



North Carolina Muscadine Grape Association Annual Conference

Food Safety: What Muscadine Growers Really Need to Know

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North Carolina Local Produce Coordinator

www.carolinafarmstewards.org



carolina farm stewardship association

CFSA is a farmer-driven, membership-based non-profit that supports farming that is good for consumers, good for our farmers and farmworkers, and good for the land.



What We Do:

- Advocate
- Provide Technical Assistance
- Develop Food Systems
- Educate

Introduction: Why Care About Food Safety?

Why Care?

- Food Safety & Modernization Act
- A buyer's requirements
- Desire to limit exposure to lawsuits
- Personal commitment to food safety

Food Safety Modernization Act

Farms Eligible for Inspection	Qualified Exempt Farms	Exempt Farms
FOOD sales over \$550,551	FOOD sales under \$550,551	PRODUCE sales under \$27,528
	51% of the sales above: <ul style="list-style-type: none"> • Direct to consumer • Restaurant • Retail food establishment • In NC, or • 275 mile radius 	<ul style="list-style-type: none"> • Rarely consumed raw • Personal consumption • Commercially processed

GAP Certification Options

USDA	PRIVATE COMPANIES	COMMODITY ASSOCIATIONS
USDA GAP/GHP Standard	--	--
USDA HGAP Standard*	Modified HGAP Standard, e.g., GlobalGAP, Primus	--
USDA HGAP + Plus Standard	--	--
USDA Mushroom Standard	Tomato Metric	Leafy Greens Marketing Agreement

Outbreaks!

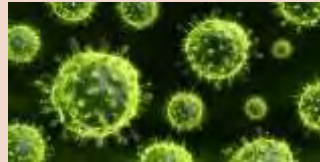
The CDC States that reducing foodborne illnesses by 10% would keep 5 million Americans from getting sick each year.

PATHOGENS OF CONCERN

Bacteria



Viruses



Parasites



E. coli O157:H7,
Listeria, Salmonella

Norovirus, Hepatitis A

Cyclospora,
Cryptosporidium

Water, soil amendments,
fecal-oral

Fecal-oral

Fecal-oral

Listeria can survive in
cooler-level temperatures

Spread quickly, can
survive in environment

Seasonal, difficult to kill
in environment

Implementing Food Safety: Harvest & Worker Training

Tools Must be Clean



Wash Your Hands!

¡Lávese Las Manos!



1 Wet Hands
Mójese las manos



2 Soap
Enjabónese



3 Wash for 20 seconds
Lávese las manos por 20 segundos



4 Rinse
Enjuáguese



5 Dry
Séquese las manos



6 Turn Off Water with Paper Towel
Cierre el grifo usando una toalla de papel

Harvest Containers Must be Clean





- **Dropped produce cannot be harvested**
- Workers must be trained and supervised to enforce this rule
- Different for wine grapes

Produce Must be Protected from Overhead Contamination



Field Sanitation



Toilet Facilities



- Consider location
- Keep clean and perform daily inspections
- Stock with toilet paper, soap, single use paper towels and **lidded** trashcan
- Keep records!

Worker Training Overview

- ✓ No harvest containers directly on the ground
- ✓ Dropped produce cannot be harvested as table grapes
- ✓ Contaminated produce cannot be harvested
- ✓ Produce cannot sit out in the open in the field
- ✓ Hygiene must be stellar
- ✓ Eating, smoking, urinating/defecating must all take place in designated areas ONLY

Implementing Food Safety: Wildlife & Domestic Animals

Livestock

- Follow the 90/120 day rule
- Don't allow livestock in fields close to harvest
- Train and supervise workers to change shoes between livestock areas and produce fields



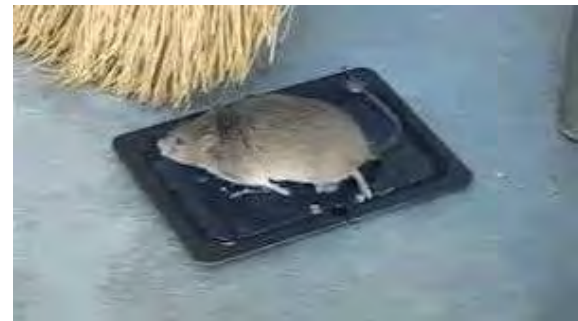
Wildlife

- Must assess what wildlife is a risk on your farm & take *some* measure to mitigate wildlife intrusion
- Train workers to recognize wildlife feces on fruit, and to NOT harvest
- Domesticated animals are not allowed in the field or packing houses



Pests

- Pest traps (non-poison) should be set around packing material storage, and in pack houses, especially if fully enclosed buildings
- Spring traps have fallen out of favor



Implementing Food Safety: Water

DRINKING WATER STANDARD	RECREATIONAL WATER STANDARD
No detectable generic <i>E. coli</i>	<126 MPN/CFUs of generic <i>E. coli</i>
Handwashing	Drip Irrigation
Postharvest Handling- including hydrocooling	Production water that does not touch edible portion of crop
Food Contact Surfaces	Minimize close to harvest (14-21 die-off rate)

Water Sources

Source determines water risks

HIGHER
RISK



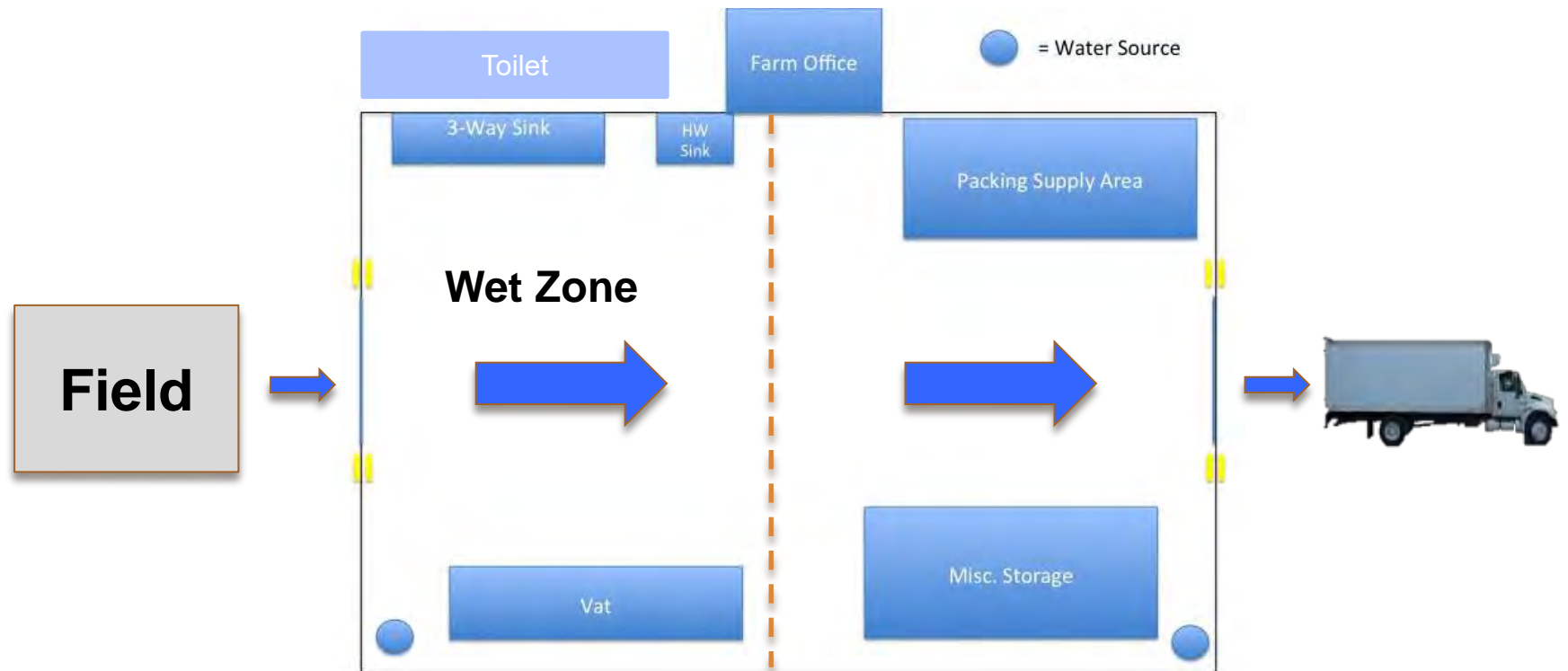
- Surface water
- Private well water
- Municipal water



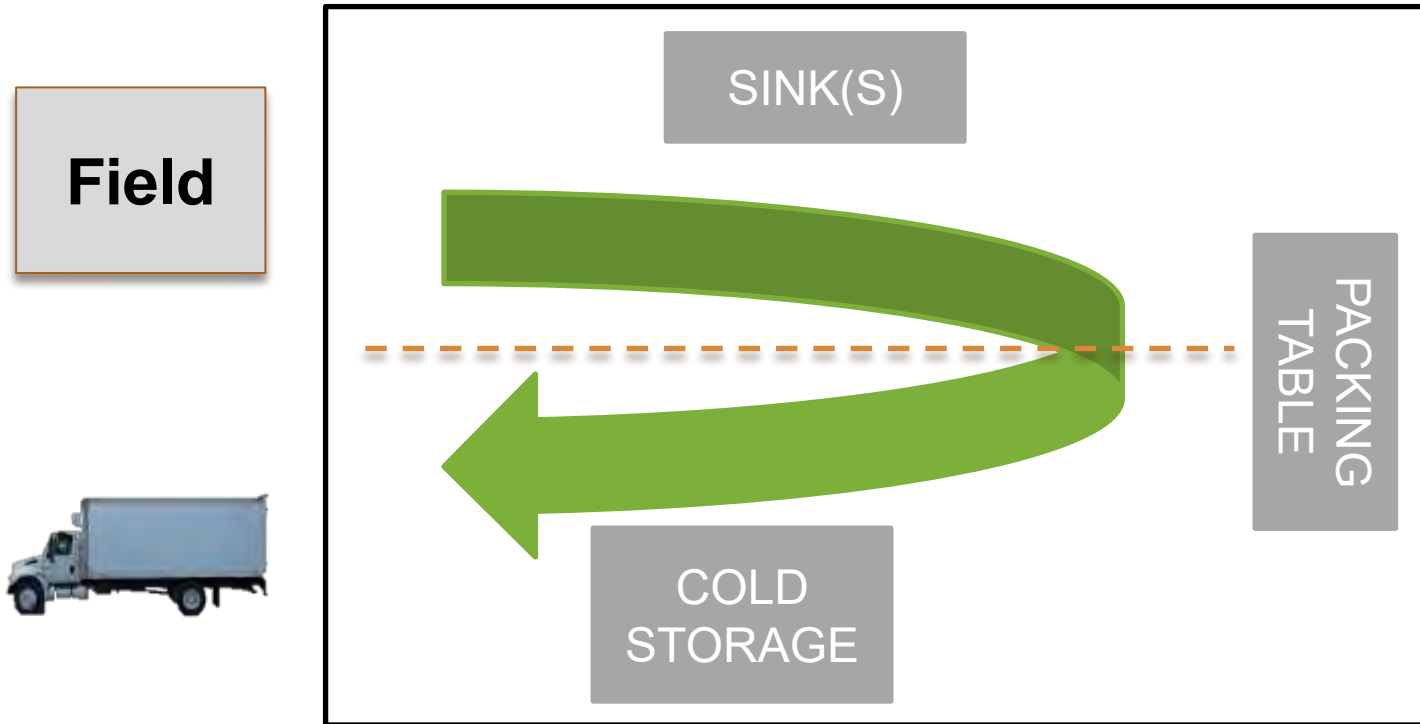
LOWER
RISK

Post-Harvest Handling

Linear Design



U-Shaped Design



Storage Areas

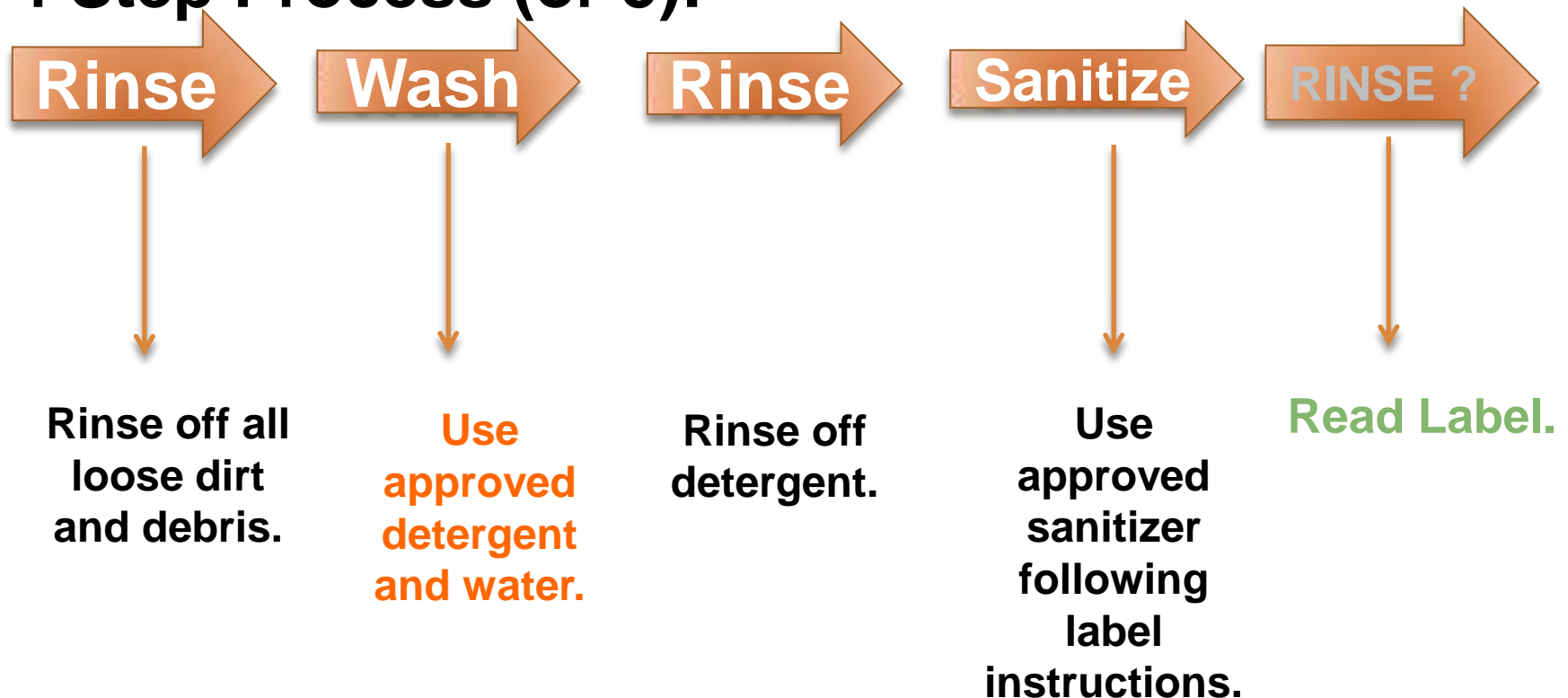


Clean Areas Passing Into Buildings



Proper Cleaning and Sanitizing

4 Step Process (or 5):



Implementing Food Safety: Visitors & U- Pick Operations

FARM SAFETY & HYGIENE



EMPLOYEES MUST WASH THEIR HANDS BEFORE THEY BEGIN WORK & AFTER ANY CONTAMINATE TOUCHEST THEIR HANDS.



IF YOU ARE FEELING ILL, OR HAVE AN OPEN CUT, WOUND OR LESIONS OF ANY TYPE, PLEASE REPORT TO YOUR SUPERVISOR BEFORE YOU BEGIN WORK.



ALL INJURIES MUST BE REPORTED IMMEDIATELY TO YOUR SUPERVISOR. ACCIDENT PROCEFURES FOR THE FARM WILL BE IMPLEMENTED.



ANY PRODUCT WHICH COMES IN CONTACT WITH BLOOD SHOULD BE REPORTED TO YOUR SUPERVISOR IMMEDIATELY FOR PROPER DISPOSAL.



NO SMOKING OR USE OF TOBACCO PRODUCTS IS ALLOWED IN THE FIELD.



PLACE ALL TRASH IN THE RECEPTACLE PROVIDED



NO EATING, DRINKING, CHEWING GUM OR GLASS ITEMS ARE ALLOWED IN THE FIELD EXCEPT FOR DESIGNATED AREAS.



NO CHILDREN ARE ALLOWED IN THE FIELD DURING WORKING OPERATIONS.



NO PETS OR LIVESTOCK ARE ALLOWED IN THE FIELD.



EMPLOYEES MUST REMOVE THEIR JEWELRY BEFORE THEY BEGIN WORK.



ALL VISITORS & EMPLOYEES MUST USE RESTROOMS PROVIDED IN THE FIELDS.



ALL EMPLOYEES & VISITORS MUST ABIDE BY FARM RULES AND HYGIENE REQUIREMENTS.

FOR THE SAFETY AND WELL BEING OF ALL THE EMPLOYEES, YOU ARE ASKED TO PLEASE REPORT ANY POTENTIALLY DANGEROUS INCIDENTS.

**Farm Managers
MICHAEL OR JEFF (919) 529-1469
EMERGENCY PHONE # (910) 529-1469**



LOS EMPLEADOS DEBER LAVAR SUS MANOS ANTES QUE ELLOS COMIENCEN EL TRABAJO Y DESPUES DE QUE CUALQUIER CONTAMINANTE TOCA SUS MANOS.



SI USTED SE SIENTE EFERMO, O TIENE UNA CORTADA ABIERTA, HERIDA, VO LESIONES DE ALGUN TIPO, POR FAVOR INFORMELE A SU SUPERVISOR ANTES QUE USTED COMIENCE EL TRABAJO.



TODAS LAS HERIDAS DEBEN SER RELATADAS INMEDIATAMENTE A SU SUPERVISOR. LOS PROCEDEMENTOS DE ACCIDENTE DE EL CAMP SERAN PUESTOS EN PRACTICA.



CUALQUIER PRODUCTO QUE ENTRA EN CONTACTO CON LA SANGRE DEBERIA SER RELATADO A SU SUPERVISOR INMEDIATAMENTE PARA LA DISPOSICION APROPIADA.



PROHIBIDO FUMAR O USO DE PRODUCTOS DE TABACO EN EL CAMP.



COLOCAR TODA LA BASURA EN EL RECEPTACULO PROPORCIONADO.



NINGUNA COMIDA, BEBIDA, CHICLE, O ARTICULOS DE VIDRIO SON PERMITIOS EN EL CAMPO EXCEPTO EN AREAS DESIGNADAS.



NO SE PERMITER NIÑOS EN EL CAMPO DURANTE OPERACIONES DETRABAJO.



NO PERMITTEN NINGUNOS ANIMALES DOMESTICOS O GANADO EN EL CAMPO.



LOS EMPLEADOS DEBEN QUITAR SU JOYERIA ANTES DE QUE COMIENCEN EL TRABAJO.

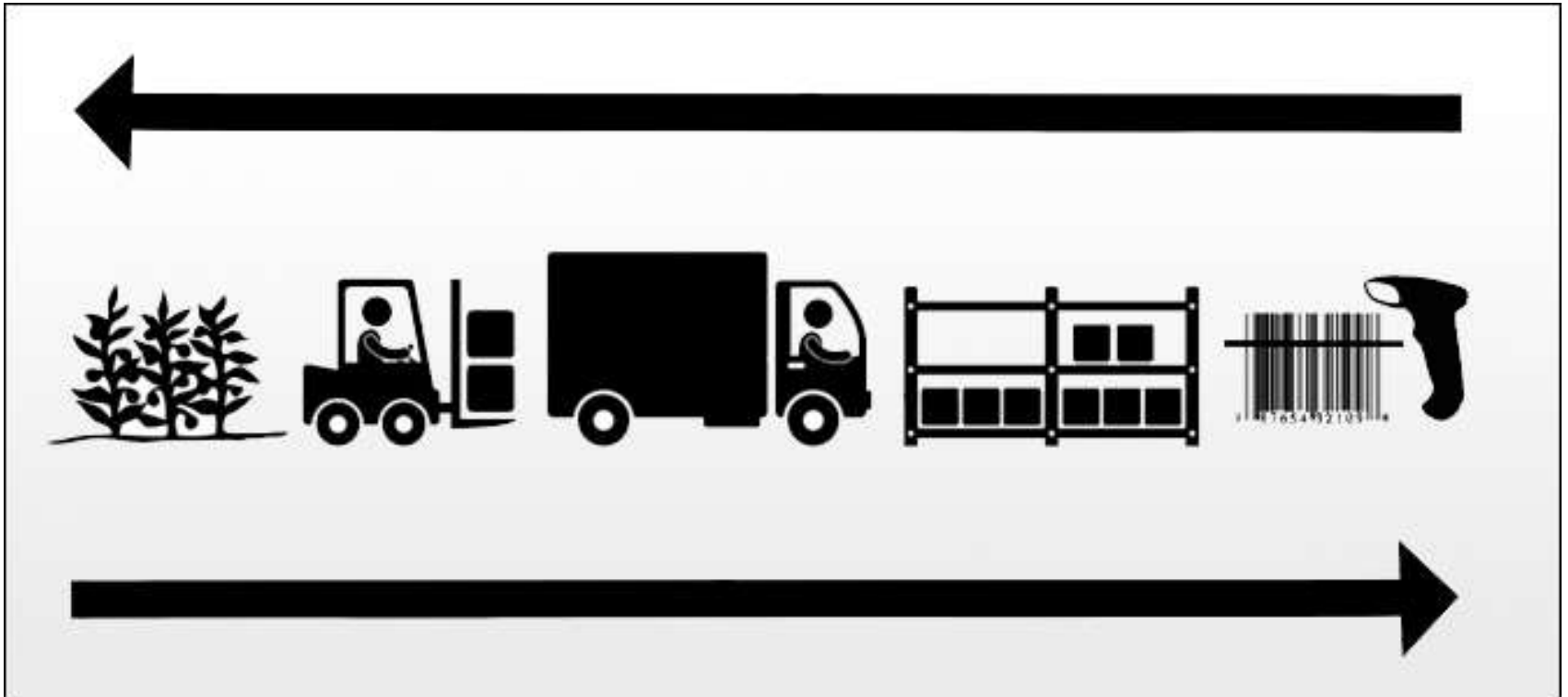


TODOS LOS INVITADOS Y LOS EMPLEADOS DEBER USAR SERVICIOS PROPORCIONADOS EN LOS CAMPOS.



TODOS LOS EMPLEADOS Y LOS INVITADOS DEBEN CUMPLIR CON REGLAS DEL CAMPO Y EXIGENCIAS DE HIGIENE.

Traceability and Recall



Labeling

- **Labels must include:**
 - Farm Name
 - Farm Primary Address
 - Origin (Product of USA)
 - Commodity (Product)
 - Pack Size/Weight
 - Allergen Disclaimer, if applicable

Cherry Tomatoes
10 lb. case pack

Lot #: T2618-3

Carolina Farms, LLC
1 Farm Road, Carolina, NC 27407

Product of USA
Grown in South Carolina

Mock Recall

Purpose:

To test you recall plan in the event of an actual recall.

BE PREPARED!



Food Safety

- ✓ Clean Workers
- ✓ Clean Fields & Harvesting Equipment
- ✓ Control Animals: Wildlife, Domesticated Animals & Pests
- ✓ Water meets Drinking Water Quality
- ✓ 90/120 Rule for Raw Manure
- ✓ Clean Buildings
- ✓ Traceability