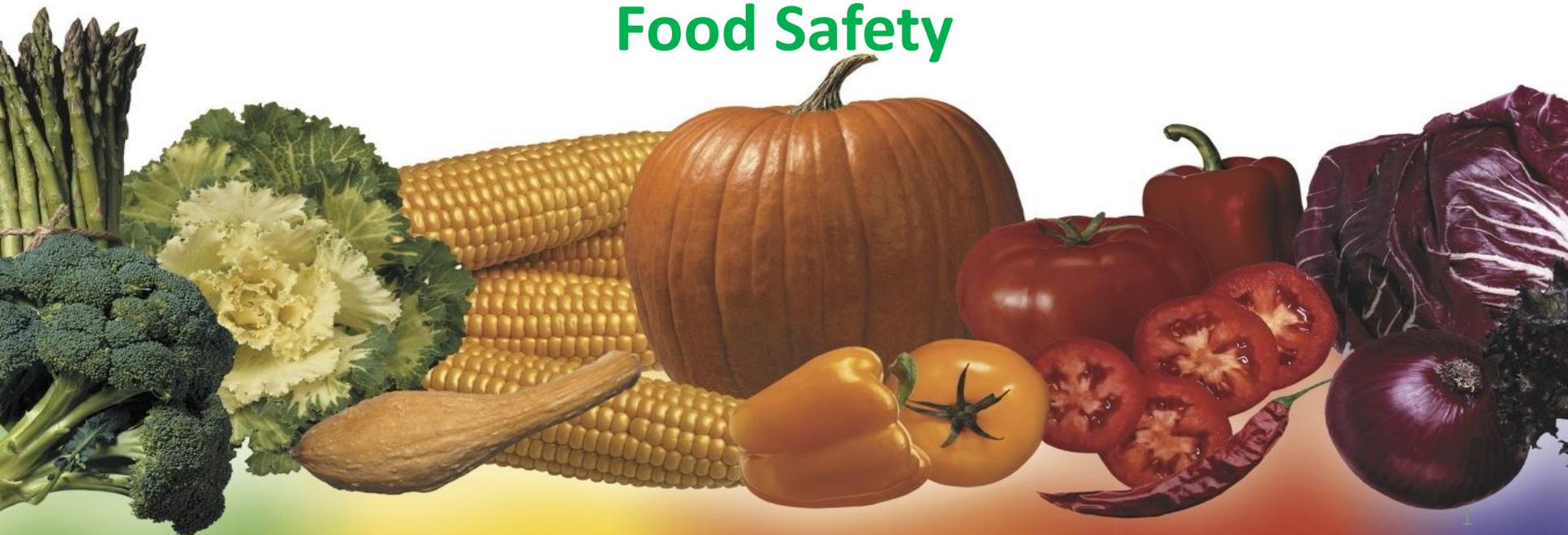




Produce Safety

Food Safety



What is Norovirus?



- Describe why norovirus is a concern in child nutrition
- List norovirus symptoms
- List ways norovirus is transmitted
- Describe methods for norovirus prevention

Why is Norovirus a concern?

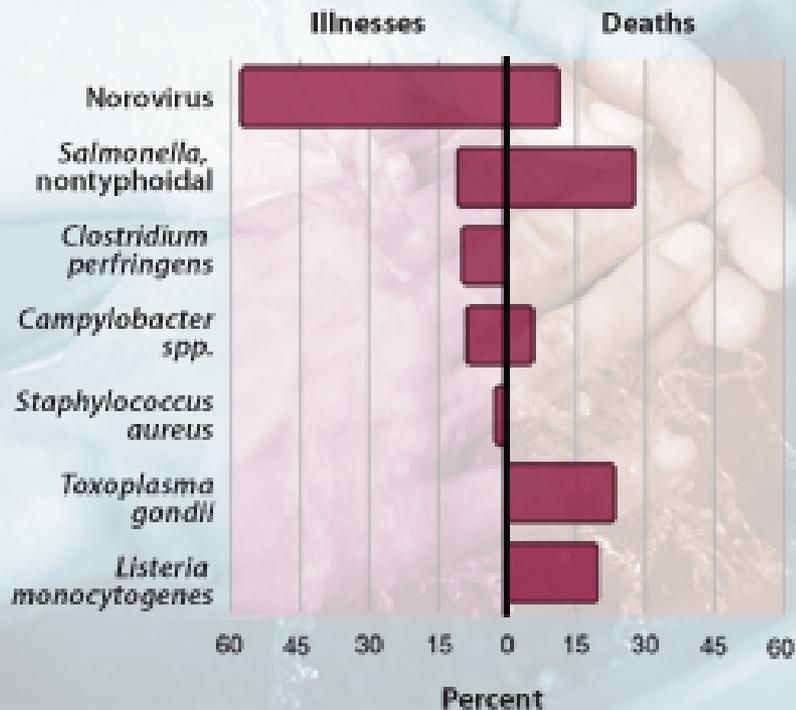


Everyone Plays a P.A.R.T in
Norovirus Control

*What do
we
know?*

Why is Norovirus a concern?

Top pathogens contributing to domestically acquired foodborne illnesses and deaths, 2000–2008



Leading cause of foodborne illnesses

- Responsible for more than half of all food-related outbreaks

Why is Norovirus a concern?



- Very hardy virus
- Survives Freezing
- Survives 145° F
- Survives up to 12 days on stainless steel surfaces
- Very resistant to routine cleaning and sanitizers

Why is Norovirus a concern?



- It can travel by air up to 25 feet away!
- Recovery up to 2 weeks
- if basic food safety practices are not followed →
- . . . Infection can occur to many children and employees

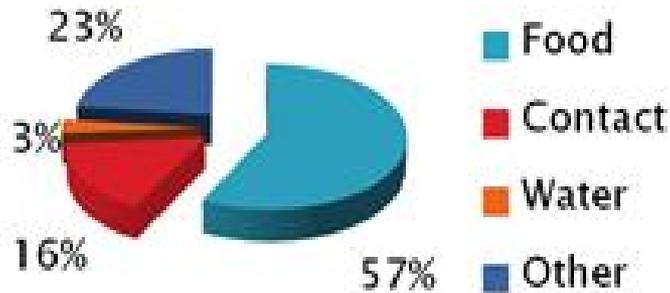
Norovirus Symptoms



- “Stomach Flu” and
- Nausea
- Vomiting
- Diarrhea
- Abdominal cramps
- Onset – 1 to 2 days after exposure
- Duration – 1 to 2 days

Norovirus Transmission

Outbreaks
(1997-2000)



- In stool or vomit of infected people
- Transmission through
 - Person to person
 - Food to person
 - Water
 - Environmental surfaces
 - Air

Norovirus: Everyone Plays a P.A.R.T.

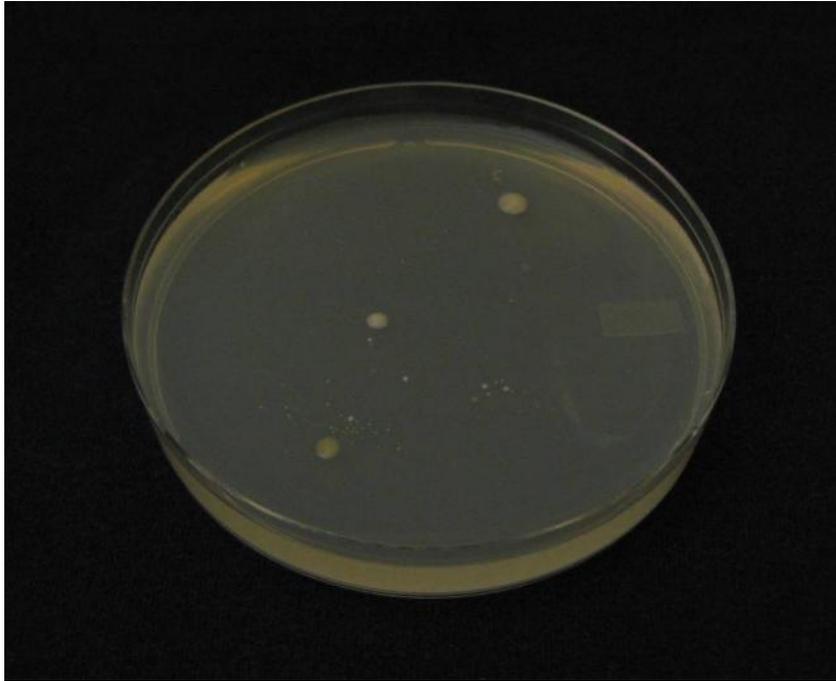


- Prevent
- Assemble a Body Fluid Cleanup Kit
- Respond to an incident
- Total cleanup

Norovirus: Handwashing



Handwashing Practices



Microorganisms from hands washed for the recommended 20 seconds



Microorganisms from unwashed hands after using the restroom

Source: Iowa State University Extension Service

Food Preparation Practices



Source: Iowa State University Extension Service

Handwashing Practices

- Wash your hands
 - Before starting work
 - After using the restroom
 - Before putting on or changing gloves
 - After handling chemicals
 - When changing tasks
- Handwashing benchmark found to be 11 times per hour for school foodservice



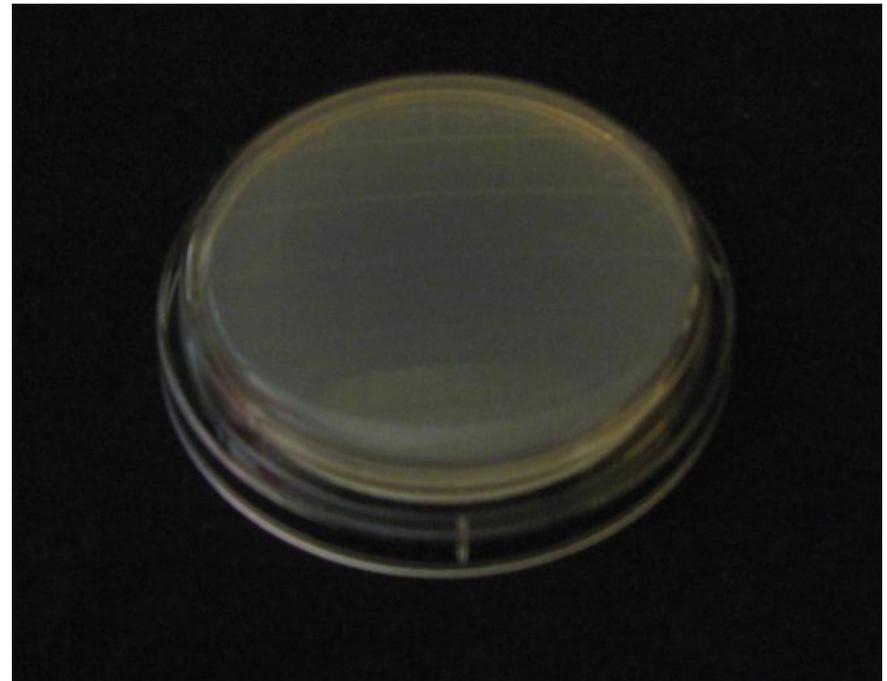
Source: Strohbehn, C, Sneed, J., Paez, P., and Meyer, J. 2008. Hand Washing Frequencies and Procedures used in Retail Food Service. *Journal of Food Protection*, Vol. 71. no. 8.

Norovirus: Prevent Bare-hand Contact



- Use gloves,
- deli sheets,
- tongs or other utensils to **prepare, handle, and serve** ready-to-eat foods.

Prevent Cross-Contamination



A clean and sanitized cutting board shows no sign of microorganisms

Source: Iowa State University Extension Service

Norovirus: Prevention



Everyone Plays a P.A.R.T In
Norovirus Control

- **Report symptoms**

- Vomiting
- Diarrhea
- Jaundice (yellowing)
- Sore throat with fever
- Cuts & infected wounds on the hands, wrists, or exposed portions of the arms.
- A current, recent or exposure to a foodborne illness

Norovirus: Stay Home



- for at least 24 hours and
- until your symptoms have been resolved

Norovirus: Everyone Plays a P.A.R.T.



- Prevent
- Assemble a Body Fluid Cleanup Kit
- Respond to an incident
- Total cleanup

Norovirus: Use Body Fluid Cleanup Kit



Keep safe:

***Wear personal protective
equipment***



Norovirus: Use Body Fluid Cleanup Kit



- ***Follow written procedures and use the special disinfectant****
 - ***8 1/3 c. bleach to 5 gal. H2O***



- ***Do not use standard foodservice sanitizers***



Norovirus: Use Body Fluid Cleanup Kit



Dispose of waste and exposed food properly



Wash hands thoroughly



BTW: What is the difference?

- **Foodborne Illness:**

- ✓ Illness resulting from eating contaminated food

- **Foodborne Outbreak:**

- ✓ At least 2 or more people consume the same contaminated food resulting in an illness.

Norovirus: Summary



- Highly contagious, spreads easily and hard to kill.
- It is a leading cause of foodborne disease in the United States,
- and has been the source of outbreaks in schools. In this lesson we have learned that:
 - Everyone plays an important part in Norovirus prevention.
 - This includes practicing good personal hygiene and reporting all illnesses to the school nutrition manager.

Norovirus



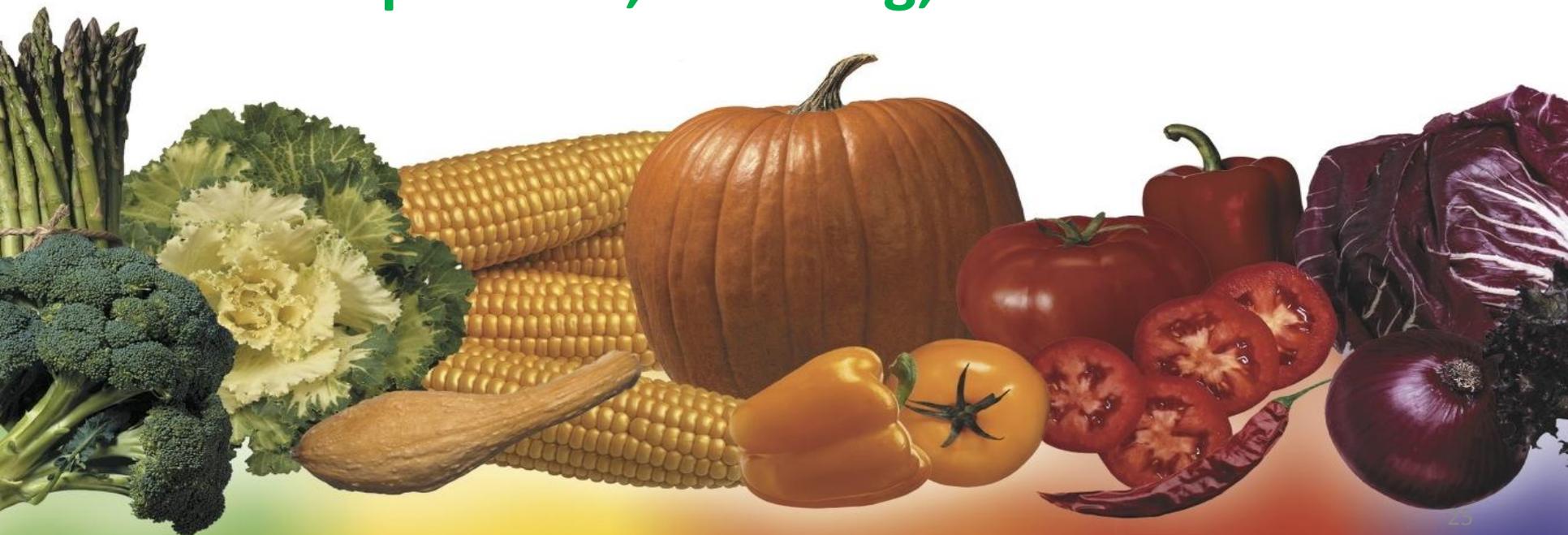
Everyone Plays a P.A.R.T in
Norovirus Control

*What we
learned!*



Produce Safety

Preparation, Handling, and Service



Objectives

At the end of this training session, participants will be able to:

1. Identify recommended practices for handling and preparing fresh produce
2. Use FDA recommendations for washing produce

Fresh Produce

- Ready-to-eat-food
- No “kill step”
- Must be safe to be nutritious



Fresh Produce – Key Point

- Processing fresh produce into fresh-cut products increases the risk of bacterial growth and contamination by breaking the natural barrier of the produce.
-
- The release of plant cellular fluids when chopped or shredded provides a nutritive medium for pathogens to grow and survive.

Fresh Produce – Key Point

- Internalization occurs when microbes infiltrate the produce moving from the outer surface to the internal tissue.
-
- Once microbes are internalized, they cannot be removed.

Internalization

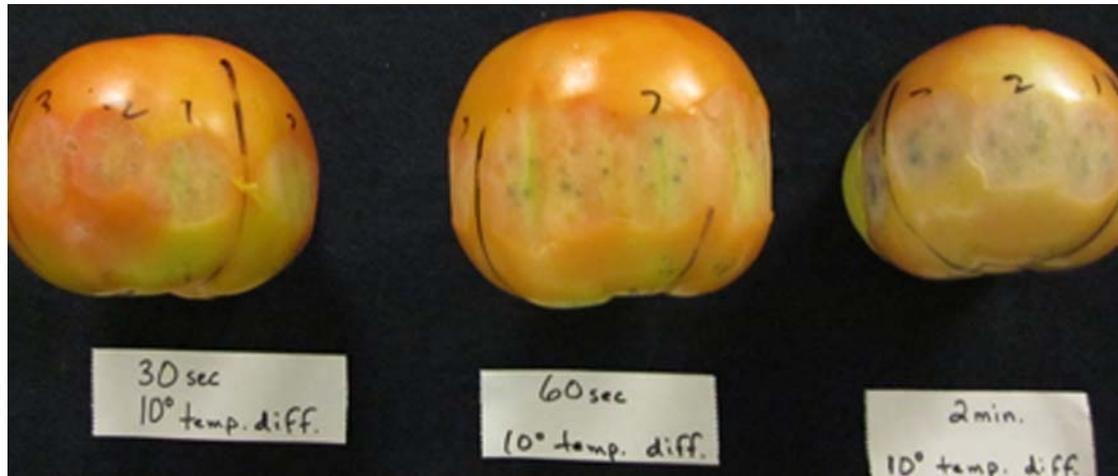


Photo provided & edited by SR Bartz

Preventing the introduction of pathogens to produce is critical to safety!
Once pathogenic microorganisms are internalized, they cannot be removed.

Internalization: Tomatoes

- Wash tomatoes in H₂O warmer than tomato – at least 10 degrees (wash warm).
- Tomatoes will act as a vacuum drawing pathogens inside from surface of skin IF washed in cold(er) water.



2009 Food Code

- Classifies fresh-cut leafy greens, tomatoes and melons as “hazardous foods”
- Account for 50%+ of Produce Outbreaks



Food Safety Requirements

- Food safety training/certificate
- HACCP-based Food Safety Programs required since 2004
- Sample SOPs
 - D. Date Marking Ready-to-Eat, Potentially Hazardous Foods38
 - G. Receiving Deliveries44
 - J. Washing Fresh Fruits and Vegetables.....50

Food Preparation Practices

- Wash **all** produce under **running** water just before cutting, cooking or eating
- Avoid soaking
- Use vegetable brush for melons, potatoes
- Use designated produce sink



Food Preparation Practices

- Pre-washed produce in sealed bags can be used without further washing
- Pre-washed produce in opened-bags should be washed before using
- *Are commercial produce washes necessary?*



Food Preparation Practices

- *Are commercial produce washes necessary?*
- **No.** They may reduce pathogens but according FDA, they are not superior to washing thoroughly under cool, running, potable water.

Food Preparation Practices

- Drying Produce:
 - Drain in colander
 - May use paper towels to further reduce bacteria that may be present
 - Use Commercial salad spinner
 - Air dry in clean, perforated pans.



Prevent Cross-Contamination

- Equipment, knives, cutting boards
- Storage containers
- Raw meat, poultry, and eggs
- Hands, gloves, aprons



Maintain the Cold Chain

- Maintain during receiving, storing, preparing, and serving
- Monitor and document temperatures
- Handle leftovers safely
- Use appropriate equipment
 - Ice/ice packs
 - Refrigeration



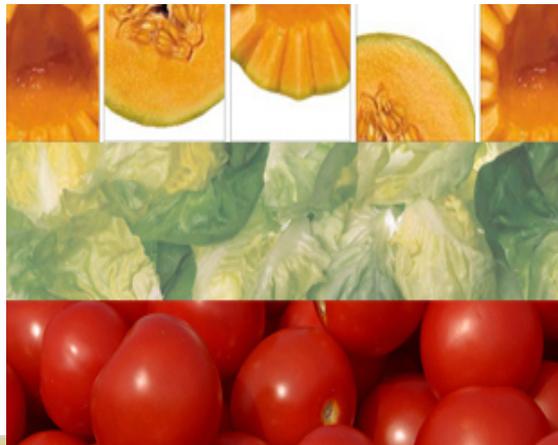
Objectives

At the end of this training session, participants will be able to:

1. Identify best practices for receiving fresh produce.
2. Identify best practices for storing fresh produce.
3. Discuss how ethylene gas affects the storage of fruits and vegetables.

Temperature Control

- Monitor time and temperature during holding and serving
- Maintain cut melons, cut tomatoes, leafy greens at or below 41° F





Produce Safety

Receiving



Produce Safety - Receiving



Produce Safety

Storing



Produce Safety - Storing

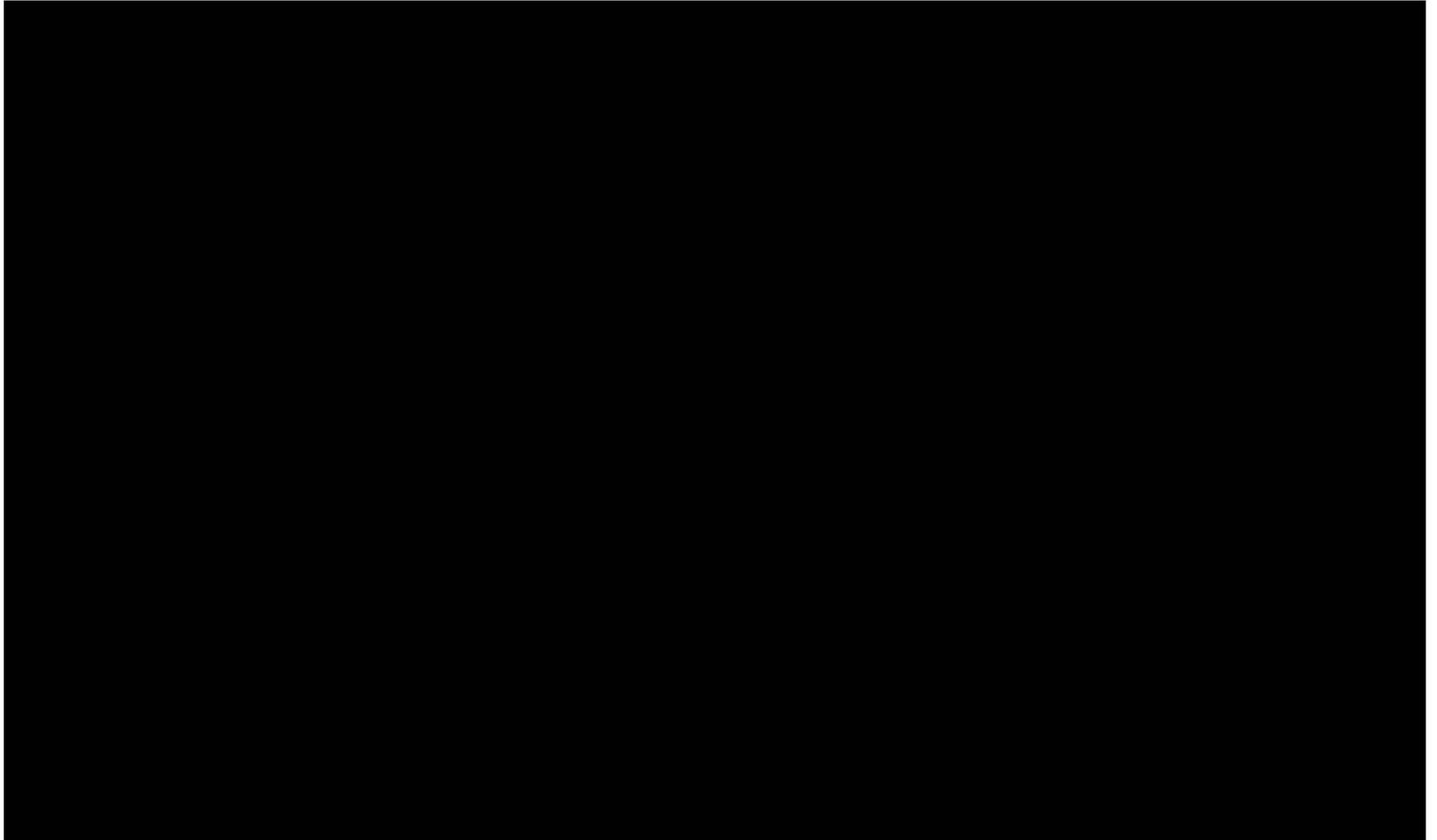


Produce Safety

Prepare



Produce Safety - Preparing





Activities and Discussion

Ethylene Gas

Ethylene gas may cause:

- russet spotting of lettuce (brown streaks)
- bitter tasting carrots
- yellowing of broccoli, cucumber, and spinach
- decreased shelf life



Ethylene Gas

- Store fruits and vegetables away from one another
- Separate refrigerators is ideal, but not always practical

Storing Produce

- **Shelf Life:**
 - **“Sell-By”** date tells the store how long to display the product for sale.
 - **“Best If Used By”** date is recommended for best flavor or quality.
 - **“Use-By”** date is the last date recommended for the use of the product while at peak quality.

Serving Practices

- Handouts about handling produce safely available
 - Classrooms
 - Self-Service Bars

<http://www.nfsmi.org/ResourceOverview.aspx?ID=437>





Produce Safety

Produce Quality and Condition



Objectives

After this session, the participant will be able to:

1. Identify the types of fresh produce quality defects.
2. Identify the types of fresh produce condition defects.
3. Discuss how quality and condition affect the grade of fresh produce.

U.S. Grade Standards

- Developed by the Agricultural Marketing Service (AMS)
- Describe measurable “quality” and “condition” characteristics of fresh produce
- Provide fair market trade for produce grown in the U.S.
- Updated periodically due to industry requests

U.S. No. 1. Grade Standard Blackberries



Firm, well colored, well developed and not overripe, free from caps (calyxes), mold and decay, and damage caused by dirt or other foreign matter, shriveling, moisture, disease, insects, mechanical, or other means.

No more than 10 % of the berries in any lot may fail to meet the requirements of this grade, including not more than 5 % for defects causing serious damage, and not more than 1 % for berries that are affected by mold or decay.

Source: www.ams.usda.gov/AMSV1.0/getfile?dDocName=STELPRDC5050347

Why does grade matter?

- Provides specification with the language to get what you want
- Provides receiving staff the quality and condition descriptions on:
 - What produce to accept
 - What produce to reject



Types of Defects

- Quality defects
- Condition defects



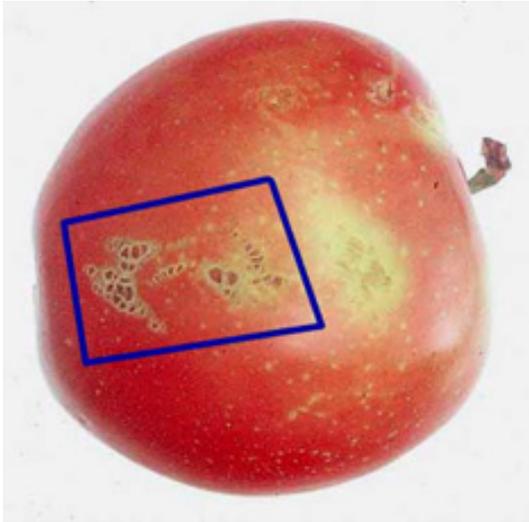
Quality Defects: Shape



Quality Defects: Texture



Quality Defects: Scars



Quality Defects: Color



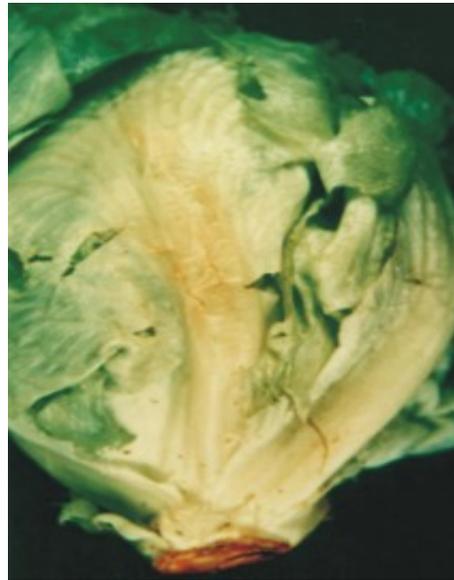
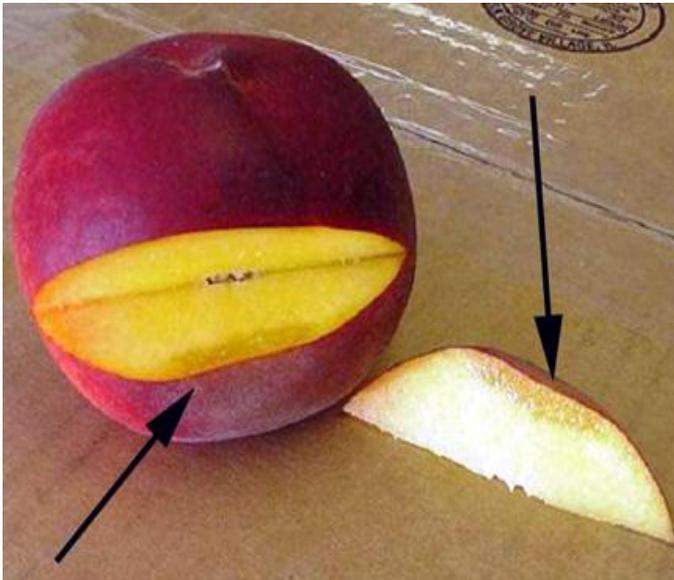
White shoulders on strawberries



Quality Defects: Growth Cracks



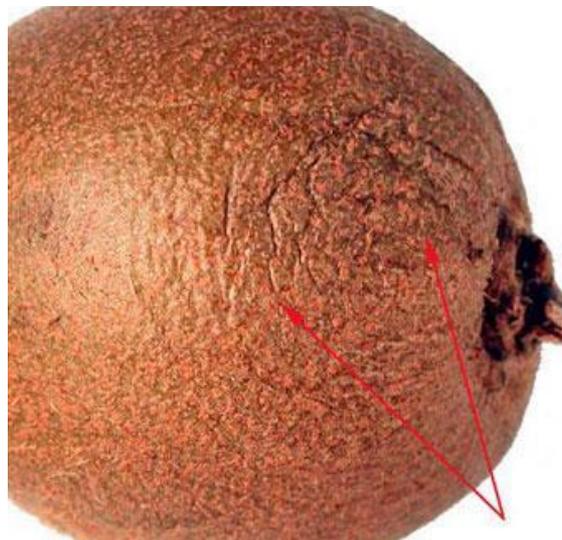
Condition Defects: Bruising



Condition Defects: Sunken Discolored Areas (SDA)



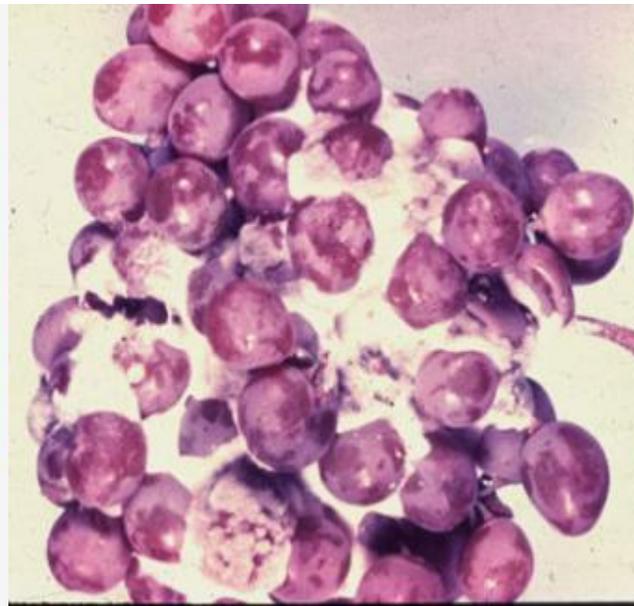
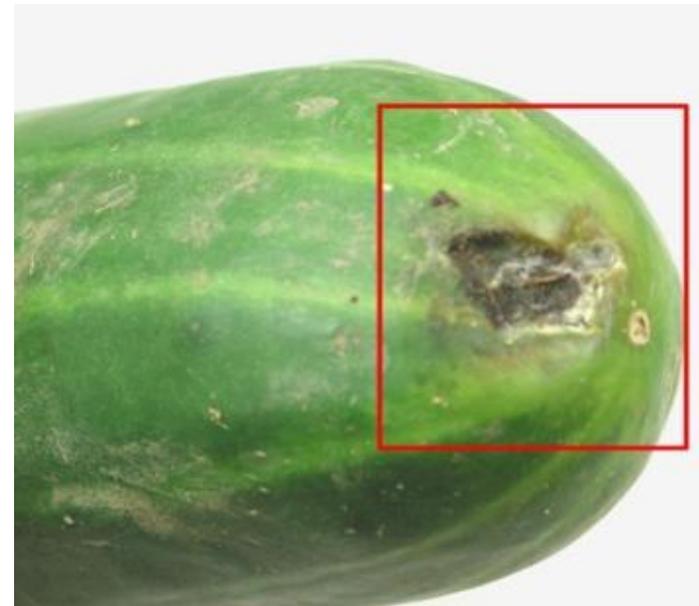
Condition Defects: Shriveling



Condition Defects: Surface Discoloration



Condition Defects: Decay



Defects

Quality and condition impact cost





Activity and Discussion

Produce Safety Resources



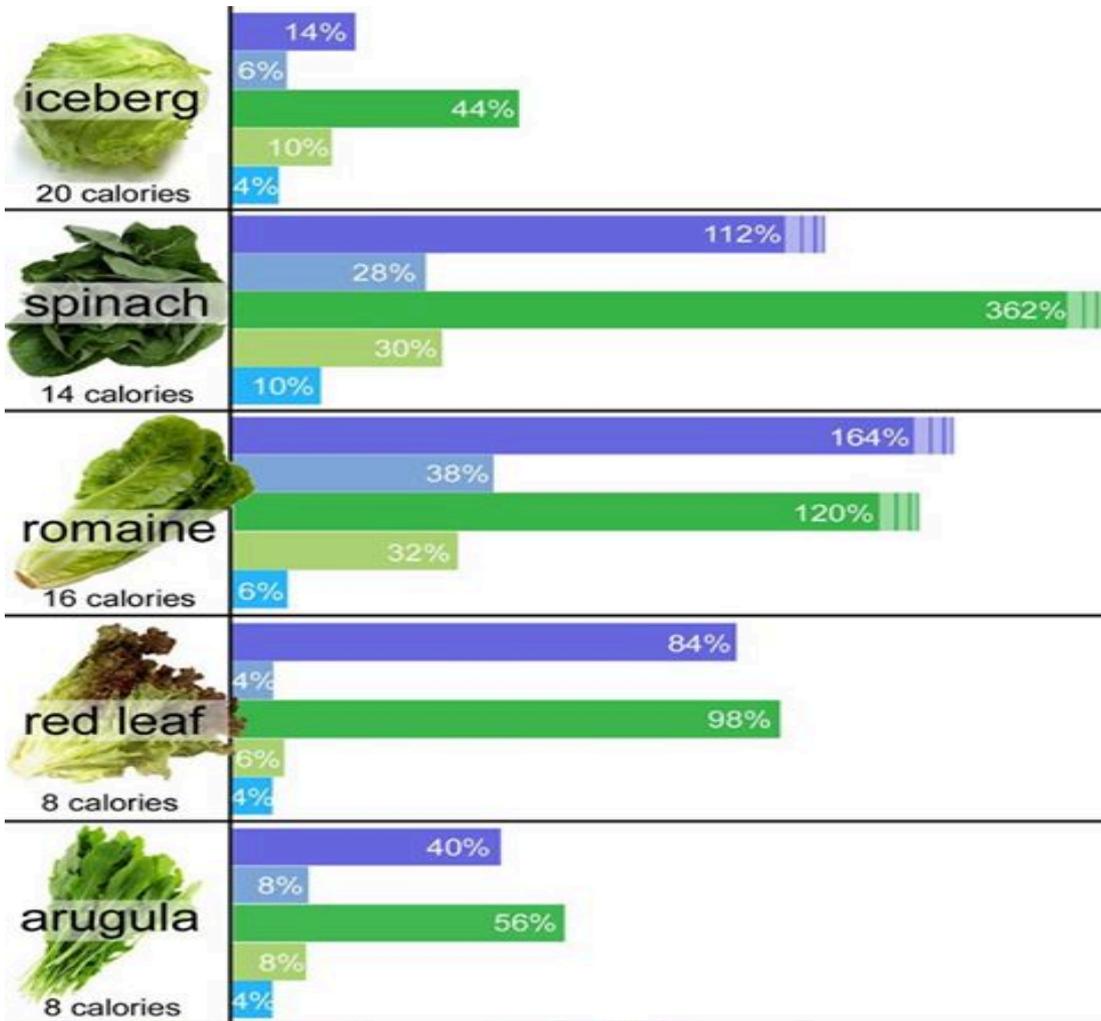
A series of resources on produce safety that describe best practices for receiving, storing, handling, and purchasing fresh and fresh-cut produce through videos, fact sheets, and PowerPoint presentations. ET106-11.

[Produce Safety Videos](#)

[Produce Safety Fact Sheets](#)

[Produce Safety Presentations and Talking Points](#)

www.nfsmi.org/producesafety

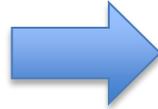


vitamin A
vitamin C
vitamin K
folate
iron



*Nutritional info based on a 2-cup serving size

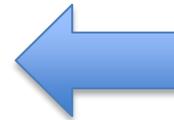
Greatist



Provides free salad bars from donations.

<http://saladbars2schools.org/guidelines>

A Missouri network of resources for schools interested in F2S!



<http://mofarmtoschool.missouri.edu/>



Host a Rainbow Day Event!



- Promoting healthy habits is the name of the game!
- Rainbow Day Events promote healthy choices from the salad bar in a fun contest while connecting with parents and community!
- Be the first of 90 schools to enroll in this program by September 13, 2013.
- *up to 5 per school district; each school site registers separately



Host a Rainbow Day Event!



Schools hosting a DHSS sponsored Rainbow Day Event will receive:



- The **LunchBox™ Healthy Tool Guide** in Microsoft word to customize news releases, parent letters, Rainbow Color Chart for Salad Bar & Etiquette sheet for Classroom!
- **\$200 stipend** to help cover essential food cost!
- **Rainbow Day Incentives:** Aprons for cafeteria staff; 2 beautiful Rainbow Day posters and roll(s) of stickers for the students.
- Opportunity to **feature your school** on the DHSS/Team Nutrition website!



Host a Rainbow Day Event!



As a school site, you will:



©Kirsten Boyer Photography

- **Assign a site coordinator** to plan the event.
- **Promote the event** soliciting school staff, parent and community volunteers.
- **Complete two brief surveys (include salad bar sales).**
- If your school would like to host a Rainbow Day event, please register at:

<http://health.mo.gov/rainbowdayprojects>