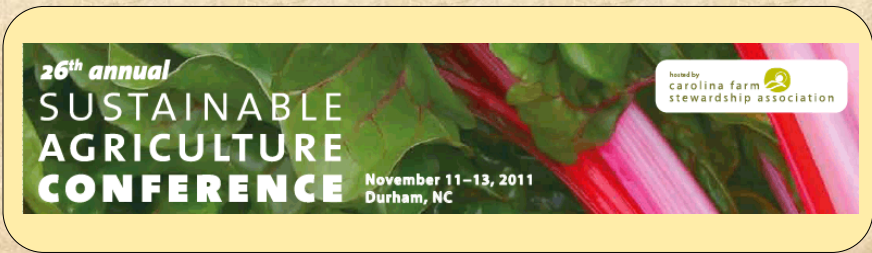


Good Agricultural Practices – The Basics



Chris Gunter
 Horticultural Science, NCSU
chris_gunter@ncsu.edu

Audrey Kreske
 Family and Consumer Sci,
 NCSU
ackreske@ncsu.edu

NCMARKETREADY™
 Fresh Produce Safety – Field to Family
 A Program of NC Cooperative Extension

Fresh Produce Safety Portal

Home | Featured Resource | GAPs Grower Directory | Legislative Updates | Program Updates | Recalls | Trainings & Events

About | GAPs | Consumers | Growers | Processors | Trainers | Spanish | Glossary & FAQ | Diane's Blog

The N.C. MarketReady team has compiled valuable resources and materials on this Fresh Produce Safety Web portal, including information on traceability, postharvest quality, cost share opportunities, Good Agricultural Practices (GAPs) and more.

For more information about Fresh Produce Safety in North Carolina, contact:

Diane Ducharme
 Extension associate & GAPs program coordinator
 704-250-5402

Rod Gurganus
 Director, N.C. MarketReady
 252-793-4428

James Oblinger
 Professor, Dept. of Food, Bioprocessing and Nutrition Sciences
 704-250-5447

Search for Growers Trained in Fresh Produce Safety

N.C. Cooperative Extension agents have been conducting Tier 1 trainings throughout the state using the N.C. MarketReady Fresh Produce Safety GAPs Training curriculum.

Search the GAPs Grower Directory >>>

Program Updates

Good Agricultural Practices Training Curriculum Now Available

N.C. MarketReady published the Fresh Produce Safety – Field to Family Good Agricultural Practices training curriculum to help fruit and vegetable growers across the state minimize fresh produce safety risks.

See Previous Program Updates >>>

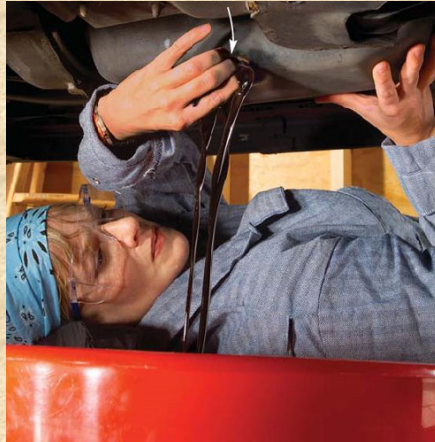
Trainings & Events

Trainings and events will be posted as soon as they are scheduled.

Legislative Updates

ncfreshproducesafety.org

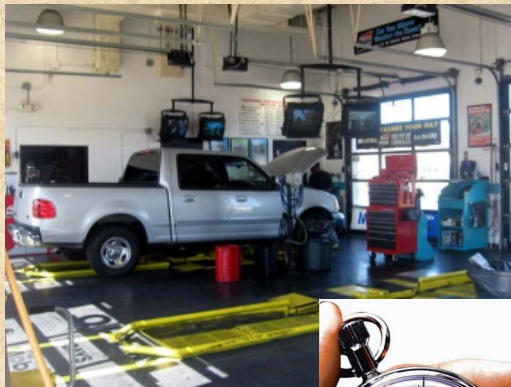
How many know how?



Change your own oil



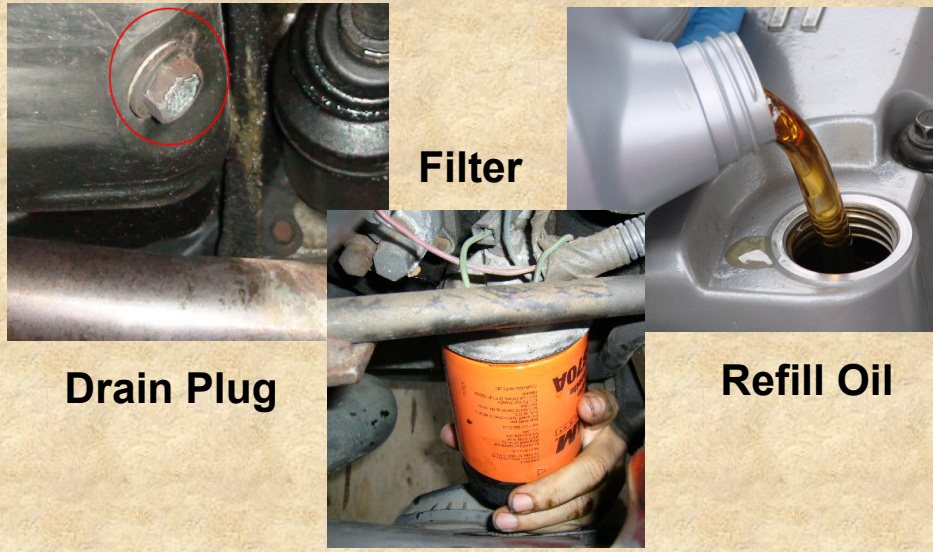
How many pay to have it done?



You Trust...



With 3 Critical Elements



Consumers are no different



They Trust You with ...



Worker Hygiene

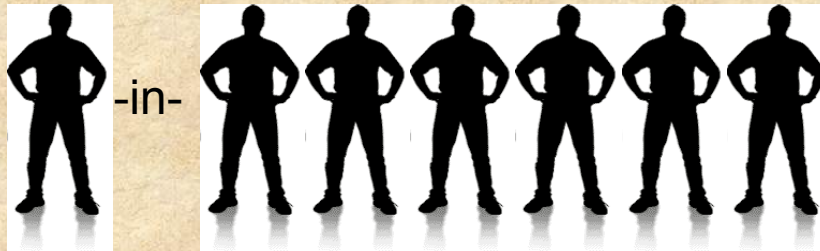
Irrigation Water



Animal Waste



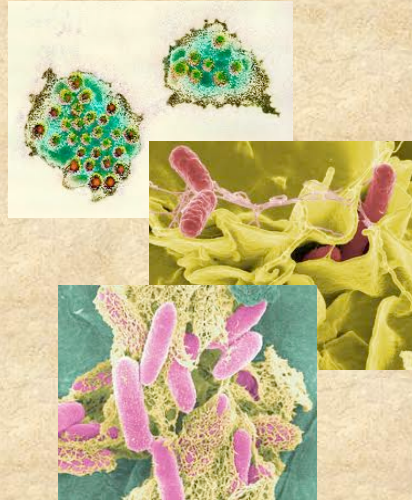
Foodborne illness in the US



31 major harmful bacteria
9.4 million episodes of foodborne illness
55,961 hospitalizations
1,351 deaths

Major pathogens

- Norovirus
- *Campylobacter*
- *Salmonella*
- *Clostridium perfringens*
- *Staphylococcus*
- *E. coli* O157
- *Shigella*
- *Listeria monocytogenes*
- Hepatitis A
- *Giardia lamblia*



Who's most at risk?



High risk populations (YOPIs)

Pregnant

immunocompromised
naturally

Immunocompromised

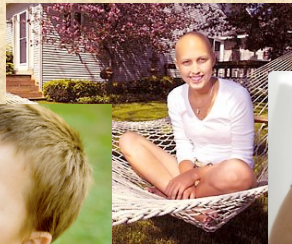
AIDS, chemotherapy,
transplants, external stress

Very young

underdeveloped

Very old

decreased immune function



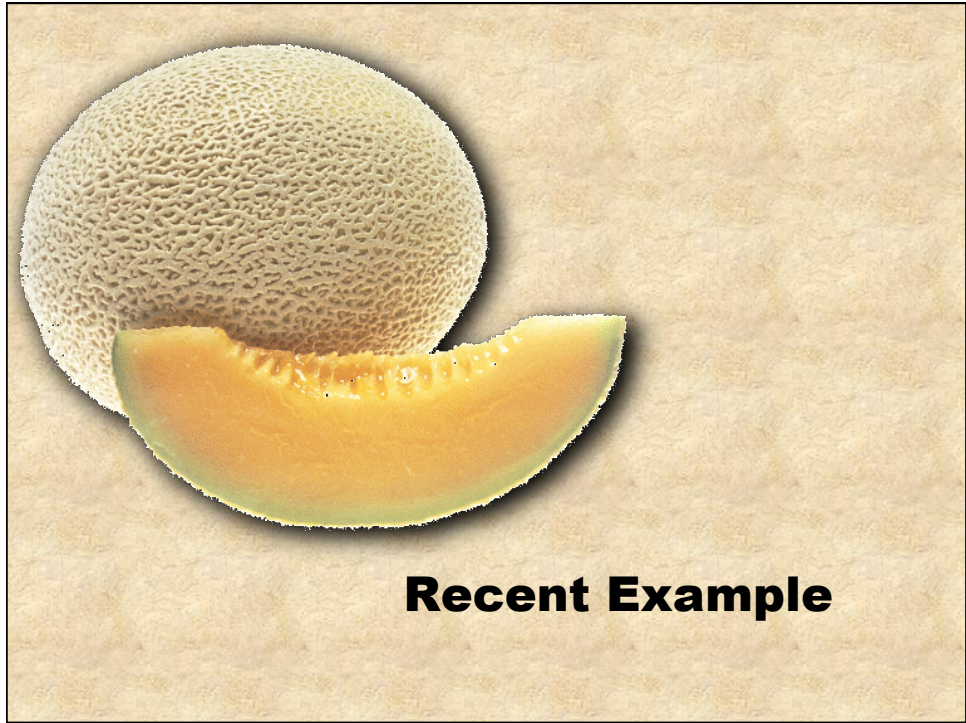
Your actions protect real people!



22 year-old Stephanie Smith
"I ask myself every day, 'Why me?' and
'Why from a hamburger?"



Travis Cudney
2010 Champion
Child
Blind since age 2
Complications
from a pathogenic
E. coli infection



Sign up | Log in

CNN Health SEARCH
POWERED BY Google

Justice Entertainment Tech **Health** Living Travel Opinion iReport Money Sports

Is cantaloupe safe to eat?

By the **CNN Wire Staff**
updated 10:35 AM EST, Thu September 29, 2011

Food safety tips 1 2 3 4 SHOW CAPTION

The Centers for Disease Control and Prevention estimates that 76 million people suffer from food-borne illnesses each year in the United States. Stay safe by following these steps outlined by the Food and Drug Administration.

STORY HIGHLIGHTS (CNN) – In the wake of a multi-state outbreak of listeriosis linked to bacteria-tainted cantaloupe, authorities assured the public that

Health officials say the only

JENSEN FARMS

CANTALOUPE CONTACT US VIDEOS GALLERY

Videos

FARM BLOG:
FDA Report
Statement in response to the FDA's released earlier today

Human Cost... 109 Ill in 24 States, 21 Deaths

BILL MARLER FOOD SAFETY ADVOCATE / FOOD POISONING ATTO



BILL MARLER is a Seattle-based personal injury attorney who has represented victims of children's Salmonella in the US. [Cont](#)



Get Help Now
NO-fee GUARANTEE
California Food Poisoning Lawyers
Foodborne illness lawsuits in Orange County, Los Angeles & San Francisco
Foodborne illnesses affect thousands of Americans every year and lead to innumerable hospital visits, lost work hours, medical, and even fatalities. If you believe that you may have a potential liability case against a restaurant, food service company, airline, or other entity, get in touch with the California personal injury lawyers at BISNAR-CHASE. We can evaluate the facts of your case and advise you on the best course of action. Contact us for an immediate response. We will be glad to help you. We have a 24-hour toll-free hotline for your convenience. We are available 24/7. We are available 24/7. We are available 24/7.

Home Biography Key Cases Blog Contact

North Carolina Lawyer Directory

Find Qualified Attorneys & Legal Resources In Your Area

North Carolina Food Poisoning Lawyers

Premier Listings

- Stallis & Brewster, LLP**
400 North Spence Avenue, Suite 2100
Phone: 919-433-6800
Contact Us, Visit Website
- Shapiro, Cooper Lewis & Appleton, P.C.**
N.C.'s Licensed Injury Lawyers Serving 202 Area Code & Beyond
Phone: 919-433-1000
Contact Us, Visit Website
- Burns, Day & Prescott, P.A.**
2828 Glenwood Avenue, Suite 980 Raleigh NC 27608
Phone: 919-858-6000
Contact Us, Visit Website

WINGATE, RUSSOTTI & SHAPIRO, LLP 1.212.ACCIDENT

Food Poisoning Attorneys

Food poisoning is a common illness that can be caused by a variety of factors. If you have been the victim of a food poisoning incident, you may be entitled to compensation for your medical expenses, lost wages, and pain and suffering. Our attorneys will help you understand your rights and fight for the compensation you deserve.

Free Consultation
Call 800-377-4710
[Or click here to email us](#)

FARBER IS A GROUP
The Washington Personal Injury Solution

Herbert G. Farber, J.D.
Call 1-800-244-9887
or (202) 462-5887
attorney@hfarber.com

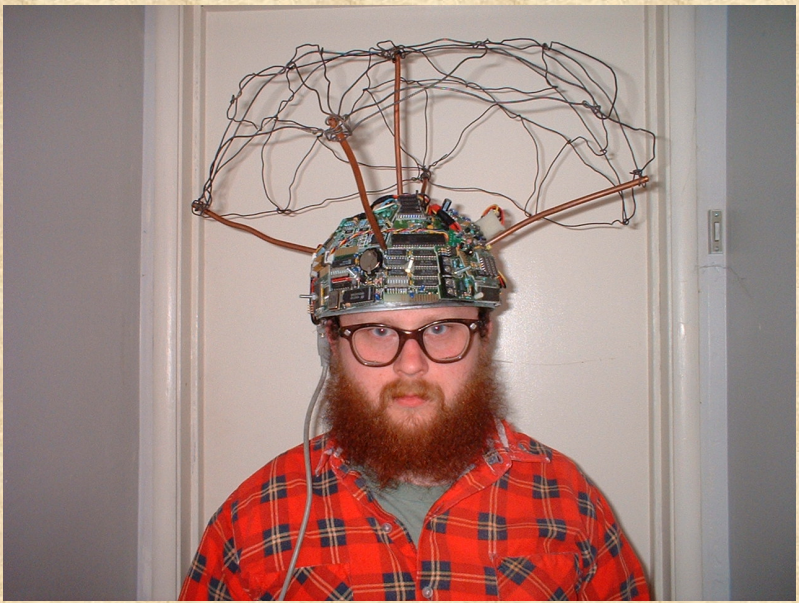
Home » Practice Areas » Foodborne Illness

Foodborne Illness

Every year in the United States the World Health Organization estimates that there are 76 million cases of Foodborne illness (food poisoning), and of those, 325,000 people are hospitalized and 5,000 people die each year. With the increasing globalization of food production and distribution, Foodborne diseases that were once limited to a small area may now occur on a global-wide scale. Outbreaks of Salmonellosis due to contaminated ice cream or bags of spinach in the past few years have affected hundreds

Contact Us
NAME: _____
EMAIL: _____
PHONE: _____
MESSAGE: _____

Reading Your Minds



“This is a BIG GROWERS Problem!”



Roadside Market - 2002

Massachusetts: Cryptosporidia – 8 illnesses linked to lettuce



Farmers Market - 2002

Fort Collins, CO: E. coli O157:H7, Linked to samples at market
14 ILL, 2 Children Required Dialysis



Farmers Market and U-Pick – 2011

14 Ill, 1 Dead – E. coli 0157:H7

Owner of Jaquith Strawberry Farm saddened by E. coli outbreak

Published: Wednesday, August 10, 2011, 9:42 AM Updated: Wednesday, August 10, 2011, 1:23 PM

By Lynne Terry, The Oregonian



The owner of the **strawberry farm in Washington County** that was linked on Monday to the **nation's first ever E. coli outbreak** related to the fruit expressed sorrow over more than a dozen illnesses and one death.

Joe Jaquith said in a statement that his fourth-generation farm "is deeply saddened by this tragic event." He said the farm is cooperating with the investigation by **Oregon Public**

Case Study

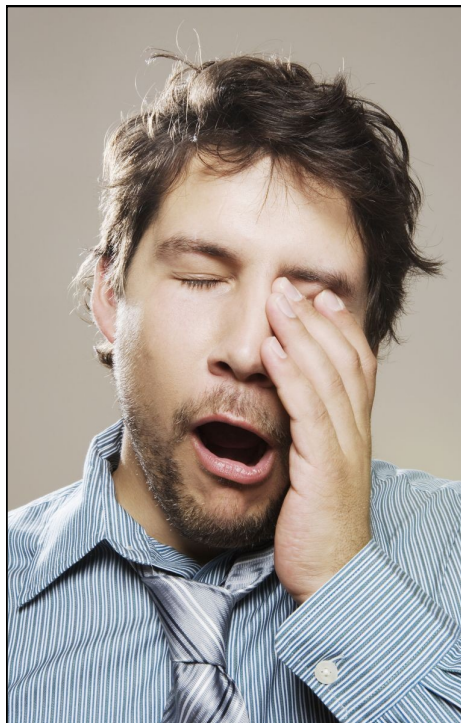
35 Acre Strawberry Producer

U-Pick, Farmers Market, and Sold to other growers at farmers markets

Traceability – Handwritten lists of buyers, some only had first names

Health unable to trace where there product went, recommended not eating strawberries from farmers markets

Can we learn from these outbreaks?



PREVENTION not CORRECTION

Already know this stuff!

People are Eating More Produce

Contamination Anytime

No Kill Step in Fresh

Bacteria, Viruses, Parasites
All implicated in OUTBREAKS

**Thou Shalt
Control
Animal
Feces!**

Intrusion into
Your Operation,
Rodents, Domestic



Sometimes we focus on these...



But don't forget these...



How does water encounter the crop?





**Sanitary
Facilities?**

**I just use my
home bathroom!**

**Who Cleans it?
How Often?**

Disposable Towels

You Have Expectations: Train Employees and Volunteers



Quick Training Materials Available

National GAPs Educational Materials

Move cursor over item of interest to see the description in a pop-up box.
Click on the item of interest to view the whole publication or a sample.
OR Click here to download the Educational Materials Flyer.
Need materials in another language?

Espanol Hmong Lao Ilocano

Order here!

Home
Research & Extension Database
Web Links
Who We Are & Contacts
Collaborators
Events Calendar
National GAPs Educational Materials
Food Safety Curriculum

A screenshot of the National GAPs Educational Materials website. The page features a navigation menu on the left with links to Home, Research & Extension Database, Web Links, Who We Are & Contacts, Collaborators, Events Calendar, National GAPs Educational Materials, and Food Safety Curriculum. The main content area displays several educational materials, including a 'Food Safety Begins on the Farm' poster, a 'Farm and Packinghouse Record Keeping Sheets' document, and a 'Food Safety Curriculum' CD. There are also links to 'Order here!' and 'Need materials in another language?'.

FIGHT GERMS BY WASHING YOUR HANDS!

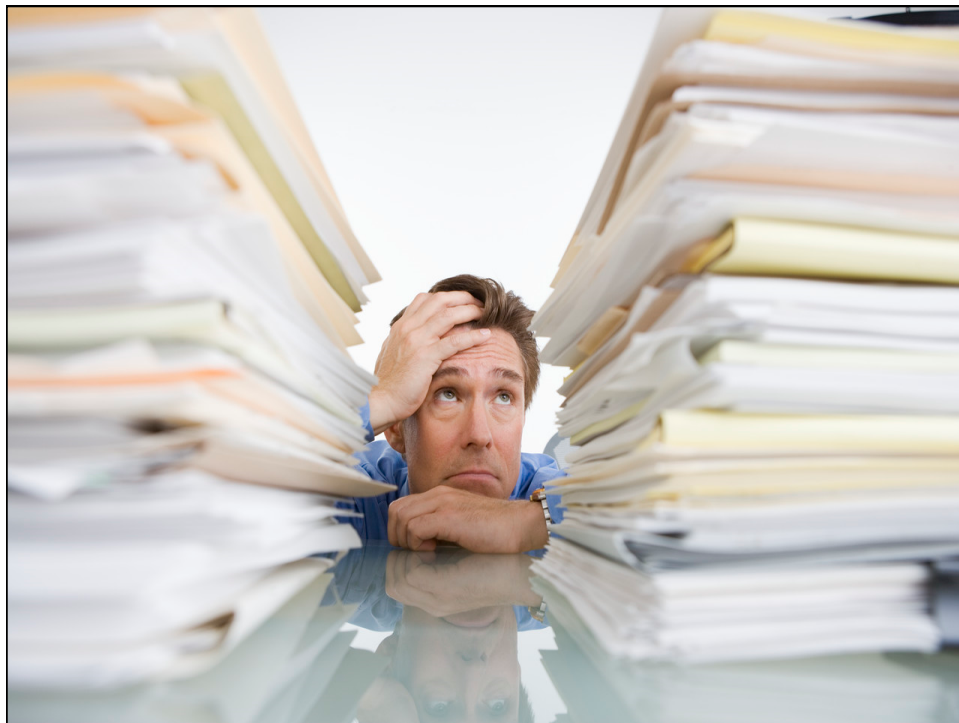
- 1 Wet your hands
- 2 Soap
- 3 Lather and scrub - 20 sec
- 4 Rinse - 10 sec
- 5 Turn off tap
- 6 Dry your hands

DONT FORGET TO WASH:

- between your fingers
- under your nails
- the tops of your hands

A 2x3 grid of illustrations showing the six steps of proper handwashing. Step 1: Wet your hands. Step 2: Soap. Step 3: Lather and scrub - 20 sec. Step 4: Rinse - 10 sec. Step 5: Turn off tap. Step 6: Dry your hands. To the right of the grid is a box titled 'DONT FORGET TO WASH:' with a list of areas to focus on: between your fingers, under your nails, and the tops of your hands.

**If you have a training:
WRITE IT DOWN!**





Harvest Containers



And boxes!







Fresh Produce Safety Portal

A Program of NC Cooperative Extension



[Home](#) | [Featured Resource](#) | [GAPs Grower Directory](#) | [Legislative Updates](#) | [Program Updates](#) | [Recalls](#) | [Trainings & Events](#)

[About](#) | [GAPs](#) | [Consumers](#) | [Growers](#) | [Processors](#) | [Trainers](#) | [Spanish](#) | [Glossary & FAQ](#) | [Diane's Blog](#)



For more information about Fresh Produce Safety in North Carolina, contact:

Diane Ducharme
Extension associate & GAPs program coordinator
🇺🇸 | 704-250-5402 | 📧

Rod Gurganus
Director, N.C. MarketReady
🇺🇸 | 252-793-4428 | 📧

James Oblinger
Professor, Dept. of Food, Bioprocessing and Nutrition Sciences
🇺🇸 | 704-250-5447 | 📧

Search for Growers Trained in Fresh Produce Safety

N.C. Cooperative Extension agents have been conducting Tier 1 trainings throughout the state using the N.C. MarketReady Fresh Produce Safety GAPs Training curriculum.

[Search the GAPs Grower Directory >>>](#)

Program Updates

Good Agricultural Practices Training Curriculum Now Available

N.C. MarketReady published the Fresh Produce Safety – Field to Family Good Agricultural Practices training curriculum to help fruit and vegetable growers across the state minimize fresh produce safety risks.

[See Previous Program Updates >>>](#)

Trainings & Events

Trainings and events will be posted as soon as they are scheduled.

[Legislative Updates](#)

ncfreshproducesafety.org