Consumer Food Safety Research

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Department of Agricultural and Human Sciences
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With the support of generous donors and our faculty and staff, the Department of Agricultural and Human Sciences designed the Dinah E. Gore Teaching and Research Kitchens, a state-of-the-art kitchen complex that will enhance and extend our work in teaching, research and extension.
Educational Food Safety Materials for Consumers

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learninggameslab.org
Learning Games Lab at New Mexico State University
Innovative Media Research and Extension

We research and produce animations, games, interactive modules and apps. We conduct research in our Learning Games Lab.

See our work at YouTube:

- Learning Games Lab: Educational animations for K-12, college students, and agricultural producers nationwide.
- College of ACES: Educational videos and animations focused on agricultural topics relevant to New Mexico.
- NMStateU: NMStateU's channel, including faculty presentations and other professional activities.

Animations, games, interactive modules and apps produced by our team.
Meaningful change in students
This material is based upon work supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, under Agreement No. 2007-51110-03813.
First, click on the sink to wash your hands.
Consumer Complaint Response

Deal 2 damage to each outbreak.

Cost: 4
Federal Inspection

Deal 4 damage.

Cooldown: 1 turn
Cost: 3
Community Outreach

Protect the next 3 low-risk people from infection.

Cost: 1

Points: 10
Food Safety Guidelines

Protect all people from new infection this round.

Cooldown: 4 turns  Cost: 5
Risk Training

High-risk people protected from new infections this round.

Cooldown: 3 turns  Cost: 4

Points: 10

GO!
Preventative Measures

- Prevent Uncommon/Rare Attacks.
- Cooldown: 1 turn
- Cost: 3

Research

POINTS
10

GO!
Published Research

Education abilities protect twice as many people this round.

Cooldown: 1 turn
Cost: 3

Research

Points 10

GO!
All enforcer attacks inflict +2 Damage this round.

Cost: 4

Cooldown: 1 turn
Quarantine

All infected people stay in place.

Cooldown: 1 turn
Cost: 4
Treatment (Low Risk)

Treat 2 low-risk people.

Cost: 1

Healthcare

Points: 10
Event: Public Outcry

They need more help out there! Treatment effects doubled this round.

CONTINUE
Outbreak Defeated!

Level Summary

<table>
<thead>
<tr>
<th></th>
<th>Low Risk</th>
<th>High Risk</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infected</td>
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<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sick</td>
<td>0</td>
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<tr>
<td>Very Sick</td>
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<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Deaths</td>
<td>5</td>
<td>2</td>
<td>7</td>
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</tbody>
</table>

REAL OUTBREAK!

In 1993, an outbreak occurred where 732 became ill from consuming contaminated beef patties in the Northwest United States. The majority of the victims were under the age of 10.
These Virtual Labs help students learn basic laboratory techniques and practice methods used by lab technicians and researchers in a variety of careers, using specific food science lab processes.

It is easy for consumers to take safe food for granted; as most people don't understand the rigorous testing, research and assessment food and food processing requires. Healthy, safe food is of extreme importance and vital to human survival. Expert lab technicians help make sure that the food we eat and feed to our animals will not harm us or our livestock.
Hello, lab assistant. Today, we'll view the Gram stained yogurt sample with a microscope to get an idea of the kind of bacteria contaminating it. To learn more about the purpose and techniques of Gram staining, please take a look at the Gram staining virtual lab.
Start by sterilizing the inoculation loop in the flame of the Bunsen burner. Hold it directly in the flame until it glows red hot.
2.0 – Measure the water’s physical properties.

Now, click the spigot to turn it off. This way, we won’t be sampling whatever has been sitting in the pipes.
1.0 - Prepare the location for sampling.

Find the best place to collect samples from.
Usually we test water upstream from the irrigation pump and away from the stream bank.
Now, mark the fluorescent colonies with the sharpie.
Fluorescent colonies are coliform bacteria other than *E. coli*. These must be counted and added to the number of total coliforms.
Today, we’re taking the first steps for analyzing samples from a pond, creating dilutions and filtering the water.
Method 1604
Total Coliforms and E. Coli.
Meaningful change for adults
Don’t Wash Your Chicken
DON'T WASH YOUR CHICKEN

GO, I TOLD MY BOSS, "I ALREADY WORKED TWO WEEKENDS," AND...

WAIT, WHAT ARE YOU ABOUT TO DO?

I'M GOING TO WASH THE CHICKEN, THEN CHOP IT FOR OUR STIR FRY.

I READ THAT RAW CHICKEN CAN HAVE BACTERIA ON IT.

SURE, CHICKEN DOES HAVE BACTERIA ON IT SOMETIMES...

BUT THE WATER IS NOT NOT ENOUGH TO KILL THE BACTERIA.

IF YOU COULD SEE GERMS, YOU WOULD SEE THAT WASHING POULTRY JUST SPLASHES BACTERIA ALL OVER YOU, THE KITCHEN, AND OTHER FOODS.

IF I CAN'T WASH THE CHICKEN...

HOW DO I GET RID OF THE BACTERIA?

BRING THE CHICKEN BACK TO THE STOVE.
DON'T WASH YOUR CHICKEN

Although raw chicken and turkey can carry bacteria on their surfaces, research has shown that washing raw poultry under running water in your kitchen sink is a bad idea.

If germs were visible to the naked eye, you would see that washing poultry just splashes bacteria all over you, your kitchen towels, your countertops, and any other food you have nearby, such as raw foods or salads. This can make people sick, especially young children, pregnant women, older adults and the immunocompromised.

Instead, just take raw poultry straight from the package into the cooking pan. The heat from the cooking process will kill any bacteria that are present. Then simply clean up any splashes and wash your hands with soap and hot water.

To learn more, explore the four mini dramas or the photonovellas.
Meaningful change for systems
Bridging the Gap: Effective Risk Mitigation Through Adoption of Agricultural Water Treatment Systems

Grant # 2016-70020-25803
Follow the directions

STEP 3:
Wait 30 seconds, then match to the color chart

If there’s a timing error.

Match the test strip to the color chart

The strip is far lighter than this color chip. There must be far less than 5 ppm. Try moving it left a few steps.

Your testing worked, but corrective action is needed

Your testing worked. It showed that your system is not working properly, and that the chlorine levels in your water are too low. You'll need to document your findings and implement corrective actions for your system.

Did you follow directions?  
Did you use the correct test kit?
ProduceSafetyMatters.org

A collaborative project supported by North Carolina Cooperative Extension, The Ohio State University Extension, and a 2012 Florida Specialty Crop Block Grant as part of the Multi-State Project “A systems approach to improving the safety of cantaloupe.”
Reducing Antibiotic Resistance

From Farm to Fork

Gene Sequences

This material was supported by Food Safety Challenge Area, Grant 2015-68003-23050, from the USDA National Institute of Food and Agriculture.
Leafy Greens Sanitization

Based on work funded by the National Integrated Food Safety Initiative (NIFSI), United States Department of Agriculture (USDA), under agreement No. 2009-51110-05902 “Pathogen Inactivation in Fresh Produce by Incorporation of Sanitizers into Existing Operations within the Produce Chain” with The Ohio State University, Iowa State University and NMSU Cooperating.
Educational

Food Safety

Materials for Consumers

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