in polystyrene (no polymerization process is 100% efficient)
- Styrene is a neurotoxicant and suspected human carcinogen
- Styrene impairs the central and peripheral nervous systems.
- Exposure to styrene in the workplace has also been associated with chromosomal aberrations, thus is considered a mutagen.
- Carcinogenic Effects: Proven that it causes cancer in animals, but there are no long-term studies showing that PS causes cancer in humans.
- Polystyrene contains alklyphenols, an additive linked to breast cancer.
“The ability of styrene monomer to migrate from polystyrene packaging to food has been reported in a number of publications and probably accounts for the greatest contamination of foods by styrene monomer.”

World Health Organization

Styrene Chapter, *Air Quality Guidelines-2nd Edition*, WHO Regional Office for Europe, Copenhagen, Denmark, 2000

http://www.euro.who.int (search “Chapter 5.12 Styrene”)
Plastics Recycling: Failure?

### Plastics Recycling Low

<table>
<thead>
<tr>
<th>Resin Type</th>
<th>Generation (thousand tons)</th>
<th>Recycling (thousand tons)</th>
<th>Recycling Level (percent by weight)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PET</td>
<td>3,530</td>
<td>730</td>
<td>20.7%</td>
</tr>
<tr>
<td>HDPE</td>
<td>5,210</td>
<td>590</td>
<td>11.3%</td>
</tr>
<tr>
<td>PVC</td>
<td>1,120</td>
<td></td>
<td>0.0%</td>
</tr>
<tr>
<td>LDPE/LLDPE</td>
<td>6,300</td>
<td>320</td>
<td>5.1%</td>
</tr>
<tr>
<td>PP</td>
<td>5,530</td>
<td>50</td>
<td>0.9%</td>
</tr>
<tr>
<td>PS</td>
<td>2,470</td>
<td>20</td>
<td>0.8%</td>
</tr>
<tr>
<td>Other resins</td>
<td>5,670</td>
<td>410</td>
<td>7.2%</td>
</tr>
<tr>
<td><strong>Total Plastics in MSW</strong></td>
<td><strong>28,830</strong></td>
<td><strong>2,120</strong></td>
<td><strong>7.1%</strong></td>
</tr>
</tbody>
</table>

Source: US EPA, 2009 data

MSW = municipal solid waste
Composting: A Success Story

The Good News on Biobased Alternatives

- Variety of resins available
- Performance improving
- Experience and R&D growing
- Growth expected
- The federal biobased procurement program – BioPreferred – will open up new markets
- Standards in place
- Price competitiveness improving
- Demand increasing
ASTM Standards

- D 6866 – defines and quantifies biobased content
- D 6400 – specification for biodegradation in commercial composting systems
- D 7081 – specification for biodegradation in the marine environment
- D 5988 – test method for biodegradation in soil
- D 5511 – test method for biodegradation in anaerobic digesters
Degradable Vs. Biodegradable

**Degradable**
- May be invisible to naked eye
- Fragment into smaller pieces
- No data to document biodegradability within one growing season
- Migrate into water table
- Not completely assimilated by microbial populations in a short time period

**Biodegradable**
- Completely assimilated into food and energy source by microbial populations in a short time period
- Meet biodegradability standards

Source for definitions: Dr. Ramani Narayan, Michigan State Univ.

1989 Cover of *Environmental Action*
Biodegradable vs. Biobased

Non-biodegradable biobased plastics are here
Biodegradability alone is not an environmental goal

Products should be:
- Reusable,
- Recyclable, or
- Compostable

Purchasers can use their purchasing power to drive the market toward more environmentally preferable products
Boulder Farmers’ Market
Whole Foods
ESPN
X Games
use of
compostable
bio-ware and
organics
collection =
80% event
waste
diversion!
San Francisco: Aiming for Zero Waste
Color-coded compostable design for 400k at SF Festival

Photos courtesy of City of San Francisco
Seattle
Acceptable Compostable Products

Cedar Grove Composting

*Commercially accepted food-service ware products

* Most items approved by Cedar Grove Composting to be placed in your guests residential cart must meet certain marking requirements. (see box below, right)

Cedar Grove is committed to supporting sustainability by encouraging the use of durable (reusable) food service items before choosing disposable packaging. If disposables must be used, Cedar Grove supports the evolving use of compostable and recyclable products that replace materials that would otherwise end up in a landfill.

All products shown on our accepted list have met our field testing requirements.

http://www.cedar-grove.com/services/compost.asp

Products are composed of historically beneficial and acceptable substrates used for feedstock in composting.

http://www.gogreenscene.com/what_we_recycle.asp

http://cedar-grove.com/acceptable/Accepted%20List.asp
Not All Bioproducts Created Equal

- Biobased content
- Material feedstock type
- Feedstock location
- Biodegradability
  - Commercial compost sites
  - Home composting
  - Marine environment
  - Anaerobic digestion
- Additives and blends
- Recyclability
- Performance
- Products

Biobased content alone ≠ sustainable
Challenges with Biobased Products

- Concern over genetically modified organisms (GMOs)
- Desire for sustainably grown biomass
- Need to develop adequate recycling and composting programs
- Concern with nanomaterials and fossil-fuel-plastic blends
- Lack of adequate labeling
- Concern over contamination of recycling systems
Genetically Modified Crops

- Can be toxic, allergenic or less nutritious than their natural counterparts
- Can disrupt the ecosystem, damage vulnerable wild plant and animal populations and harm biodiversity
- Increase chemical inputs (pesticides, herbicides) over the long term
- Deliver yields that are no better, and often worse, than conventional crops
- Cause or exacerbate a range of social and economic problems
- Are laboratory-made and, once released, harmful GMOs cannot be recalled from the environment.

Source: http://www.nongmoproject.org/
What We Put Into Corn...

- Average of over 120 lbs. nitrogen fertilizer per acre
- Among the highest levels of herbicide and pesticide use for conventional crops
- Irrigation water
- Proprietary hybrids
Survey Data: feedstock types and sources

- **China**
  - Bulrush
  - Bagasse
  - PSM (Plastarch Material)
  - Corn
  - Chinese PLA
  - PHBV*
  - PBS**
  - Cornstarch

- **India**
  - Fallen palm leaves
- **Thailand/Vietnam**
  - Tapioca starch
  - Grass fiber
  - Bagasse
- **Malaysia**
  - Palm fiber
- **USA**
  - NatureWorks PLA
  - “Natural total chlorine-free pulp”
  - Recycled wood fiber

*polyhydroxybutyrate-polyhydroxyvalerate

**polybutylene succinate (petrochemical + succinic acid)
Path from Field to Producer

“The source product is from Brazil, then turned into cornstarch in China, then the starch is used in our manufacturer’s facility.”

“Feedstocks grown in Midwestern US. Manufacture the resin in Hawthorne, CA today, but plan to manufacture in Seymour, IN shortly.”
Recyclable?

Mother Earth's future is in your hands

This innovative product is the 1st All Natural Lemonade to be poured into an ALL NATURAL BOTTLE. Noble is simply too good to be poured into a plastic bottle made from oil, so our team of juceologists went to work to find a container worthy of Noble. They explored the world to find the “E Bottle,” an eco-friendly bottle made from nature. Not only is our bottle better for our juice, it is better for the environment.

Better Earth.
Better Juice.
Better Bottle.
The Sustainable Biomaterials Collaborative is a network of organizations working together to spur the introduction and use of biomaterials that are sustainable from cradle to cradle. The Collaborative is creating sustainability guidelines, engaging markets, and promoting policy initiatives.

As You Sow
Center for Health, Environment and Justice
Clean Production Action *
Environmental Health Fund *
Green Harvest Technologies
Green Purchasing Institute
Health Care Without Harm
Healthy Building Network
Institute for Agriculture and Trade Policy *
Institute for Local Self-Reliance *
Lowell Center for Sustainable Production *
Sustainable Research Group
Pure Strategies
RecycleWorld Consulting
Responsible Purchasing Network
Science & Environmental Health Network
Seventh Generation
National Campaign for Sustainable Ag.
Whole Foods
City of San Francisco

* Steering committee
Defining Sustainable Life Cycles by Principles

- Sustainable feedstocks / Sustainable agriculture
- Green chemistry / Clean production
- Closed loop systems / cradle to cradle / zero waste

“Just because it’s biobased, doesn’t make it green”
Biomass Feedstock

- Avoid hazardous chemicals
- Avoid GMOs
- Conserve soil & nutrients
- Biological diversity
- Sustainable agriculture plan
- Protect workers
Manufacturing

- Support sustainable feedstock
- Reduce fossil energy use
- Avoid problematic blends & additives
- Avoid untested chemicals and engineered nano particles
- Design for recycling & composting
- Maximize process safety/reduce emissions
- Green chemistry
- Protect workers
End of Life

- Compostable or recyclable
- Biodegradable in aquatic systems
- Adequate product labeling
- Adequate recovery infrastructure
Development of Specifications for Environmentally Preferable Products

BioSpecs for Food Service Ware
(BioSpecs v.1.0)

Environmentally Preferable Specifications for Compostable Biobased Food Service Ware

Prepared by:

Sustainable Biomaterials Collaborative

2011
Next Steps

- Vetted List of Products
  - Clear process for manufacturers to assess conformance to criteria
  - Beta-test conformance process
- Green Purchasing Institute finalize sample purchasing bid specifications and documents
- Work with purchasers to beta-test bid specs
Contact

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SBC, Co-Chair
Institute for Local Self-Reliance, Co-Director
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202-898-1610 ext 230
BioSpecs for Purchasers
RPN Compostable Food Service Ware Webinar
May 12, 2011

Alicia Culver
Director, Responsible Purchasing Network
Sustainability Purchasing Specifications for Biobased Food Service Ware

Green Purchasing Institute

Sustainable Biomaterials Collaborative

www.ResponsiblePurchasing.org
Overview of BioSpes For Purchasers

Mandatory Sustainability Criteria

✓ Specifications
✓ Points

Desirable Sustainability Criteria

✓ Points
✓ Disclosure requirement (questionnaire)
Scope of BioSpes
For Purchasers

Types of products covered
- Cutlery
- Plates, bowls, cups
- Clamshells
- Gloves, trays, etc

Types of materials covered
- Bioplastics (e.g., PLA, potato starch, etc.)
- Other plant-based materials: paper, wood, bamboo, bagasse
Mandatory Criteria

✓ Minimum Biobased Material
✓ Nano-materials Declaration
✓ No fluorinated compounds
✓ Commercial compostability
✓ Products made in compliance with all applicable laws and regulations
✓ Products offered in bulk
✓ No polystyrene or PVC packaging
✓ 10 samples must be provided
Minimum Biobased Material

All products (other than cutlery) must contain at least 90% biobased carbon content; cutlery must contain at least 75% 

- = % weight of total carbon content
- ASTM Test Method D6866

Documentation required

- Independent laboratory analysis
- Verification by USDA or an independent third party organization (e.g., OK Biobased Program of Vincotte)
Minimum Biobased Material

Products made of 100% (uncoated) wood, bamboo, paper or another obviously plant-based material (other than biobased plastic) will automatically meet this requirement.
Nanomaterials Declaration

Bidder must declare whether or not nanomaterials were intentionally added to any offered products (including surface treatments)

Documentation Required

✓ Written declaration on manufacturer’s letterhead
✓ Signed and dated by a corporate officer
No Fluorinated Compounds

✓ Perfluorinated compounds are sometimes added to molded paper products as a grease barrier
✓ Bidder must verify that products do not contain fluorine or fluorinated compounds

Documentation Required
✓ Laboratory tests (e.g., XRF results)
✓ Type of grease barrier used must be identified
Compostability

Biobased food service ware products must be certified as “compostable” (in a commercial facility) based on verified compliance with the following standards:

 ✓ ASTM D6400 (North America)
 ✓ ISO 17099 (International)
 ✓ DIN EN 13432 (European Union)
 ✓ AS 4376 (Australia)
Commercial Compostability

Products must have one of the following certifications:

- Biodegradable Products Institute (North America)
- Green Seal GS-35 (USA)
- AIB Vincotte Inter (Belgium)
- Din Certo (European Union)
- Australian Environmental Labeling Association
- Japan Bioplastics Association
Commercial Compostability

**Documentation Required**

- Product or packaging must contain certification logo
- If BPI-certified, manufacturer must be listed on BPI website
- If paper, wood, or another obvious plant-based material (other than biobased plastic) must be approved by Cedar Grove Composting site.

*Bidder must disclose the material and coatings of each product offered.*
Other Mandatory BioSpecs Criteria

✓ Products must be made in compliance with all applicable laws and regulations
✓ Products must be offered in bulk
✓ No polystyrene or PVC packaging allowed
✓ 10 samples must be provided for performance testing

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BioSpecs Complement Other Considerations

- Design requirements (type, size, shape, color of products needed)
- Performance During Use
- Availability of Products from Local Vendors
- Cost (Best Value)
Additional Sustainability Criteria (Desirable)

- Additional Biobased Content (>90%)
- Sustainability Attributes of Biobased Material
- Sustainability of Biobased Product Manufacturing
- Other End-of-Life Considerations
- Transportation and Packaging Considerations
Higher Biobased Carbon Content

Additional points offered for products with higher biobased content (>75% for cutlery & >90% for everything else)

Documentation required

- Independent laboratory tests (per ASTM D6868)
- Third party verification (USDA Biobased Label or OK Biobased Program of Vincotte)
- Products made of 100% uncoated paper, wood or other plant-based material automatically get all points
Sustainability Attributes of Biobased Material

Sustainable Production of Biobased Feedstocks

“Bidders are encouraged to offer products containing biobased materials that protect the environment when they are grown and harvested.”

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Sustainability Attributes of Biobased Material

Grown Without Genetically Modified Organisms (GMOs)

“Bidders are strongly encouraged to offer products containing plant-based material for which no GMOs were intentionally added to the field.”

✓ Certified GMO-free
✓ GeneScan ([www.gmotesting.com](http://www.gmotesting.com))
✓ Test data from ISO 17025-accredited lab
Sustainability Attributes of Biobased Material

GMO Offset Certificates

Bidders are encouraged to offer products for which GMO offset certificates were purchased by biobased feedstock, resin and/or product manufacturers.

- Working Landscapes Certificate Program
- NatureWorks Source Offset Program
Sustainability of Biobased Product Manufacturing

- Avoidance of chemicals of high concern
- Use of recycled content in wood- and paper-based food service ware products
- Protection of workers and the environment during product manufacturing
- Minimization of transportation impacts
Sustainability of Biobased Product Manufacturing

Avoidance of Chemicals of High Concern

- Carcinogens and Reproductive Toxins (California’s Prop 65 list)
- Halogens and Halogenated Compounds
- Toxic Heavy Metals
- Phthalates
- Bis-Phenol-A

Lab tests or results of XRF spectroscopy tests
Sustainability of Biobased Product Manufacturing

Recycled Content

“Bidders are encouraged to offer products that contain recycled-content (particularly post-consumer) material.”

- FSC 100% Recycled or Mixed Sources
- SCS Recycled Content Verification (Scientific Certification Systems)
- GS-35: Green Seal Environmental Standard for Food Service Packaging (min. 45%)
Sustainability of Biobased Product Manufacturing
Protection of Workers and Environment

“Bidders are encouraged to offer products that have been certified by an independent third-party organization to meet…”

- ISO 14001 (EMS)
- Social Accountability 8000
- OSHA 8002
- ILO Standards
- ISO Environmental Health Protection & Safety Standards
Sustainability of Biobased Product Manufacturing
Minimization of Transportation Impacts

Bidders are encouraged to reduce transportation impacts by offering products for which biobased feedstocks, resin and finished products are made in North America.

Bidder must identify where biobased material is grown and where resin and final product are made.
Additional End-of-Life Product Considerations

- Acceptable to local commercial composting facility
- Clearly labeled “Compostable”
- Compostable in backyard or onsite system
- Biodegradable in marine environment
- Biodegradable in fresh water
Photo courtesy of Melbourne Zoo
Packaging Considerations

✓ Commercially compostable
✓ Easily recyclable
✓ Devoid of chemicals of concern
✓ Contains post-consumer recycled content
Additional Sustainability Criteria Not in BioSpecs

- Products made using solar or wind power
- Products delivered in less-polluting vehicles
- Manufacturing facility certified green building
- Products distributed by certified green business
Thank You!

Responsible Purchasing Network

info@responsiblepurchasing.org

510.547.5475

www.responsiblepurchasing.org
Performance Testing for Compostable Food Service Ware Products

Susan Kinsella
Responsible Purchasing Network and Conservatree
Is Performance Testing Necessary?

• Not always – Good experiences reported by others might be enough, e.g., reports on SBC and RPN websites, comments from other buyers

• You are probably already using some naturally compostable products

• Testing might be desired to be sure that new product sizes, shapes, and materials will work in your system

• Your composting facility might need to test products to be sure they will work for them
Examples of Naturally Compostable Products

- Uncoated paper portion cups
- Paper tray sheets
- Molded pulp trays
- Napkins
- Paperboard lunch boxes
- Paperboard bakery boxes
- Baking pan liners
Performance Considerations

- **Certification** – Biodegradable Products Institute (BPI) in North America

- **Compatibility** with intended compost facility

- **Food service function** – e.g., strength, easy use

- **Specialized requirements**, e.g., for a hospital, jail, food service preparation and transport

- **Compatibility** with food service system – for some venues, it may be all or nothing
Benefits of Kitchen Walk-Through

• See how target products are currently being used
• Identify capabilities that compostable alternatives will need to meet
• Understand each kitchen’s food service process and opportunities for flexibility
• Create buy-in from kitchen managers and food service departments
• Understand the waste management system
• Take photographs
Benefits of Compost Facility Tour

- Determine the process it uses, how quickly compostables must decompose, what happens if they don’t.
- Understand features and limitations. Does it have OMRI (organic) certification?
- Identify steps for testing products, if it does testing.
- Decide method for ensuring that the compostable products you choose are acceptable.
- Develop buy-in from compost facility managers.
Finding Potential Alternatives

- BPI certification website
- Cedar Grove composting facility approved products list
- Local food service and restaurant supply vendors
- USDA list of Bio-Preferred Products List
- Other purchasers
## Track Options in Database

Table 1. Sample Spreadsheet for Tracking Potential Options

<table>
<thead>
<tr>
<th>Category</th>
<th>Brand</th>
<th>Manufacturer</th>
<th>Product Description</th>
<th>Manufacturer ID #</th>
<th>Certification, Approvals</th>
<th>Material</th>
<th>Additional Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clamshell, Hot</td>
<td>Harvest</td>
<td>GenPak</td>
<td>Large Hinged 3 Section 9”x9.1”x 3.1”, heat tolerance up to 140°</td>
<td>HF203</td>
<td>BPI, Cedar Grove</td>
<td>PLA/fiber</td>
<td></td>
</tr>
<tr>
<td>Plate</td>
<td>Chinet</td>
<td>Huhtamaki</td>
<td>8 3/4” plate</td>
<td>25710</td>
<td>BPI, Cedar Grove</td>
<td>Smooth molded fiber</td>
<td>100% postindustrial paper fiber</td>
</tr>
<tr>
<td>Cup, Cold</td>
<td>GreenWare</td>
<td>Fabri-Kal</td>
<td>12 oz. cold cup</td>
<td>GC12S</td>
<td>BPI, Cedar Grove</td>
<td>Ingeo PLA</td>
<td></td>
</tr>
</tbody>
</table>
Samples

• Request samples from product manufacturers, vendors
• ID samples by name or code as they come in, and add the code to the database
• Get samples of lids if those will be important in evaluation and use
• ID which products the lids work with
# Evaluation Criteria

<table>
<thead>
<tr>
<th>Size</th>
<th>Sufficient surface, fits facility needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shape</td>
<td>Works for stacking, space requirements</td>
</tr>
<tr>
<td>Strength</td>
<td>Maintains shape when carried with food</td>
</tr>
<tr>
<td>Integrity</td>
<td>Holds up with utensil use; doesn’t get soggy, leak or deform</td>
</tr>
<tr>
<td>Heat Results</td>
<td>Does not deform, not too hot to hold</td>
</tr>
<tr>
<td>Aesthetic</td>
<td>Tactile feel, food does not absorb taste</td>
</tr>
<tr>
<td>Technical</td>
<td>Can withstand refrigerating, stacking</td>
</tr>
<tr>
<td>Accessories</td>
<td>Lids fit, easy to use, allow stacking; clamshell closures work well, easy to open/close, don’t leak</td>
</tr>
<tr>
<td>Cutlery</td>
<td>Do not splinter, knife cuts, fork spears, tactile feel</td>
</tr>
</tbody>
</table>
# Evaluation Sheets

## Compostable Food Service Ware Performance Testing

### Plates

<table>
<thead>
<tr>
<th>Performance Graded By</th>
<th>Agency</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code</td>
<td>Description/Grade</td>
<td>Performance Parameters</td>
</tr>
<tr>
<td>P-1</td>
<td>Plate – 7” FH807</td>
<td>Size appropriate: Yes/No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sufficient carrying strength: Yes/No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Holds up with utensils use: Yes/No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Absorbs liquids, gets soggy: Yes/No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Leaks: Yes/No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Melts with hot food: Yes/No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Collects condensation: Yes/No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Food absorbs plate taste: Yes/No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Overall Grade: 5 = Best; 4 = Neutral; 3 = Poor</td>
</tr>
</tbody>
</table>

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www.ResponsiblePurchasing.org
Test Day!

• Tested product categories together – e.g. all plates, all cups at same time

• Tried all kinds of food with plates, used compostable utensils with them

• Standby thermoses of hot water and jugs of ice water to test bowls and cups

• Multiple trays to test food prep scenarios with lids, stacking
Product Evaluations

- Each tester evaluated every product
- Relevant questions answered on evaluation sheets for each product
- Each product given overall score from 1 - 5 by every tester
- Additional notes written in
- Spreadsheet calculations for the results
- Some products later site-tested in larger quantities
# Product Evaluations

## Compostable Food Serviceware

**Product Testing Results**

*Category: Hot Cups*

<table>
<thead>
<tr>
<th>Brands/ Lines</th>
<th>Manufacturer</th>
<th>Products</th>
<th>Approvals, Certifications</th>
<th>Overall Score (1-5)</th>
<th>% of Performance Criteria Passed</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>GalliGreen</td>
<td>Gallimore HealthCare</td>
<td>8 oz hot cup</td>
<td>BPI certified</td>
<td>5.0</td>
<td>100%</td>
<td>Not too hot to hold. Does not need a sleeve. Thick wall prevents cup from losing its shape.</td>
</tr>
<tr>
<td>EcoGreen</td>
<td>Kuan Chun Paper Company</td>
<td>4 oz cup</td>
<td>BPI certified</td>
<td>4.0</td>
<td>100%</td>
<td>Acceptable/ medium heat to hold</td>
</tr>
<tr>
<td>EcoGreen</td>
<td>Kuan Chun Paper Company</td>
<td>7 oz cup</td>
<td>BPI certified</td>
<td>4.0</td>
<td>100%</td>
<td>Acceptable/ medium heat to hold</td>
</tr>
<tr>
<td>StalkMarket, Jaya</td>
<td>Asean Corporation</td>
<td>12 oz hot cup</td>
<td>BPI certified</td>
<td>4.0</td>
<td>89%</td>
<td>Structure gives somewhat</td>
</tr>
</tbody>
</table>
# Highlights of Test Results

<table>
<thead>
<tr>
<th>Item</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Utensils</strong></td>
<td>Some bioplastics worked well; some bioplastics broke, one bent without breaking, some soup spoons deformed; wooden utensils were not accepted</td>
</tr>
<tr>
<td><strong>Plates</strong></td>
<td>Paper plates were too flimsy for cafeteria use but molded fiber and plant fiber plates worked well; some very attractive bioplastic options</td>
</tr>
<tr>
<td><strong>Clamshells</strong></td>
<td>Compartments made them stronger, some closures were insecure</td>
</tr>
</tbody>
</table>
# Highlights of Test Results

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cold Cups</strong></td>
<td>Sizes varied despite same volumes; paper/wax cups not sturdy enough; one PLA cup crushed easily; some cups had no lids, some lids were non-compostable</td>
</tr>
<tr>
<td><strong>Hot Cups</strong></td>
<td>Almost all were PLA-lined paper cups; most were too hot to hold without sleeves</td>
</tr>
<tr>
<td><strong>Bowls</strong></td>
<td>Mix of materials (PLA-lined paper, PLA-lined fiber, bagasse, molded pulp); PLA-lined products were most successful; some products sweated, got soggy, deformed; some were too hot to hold; some lids did not work well</td>
</tr>
</tbody>
</table>
## Highlights of Test Results

<table>
<thead>
<tr>
<th>Product</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portion Cups</td>
<td>All were made from bio-based polymers; some were accepted but County needed different sizes; some were rejected for a strange odor</td>
</tr>
<tr>
<td>Food Service Gloves</td>
<td>Accepted</td>
</tr>
<tr>
<td>Sandwich Bags</td>
<td>Accepted but product discontinued</td>
</tr>
</tbody>
</table>
Costs Comparison

• Comparisons are difficult until actual bid results

• Ballparked possible price comparisons by comparing differentials in retail pricing, but not always available

• May be able to offset price increases with waste disposal savings

• May be able to offset price increases by receiving compost products from compost facility
Additional Considerations

**Local Suppliers**
- Often have incomplete lines
- Some manufacturers sell direct only
- Need for more manufacturer/local vendor relationships to ensure competitive bids

**Energy Use and Greenhouse Gas Impacts**
- Manufacturing locations and transportation impacts are difficult to sort out
- Local suppliers may import products from Asia
- Domestic products shipped by truck may produce more negative impacts than imports delivered by ship
What We Learned

• The compostable food service ware market is very dynamic – new products all the time, changes in existing products, many different types of materials

• Wide range of quality and compostability

• Increasing number of high quality certified products and good options

• Needs more development of distribution channels
What We Learned

• A comprehensive compostables program requires careful planning and collaboration with the compost facility

• There are significant differences between composting facilities

• Products that are not accepted in one program may well be great for another, depending on program needs and composting capabilities
Links

**BPI**: www.bpiworld.org

**OMRI**: www.omri.org

Cedar Grove composting facility
www.cedar-grove.com/acceptable/Accepted%20List.asp

**USDA BioPreferred**
www.catalog.biopreferred.gov/bioPreferredCatalog/faces/jsp/catalogLanding.jsp
### Membership Benefits:
- Model policies and specifications
- Green purchasing webinars
- Certified green products database
- Expert sustainability speakers
- Responsible Purchasing Awards

### Consulting Services:
- Custom green specifications
- Green purchasing policies
- Life Cycle Analyses
- Green office audits
- Cost-saving green practices

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www.ResponsiblePurchasing.org