Produce Identification, Barcoding and Traceability
Antitrust Caution

GS1 US is committed to complying fully with antitrust laws.

We ask and expect everyone to refrain from discussing prices, margins, discounts, suppliers, the timing of price changes, marketing or product plans, or other competitively sensitive topics.

If anyone has concerns about the propriety of a discussion, please inform a GS1 US® representative as soon as possible.

Please remember to make your own business decisions and that all GS1 Standards are voluntary and not mandatory.

Please review the complete GS1 US antitrust policy at: www.gs1us.org/gs1-us-antitrust-compliance-policy
Presenters

Dr. Jennifer McEntire  
Vice President, Food Safety & Technology  
United Fresh Produce Association  
USA

Ed Treacy  
Vice President, Supply Chain Efficiencies  
Produce Marketing Association  
USA

Jane Proctor  
Vice President, Policy & Issue Management  
Canadian Produce Marketing Association (CPMA)  
Canada

Liz Sertl  
Director, Community Engagement  
GS1 US  
USA
Agenda

- Introduction – Why a Webinar about Barcodes?
  - Relationship with Traceability
- Why You Need a Global Trade Item Number™ or GTIN®
- Barcode Benefits, Uses and Differences
- How to Get Started with The Produce Traceability Initiative
- Additional Resources
Why a Webinar About Barcodes?

- So many kinds
- Different types of information in each
- Different uses and applications
Relationship with Traceability

- Barcodes are one way to communicate information to trading partners
- Barcodes can carry traceability information

Trust starts and grows with visibility.
The only way businesses big or small can move forward is to work together.

They need to be able to understand each other, anywhere in the world.

Business requires a common language, and barcodes are just the beginning...
Why You Need a Global Trade Item Number™?
GS1 Standards in Produce
Identify: The Foundation

GS1 Company Prefix

- Issued to the company (could be U.P.C. Company Prefix)
- Used to create globally unique identification numbers for:
  - Products (GTIN®)
  - Inner Packs, Cases, and Pallets (GTIN)
  - Locations (GLN)
  - Assets (GRAI, GIAI)
GS1 Identification Numbers

GS1 Standards begin with **GS1 Identification Numbers** used to uniquely distinguish all products (trade items), logistics units, locations, assets, and relationships across the supply chain from manufacturer to consumer.

<table>
<thead>
<tr>
<th>Company</th>
<th>Location</th>
<th>Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global GS1 Company Prefix</td>
<td>GLN  Global Location Number</td>
<td>GIAI  Global Individual Asset Identifier</td>
</tr>
<tr>
<td>GLN  Global Location Number</td>
<td></td>
<td>GRAI  Global Returnable Asset Identifier</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Product</th>
<th>Logistics</th>
<th>Services and Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>GTIN® Global Trade Item Number®</td>
<td>SSCC  Serial Shipping Container Code</td>
<td>GSRN  Global Service Relation Number</td>
</tr>
<tr>
<td>EPC®/SGTIN  Serialized Global Trade Item Number</td>
<td>GSIN  Global Shipment Identification Number</td>
<td>GDTI  Global Document Type Identifier</td>
</tr>
</tbody>
</table>
Capture: GS1 Barcodes (Data Carriers)

GS1 Data Carriers are capable of holding varying amounts of data to accommodate different needs such as Batch/Lot information and expiration dates.
Interoperability, made possible by identification standards, data capture standards, and **data exchange standards**, allows product information to flow through the supply chain.

<table>
<thead>
<tr>
<th>Product Master Data</th>
<th>Transactional Data</th>
<th>Physical Event Data</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GDSN</strong> Global Data Synchronization Network™</td>
<td><strong>EDI</strong> Electronic Data Interchange</td>
<td><strong>EPCIS</strong> Electronic Product Code Information Services</td>
</tr>
<tr>
<td>The GDSN connects trading partners to the GS1 Global Registry via GS1-certified data pools, enabling the immediate electronic sharing of standardized, up-to-date, accurate information.</td>
<td>EDI enables the computer-to-computer exchange of structured information between companies using a standardized format.</td>
<td>EPCIS is the standard for sharing information about the movement and status of goods in the physical world.</td>
</tr>
</tbody>
</table>

**What Goes Into It**
- GTINs
- Brand Owner Identification
- Product Descriptions
- Product Classification

**What Goes Into It**
- GTINs
- GLNs
- SSCCs

**EDI Document Types**
- Purchase Order
- Advance Ship Notice
- Invoice
- Payment

**What Goes Into It**
- What: GTIN
- Where: GLN
- When: Date and Time Stamp
- Why: Business Step and Product Disposition
GS1 Standards – Global Language of Business

Identify: GS1 Identification Numbers

- **GLN** Global Location Number
- **GTIN** Global Trade Item Number
- **SSCC** Serial Shipping Container Code

Capture: GS1 Data Carriers

- **Barcodes**
  - EAN®/UPC
  - GS1 DataBar® Stacked Omnidirectional
  - GS1 DataMatrix
  - ITF-14
  - GS1-128

Share: GS1 Data Exchange

- **Product Master Data** Global Data Synchronization Network™ (GDSN™)
- **Transactional Data** Electronic Data Interchange (EDI)
- **Physical Event Data** EPC Information Services (EPCIS)

Interoperability

- Product Data
- Price and Promotion Data
- Purchase Order
- Planning Schedule
- Advance Ship Notice
- Invoice
- Product Visibility
What is a GTIN®?
1 Product = 1 GTIN

Generic U.P.C.  
Brand Owner-Specific U.P.C.
Barcodes: Benefits, Uses and Differences
UPC-A / GTIN-12

Data Carrier
(UPC-A Barcode)

Data Structure
(GTIN-12)
EAN / GTIN-13

- Encodes only the Global Trade Item Number™ (GTIN®)
  - GTIN-12, GTIN-13, or GTIN-8
- Point-of-Sale (POS) scanning
  - POS scanners are optimized for EAN/UPC
- Omni-directionally readable
- Enables fast and accurate tracking of retail consumer trade items in the supply chain
GS1 DataBar
## GS1 DataBar

### Retail Point-of-Sale Applications (2014)

<table>
<thead>
<tr>
<th>GS1 DataBar Omnidirectional</th>
<th>GS1 DataBar Stacked Omnidirectional</th>
<th>GS1 DataBar Expanded</th>
<th>GS1 DataBar Expanded Stacked</th>
</tr>
</thead>
<tbody>
<tr>
<td>GTIN only</td>
<td>GTIN only</td>
<td>GTIN + other data (using AIs)</td>
<td>GTIN + other data (using AIs)</td>
</tr>
</tbody>
</table>

### Non-Retail Point-of-Sale Applications

<table>
<thead>
<tr>
<th>GS1 DataBar Limited</th>
<th>GS1 DataBar Truncated</th>
<th>GS1 DataBar Stacked</th>
</tr>
</thead>
<tbody>
<tr>
<td>GTIN only</td>
<td>GTIN only</td>
<td>GTIN only</td>
</tr>
</tbody>
</table>
GS1-128 Barcode - Foundation for Visibility

When using a GS1-128 barcode, Application Identifiers (AIs) are encoded for scanning purposes. AIs are flags that precede each piece of data in a barcode to identify its meaning and format.

GS1-128 provides the ability to string together additional fields of information:

(01) precedes a GTIN (14522144000003)
(13) precedes Packaging Date (YYMMDD) (190111)
(10) precedes Batch/Lot Number (ABC123)
How to Get Started with the Produce Traceability Initiative (PTI)
The PTI vision:
Supply chain-wide adoption of electronic traceability

Start Here for PTI Success
The Produce Traceability Initiative (PTI) outlines 7 milestones to implementing case-level electronic traceability in the produce industry. On this website you will find the tools and resources you need to implement PTI requirements within your company. If you’re just getting started with PTI implementation, check out the GS1 US company prefix pricing information here and take a look at the milestone-specific resources here.

Next Step: PTI Checklists
If you’re already on your way with PTI implementation, here are two checklists to help you facilitate further progress: Checklist for growers/packers/shippers and Checklist for receivers/buyers.

Join the PTI Buyer Working Group!
To address the remaining implementation challenges for the PTI, the Leadership Council is calling on all buyers supporting the initiative to join the newly forming PTI Buyer Working Group. Learn more here.

PTI Webinar: Produce Identification, Barcoding and Traceability
Do you know which barcode is the right one for your products? Join us on September 26 at 2PM ET to get the answers from industry leaders who have been spearheading the PTI.

Ocean Mist Farms Implements PTI Best Practices
Learn about Ocean Mist Farms’s implementation of PTI best practices, and what benefits the business has realized from this work. Click here.
Resources & Tools

In an effort to implement the Produce Traceability Initiative as outlined in the Action Plan, the following Resources & Tools are available to provide comprehensive background information on each of the steps and best practices to assist the industry in accomplishing the milestones.

Making the Case for PTI
Best Practices
Guides
Calculators, Checklists & Scorecards
Case Studies & Pilot Test Findings
Data Synchronization

E-Learning Module

E-learning modules: Product Identification and Traceability in the Fresh Produce Industry

English: Product Identification, Traceability
French: L'identification, La traçabilité

Webcasts

Implementing PTI: Best Practices for Produce Brokers
Recorded on: April 5, 2012

Implementing PTI: Best Practices for Repacking and Commingling
Recorded on: March 27, 2012

Implementing PTI: Best Practices for Hybrid Pallet Labeling
Recorded on: November 1, 2011

Implementing PTI: Best Practices for Retailers
Recorded on: October 6, 2011

Implementing PTI: Best Practices for Case Labeling
Recorded on: September 20, 2011

Making the Case for PTI

Traceability Frequently Asked Questions

SPANISH - Preguntas Más Frecuentes Sobre Trazabilidad de Frutas y Vegetales Frescos

7 Milestones to PTI Implementation

“About the PTI” Flyer (September 2011)

PTI Traceability Frequently Asked Questions

Produce Traceability Initiative versus DataBar

Produce Traceability Initiative eLearning Course

Flash plug-in required for viewing. Disponible en español.

PTI Industry Presentation Made at Hunts Point Produce Terminal Annual Meeting

PTI Industry Presentation Made at Premier Apple Marketing Cooperative Annual Forum
Best Practices

The following documents were created to assist the industry in voluntary implementation of the PTI and may not reflect all business or regulatory requirements in the marketplace. Users are reminded to ensure that your organization is familiar with all requirements in your target market(s).

Best Practices for Formatting Case Labels (June 2019)

SPANISH - Ocean Mist Farms Implements PTI Best Practices

Learn about Ocean Mist Farm’s implementation of Produce Traceability Initiative (PTI) best practices, and what benefits the business has realized from this work.

Best Practice for Use of Hybrid Pallet Labels by Receivers (October 2014)

Best Practices for Formatting Hybrid Pallets Labels (October 2014)

Best Practices for Private Label/Brand (September 2016)

Best Practices for Repacking/Commingling (March 2012)

Best Practice for Produce Brokers (March 2012)

Best Practices for Direct Print (February 2012)

Best Practices for Preparing to Assign GTINs (January 2012)

SPANISH - Best Practices for Preparing to Assign GTINs (January 2012)

Best Practices for Product Substitutions (January 2012)

Best Practices for Cross Docking (December 2011)

SPANISH - Best Practices for Cross Docking (December 2011)

Implementing PTI: Best Practices for Packer/Shippers

Recorded on: September 7, 2011

PTI’s 5 Ws (and 1 H): Who, What, When, Where, Why and How

Recorded on: August 29, 2011
Guides

Guidance for Sharing Traceback Data (September 2015)

Guidance for GLN Assignment (September 2015)

Fruit and Vegetable GTIN Assignment Implementation Guideline (January 2014)

This guide issued by GS1 provides guidance on how to assign a Global Trade Item Number (GTIN) and when to assign a new GTIN.

Guidance on Benefits of Advance Ship Notice versus Hybrid Pallet Labels (November 2013)

Why and How to Use EDI 856 Advance Ship Notice/Manifest Transaction (October 2012)

Guidance on Choosing a Technology Provider (February 2012)

GS1 Global Fruit & Vegetable Traceability Implementation Guide (May 2010)

This guide documents best practices for implementing traceability in the fresh produce industry and is intended for those responsible for implementing traceability in their company's operations across the entire produce supply chain. It updates and replaces the CPMA/PMA Fresh Produce Traceability Guide to Implementation v2 (October 2006).
Data Synchronization

Best Practices Data Synchronization (March 2012)

Data Synchronization: Grade Codes (February 2012)

Data Synchronization: Commodity and Variant Codes (February 2012)

Data Synchronization: Growing Method Codes (February 2012)

Data Synchronization: Units of Measure Codes (February 2012)

Data Synchronization: Package Type Codes (February 2012)

Data Synchronization: Country of Origin Codes (February 2012)

Data Synchronization: Worksheet Example (February 2012)

Data Synchronization Template (February 2012)
Calculators, Checklists & Scorecards

PTI Online Scorecard

Scorecard PDF Form

Receivers/Buyers PTI Scorecard Report (August 2015)

Growers/Packers/Shippers PTI Scorecard Report (August 2015)

PTI Checklist for Receivers/Buyers (April 2012)

PTI Checklist for Growers/Packers/Shippers (April 2012)

Voice Pick Code Calculator (Source: HarvestMark)

This tool will calculate four-digit voice pick codes for PTI-compliant case labels.

GTIN Check Digit Calculator (Source: GS1 US)

Note this link will redirect you to the GS1 US website; use the check digit calculator for the PTI-compliant 14-digit GTIN.
PTI - 7 Milestones

1. Obtain Company Prefix
2. Assign GTINs
3. Provide GTIN information to Buyers
4. Show human readable information on cases
5. Encode information in a barcode
6. Read and store information on inbound cases
7. Read and store information on outbound cases

www.producetraceability.org
The Produce Identification e-learning module will help you understand produce identification in the supply chain using barcodes and identification numbers.

Visit the ProduceTraceability.org/resources to learn more.
Industry & GS1 Global Guidance

The global fresh fruit & vegetable industry has a long history of collaboration with GS1 and have developed the following guidance documents to help industry in their efforts.

- Fruit & Vegetable GDSN Trade Item Implementation Guideline
- GS1 Fresh Fruit & Vegetable Labelling Consumer Units Guideline
- Fruit and Vegetable Master Data Attribute Implementation Guide
- Fruit and Vegetable GTIN Assignment Implementation Guideline

Fresh Foods Implementation Guidelines
Thank you from
the Produce Traceability Initiative

Liz Sertl
Director, Community Engagement
GS1 US
300 Charles Ewing Boulevard
Ewing, NJ 08628 USA
Tel: +1 609.620.4608
Email: esertl@gs1us.org

Jane Proctor
Vice President, Policy & Issue Management
Canadian Produce Marketing Association (CPMA)
162 Cleopatra Drive
Ottawa, Ontario, K2G 5X2 Canada
Tel: 613-226-4187 ext 212
Email: jproctor@cpma.ca

Dr. Jennifer McEntire
Vice President, Food Safety & Technology
United Fresh Produce Association
1901 Pennsylvania Ave., NW, Suite 1100
Washington, D.C. 20006 USA
Tel: 202-303-3419
Email: jmcentire@unitedfresh.org

Ed Treacy
Vice President, Supply Chain Efficiencies
Produce Marketing Association
1500 Casho Mill Road
Newark, DE 19711 USA
Tel: 302-738-7100Call: 302-738-7100 ext. 3018
E-mail: etreacy@pma.com

CPMA GS1 US pma United Fresh Produce Association