ISU Extension and Outreach Resources

Home-based Kitchen Operations

IOWA STATE UNIVERSITY
Extension and Outreach

FALL 2022 – Spring 2023

Shannon M. Coleman, PhD.

Associate Professor and State Extension Specialist, Food Safety and Consumer Production

Email: scoleman@iastate.edu

Phone: 515-294-9011

OUTLINE

- Trainings
- Resource updates for NCR FSMA Center
- Timeline for updating digital resources
  - Fact sheets/Infographics
- North Central Food Safety Extension Network (NCFSEN)

TRAININGS

IN-PERSON offering
(Spring 2018)

Spring 2018
Included

Home Based
Food Operations

129 PARTICIPANTS

Food Safety
and Regulations

Lecture-style training utilizing
Microsoft PowerPoint
Open discussion
Interactive activities

FLIPPED CLASSROOM (ONLINE)
offering *(Fall 2018)*

MEASUREMENT OF IMPACT

Leah Reever,[1] Melissa Cater[2] and Shannon M. Coleman[3*]

[1]Dept. of Food Science and Human Nutrition, Iowa State University, 220 MacKay Hall, 2302 Osborn Drive, Ames, IA 50011-1078, USA
[2]Dept. of Agriculture and Extension Education and Evaluation, Louisiana State University, JC Miller Hall, Room 125, 110 LSU Union Square, Baton Rouge, LA 70803, USA
[3]Iowa State University, Dept. of Food Science and Human Nutrition, 2312 Food Sciences Bldg., 536 Farm House Lane, Ames, IA 50011-1054, USA

PEER-REVIEWED ARTICLE

Food Protection Trends, Vol. 41, No. 4, p. 389–399

2900 100th Street, Suite 309, Des Moines, IA 50322-3855, USA

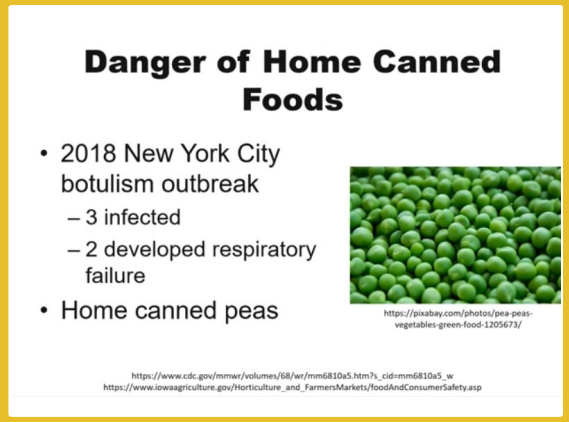
Assessing Short- and Long-term Food Safety Attitude and Behavior of Home-based Food Operators

https://www.foodprotection.org/files/food-protection-trends/jul-aug-21-reever.pdf

ONLINE CURRICULA

PREVIOUS ONLINE CURRICULA

RECORDED LECTURES



REAL-LIFE EXAMPLES

INTERACTIVE LECTURES

Knowledge assessment for each module

Measurement of Impact

Received: 21 November 2019 | Revised: 21 April 2020 | Accepted: 5 May 2020

DOI: 10.1111/1541-4329.12196

Journal of Food Science EDUCATION WILEY

CLASSROOM TECHNIQUES

Assessment of an online piloted module targeted toward home-based food operators in Iowa

Tarah Temen[1] | Nadia Jaramillo Cherrez[2] | Shannon Coleman[1]

[1] Department of Food Science and Human Nutrition, Iowa State University, Ames, Iowa

Abstract

Understanding safe food practice is important for home-based food operators to

https://doi.org/10.1111/1541-4329.12196

NEW ONLINE TRAINING

Home Based
Kitchen Operations

Food Safety
and Regulations

Curricular includes

- Recorded Lecture(s)
- Recorded Interactive Lecture(s)
- Graded Knowledge Assessments (must achieve 75%)

TRAINING TOPICS

Home Based Kitchen Operations

Food Safety and Regulations

Module 1:	Iowa Policies and Regulations
Module 2:	Food Safety Basics, Non Temperature Control for Safety (TCS) Foods and Temperature Control for Safety (TCS) Foods
Module 3:	Foodborne Pathogens
Module 4:	Safe Food Practices in the Kitchen
Module 5:	Safe Food Practices during Food Preparation
Module 6:	Safe Food Practices during Packaging and at the Point of Sale
Module 7:	Recordkeeping

Website:
https://www.extension.iastate.edu/humansciences/home-food-operations

Going Live
Monday, October 10, 2022

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Extension and Outreach

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North Central Region

Center for FSMA Training, Extension and Technical Assistance

Website link: https://www.ncrfsma.org/

Contact Ellen Johnsen (johnsene@iastate.edu)

UPDATED RESOURCES

FALL 2022

Federal and State Regulations on Selling Fermented Foods

Introduction[1]

Fermented foods are low-acids foods (typically fruits and vegetables) subjected to the action of acid-producing microorganisms to reduce the pH of the food to 4.6 or below. Examples of fermented foods are sauerkraut, some pickles, kimchi, and kombucha. The concern about fermented foods is *Clostridium botulinum*. *Clostridium botulinum* is a microorganism that produces a fatal toxin in anaerobic environments with a pH above 4.6. The toxin causes botulism, a serious paralytic illness that can be fatal and is considered a medical emergency. As you may notice, the differences between state regulations are rather large. Take time to ensure you are following the correct laws. Be sure to also look at additional resources for more information.

Standards of Identity/Definitions

Sauerkraut[2]—The product of characteristic acid flavor, obtained by the full fermentation, chiefly lactic, of properly prepared and shredded cabbage in the presence of not less than 2 percent nor more than 3 percent of salt. It contains, upon completion of the fermentation, not less than 1.5 percent of acid, expressed as lactic acid. Sauerkraut which has been rebrined in the process of canning or repacking, contains not less than 1 percent of acid, expressed as lactic acid.

Kombucha[3]—While there is variation among kombucha products, the term "kombucha" generally refers to a fermented beverage produced from a mixture of steeped tea and sugar, combined with a culture of yeast strains and bacteria. The combination of sugar and yeast triggers fermentation, which may produce a kombucha with an alcohol content of 0.5% or more alcohol by volume. When this happens, the kombucha is regulated as an alcoholic beverage under federal law and TTB regulations.

Kimchi[4]—Kimchi is a Korean spicy fermented combination of pickled vegetables. The vegetables most commonly used in its preparation are celery, cabbage, Chinese turnip, and cucumber. The vegetables are sliced, seasoned, and fermented in brine in large earthenware jars. During fermentation, which takes approximately one month depending on weather conditions, the kimchi jars are stored totally or partially underground in cellars or sheds built expressly for this purpose.

Fermented foods[5] are low-acids foods (typically fruits and vegetables) subjected to the action of acid-producing microorganisms to reduce the pH of the food to 4.6 or below. Examples of fermented foods are sauerkraut, some pickles, kimchi, and kombucha.

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Last updated Fall 2022

1

Link:
https://www.ncrfsma.org/files/page/files/ncr_fermented_foods_1.pdf

Federal and State Regulations on Selling Jams and Jellies

Standards of Identity[4]

Jellies - Jelled foods made from a mixture of one or a permitted combination of fruit juice ingredients described in 21 CFR 150.140(b). It may or may not include any combination of optional ingredients in 21 CFR 150.140(c). The jelly must have no less than 45 parts by weight of fruit juice ingredients measured in accordance with 21 CFR 150.140(d)(2) to each 55 parts by weight of saccharine ingredient as measured in accordance with 21 CFR 150.140 (d)(4). The soluble solids content of the finished jelly must not be less than 65%.

Jams/preserves - Jams/ preserves are viscous or semi-solid foods, each of which is made from a mixture composed of one or a permitted combination of the fruit ingredients in 21 CFR 150.160(b) and one or any combination of the optional ingredients in 21 CFR 150.160(c) that meets the specifications in 21 CFR 150.160 (d). The mixture must be 45 [47 if using only group 1 fruits as defined in 21 CFR 150.160(b)] parts by weight of the fruit ingredients to each 55 parts by weight of the saccharine ingredient. The soluble solids content of the finished jam or preserve is not less than 65%.

Introduction[1,2,3]

Jams, jellies, fruit butters, and preserves are shelf-stable food products. They contain high amounts of sugar and acid which lower the water activity and pH, respectively, of the product to minimize the growth of bacteria. Moisture migration, mold growth, and oxidation are reduced by hermetically sealing the jar. Important to the safety of jams and jellies is ensuring the pH of the product is below 4.6. Below this pH, *Clostridium botulinum*, a very serious human pathogen, cannot produce its deadly toxin.

Making low or no sugar jams, jellies, and preserves affects the type of pectin used to set the fruit and the microbiological safety and quality of the product. Sugar binds water in jams and jellies, reducing the water activity. Bacteria and molds grow well at high water activities and cause illness. By reducing the sugar in a jam or jelly recipe, the water activity is increased and pathogenic organisms can grow. Be sure to accurately follow verified recipes and process the jams and jellies well to kill pathogenic bacteria that may be present. Water activity below 0.85 prevents bacterial growth. If the water activity is too high, pathogenic (harmful) bacteria can grow and cause illness. Water activity is a ratio that represents the water available for microorganisms to use for growth. It is different from moisture content which is the total water contained in a food. Pepper jellies and other vegetable jellies do not have as much acid naturally present as fruit jellies. Low acid foods, pepper and other vegetable jellies, have strict standards and regulations due to their enhanced safety risk. Be sure to check with your state on the production of low acid foods.

The information below pertains to specific types of manufacturers. Manufacturers that sell their product directly to consumers through farmers' markets, roadside stands, or other similar venues should direct their attention to the "For Manufacturers Selling Directly to

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Link:
https://www.ncrfsma.org/files/page/files/ncr_jams_and_jellies_3.pdf

Federal and State Regulations on Selling Pickled Vegetables

Introduction[1,2]

Pickling is an ancient method of food preservation dating back to 3rd century BC China. Unfermented pickles are typically put into an airtight jar with acid and flavorings and heated to kill any potential bacteria on the fruit or vegetable that may cause illness or spoilage. After a few days, the pickles are ready for consumption. The biggest concern about pickled foods is *Clostridium botulinum*. *Clostridium botulinum* is a microorganism that produces a fatal toxin in anaerobic environments with a pH above 4.6. The toxin causes botulism, a serious paralytic illness that can be fatal and is considered a medical emergency. Be sure to follow recipe directions and use recipes from reputable sources such as universities.

Recipes

Recipe 1: https://catalog.extension.oregonstate.edu/pnw355
Recipe 2: https://hgic.clemson.edu/factsheet/pickled-cucumbers/
Recipe 3: extension.colostate.edu/topic-areas/nutrition-food-safety-health/making-pickles-9-304/

Standards of Identity/Definitions

Acidified foods[3]—low-acid foods to which acid(s) or acid food(s) are added; these foods include but are not limited to, beans, cucumbers, cabbage, artichokes, cauliflower, puddings, peppers, tropical fruits, and fish. They have a water activity greater than 0.85 and have a finished equilibrium pH of 4.6 or below. These foods may be called "pickles" or "pickled ____".
Low-acid foods[4] - any foods, other than alcoholic beverages, with a finished equilibrium pH greater than 4.6 and a water activity (a_w) greater than 0.85. Tomatoes and tomato products having a finished equilibrium pH less than 4.7 are not classed as low-acid foods.
Pickles[3]—pickles are considered an acidified foods as they have a water activity (a_w) greater than 0.85 and have a finished equilibrium pH of 4.6 or below.

The information in this document pertains to specific types of manufacturers. Manufacturers that sell their product directly to consumers through farmers' markets, roadside stands, or other similar venues should direct their attention to the "For Manufacturers Selling Directly to Consumers" portion of this document. Manufacturers that do not sell directly to consumers (those that sell to restaurants, grocery stores, or other manufacturers) should view the "For Manufacturers Not Selling Directly to Consumers" portion of this document, directly below.

For Manufacturers Not Selling Directly to Consumers Federal[5]

All pickle and relish producers are required to follow current Good Manufacturing Practices [21 CFR Part 117, Subpart B, and 21 CFR 117.4 (Qualifications of individuals who manufacture, process, pack, or hold food.)]. If the manufacturer sells less than $500,000 in the preceding 3 years, that business is exempt from Hazard Analysis and Risk-based Preventive Controls [21 CFR Part 117, Subparts C and G]. If the manufacturer sell more than 50% of their food directly to consumers within 275 miles of the production facility, that business is exempt from Hazard Analysis and Risk-based Preventive Controls [21 CFR Part 117, Subparts C and G]. Current Good Manufacturing Practices are practices that minimize the likelihood of allergen/

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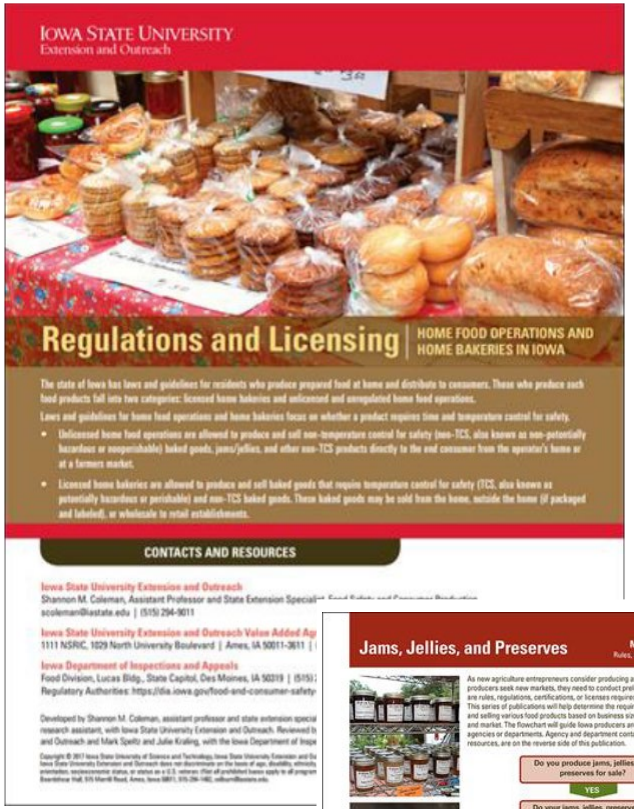
Link:
https://www.ncrfsma.org/files/page/files/ncr_pickled_vegetables_2.pdf

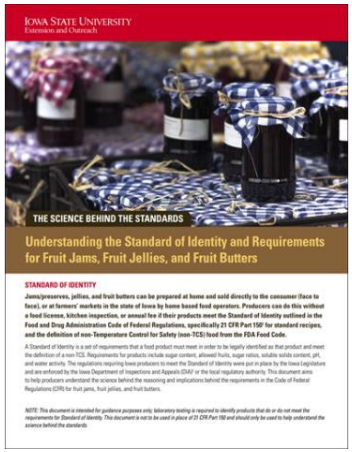
NCR FSMA Resource website: https://www.ncrfsma.org/resources

Digital Resources

Timeline update Spring/Summer 2023

- Available at the Extension Store
  https://store.extension.iastate.edu/





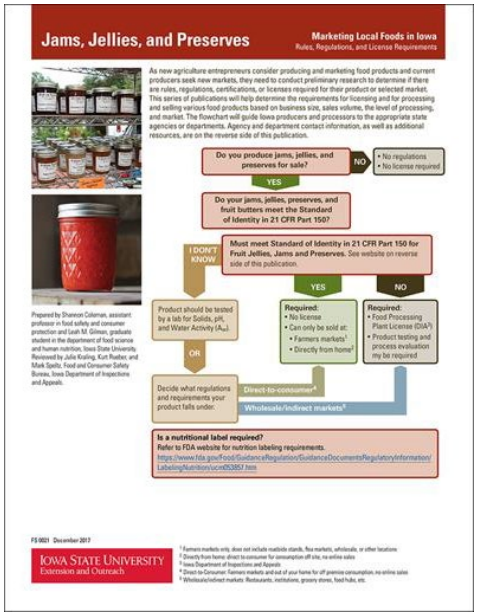


Image from ISU Extension and Outreach Store

Website link: https://www.ncrfsma.org/north-central-food-safety-extension-network-ncfsen

Co-lead by Dr. Julie Garden-Robinson, NDSU (Julie.Garden-Robinson@ndsu.edu) and
Dr. Shannon Coleman, ISU (scoleman@iastate.edu)

UPCOMING EVENT

Zoom registration Link: https://msu.zoom.us/webinar/register/WN_jwXMJfZESI-ctAYCGH2R0w

NORTH CENTRAL FOOD SAFETY EXTENSION NETWORK NCFSEN

FOOD SAFETY FOR FOOD ENTREPRENEURS

Let's cut the confusion! This webinar series details best practices related to food safety, food labeling, cleaning and sanitation of food contact surfaces.

WHEN?

Wednesday, October 12, 26 & November 9, 2022

TIME: 12:00 PM CDT/ 1:00 PM EDT

TO REGISTER:

https://go.iastate.edu/SZAPVM

QUESTIONS?

scoleman@iastate.edu or fifield@msu.edu

WEBINAR TOPICS

FOOD SAFETY BASICS

Wednesday, October 12, 2022

Emily Marrison, Ohio State University
Betty Feng, Purdue University
Morrine Omolo, University of Minnesota

CLEANING AND SANITATION BASICS

Wednesday, October 26, 2022

Shannon Coleman, Iowa State University
Karen Fifield, Michigan State University

FOOD LABELING BASICS

Wednesday, November 9, 2022

Julie Garden-Robinson, North Dakota State University
Karen Blakeslee, Kansas State University

This webinar series was made possible by USDA, NIFA 2019-70020-3033

FOOD SAFETY BASICS

Planning for food safety helps to ensure the safety of your food products and protects both your consumers and your business.

FOOD LABELING BASICS

Learn about labeling your food products, FDA's food package labeling requirements, including nutrition, ingredients, allergens and more.

CLEANING AND SANITATION BASICS

Learn about the definition of cleaning and sanitization, methods to clean and sanitize food contact surfaces.

Thank you

Shannon M. Coleman, PhD.

Email: scoleman@iastate.edu

Phone: 515-294-9011