

Farm to Retail Produce Traceability Pilot


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Fresh Produce Safety - Farm to Fork
A Program of NC Cooperative Extension



North Carolina
Tobacco Trust Fund Commission








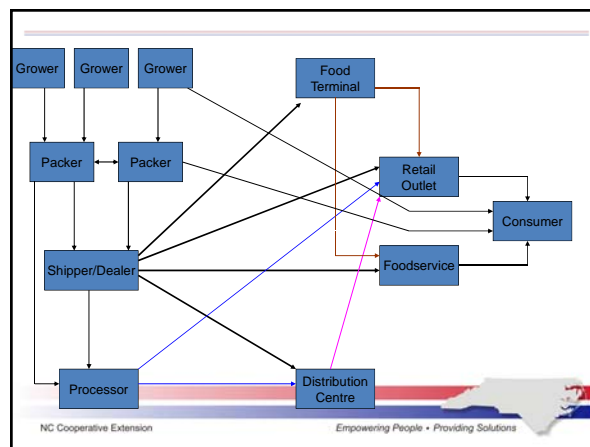
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Cilantro/Salmonella recall July 20, 2009

- Company recalled fresh cilantro as investigators tried to figure out who bought the potentially salmonella-tainted salsa staple.
- Just where the **104** 15-pound crates of cilantro ended up remains unclear



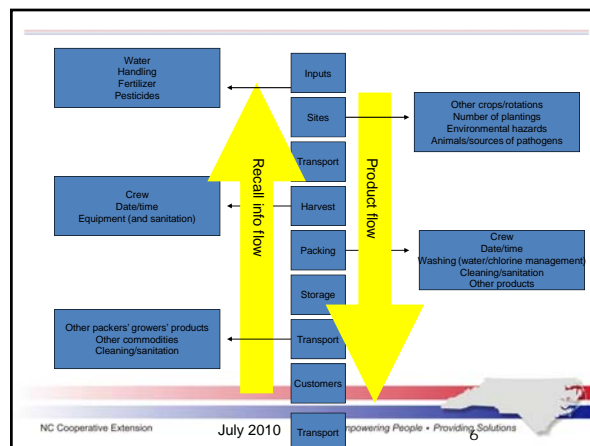
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Objectives

- Baseline of implementation of traceability systems
- Readiness for recall
 - Is it possible to find where a specific product came from or went?
- Recommendations for support

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North Carolina producer study

- Two methods
 - Survey of 63 grower packer shippers
 - On-site evaluation of 11 systems
- Multiple systems employed
 - Objective is most important
 - Recall, and traceforward

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Survey results

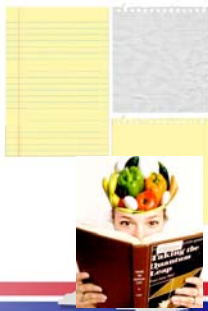
- 68 % of the respondents had some sort of a traceability program in place
- What does a traceability system mean?
 - 59 % use lot codes to label their product
 - 35 % label the shipment
 - 30 % percent label pallets/bins
 - 59% label cases
 - Date of receipt, date of sale, date of shipment

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Data collection systems

- 46 % paper based system
- 41 % both on paper and electronically
- <3 % storing information only electronically
- 11 % relying on their memory for information storage



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Recall efficiency

- Of those (85%) who said they could conduct a recall
- Almost 20% said that it would take more than a day to find the correct documents to point to the products channels/location (not correlated to size)

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On-site visit results

- Date and location of harvest becomes the biggest differentiator
- Depending on product, can be linked to
 - Pallet/bin (bin tag -- sometimes generated by hand)
 - Box/case/flat (stamp/sticker)
 - Clamshell (handwritten)



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Most complicated system


- Three commodities
- One farm site (two pack buildings and a retail stand)
- 9 different locations for data on one item



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Where it breaks down



- Co-mingling
- Cash sales?
- If/how information is stored up-stream
 - Food service
- Electronic data collection
 - Capacity
- Different systems employed by growers shipping through same dealer/wholesaler

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Pilot Objectives

- Develop guidance for North Carolina growers, packers and shippers on how to implement PTI compliant traceability efficiently and effectively based on three size appropriate templates.
- Secondly, the pilot was a vehicle for evaluating existing internal traceability systems, identifying best practices and better understanding the costs of implementing PTI compliant external traceability.
- Third, connect retailers and growers to facilitate whole chain traceability.

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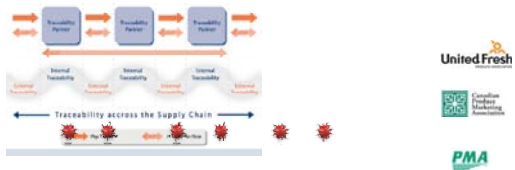
Pilot Scope

- The scope of the pilot included the analysis of the existing traceability systems of three North Carolina produce organizations, discussing their plans to address the Produce Traceability Initiative (PTI).
 - Eastern Carolina Organics, Pittsboro, N.C.
 - Jackson Farming Co., Autryville, N.C.
 - L&M Produce, Raleigh, N.C.
- YouTube:<http://www.youtube.com/watch?v=UA1MaCMJmpc>

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Whole Chain Traceability

The PTI vision: **THE PRODUCE TRACEABILITY INITIATIVE**
 “Supply chain-wide adoption of electronic traceability for every case of produce by the year 2012.”



Source: www.produce-traceability.org

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Pilot Overview

Pilot Scope	Participants	Participant Characteristics
Prefix	Jackson Farming	Moderate size grower/packer/shipper who sells to retail direct
GTIN	Eastern Carolina Organics	Small, organic grower owned distribution company
Sync to Retail	L&M Produce	Large marketing organization who sells their own product and markets other growers to food service and retail direct
Move Out		
Move In (optional)		
Grower Reporting		
Retailer Reporting		


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Participants

Jackson Farming Co.	Eastern Carolina Organics	L&M Produce
<ul style="list-style-type: none"> • Moderate size grower/packer/shipper who sells to retail direct 	<ul style="list-style-type: none"> • Small, organic grower owned distribution company 	<ul style="list-style-type: none"> • Large marketing organization who sells their own product and markets other growers to food service and retail direct

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Moderate-size Pack Cantaloupe Flow



<p>Harvest Harvest truck delivers cantaloupe to packing shed from nearby field.</p>	<p>Wash Product is washed in line at shed.</p>	<p>Item label Each product is labeled with a combo PLU/DataBar label.</p>	<p>Grade, Pack, Case Label Product is sorted into bins which are labeled with a case label.</p>
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Best Practice: Each movement is recorded within the warehouse. Best Practice: Each WO uses only 1 PO so they are not commingled.

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Moderate-size Challenges of Traceability

- Cleaning and grading in the packing shed means that a single case will contain product from several fields.
 - In reality, potential for cross contamination in the case and in the cleaning and packing operation means that it is hard to tell which field is the actual source until all fields are tested from that day's pack.
- In-field cleaning and packaging means that labels need to be printed in the field or they must be printed ahead of time.
- Cases are the size of pallets, so should they be double labeled with an SSCC code as well?
- Whole chain challenge: Linkage from internal traceability (Famous) to external traceability systems and internal traceability systems of the Retailer.

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Moderate-size Challenges of Traceability

- There are concerns of data privacy in the case of rework/returns and reshipments. Sometimes outbound shipments do not end up at the original destination.
- GLNs are not currently shared between retailer, wholesalers, distributors and growers, so movement records are one sided. Not clear in PTI how to do this.
- Retailers are not currently able to receive ASNs, Scan SSCCs or GTIN+Lot Code into their warehouse management systems or at their stores. Therefore, there is not downstream usage of the data or verification that the data is properly formatted.

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Notable Practices

- ❖ PTI Case labels are encoded with location and lot.
- ❖ Lot number is the Julian date, so the harvest date can be determined from the lot.
- ❖ Link field to the harvest crew to the packing shed to the GTIN + Lot.
- ❖ Use industry standard GS1 DataBar for item level barcodes.
- ❖ Ability to link field packed items to geographical coordinates for in-field printed labels.
- ❖ Link harvest crew to field to item or lot code.

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Large Marketing Organization Overview



<p>Inbound Grower sends product to LMM processing center. Shipping document references LMM purchase order (PO). Inspection is performed upon receipt. Lot # = PO#</p>	<p>Warehouse A label is printed for each pallet with a serial number and the PO number. The serial number is barcoded on the label. This is used to track all movements through the warehouse.</p>	<p>Repack A Work Order (WO) is generated either based on a Sales Order or a forecast. The WO lists the production area which pallets to use, where they are located and how to pack them. Lot # = WO #</p>	<p>Bag For bags that are first filled LMM has the capability to print the WO# (Lot#) on the kink lock. During the packing and bagging process, finished good inventory is shown as "estimated".</p>	<p>Outbound When each pallet is completed, the serialized pallet tag is scanned into finished goods inventory and is ready to ship. Inventory is move from "estimated" to "available". Shipment to customer is built from using pallet tag #s.</p>
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Large Challenges of Traceability

- One size does NOT fit all for traceability
- Retailers often reuse display packaging from other vendors
- Item level UPC does not track to case and GTIN
- Internal system does not connect to external whole chain systems
- Replacing internal system for a new system to meet PTI
- Traceability level is not consistent across all commodities
- Potatoes are uniquely tough because of extended shelf life and number of resellers that handle them
- Potential food safety issues abound with potatoes because of postharvest treatment in storage sheds and handling. Tubers can be exposed to bacteria, pests, metal, broken glass from warehouse lights, postharvest pesticides, cleaning chemicals and cross contamination from other stored items.

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Notable Practices

- ❖ Material movement recording in warehouse and during repack operation is excellent for tracking and recalling product that was contaminated in the warehouse or during repacking.
- ❖ Inbound product is rigorously inspected before it is accepted.
- ❖ Real-time view of product quantity and location is great for customer service and warehouse management.
- ❖ Serialization of each pallet enables granular traceability.
- ❖ Consumer 10-lb. bags are secured with an automated Quik-Lok plastic tab which can be imprinted with the work order or PTI compliant lot number.

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Small co-op

Receiving

Record PO, farm, product, lot and quantity on inbound

Labels

Product is already labeled by growers with ECO labels and packed in cases or bags

Storage

Product is stored in original cases awaiting shipment to customer

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Small Challenges of Traceability

- Don't want to buy a prefix from GS1 due to the cost.
- How to synchronize systems across many small growers, some without label printers?
- How to automate a warehouse if everything is not barcoded on inbound?
- Scanning inbound can damage product through taking off pallet and putting back on. This can be solved with ASN from growers or Pallet tag.

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Notable Practices

- Case labels are encoded with grower and lot in the ECO barcode.
- Electronic data capture and reporting at the case level from Grower/Field to Customer.
- All product is organic, so everything is traceable to the field by the grower.
- Cases are not repacked, so there is little chance of contamination from repacking. Also, this prevents mixing of product between multiple growers.
- Implementing an integration accounting, warehouse management and order processing system to maintain traceability from grower to customer.

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Challenge Summary

- The Produce Traceability Initiative offers clear guidance on how to label cases of produce that can be traced to the last package of product.
- Most grower/packer/shipper, distributor and retailer internal systems today do not support the 14 digit GTIN + Lot Code and do not connect to external traceability systems, although most offer adequate internal traceability.
- Item level traceability is not specified in the PTI, but it should be built around the GS1 DataBar which is readable at retail by laser-based scanners. This is also based on the 14 digit GTIN, but does not currently incorporate Lot Code for produce.
- The cost of acquiring a Prefix discourages adoption.
- The National Organic Protocol requires traceability to the field, but does not currently support the usage of PTI standards.
- There is not a universal list of GLNs that can be used to enable movement transactions.

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These projects received funding from

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