# Getting Started in Food Safety: Day #2

**Northern Fruit and Vegetable Producers**

*Colleen Haskins,*

Food Safety Advisor,

Food Safety Inspections Delivery Branch

Ontario

# Our Plan for Today

1. Recap of Day #1

2. Knowledge check Exercises

3. Urban Agriculture and CSAs

4. Documentation & Traceability

5. Questions, Comments – Open Forum

**Ontario**

# Hazards Vs Risks

Which one(s) is/are considered the Hazard?

1. Peanut Butter

2. Dirty harvest bins

3. *E. coli* O157

4. Broken glass

5. Pooling water

A. 1,3
B. 2,5
C. 3,1, 4
D. 3, 5
E. All are correct

Ontario

# Hazards Vs Risks

Which one(s) is/are considered the Risk?

1. Dirty apron

2. Cardboard harvest boxes

3. Applying raw manure

4. Swimming with a shiver

5. Pooling water

A. 1,3
B. 2,5,4
C. 3,1, 4
D. 3, 5
E. All are correct

Ontario

# What Best Practices Would Address the Risk(s)?

**Operation**: fresh fruit and vegetable production

**Stage of production**: Harvest

**Scenario**: Worker eats a peanut butter and jelly sandwich on break, before returning to work (e.g., harvesting the fresh produce)

**Question**: what practices (GAP/GMP) would mitigate the potential risks of this situation and why?

**Considerations**:

- What is the hazard? (B, C, P)

- What is the risk? (immediate food safety, or could be a risk)

- What type of food is it?

- Who will be eating it?

Ontario

# Assessing Risk (s)  & Understanding GAPs

**Participation Exercises**:

# Food Safety = Risk Mitigation

? Are biological, chemical and physical hazards present in the food production area

? Is there a chance a hazard might contact the food or related food items (e.g. harvest containers, tools, storage area….etc.)

? Does the process control the identified risk

? Is the process being implemented properly

? Does the process need to be changed to improve the effectiveness

? Is there a risk that food or food related items could become contaminated

? *If there is a risk, what is the likelihood that will happen

? Is there an immediate food safety risk or could "X" lead to a food safety risk

✓ Implement best practices/preventative measures to reduce the risk

✓ Prevent the chance of food becoming contaminated and entering our food system

✓ Maintain the integrity of Ontario's food chain

RISK
Management Process

Assess Risk

Control Risk

Review Control

Identify Risk

Ontario

# Eye Spy – Is there a risk?



A. Worker Practices/Hygiene

B. Water

C. Cleaning & Sanitation

D. Pests, Building and Maintenance

E. Soil Amendments/Agricultural Inputs

**Ontario**

# Eye Spy – Is there a risk?



A. Worker Practices/Hygiene

B. Water

C. Cleaning & Sanitation

D. Pests, Building and Maintenance

E. Soil Amendments/Agricultural Inputs

Ontario

# Eye Spy – Is there a risk?



A.  Worker Practices/Hygiene

B. Water

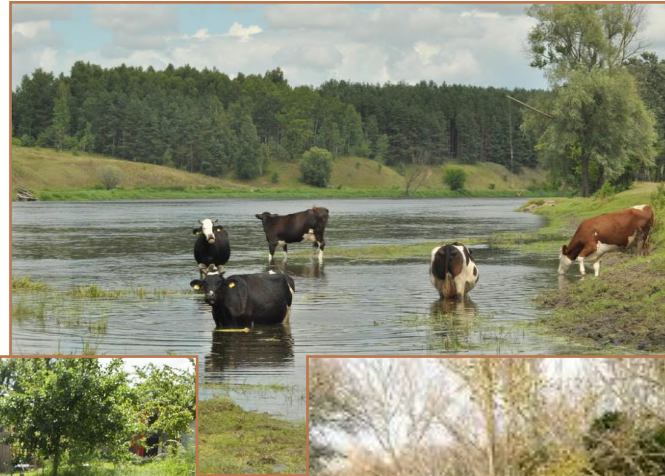C. Cleaning & Sanitation

D. Pests, Building and Maintenance

E. Soil Amendments/Agricultural Inputs

Ontario

# Exercise: Making the Connection

1.


2.


3.


4.


5.


6.

# Assessing the Risk: (1)

Ontario

# Assessing the Risk : (2)

**Ontario**

# Assessing the Risk : (3)

Ontario

# Assessing the Risk : (4)

Ontario

# Assessing the Risk : (5)

Ontario

# Assessing the Risk : (6)

Ontario

# Consider this

Field Harvest







*Did you Know?...*
Bun Bags are required when using horses for harvesting produce in the field.

Ontario

# Urban Agriculture and Community Supported Agriculture (CSA)

# What is "Urban Agriculture"?

(AKA: Urban farming, urban gardening)

- The practice of growing crops, harvesting, processing and distributing the food in and/or around urban areas

- Often a group of individuals or organization that manage the "urban crops"

  - Promotes and increases personal health and economics, increases food access, creates income and jobs

  - Smaller scale food production, a reduction in the use of fossil-fuel consumption and carbon footprint

**Ontario**

# What is "Community Supported Agriculture"?

- Farming operation that is supported by the community financially
  - Often personal and deeper connection for the farm and the community
- Individuals within a community who support a farm operation
  - Typically involves contributing money to support the farm operations
    - Buy shares of the harvest in advance of the production season (e.g. lump sum or installments)
    - Opportunity to assist/support the farm with operational expenses
  - Some operations offer a box program on a regular schedule
  - The "community" and "farmers" share the risks and the benefits of production

Ontario

# Food Safety: CSAs and Urban Agriculture

- Expectations from the consumers are the "same" as retail
  - Safe, healthy, quality food
- CSAs & Urban Agriculture need to follow safe food production and handling guidelines
  - Formal food safety program not required, but mandatory to meet the minimum requirements of the regulation
  - Products are regulated under O. Reg 119/11 : Produce, Honey and Maple
    - Ontario Regulation 119/11
- CSAs, Urban agriculture and farm gate sales are subject to provincial food safety monitoring program (e.g. product available for sale to the public)
  - Produce sample collection to test for microbiological or chemical violations

**Ontario**

# What country consumes the most ice-cream?



You haven't selected at least one right answer.

▲ America | **A**

◆ Sweden | **B**

● Russia | **C**

■ Norway | **D**

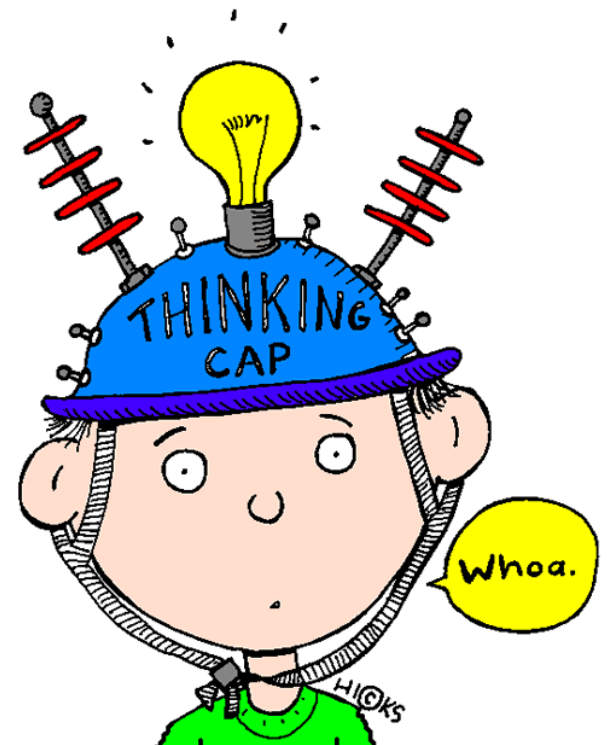Remove

# Value-Added Products

Value –added agriculture or products

- Process of changing or transforming a product from its original state to something of more value
- It can also be utilizing the product/by products in different way (*innovation*)

Can you think of examples?

- Examples:
  - Apples slices,
  - Mini-yogurts/yogurt tubes,
  - Diced frozen fruit/veggies

Ontario

# Examples



Fresh asparagus, expanded production over the years

Looked at new ways to promote asparagus

- The pickled asparagus tends to be the "smaller spears" that my not be destined for fresh

http://kotelesfarms.com/

- Pork farm
  - Only producer in NA that raises pork enriched with DHA/EPA Omega-3 polyunsaturated fatty acids and organic Selenium
    - No antibiotics, no growth promotants
    - Won the Premier's award for Agri-food Excellence - 2011 http://www.willowgrovehill.com/

Ontario

# Documentation

# Documentation

- Identify practices/processes

- Track and confirm your practices

- Use as a training reference and resource

- Identify trends and adjust operations as necessary

- Collect Data/information

- Demonstrates proof of due diligence

Ontario
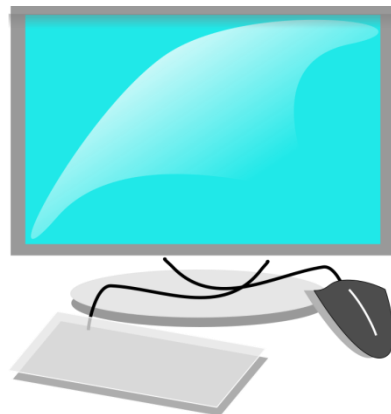
# Examples of Documentation

Medium – Large production and operations

- Standard Operating Procedures (SOPs) (e.g., recipes, cleaning processes)

- Record Templates (e.g.,  Building inspections, pest control device inspection, transportation inspection, etc.)

- Completed Records (e.g., monthly inspection reports, training records, agricultural inputs, irrigations records, harvest records, etc.)

- Shipping & receiving (e.g., Packing slips/ receipts, bills of lading, and Invoices)

- Transportation documentation (e.g., truck ID, container Id, temperature logger).

Ontario

# Standard Operating Procedure (SOP)

- A set of written instructions/steps for carrying out routine operations and established procedures.
  - The details standardize the process and provide step-by-step instructions that enable anyone within an operation to perform a task in a consistent manner

    (CanadaGAP™)

  - E.g., cleaning solution preparation, using a bin washer, cooking recipe.

**Ontario**

# Other Documentation and Record Examples

- Pre-operational inspection

- Harvest container inspection/records

- Harvest equipment inspection

- Harvest records

- Water inspection/treatment

- Receiving inspection

**Ontario**

# Written Practices/Procedures(SOP)– Tip sheet

**Why are they important?**

* To identify duties and tasks that workers are to perform

* To help maintain quality, consistency and safety of food products
  * reduces the likelihood of mistakes that can cause delays, cost money or make people ill
  * ensures that all regulations that may apply are followed

* To provide effective training tools for new workers or refresher training for current workers

* To serve as reference material for operators, management, inspectors

**What should they look like?**

* Written practices should have a similar look

* Include all the required information.

**Tips for writing effective practices:**
•Be concise
•Be practical and test the practices being used
•Use pictures or graphics where possible to clearly demonstrate tasks
•Record the date on every practice to show how current it is
•Identify the author of the practice

Ontario

# Important Information to Include (SOPs)

| SAMPLE A: Worker Policy for Don's Orchards | |
|---|---|
| **Written practice for:** | Worker policy |
| **Who needs to do it:** | Each worker |
| **How often it should be done:** | At time of hire, with refresher training at regular intervals (1x/ yr) |
| **Why you are doing it:** | To reduce the risk of contamination to apples by workers |
| **Tools and equipment used (if applicable):** | None |
| **Step-by-step instructions:** | 1. No workers will bring food, medication or glass containers into the food handling area.<br>2. Workers will refrain from chewing gum, using tobacco products, or spitting in or around the food handling area.<br>3. Workers will not wear jewelry of any kind including necklaces, watches, brooches or rings. Nail polish and false fingernails are also not allowed.<br>4. All workers will wash their hands before entering the food production, handling and storage areas, after lunch and breaks, and after any action that may contaminate their hands.<br>5. All workers will wear a suitable clean uniform at all times in the food handling area. All uniforms and footwear will be properly and cleanly stored when not in use.<br>6. Workers with open cuts and wounds will not work in the food production or handling areas without a secure watertight bandage covering the wound. All injuries occurring during work will be promptly reported.<br>7. Workers known to be suffering from a disease transmissible through food will not enter any food production areas or handle food or packaging. |
| **What records need to be filled out:** | None |

Last updated on: January 15, 2013        By: Farmer Don            Version : 1

Ontario

## Sample: Monitoring Procedure for Chlorinated water for fruit washing tank

| | |
|---|---|
| **Written practice for:** | Maintaining and monitoring tank water for apples |
| **Who needs to do it:** | Workers responsible for task |
| **How often it should be done:** | Initially before using the tank water and several times during the day |
| **Why you are doing it:** | To ensure chlorine levels are sufficient to maintain water quality |
| **Tools and equipment used (if applicable):** | • 12% sodium hypochlorite<br><br>• pH test strip Free chlorine test strips |
| **Step-by-step instructions:** | 1. Fill tank with potable water.<br><br>2. Add 1 L sodium hypochlorite for 1,000 L of water (to create 120 ppm solution) and mix well.<br><br>3. Test for free chlorine:<br><br>    o Initially when you first make up the solution you will have to dilute the sample due to limitations on the free chlorine test strip. Remove 1 mL of chlorinated water and dilute with 9mL distilled water. (Note: a 1:100 dilution may be necessary for the initial testing.)<br><br>    o Using dry hands, dip the chlorine test strip into the water. Compare it to the colour chart and record the free chlorine level.<br><br>4. Test for pH:<br><br>    o Dip a new pH test strip for 1-2 seconds in the dump tank water and then compare it to the colour chart. Record the pH. It should be between 6.0 and 7.5.) If the pH is too high, add acid.<br><br> Throughout the day:<br><br>1. Use tank water that is slightly warmer than the apples.<br><br>2. Test and record the level of free chlorine halfway through the day OR when the product is unusually dirty.<br><br>3. Add sodium hypochlorite as required to maintain a level of at least 25 ppm free chlorine. |
| **What records need to be filled out:** | Water treatment record |

**Ontario** 🪻

# Record Template Example: Water Treatment

## Water Treatment Record

Producer/Farm Name: _____ Year: _____

Location (e.g. building) _____ Equipment (e.g. flume tank, cistern) _____

If poor quality water is used without being treated first, or water quality is not maintained during use, contaminants can be passed to livestock, poultry and food.

**NOTE:** Keep a record of lab water quality test results.

| Date | Time | Treatment Method (List the treatment method, chemical, concentration, amount, etc.) | Monitoring Result (e.g. chlorine level, pH) | Corrective Action(s) (if necessary) | Completed By: (Print name and initial) |
|------|------|------|------|------|------|
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

Ontario

# Example: Nutrient Application record

## NUTRIENT APPLICATION RECORD

Producer/Farm Name: _____

| Application Date | Type of Nutrient | Amount Applied | Weather Conditions | Time to Incorporation | Field Identification, Location, Size | Initials of Applicator |
|---|---|---|---|---|---|---|
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

Last updated on: January 15, 2013        By: Farmer Don        Version : 1

**Ontario**

| Practice Exercise – SOP template | |
|---|---|
| **Written practice for:** | • <br> • |
| **Who needs to do it:** | • |
| **How often it should be done:** | • <br> • |
| **Why you are doing it:** | • <br> • <br> • |
| **Tools and equipment used (if applicable):** | • <br> • <br> • <br> • |
| **Step-by-step instructions:** | • <br> • <br> • <br> • <br> • <br> • <br> • <br> • <br> • <br> • <br> • <br> • <br> • <br> • <br> • <br> • <br> • <br> • |
| **What records need to be filled out:** | |

Last updated on:_____     By:_____     Version: 1

**Ontario**

# Can you think of documentation examples applicable to community or smaller plot gardens?

Ontario

# Exercise: Creating a Record Template

## Harvest Record

| Date | | | | | | | | Initials of person who completed the task |
|------|--|--|--|--|--|--|--|-------------------------------------------|
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Last updated on:_____  By:_____ Version: 1

Ontario

# Data/Information Collection

• Paper-based recording of information
• Filing cabinet and clipboard

## Bar codes
• Electronic capture of information
• Software linkages of information

ISBN 0-918894-28-X

| Manual Info Collection | Semi-Manual Info Collection | Electronic Info Collection |

## RFID technology
• Computer chip containing data
• Electronic capture of information
• Software linkages of information

• Some records kept on paper and entered into the computer
• Linkages and sorting using software system for speed
• Printers, computer networks

**Ontario**

# Take a Break – you deserve it!

Ontario
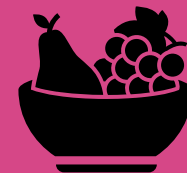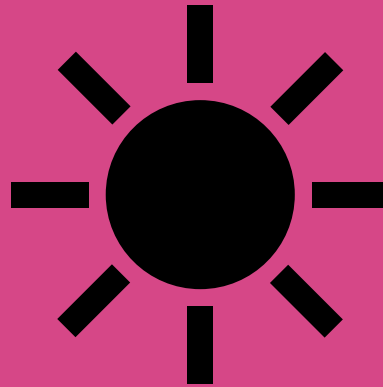
What is an important purpose of proper documentation?

Ontario

# Traceability

Traceability is the ability to follow products through the use, history, application or location of an item or activity by means of recorded information
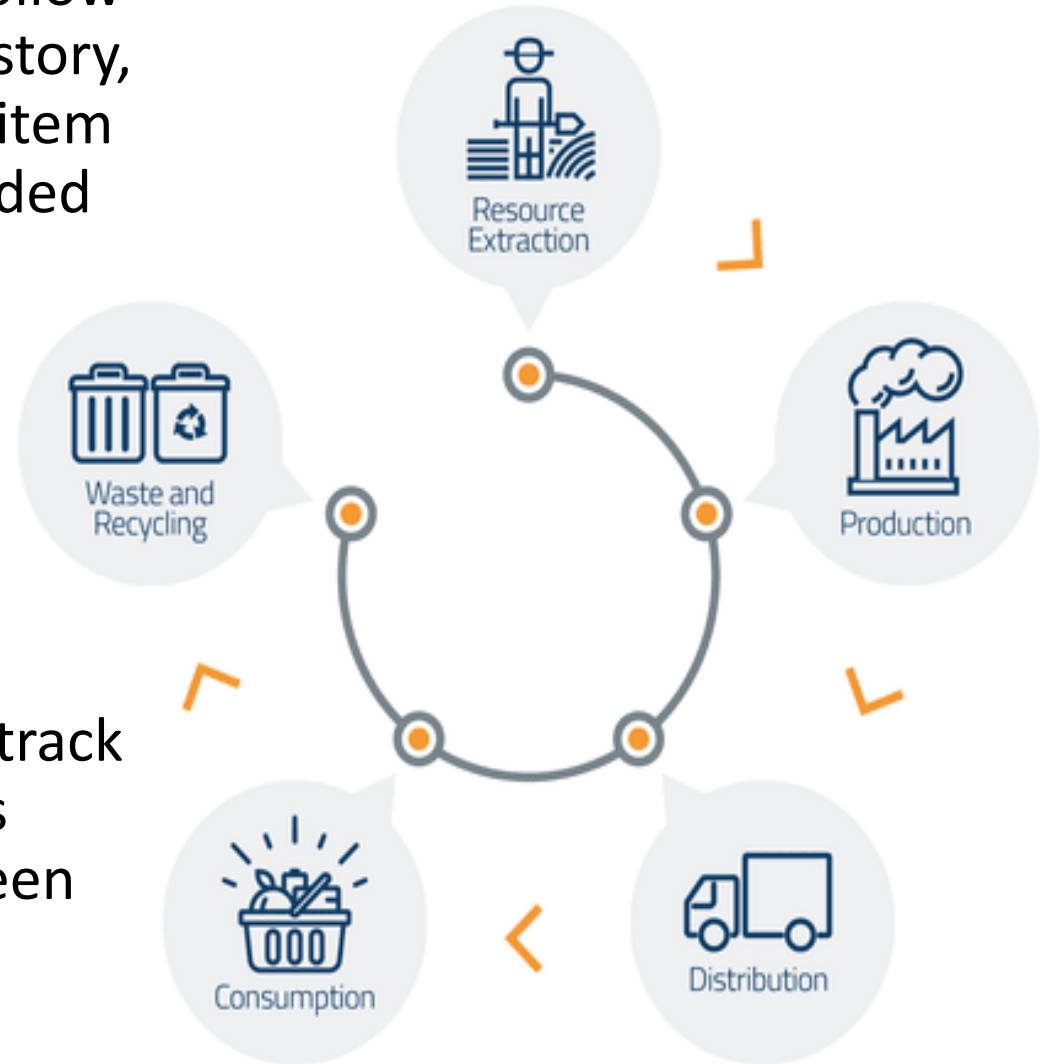
Provides an effective way to track an identified product (and its attributes) as it moves between locations



Resource Extraction

Production

Distribution

Consumption

Waste and Recycling

# Traceability: Benefits

Traceability is important for all agri-food and agri-product businesses.

It supports:

- **Recall and incident management** by enabling a fast and accurate response to quality and food safety issues, improving confidence in your products

- **Surveillance of plant and animal diseases** that can impact productivity and market access

- **Efficiency and productivity improvements** in your operation with access to accurate and timely data

- **Cost reductions** through better record keeping, inventory control and management of waste

- **Better supply chain management and visibility** to achieve a competitive edge

- **Access to new markets** and retention of existing ones by meeting customer expectations for product tracking and verification of claims
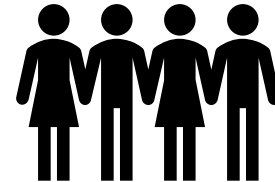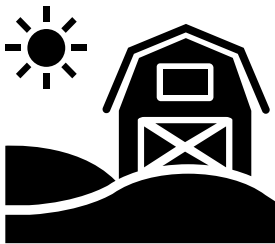
Most buyers and markets are now asking for traceability from their suppliers to be "one step forward, one step back":

➢ Traced forward to the next step in the supply chain where the output/product/animal will go (one step forward)
➢ Traced backward to the original supplier/producer from where the input/product/animal came from (one step back)

One step back ⟵——————————         ——————————⟶ One step forward

Ontario

# Three "Pillars" of Traceability

1. Premises Identification

2. Product/Animal Identification

3. Movement Recording

**Ontario**

It is linking everything that goes into producing a food product through to harvest, processing/packing, and its final delivery to a customer/ or consumer



Input



Production



Output

Ontario

## Module 2: Exploring Traceability Concepts

18% Complete

## Applying the Three Pillars of Traceability on Your Farm

Let's have a look at the Three Pillars of Traceability in action for inputs that come onto the farm, for production, and for outputs that are shipped off the farm.

Based on your interest, choose to review a horticulture or livestock example, or both.

Click on the images to see how Traceability is applied on the farm for inputs, at production and for outputs.

### Horticulture Example



Inputs | Production

Outputs | See Traceability in Action

### Livestock Example



Inputs | Production

Outputs | See Traceability in Action

< BACK    NEXT >

51

Ontario
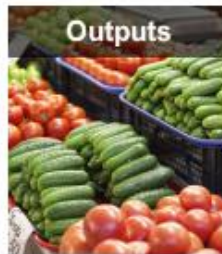
## Module 2: Exploring Traceability Concepts
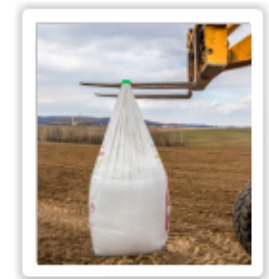
19% Complete

# Applying the Three Pillars – Horticulture example for inputs

**What are inputs?**

Inputs are all materials and goods needed for production. Consider keeping a receiving log or receiving book to document all inputs received on the farm.

Click each of the buttons below to review the examples. Click **BACK** to return.

| | | | |
|---|---|---|---|
| **What kind of inputs would the farm receive?** | **What information can be collected?** | **Where can the information be found?** | **How are the Three Pillars of Traceability involved?** |

**Ontario**

# Traceability – Horticulture Inputs

| Questions to ask | Examples |
|---|---|
| What kind of inputs would the farm receive? | • Seed, seedlings, transplants, fertilizer<br>• Agrichemicals (eg. Pesticides, fungicides)<br>• Packaging materials (e.g. boxes, clam shells, etc.) |
| What information can be collected? | • Date and quantity received, as well where it came from or delivered by<br>• Supplier's premises information<br>• Lot number and description of the input received |
| Where can the information be found? | • Purchase Orders<br>• Bill of Lading<br>• Receipts |
| How are the Three Pillars of Traceability Involved? | • Premises identification (e.g. supplier of the input)<br>• Product Identification (e.g. lot number linked to supplier)<br>• Movement recording (e.g. where input stored until use) |

Ontario

# Horticultural - Production

| Questions to ask | Examples |
|---|---|
| What kind activities to consider? | • Planting, irrigation<br>• Spraying<br>• Harvesting, packing |
| What information can be collected? | • Lot number, description and quantity of inputs<br>• Date of activity or process when inputs were used<br>• Premises or location of the activity or process |
| Where can the information be found? | • Seed/Planting records, field maps or activity logs<br>• Spray records<br>• Harvest records |
| How are the Three Pillars of Traceability Involved? | • Premises ID (e.g. location where activities took place)<br>• Product ID (e.g. lot numbers of inputs used, identifier for output produced (harvest/pack date)<br>• Movement recording (e.g. where produce was harvested, where product is stored until shipped). |

# Something to think about

Egg vs Cupcake:

? If there was an issue with the egg, would you be able to identify where *all the eggs of this lot were?

? If the producer of the cupcake indicated an ingredient issue, would you be able to provide them information about the *egg lot that was sold to them?
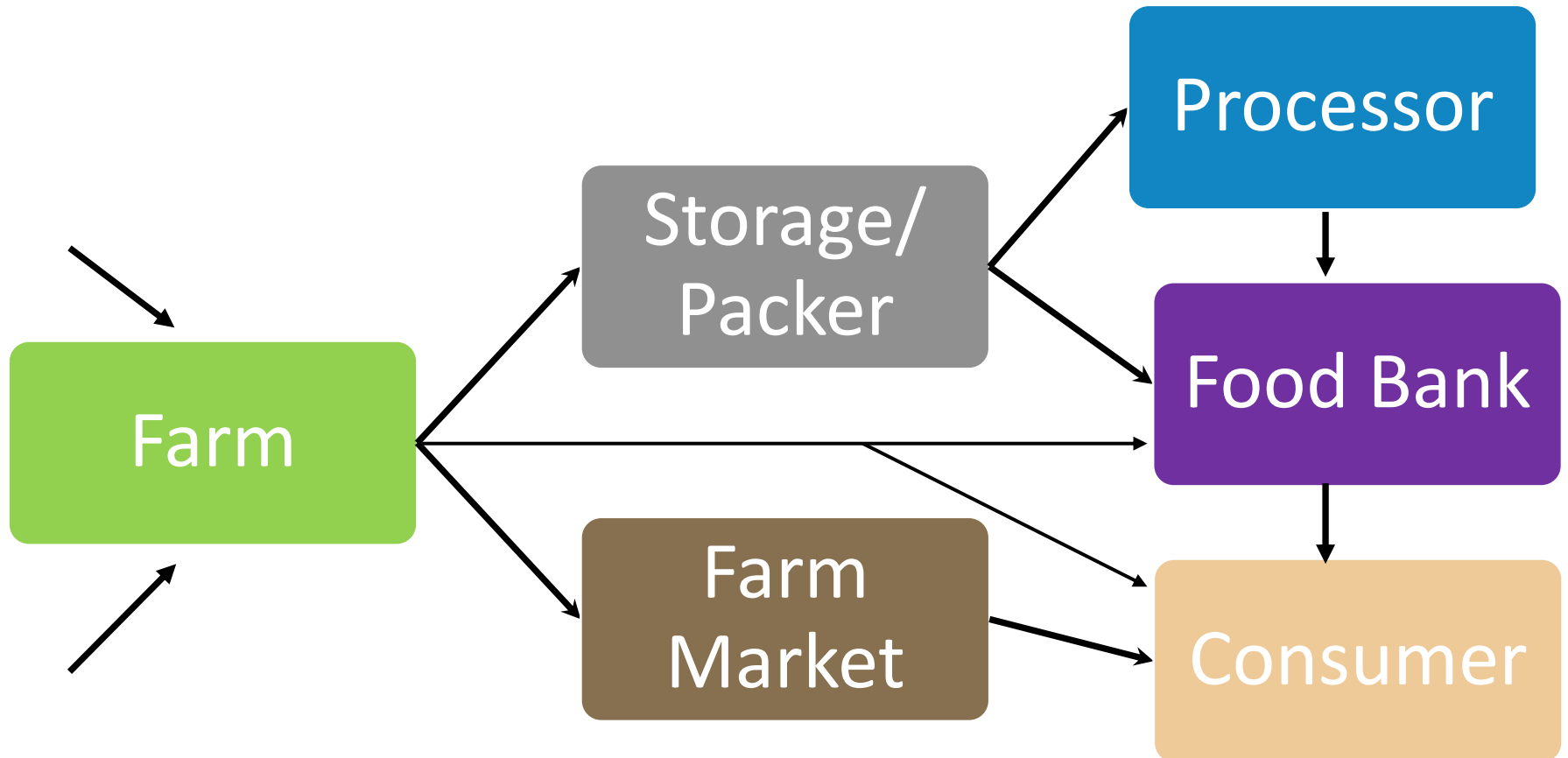
Ontario

# Do You Know What You Know?

What is the general rule for information regarding traceability?

1. If you don't use it you lose it

2. Take 2 steps forwards 1 step back

3. 1 up  1 down

4. You put your right foot in you take your right foot out

5. 1 forward 1 back

A. 1, 5
B. 2,4
C. 3,1, 2
D. 3, 5
E. All are correct

**Ontario**

# Exercise: Understanding Traceability

Ontario

# Traceability discussion

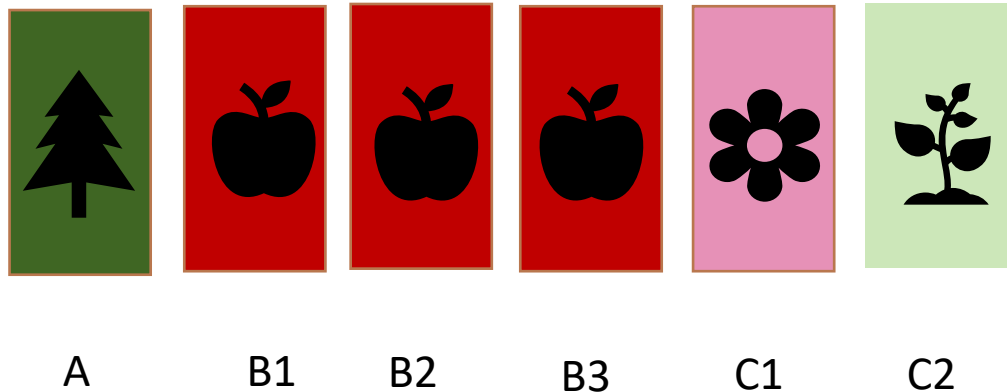What do we know?

What information do we need?

Ontario

# Traceability/Recall Discussion



Operation:
Different production blocks

|  A  |  B1  |  B2  |  B3  |  C1  |  C2  |

Scenario:
- Block A, B1-B3, C1-C2 : sprayed fungicide May 1st, 2020
- Block B1 – B3 : sprayed with insecticide May 7th, 2020
- Block C1 : sprayed with herbicide May 11th, 2020
- Block C2 : sprayed with fumigant May 11th, 2020
- Block B1-B3 : harvested and shipped May 12th, 2020

- May 16th, 2020 – indication of restricted herbicide on apples at retailer

- What happens next?

Ontario

# Recall Exercise - Steps

1. Assemble the recall team

2. Gather all information about the product involved in the incident

3. Identify all products that could be involved (e.g., which products to focus on)

4. Locate all products involved (e.g., finding the products of focus)

   A. Have all items been identified (Does production/harvest/shipment need to halt?)

   B. Have all items been located?

      i. e.g., any remaining at the operation (farm/garden/in storage), where were the products shipped to? multiple or single buyer?,

      ii. does the buyer have any remaining stock of the product involved?

      iii. What is the next step for the product? (reclaim, destroy)

      iv. Who else should be notified?

      v. Close out the recall

      vi. Review any challenges – revisit process, amend if necessary

Ontario

# OMAFRA Resources

# Food Safety and Traceability Courses: Online


Agriculture and Food Education in Ontario

Free food safety and traceability eLearning courses

- Launched on the Agriculture and Food Education in Ontario (http://agandfoodeducation.ca/ ) online learning system through University of Guelph
- Visit the University of Guelph website
  - to register for a FREE account, and simply log in and begin your learning journey

For more information, contact:

- University of Guelph, Ridgetown Campus, rcagfood@uoguelph.ca or 519-674-1500 ext. 63295

Ontario

WHEN HANDLING FOOD
AL MANIPULAR ALIMENTOS

HAND WASHING
LAVADO DE MANOS

CLEANING HANDS WHEN
WATER IS NOT AVAILABLE
LIMPIEZA DE LAS MANOS CUANDO
NO SE DISPONE DE AGUA

WASH HANDS OFTEN
LÁVESE LAS MANOS CON FRECUENCIA

USE TOILETS
USAR LOS BAÑOS

Ministry of Agriculture
and Food
Ministry of Rural Affairs

Ontario

Hand Washing Easel: an Employee Training Tool

Available in: English, French, Spanish and Chinese.

Aide-mémoire de table pour le lavage des mains :
un outil éducatif pour le personnel

Il existe en anglais, en français, en espagnol et en chinois.

Ontario

Ontario

# We can help!

## Call, email or visit our website

- To get resources
- To get guidance



- Factsheets
- Articles and reports
- Procedure and Record Templates
- Video links
- Traceability

Agricultural Information Contact Centre
Toll Free: 1-877-424-1300

Ontario

# Thank You!

Questions?

Ontario