It’s More Than Keeping Your Fingers Out of the Cookie Dough!

Food Safety for Fair Exhibits
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The Road to the Fair

Why is Food Safety Important?

Every time you cook or bake in the kitchen you are doing a science experiment!

Not all recipes are appropriate for the fair!!

Be smart about food safety!!

Is This Food Exhibit Safe?

• Ask Yourself...
  – Does this food require refrigeration?
  – Would you eat this food at room temperature?
  – Will this product hold up to its standard when it is judged or displayed?
• Food Safety violations will be disqualified!

What Makes a Food Unsafe?

• Three categories of hazards
  – Chemical
  – Physical
  – Biological

Microorganisms

• Biggest risk to humans
• Loss of shelf life
• Loss of product quality
• Can lead to foodborne illness
**Conditions for Growth**

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<tbody>
<tr>
<td>Food</td>
<td>Acid</td>
<td>Time</td>
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<td>T</td>
<td>O</td>
<td>M</td>
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<tr>
<td>Temperature</td>
<td>Oxygen</td>
<td>Moisture</td>
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**What Grows Where?**

- Bacteria, yeast, and molds can grow on just about any food
  - They really like carbohydrates and proteins
- What foods spoil the quickest?
  - These are the ones of concern

**Food Safety at the Fair**

- What is perishable?
  - High in moisture, protein and neutral acidity
  - Anything that needs refrigeration
- Many fairs have a Perishable Foods class
  - Bring at proper temperature, judge, take home
- Perishable foods are good options for a Favorite Food Show
- County Fairs that have refrigeration can allow perishable exhibits
  - Not allowed at State Fair 4-H Foods!

**Perishable Foods**

- Fresh fruit OR vegetable as a garnish
  - Once a fruit is cut it must be refrigerated
  - Many whole fruits need refrigeration
    - Strawberries
    - Raspberries
  - Many vegetables need refrigeration after harvest
    - Peppers
- Any Dairy based filling
  - Cream cheese
  - Sour cream
  - Ricotta
- Moisture level is higher in the filling and the food would need refrigeration to prevent microbial growth

**Fillings with High Amount of Dairy**

- Not acceptable!
**Pies**

- Custard Pie
  - Pumpkin
  - Cheesecake
- Cream/Meringue Pie
  - Coconut
  - Chocolate
  - Lemon
  - Any flavor!
- Strawberry pie
- Chiffon pie
- Bacteria can multiply in these moist desserts high in dairy and eggs

**NOT ACCEPTABLE!**

**Bread or Cake in a Jar**

- Jars should not be used in oven
  - Per manufacturer
- Sealed jar creates anaerobic environment that supports growth of Botulism!

**NOT ACCEPTABLE!**

**Baking in Brown Paper Bags**

- “Do not use brown paper bags from the grocery or other stores for cooking. They are not sanitary, may cause a fire, and may emit toxic fumes. Intense heat may cause a bag to ignite, causing a fire in the oven and possibly contaminating the food. The ink, glue, and recycled materials in paper bags may emit toxic fumes when they are exposed to heat. Instead, use commercial oven cooking bags.”

**NOT ACCEPTABLE!**

**Say NO to Alcohol!**

- 4-H Youth are not of legal age to purchase or possess alcohol
- Not all of the alcohol is evaporated or baked off during cooking or baking.
  - Alcohol retention ranged between 4% and 85%
  - Depends on severity of heat treatment

**NOT ACCEPTABLE!**

**Cooking in Clay Pots**

- Non-glazed terra cotta clay pots
  - Flower pots
  - Not food grade
  - May contain lead
- Use pots with food grade glaze
  - Labeled for food use

**NOT ACCEPTABLE!**

**Friendship Bread Safety**

- If starter was NOT fermented in the refrigerator, it will NOT be acceptable
  - Studies have shown that Salmonella and Staphylococcus aureus can grow during prolonged fermentation at room temperature
- Typically use milk which can spoil

**NOT ACCEPTABLE!**
**K-STATE**

**Bacon or Meat**

- Meat is perishable
- May not be completely cooked

**NOT ACCEPTABLE!**

**K-STATE**

**Flavored Oils**

- Herbs, vegetables, and garlic in oil
  - Garlic in oil has caused Botulism
  - Must be refrigerated
- Flavored vinegars are safe
- [www.ext.colostate.edu/pubs/foodnut/09340.html](http://www.ext.colostate.edu/pubs/foodnut/09340.html)

**OILS NOT ACCEPTABLE!**

**K-STATE**

**What is Safe and Non-Perishable?**

- Dairy products incorporated into the entire batter
  - Not as separate layer
- Examples include
  - Cream cheese
  - Sour cream
  - Milk
  - Cream
- These get baked into a drier environment

**ACCEPTABLE!**

**What is Safe and Non-Perishable?**

- Eggs mixed into the batter and baked
- Egg glazes on top of breads prior to baking
- Egg white powder
  - Meringue powder
  - Used in place of raw egg whites for frosting
- Egg in pie crust

**ACCEPTABLE!**

**K-STATE**

**What is Safe and Non-Perishable?**

- Fruit baked into a product
  - Pineapple Upside Down Cake
  - Blueberry muffins

**ACCEPTABLE!**

**What is Safe and Non-Perishable?**

- Fruit Pie
  - High sugar content takes moisture away from bacteria
  - Baking reduces bacteria issues
  - Exception is refrigerated pie like Strawberry
- Pecan or any Nut Pie
  - High sugar binds up moisture making it unavailable for bacteria to use

**ACCEPTABLE!**
What is Safe and Non-Perishable?

- Frostings/Icings
  - High sugar content suppresses bacterial growth
  - Use small amount of liquid
    - Milk, juice, water
  - Add flavorings
    - Cream cheese flavor
    - Fruit flavor
  - Shortening withstands heat better than butter
  - German Chocolate Frosting
  - Commercial frosting
    - If permitted at your fair
    - Note in the recipe

Acceptable!

Underbaked Foods

- White Ribbon at State Fair
- What do you think?
- Will be dropped at least one ribbon placing

Acceptable!

Is it Nutritious?

- Consider the Dietary Guidelines
- Use of whole grains, fiber
- Low in fat
- Low in sodium
- Reduce added sugars
- Proper portion size

Prize winners do not always = high fat or high sugar!

Portion Size

- Portion size!
  - Bar cookies – 2-inch
  - Drop cookies – 2 half dollar coins
  - Cinnamon roll – hockey puck
  - Roll – bar of soap
  - Muffin – tennis ball
  - Biscuit – hockey puck
Modified Foods Class

- Original recipe changed to improve nutritive value or fit diet needs
- Standard Blueberry Muffin recipe changed by:
  - All purpose flour replaced with whole wheat flour
  - All purpose flour replaced with gluten free flours
  - Fat content changed by using fruit puree
- A recipe already gluten-free is NOT a modified food!

So What Can Be Entered at a Fair?

There are thousands of recipes!!

PRACTICE! PRACTICE! PRACTICE!

READ THE RULES!

For Judge’s, Leaders, Parents, Youth

Judge’s Guide for Foods and Nutrition Exhibits

Class No
Foods Product
Name
County /District
Foods Label
http://www.kansas4-h.org/doc13311.pdf

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