



Is a food exhibit appropriate? Ask yourself:

1. Does this product require refrigeration?
2. Would you eat this product at room temperature?
3. Will this product hold up so it represents a standard when evaluated by judges or viewed by the public?

See following pages for details about specific products.

If you have questions or need information about pressure canner test dates, please contact your local ISU Extension office or AnswerLine:

1-800-262-3804
Iowa Relay (TTY):
1-800-735-2941
www.extension.iastate.edu/answerline

* indicates a change for 2009

Inappropriate Food Exhibits For Iowa 4-H Fairs

ACCEPTABLE FOR FAIR DISPLAY

Questions have been raised about these products but they are OKAY:

Caramel rolls
Cream cheese mints
Pineapple upside down cake

These products are OKAY IF specific criteria are met (see details on page 3):

*Canned products

- Canned and pickled products—including salsa, vegetables, and meats—must meet USDA guidelines for recipe and heat processing.
- Fruits, jams, jellies, and other spreads must use an approved source.
- All products must be labeled using the template available at www.extension.iastate.edu/4H/StateFair/index.htm
Or, have an equivalent label that includes the same information.

Frosting, icing, glazes

Fruit-flavored vinegars

Pecan/walnut pies

NOT ACCEPTABLE FOR FAIR DISPLAY

Any food containing alcohol

*Breads containing ingredients that are normally refrigerated (such as chopped and dehydrated vegetables, meats, and layers of cheese). A small amount of thinly sliced vegetables may be used as a garnish on top if added before baking.

Breads, brownies, or cakes baked in a jar or a non-food grade container, including anything baked in a jar and allowed to vacuum seal

Caramel corn or pies baked in a paper grocery bag

Custard and cream-filled pies, cheesecakes

Flavored oils

Fresh salsa

Homemade egg noodles

Jerky of any kind

Meat-filled pastries

Raw egg in any uncooked product

Sourdough, friendship bread, etc.

Sweet rolls with cottage cheese/egg topping

Vegetables marinated in oils and herbs

Digging Deeper: Guidance for Preparing Safe Foods for 4-H Exhibits

Food and nutrition projects for 4-H exhibits should be prepared with food safety in mind. The importance of food safety cannot be overemphasized. Judges will not evaluate foods that they consider unsafe and you do not want the judges to become ill. This means following the safe food handling practices outlined below and preparing foods that will survive in warm, humid situations.

Why are some foods inappropriate for display at fairs?

Most foods are safe to consume immediately after preparation; others pose unique handling considerations that might be difficult to provide in an exhibit. For example, custards, cream pies, fluid dairy products, egg dishes, and meat products require colder storage temperatures than are usually available away from home. Other foods may be unsafe if kept at room temperature for more than two hours.

How do foods make people sick?

Proper preparation and handling of foods is critical to avoid foodborne illness. The *two most important* aspects are to prevent food from being contaminated with bacteria or viruses and to prevent the growth of bacteria. Although a variety of naturally-occurring pathogenic bacteria may be present in foods, processing steps (such as heat and refrigeration) usually kill them or prevent them from growing.

Viruses that make us sick are almost always found in food as a result of fecal contamination from the preparer. The key to preventing pathogenic viruses from causing illness is frequent hand washing, especially after using the restroom.

Proper hand washing is the most important step each of us can take to ensure safe food—and it takes only a minute. Wash your hands:

- After using the restroom
- Before preparing food
- Before eating food
- After playing with pets
- Almost anytime you think they may be dirty!

**An estimated 50 million Americans
get sick yearly because
someone did not wash his/her hands.**

FAT TOM

— factors necessary for bacterial growth

Bacteria are like us; they need specific conditions to grow. The conditions that bacteria need can be summarized in the acronym FAT TOM.

F – food

Bacteria can grow on almost anything; they need only protein and carbohydrate. Think about how fast milk spoils. With 4 percent sugars and 4 percent protein, milk is the perfect food for bacteria.

A – acidity

Bacteria need a neutral environment, neither too acidic nor too alkaline. Optimum growth is in the pH range of 4.6 to 7.8. Fruits tend to be acidic (high acid) while milk, vegetables, and meat are neutral (low acid). Properly made pickles are vegetables that have been acidified to bring them below pH 4.2.

T – temperature

Pathogenic bacteria can grow in temperatures from 40-140°F but they grow best in the 70-110°F zone. In this temperature range, pathogens may double every 20 minutes. No wonder so many people get sick from temperature-abused foods! Hot foods should be kept HOT (above 140°F) and cold foods COLD (below 40°F).

T – time

Because bacteria can double so quickly, time is as critical as temperature. Remember the two hour rule—"Do not hold foods at room temperature any longer than two hours."

O – oxygen

Some bacteria are able to grow without oxygen (anaerobic). The process of canning foods creates an anaerobic environment and may allow the growth of the bacterium that causes botulism. Fortunately, the extreme heat of the pressure canner (240°F at 11 pounds pressure) kills the bacterium. By comparison, a water bath canner reaches a maximum temperature of only 212°F.

M – moisture

All life needs water to grow. For example, dried rice does not support bacterial growth; however, cooked rice is a very good growth medium for bacteria.

Critical safe food handling guidelines

- Keep counters, dishes, and hands clean. Use paper towels or replace hand towels frequently.
- Avoid cross contamination of raw or prepared foods with raw meats or poultry. Cutting boards, knives, hand towels, plates, and hands are all potential sources of cross contamination.
- Thaw foods in the refrigerator and not at room temperature.
- Cook meats and poultry to the proper internal temperatures.
- Cool foods quickly. Remember the two hour rule.

Canned vegetables and meat products—Product must be accompanied by a statement indicating the canning method, processing time, and recipe. If a dial gauge canner is used, a copy of the annual test record should be included but is not required. (Weighted gauge canners do not require yearly testing.)

Frosting, icing, glazes – OKAY “IF”

NOTE: Frostings and glazes will “melt” in hot, humid weather and be less attractive for product evaluation.

The following are acceptable:

- Cream cheese frostings made with at least 4 cups of sugar per 8 ounces or less of commercially available cream cheese
- Frostings made with meringue powder
- Frostings and glazes made of powdered sugar, milk, and vanilla or other flavorings

The following are not acceptable:

- Icing and frostings made with raw eggs
- Whipped cream cheese frostings made without powdered sugar

Fruit-flavored vinegars – OKAY “IF”

Fruit-flavored vinegar will be allowed as an exhibit, only if a specific recipe is used and included (with publication date); simply adding fruit to vinegar is not enough. Note that the color of the fruit may change with storage. Use only commercially available vinegars and do not dilute.

Pecan/walnut pies – OKAY “IF”

These pies are safe if made from a traditional recipe using eggs, sugars, and no added water or milk. Although these are very rich and moist, they are safe because there is not enough moisture to support bacterial growth. Products made from a nontraditional recipe that includes added water or milk are NOT acceptable.

UNACCEPTABLE FOODS FOR FAIR DISPLAY

Any food containing alcohol

The use of alcoholic beverages in the preparation or production of 4-H food exhibits is NOT permitted.

Breads containing ingredients that are normally refrigerated

Breads made with ingredients that are normally refrigerated (such as salsa and chopped or dehydrated onions, mushrooms, or peppers) and/or high protein items (such as pork and beans or layers of cheese) have a short shelf life. They would be used in a timely manner at home but are not acceptable as a fair exhibit.

ACCEPTABLE FOODS FOR FAIR DISPLAY

Further explanation of why some foods are OKAY

Caramel rolls, cream cheese mints, and pineapple upside down cake – OKAY

These products are acceptable because the high sugar content will not support bacteria growth.

The following products are OKAY IF these criteria are met

Canned products – OKAY “IF”

Canned products will not be tasted but will be evaluated on color, appearance, aroma, and texture.

Products are acceptable if

- the recipe and process are from an approved source —such as university extension publications, USDA canning guide, or Ball Blue Book (1994 or later).

- the product is in a “Mason-type” threaded canning jar with a canning lid and band. Brands of jars and lids are interchangeable. Decorative half-pint jars are acceptable only for jams, jellies, and fruit spreads.

NOTE: Jars that previously contained a commercially processed product (such as mayonnaise) are not acceptable. Paraffin or waxes are not acceptable as a jar sealant.

- the canning method, processing time, altitude, recipe, and source of recipe (including publication date) is clearly indicated. Only products processed since September of the previous year are acceptable.

Canned fruits, jams and jellies—Boiling water canner processing may be used. Tomatoes must be acidified; see page 4 for resources. Flower jellies cannot be low sugar and flowers must be pesticide-free. For a list of acceptable flowers, refer to “Edible Flowers” at www.extension.iastate.edu/Publications/RG302.pdf.

Canned salsas and pickled products—Product must be accompanied by a statement describing the entire process and recipe source, including publication date.

UNACCEPTABLE FOODS FOR FAIR DISPLAY

(continued)

Cake, brownies, bread baked in a jar or non-food grade container

Preparation method creates potential botulinum risk.

Canned/preserved products using questionable recipe or procedure

(Refer to instructions in previous section.)

Caramel corn or pies baked in a paper grocery bag

Bags are inappropriate cooking containers because the bag may not be sanitary, the glue and ink used on the bag have not been approved for contact with food and may give off toxic fumes when heated, the bag may catch on fire, and grocery bags made of recycled paper may contain a variety of contaminates that may leach into the food.

Custard and cream-filled pies, cheesecakes

Products requiring refrigeration are not allowed.

Flavored oils

Oils infused with herbs or garlic are a potential botulism risk. Products made with these oils also are considered unsafe.

Fresh salsa

Requires refrigeration and is not allowed.

Frosting, icing, glazes

(Refer to instructions in previous section.)

Homemade egg noodles

According to the United States Department of Agriculture Meat and Poultry Hotline, noodles made with whole raw eggs should be dried and stored in the refrigerator or frozen to prevent salmonella from growing to disease-causing levels.

Jerky of any kind

Not acceptable because of the potential for bacteria and/or toxin survival in the finished product. A poster or notebook is a better choice as an exhibit.

Meat-filled pastries

These products have a significant chance of bacterial growth.

Raw egg in any uncooked product

Eggs have been implicated in an increasing number of cases of food borne illness. Salmonella can lurk

inside the egg, even one with a clean, uncracked shell. That means that some recipes, unless modified, are unsafe. Many old favorite recipes were written before salmonella was recognized as a problem in raw eggs.

Sourdough, friendship bread, etc.

Although bakery products leavened by wild microorganisms have been used for years, the potential for abuse may result in an unsafe product. Of particular concern are toxins produced by a variety of organisms including *Staphylococcus*.

Sweet rolls with cottage cheese/egg topping

Implies a sugar, egg, cream cheese (or other unripened cheese such as cottage or ricotta cheese) mixture that is protein-rich, moist, and can be easily contaminated. Bacteria love high protein, high moisture, and a neutral pH environment.

Vegetables marinated in oils and herbs

The vegetables could harbor botulism spores. Covering moist vegetables with oil results in anaerobic conditions that may allow botulinum growth.

Additional resources

Iowa State University Extension Distribution Center

www.extension.iastate.edu/store

(See especially the sections on food preservation and food safety in the Food, Nutrition, and Health topic area)

Iowa State University Extension Food Safety

www.extension.iastate.edu/foodsafety/

Jarden Home Brands (Ball Blue Book®)

www.freshpreserving.com

National Center for Home Food Preservation

www.uga.edu/nchfp/

New Mexico University Extension (salsa recipes)

http://aces.nmsu.edu/pubs/_e/e-323.pdf

United States Department of Agriculture: Complete Guide to Home Canning. 2006

www.uga.edu/nchfp/publications/publications_usda.html

No endorsement of products or firms is intended nor is criticism implied of those not mentioned.

Prepared by Sam Beattie, extension food science specialist; Liz Meimann, food science graduate student; Sue Bogue, state youth development specialist; and Diane Nelson, communication specialist.