Housekeeping Items

Today’s webinar is being recorded. The recording and contact information for all presenters will be available on pma.com soon.

Due to the fast-paced nature of the webinar, there will be no live questions. Presenter contact information will be available for follow-up questions.

All participants will be muted, and screens will be turned off for the duration of today’s webinar.
## Today’s Presenters

<table>
<thead>
<tr>
<th>Company</th>
<th>Presenter</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>vpz.</strong> packnatur GmbH</td>
<td>Roland Arbesleitner</td>
<td><a href="mailto:r.arbesleitner@vpz.at">r.arbesleitner@vpz.at</a></td>
</tr>
<tr>
<td><strong>EMERALD PACKAGING</strong></td>
<td>Kevin Kelly</td>
<td><a href="mailto:kkelly@empack.com">kkelly@empack.com</a></td>
</tr>
<tr>
<td><strong>DISRUPTIVE PACKAGING</strong></td>
<td>Nathan Hall</td>
<td><a href="mailto:Nathan.hall@disruptivepackaging.com.au">Nathan.hall@disruptivepackaging.com.au</a></td>
</tr>
<tr>
<td><strong>Fox Packaging</strong></td>
<td>Victoria Lopez</td>
<td><a href="mailto:Victoria.lopez@foxbag.com">Victoria.lopez@foxbag.com</a></td>
</tr>
<tr>
<td><strong>Giro Pack, Inc.</strong></td>
<td>Jen Doxey</td>
<td><a href="mailto:jdoxey@giropack.com">jdoxey@giropack.com</a></td>
</tr>
<tr>
<td><strong>belmark, Inc.</strong></td>
<td>Jason Vande Loo</td>
<td><a href="mailto:jasonv@belmark.com">jasonv@belmark.com</a></td>
</tr>
<tr>
<td><strong>SUGAR SHEET</strong></td>
<td>Minto Roy</td>
<td><a href="mailto:minto@socialprint.com">minto@socialprint.com</a></td>
</tr>
<tr>
<td><strong>SAMBRRAILO® PACKAGING</strong></td>
<td>Sara Lozano</td>
<td><a href="mailto:s.lozano@sambrailo.com">s.lozano@sambrailo.com</a></td>
</tr>
<tr>
<td><strong>bama PACKAGING</strong></td>
<td>Øyvind Briså</td>
<td><a href="mailto:oyvind.brisa@bama.no">oyvind.brisa@bama.no</a></td>
</tr>
</tbody>
</table>
Packnatur®
Biogenic packaging solutions made from wood!


It’s not that difficult.
Organic potatoes in a plastic bag? Not a good combination, in our opinion. This is why we have looked for partners with whom we can drive research and development forwards. One of these partnerships has resulted in the development of the PACKNATUR® cellulose tube netting made from FSC® and PEFC certified beechwood.

The sustainable packaging solution for fruit and veggies!
Packnatur® Cellulose Net Tube:
Packnatur® Cellulose Net Tube:
Packnatur® Cellulose Net Tube:
Packnatur® Cellulose Net Tube:
Packnatur® - From Wood to Netting
Comparison to plastics

- The Higg Materials Sustainability Index (MSI) compares the foodprint of material production.

- Lower score = smaller environmental footprint.

- VPZ fibers have a far smaller environmental footprint than plastic and cotton.

![Comparison to plastics]
Packnatur® Cellulose Netting
100% bio-degradable
Awards:

24 national and international Awards for Packnatur® net packaging and organic wineglass labels (a random selection):

• WorldStar Packaging Award 2020 for Packnatur® Pick Pack net bag
• Smart Packaging State Price for Packaging 2018 (AT)
• WorldStar Packaging Award 2018, Categories “Food Packaging”, Sustainable Award in silver, Presidential Award in bronze, Lifetime Achievement
• Energy Globe Styria Award 2018
• Green Packaging Star Award 2017
• Green Product Award 2016
• Top 3 at the International Green Tec Award 2015, Category Production
• Green Packaging Star Award 2014
• Internationaler A’ Design Award 2014 in Silber, Kategorie Sustainable Products and Projects / Green Design Award
• Fast Forward Award 2013 (AT)
• Energy Globe Styria Award 2013
It’s not that difficult.
Plastic is the most widely used raw material for flexible packaging accounting for 78.3% of the total revenue share in 2016.

GLOBAL MARKET

Projected to reach 131.65 Billion by 2022 at a CAGR of 5.2%

MARKET DRIVERS

• Cost-effectiveness
• Increased Shelf-Life
• Downsizing
• Consumer Demand
• Automation
Packaging with Benefits

Fox Fresh Mesh

Fox Fresh Mesh Wicketed

Fox Fresh Mesh Combo

Fox Combo Ultra Shield

Fox Stand-Up Combo

Leno
Streamlining your packaging operations

FSPB2 Pouch Bagger

FSWB3 Wicketed Bagger
Like-Minded Partners

61% of consumers say that they will change their behavior as a result of the How2Recycle label

Sustainable Packaging should result in less packaging and less food in our landfills.
Your packaging partners.

Victoria Lopez
Marketing
victoria.lopez@foxbag.com
(956) 252-2507

Connect on LinkedIn
Sustainable Packaging Alternatives

A webinar by PMA
Some of our Partners

We’re working with everyone from leading organizations to smallholder farmers in order to improve product quality, shelf life and distribution range. Longer lasting produce means less food waste and a more efficient use of our earth.
SPEED & SERVICE

- Belmark’s no minimum order quantities minimizes risk of obsolescence and disposal of unused packaging while freeing up cash rather than having it locked up in packaging inventory.

- Ability to respond rapidly to shifting demand or harvest schedule with three week or less packaging lead times.
Belmark Fresh Technology is exclusive in North America with our technology partner Perfo Tec.

Our analytical capabilities will test your specific product for determining optimal respiration and our closed loop, in-process control provides the quality assurance of a consistent and accurate package.

The average American family of four throws out $1,600 a year in produce.\(^{10}\)

Source: [https://www.rts.com/](https://www.rts.com/)
Recyclers are challenged with pressure sensitive labels compromising the purity of the recycle stream due to the adhesive contamination.

Belmark has developed an APR approved label solution that will cleanly release from the container during the sink/float process at the recycler.
Belmark has created tru-IMPACT® eco-friendly flexible packaging. With tru-IMPACT®, you can offer your products in sustainable flexible packaging that’s made with a minimum of 20% post-consumer waste recycled content.
PACKAGING INNOVATION

ENVIRONMENTAL IMPACT

• Annually prevent the use of 180,000 pounds of plastic
  *Equivalent to 8,500,000 water bottles each year*

• Annually save 6.2 billion BTUs of energy
  *Enough to power 40 US homes each year*

• Annually prevent 460,000 pounds of Green House Gas Emissions from entering our atmosphere
  *Equivalent to taking 45 cars of the road each year*

*EAU of 8mm Packages

SEALutions™

35% LESS PLASTIC

AS COMPARED TO CLAMSHELLS

SEALutions™
# Packaging Innovation

## TopSeal ReSeal
- **ReSeal**: ★★★★★
- **Easy Open**: ✔
- **Hermetic Seals**: ✔
- **Engineered Barrier**: ✔
- **Tamper Proof**: ✔
- **Antifog**: ✔
- **Seals To**: PET

## Simple ReSeal
- **ReSeal**: ★★★★
- **Easy Open**: ✔
- **Hermetic Seals**: ✔
- **Engineered Barrier**: ✔
- **Tamper Proof**: ✔
- **Seals To**: PET, HDPE, LDPE

## Simple Seal
- **One Time Easy Peel**: ✔
- **Seals To**: PET, HDPE, LDPE, PP

## SmartSeal
- **One Time Easy Peel**: ✔
- **Seals To**: PET

## LockSeal
- **Lock Up Weld Seal**: ✔
- **Seals To**: PET, HDPE, LDPE, PP

## Markets Served:
- Fresh Produce
- Cheese
- Meat / Meat Snacks
- Seafood
- Confections
- Snacks
- Bakery
- Prepared Meals
- Dips / Sauces
- Pasta

[Image: www.belmark.com]
PACKAGING INNOVATION

COMPOSTABLE C+ FRESH

Plant based transparent film with ideal H MVTR and CO₂ TR for fresh produce. The result is extended freshness and shelf life, when combined with laser perforation.

Features & benefits

<table>
<thead>
<tr>
<th>Feature</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximizes the shelf life of Fresh Produce</td>
<td>Suitable for flowpacking</td>
</tr>
<tr>
<td>Balanced O₂ and CO₂ transmission level</td>
<td>Printable</td>
</tr>
<tr>
<td>High Water Vapour Transmission Rate (WVTR)</td>
<td>Plasticizer free</td>
</tr>
<tr>
<td>Produce weight loss is virtually zero</td>
<td>GMO free</td>
</tr>
<tr>
<td>Certified Home Compostable material, by TÜV AUSTRIA</td>
<td>Food Contact compliance approved</td>
</tr>
</tbody>
</table>

Belmark C+ FRESH

- Available for Retail and Food Service
- Excellent for high value produce types
- Available in Medium and High MVTR
- Available with Belmark Fresh Technology for additional shelf life extension
- Good for Home and Industrial Compost
PACKAGING INNOVATION

SHIP LESS AIR
REDUCE CARBON EMISSIONS & LOGISTICAL COSTS

Traditional Packaging Includes Excessive Air

<table>
<thead>
<tr>
<th>Six Containers With Product</th>
<th>Remaining Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>50-55% Product and Packaging Material</td>
<td>45-50% Air</td>
</tr>
</tbody>
</table>

The Q-Bic Cube Contains Less Than 10% Air

<table>
<thead>
<tr>
<th>Cube With Six Trays of Product</th>
<th>Remaining Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>92% Product &amp; Packaging Material</td>
<td>8% Air</td>
</tr>
</tbody>
</table>
1 Dry Pint Tomato Tray – 35-40% Reduction in Total Volume

Belmark & Q-Bic

- Unique efficient Q-Bic package design
- SEALutions lidding films for PET containers
- Any style paperboard cartons, tray and sleeves available
CONTACT INFO

Dr. Raj Sharma, Ph.D.
Director Customer Development – Fresh Produce
neerajs@belmark.com
cell 805.245.7505

Jason Vande Loo
Director Technical and Business Development
jasonv@belmark.com
cell 920.412.6018
Sustainable Packaging Alternatives

Kevin Kelly, CEO
Emerald Packaging

July 20, 2020
Emerald Packaging at a Glance

Founded in 1963, Emerald Packaging is a manufacturer of flexible packaging products, delivering highly customized long and short run packaging solutions.

**Background:** Family based company, 57 year operating history.

**Annual Sales:** $85 million, with 90% in Fresh Produce.

**Customers:** Mix of large and small regional, national, international customers: Fresh Express, Taylor Farms and Grimmway Farms to name a few.

**Certified California Green Business:**
One of only a few manufacturers to earn the honor
Our Packaging Portfolio

**Standard**
- Using standard/conventional hydrocarbon-based packaging materials
- Manufactured in our facility using sustainable practices and advanced technology
- Focus on right sizing packaging, down gauging films
- Application formats: Rollstock, Bags, SUPs

**Recyclable**
- 100% recyclable, surface and reverse printed polyethylene SUPs
- Substitutes for a PET/PE laminated structure
- Application formats: Rollstock, SUPs
- Post Consumer Recycled (PCR) Resin

**Renewable**
- Use of resin from a renewable, bio-based source such as corn starch, potato starch, sugar cane and/or other cellulose-based bio-films
- Application formats: Rollstock, SUPs

**Compostable**
- Using certified compostable films and materials (including adhesives)
- Accordance with ASTM D6400 standards of compostability
- Application formats: Rollstock, SUPs

**Sustainable Printing Alternative:**
- Short Runs
- Variable data
- Eliminates the use of printing plates
- Environmentally friendly inks
Industry Wide Challenges

- Recycling systems
- End-users unwilling to pay 2x for compostable films
- PCR resin scarce
- False claims around Compostability/adhesives and Bio-Resins
- Many films can’t be effectively recycled
Influencing Packaging Legislation

Food Waste is responsible for 6% of global greenhouse gas emissions, and yet there is a call to ban packaging that extends shelf-life.

Working to reshape legislation requiring single use packaging to be recycled by 2030

- **Helping to write the amendments** for the produce industry that would grant Field-Pack Produce and Salad Packaging exemptions from proposed California SB-54 anti-plastics bill.

- **Lobbying to increase funding** to upgrade recycling systems. We’re one of the few packaging manufactures to join the Association of Plastics Recyclers.

- **Working with state and local agencies** to create laws to reduce plastic litter.
Select solutions that meet the Circular Economy criteria. So far, only recyclable product do.

- Work with us to create your Recyclable Packaging. Recyclable is the most scalable solution into the future.

- Rely on our expertise to achieve Source Reduction by designing and manufacturing materials that reduce the mass, volume and toxicity of products throughout your product’s life cycle. (e.g. lidding, in clamshells or resizing a package.)

- Innovate using Intelligent Packages, which help provide real-time ‘use- by- date’ expiry data along with temperature change notifications, thus preventing food spoilage.

- Get involved. We’re writing the amendments to carve out more time for produce packaging. Join this effort.

- Advocate for and help underwrite recycling system upgrades by accepting a bag fee of $1 per m bags. Join APR.
The sustainable plastic packaging landscape is changing quickly.

Let us help guide you in your transition to more sustainable packaging for your brand.

sales@empack.com
www.empack.com
SUSTAINABLE PACKAGING
GIRÓ NET PACKAGES
The most sustainable on the supermarket

**GRAMS OF PACKAGING VS 1KG OF CONTENT**

- **PET Bottle**: 23 to 35gr
- **Beverage Can**: 36 to 45gr
- **Tetrapack**: 36 to 55gr
- **Chips / Snacks**: 35 to 75gr
- **Yogurt**: 39 to 78gr
- **Cosmetics**: 100 to 110gr
- **Beer / Wine bottle**: 350 to 800gr
- **Net Bag**: 1.8 to 10gr
- **Pouch Bag**: 9 to 15gr

**Giró net bags are the most efficient and sustainable packaging solution**

This chart shows the weight of different types of packaging needed to contain 1 kg of product. In each type, the usual range of values is indicated, taking into account that the packaging size and possible variants can significantly affect the weight of the pack to contain 1 kg of product.
EcoGiró is the brand through which Giró expresses its commitment to the environment and sustainable development.

**How?**

- 100% recyclable packages
- 100% compostable packages
GIRO’s 100% recyclable packages allow us to:

**OPTIMIZE** the amount of plastic used in each package; reducing the environmental impact.

**RECYCLE** the package once used to transform them back into raw materials; promoting a circular economy.
GIRO’s 100% compostable packages allow us to transform these materials into organic matter (compost) once used, thus promoting the circular model.
Jennifer Doxey
M: 559.474.5694
E: jdoxey@giropack.com
www.giropack.com
Creating a world that never uses trees to make paper and packaging

Sugar Sheet Paper & CanePak Paperboard Packaging
Supporting the environmental stewardship of many of Canada's leading organizations

Government of Canada
Gouvernement du Canada

Oppy
Expect the world from us

London Drugs

UBC
The University of British Columbia
Sugar Sheet Paper & CanePak Packaging versus traditional paper

- Did you know that everyday in North America 3 million trees are cut down to make paper and packaging. That’s approx. 1.1 billion trees per year for paper and packaging.

- Trees are vital to absorb carbon dioxide and other gases, replenish the atmosphere with oxygen and are a vital part of a surrounding eco-eco-system supporting wildlife and plant bio-diversity.

- An acre of trees produces enough oxygen for 18 people each day. An acre of trees absorbs enough CO2 over a year to equal the amount produced driving a car 26,000 miles.

- Sugar Sheet Paper and CanePak Paperboard are tree free and produced using 100% agricultural fibre.

- Sugar Sheet Paper and CanePak Paperboard look feel and perform to the same quality standards as wood fibre paper and packaging.

- Sugar Sheet Paper and CanePak Paperboard are fully recyclable and compostable and help to advance a circular economy.

- Sugar Sheet Paper and CanePak Paperboard measurably reduce green house gas emissions and minimize deforestation.
Sugar Sheet Paper and CanePak Paperboard support the growing demand for sustainable packaging solutions

- Sugar Sheet Paper and CanePak Paperboard provide the value of sustainability without sacrificing paper & packaging quality, performance or paying a premium

- Food and product packaging, take-out containers, and boxes with or without grease resistant coatings, coffee bags, java jackets, cake and pastry boxes, tray-liners and a wide variety of custom bag solutions

- Sugar Sheet Paper and CanePak Paperboard will work with your existing packaging converter to ensure minimal change and disruption to your existing supply chain

- Sugar Sheet Paper and CanePak Paperboard help companies leverage the value of sustainability to support key business functions, brand awareness, customer engagement and revenue growth
Sugar Sheet Paper and CanePak Paperboard

- Head office located Vancouver, British Columbia, Canada
- Tree-Free Sugar Sheet Paper launched in 2015
- Tree Free CanePak Paperboard launched in 2018
- Awarded Canada Clean50 Award for Emerging Sustainability Leadership
- CanePak Paperboard & Sugar Sheet Paper are ISO 9001, 14001 & 18001 Certified, ensuring global compliance and standards for quality, environmental healthy & safety protocols and fair employment practices
- 2016 & 2018 Life Cycle Assessments conducted on CanePak Paperboard & Sugar Sheet Paper conducted by TruCost www.trucost.com

Contact us to discuss your sustainable packaging or paper requirements
email: minto@socialprint.com Phone: 604 783 9942
www.socialprint.com
ReadyCycle®
sustainable packaging and alternative to single use plastic

No Wax, No Labels, No Plastic

100% Recyclable

Full branding real estate to tell your story
Thank you!

Sara Lozano
Manager of Marketing + Product Development

s.lozano@sambrailo.com

@sambrailopackaging
@readycycle

Instagram Facebook LinkedIn

Sambrailo Packaging
We have Invented a New Sustainable Packaging Solution “Uniqcor” to Replace Waxed Cartons, Styrofoam and Plastic Boxes

We are disrupting the market with innovative packaging that is Better, Stronger and Greener

Our Journey to Date

UNIQCOR
We created an Innovative Paperless Corrugated Board with many Advantages over Conventional Wax Coated Cardboard, Styrofoam and other Paper and Plastic packaging due to its:

- Sustainability – 100% recyclable and reusable
- Merchandising Capability – magazine print quality
- 100% Waterproof, washable, sanitizable
- Logistics efficiency increases – up to 50% versus polystyrene in some scenarios
- Quality and Integrity in Cold Chain environments, superior load tolerance and strength
- Improved ROI through Reuse capability
Our Innovation is helping reduce and solve some global environmental problems through:

Reusability and 100% Recyclability in a Circular Economy model. Collection sites in Brisbane, Sydney, Melbourne and more coming online

Up to 70% Lower Carbon Footprint in the Manufacturing and Recycling Process versus alternative incumbent technologies

Uniqcor production uses zero water resources and much less energy in comparison to alternatives
Net climate change impact of Uniqcor® in comparison to Polystyrene, waxed cardboard, Corflute and cardboard; cradle to grave, per 100L*

*The comparison whitepaper was prepared by Dr Helen Lewis from Helen Lewis Research. It incorporates the results of a Life Cycle Assessment (LCA) undertaken for Uniqcor® by Tim Grant from Life Cycle Strategies.
Our Target is to Solve this Massive Global Environmental Disaster, one box at a time

The goal of our innovation is to Replace non-recyclable or difficult to recycle Waxed Cardboard, Styrene that inevitably end up in landfill, rivers or oceans.

In Australia alone:

- **Polystyrene** 180,000 tons (360,000 cubic meters in 2015) is sent to landfill in Australia every year (or worse – end up in our rivers and oceans).

- **Waxed Cardboard** is non-recyclable – over 500,000 tons (2015) are sent to landfill in Australia every year.

- **Plastic or Poly Lined Cardboard** is only recyclable in certain areas of Australia – Thousands of tons are sent to landfill in Australia every year but currently are not captured in waste sites.
Closed Loop Recycling – Started and gaining Momentum

We have designed corner angles that hang on pallets and are 100% waterproof and get stronger in a cold supply chain. Our aim is develop manufacturing of corner angles initially in Australia from majority recycled material.
Pallet solutions, bulk bins, logistics efficiency, cold chain strength is performing very well.
PRODUCE RANGE - The biggest challenge for environmentally friendly solutions is to provide a product that is as good or better compared with what's currently available and at the same time to price competitive or even provides an economic saving.
SEAFOOD RANGE — We can produce leakproof boxes that can hold ice, water and
keeping the seafood fresh for up to 5 days.

mooloolaba fish market
Finest Quality Seafood
www.mooloolabafshmarket.com.au
(ORDERS) Tel: 07 5441 4700 | Fax: 07 5442 4699
Email: distributions@mooloolabafish.com.au

NEW ZEALAND Fresh Mussels

NEW ZEALAND
Thank you for the opportunity

Email: nathan.hall@disruptivepackaging.com.au

Phone: +61 488 220 513
Sustainable Packaging solutions
BAMA Packaging is owned by the BAMA Group, Norway's leading marketeer of fruits, vegetables and flowers.

BAMA Packaging was established in 2018 as a competence and resource hub to develop and implement new sustainable packaging solutions across product categories and in collaboration with our approximately 200 suppliers from around the world. The main focus was to find solutions that reduce the use of single-use-plastics, replace with documented sustainability solutions and improve the solutions with more efficient packaging and handling throughout the value chain.
NEW SHAKER FOR BERRIES

- New fiber based shaker for berries - in various formats and sizes
- Can be recycled as paper in Norway
- Optimization for better and more efficient transport/logistics
- Improved shelf life for the products

FACTS ON EFFECTS

<table>
<thead>
<tr>
<th>Effect</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plastic</td>
<td>$308,000$ kg.*</td>
</tr>
<tr>
<td>Footprint</td>
<td>$-48.2%$</td>
</tr>
<tr>
<td>Increased capacity</td>
<td>$+58.2%$*</td>
</tr>
</tbody>
</table>

* On an annual volume
Construction available in different sizes and adapted for different products
NEW PACKAGING FOR GRAPES

- Pure, strong and sustainable fiber sourced from Nordic forests
- Designed for optimal ventilation for increased quality and shelf life
- Recycled as paper in Norway
- Manual and automatic versions available

**FACTS ON EFFECTS**

<table>
<thead>
<tr>
<th>Description</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plastic</td>
<td>402 tonns.*</td>
</tr>
<tr>
<td>Footprint</td>
<td>6.8 %</td>
</tr>
</tbody>
</table>

* On an annual volume
NEW ‘FLOW-FREE’ PACKAGING SOLUTION

- 100% plastic-free solution
- Automatic high-speed packaging
- The lid is automatically tightened individually according to the size of the contents each packaging.
- Easy open / close mechanism
- Large surfaces for communication and ensures good in-store exposure

FACTS ON EFFECTS

<table>
<thead>
<tr>
<th>Effect</th>
<th>Percentage Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plastic</td>
<td>33% reduction</td>
</tr>
<tr>
<td>Footprint</td>
<td>18% reduction</td>
</tr>
<tr>
<td>Increased capacity</td>
<td>+20%*</td>
</tr>
</tbody>
</table>

* On an annual volume

Patent pending
The solution and concept can easily be adapted for different sizes, formats and types of products. Available in both solution for fully manual packing and automatic packing. Machine available for high speed packing.
HELE EMBALLASJEN SKAL KASTES I PAPP/PAPIR.
Thank You