United States Department of Agriculture
Food Safety and Inspection Service

Food Safety Information

Shell Eggs from Farm to Table

Eggs are among the most nutritious foods on earth and can be part of a healthy diet. However, they are perishable just like raw meat, poultry, and fish. Unbroken, clean, fresh shell eggs may contain Salmonella Enteritidis (SE) bacteria that can cause foodborne illness. While the number of eggs affected is quite small, there have been cases of foodborne illness in the last few years. To be safe, eggs must be safely handled, promptly refrigerated, and thoroughly cooked.

What is the history of the egg?

"Eggs existed long before chickens," according to *On Food and Cooking: The Science and Lore of the Kitchen* by Harold McGee. "The first eggs were released, fertilized, and hatched in the ocean. Around 250 million years ago, the earliest fully land-dwelling animals, the reptiles, developed a self-contained egg with a tough, leathery skin that prevented fatal water loss. The eggs of birds, animals that arose some 100 million years later, are a refined version of this reproductive adaptation to life on land. Eggs, then, are millions of years older than birds. *Gallus domesticus*, the chicken more or less as we know it, is only a scant 4 or 5 thousand years old."

How often does a hen lay an egg?

The entire time from ovulation to laying is about 25 hours. Then about 30 minutes later, the hen will begin to make another one.

How does *Salmonella* infect eggs?

Bacteria can be on the outside of a shell egg. That's because the egg exits the hen's body through the same passageway as feces is excreted. That's why eggs are required to be washed at the processing plant. All USDA graded eggs and most large volume processors follow the washing step with a sanitizing rinse at the processing plant. It is also possible for eggs to become infected by Salmonella Enteritidis fecal contamination through the pores of the shells after they're laid. SE also can be inside an uncracked, whole egg. Contamination of eggs may be due to bacteria within the hen's reproductive tract before the shell forms around the yolk and white. SE doesn't make the hen sick.

What part of the egg carries bacteria?

Researchers say that, if present, the SE can be in the yolk or "yellow" or the albumen (egg whites). So everyone is advised against eating raw or undercooked egg yolks and whites or products containing raw or undercooked eggs.

What safe handling instructions are on egg cartons?

All packages of raw, shell eggs not treated to destroy Salmonella must carry the following safe handling statement:

SAFE HANDLING INSTRUCTIONS: To prevent illness from bacteria: Keep eggs refrigerated, cook eggs until yolks are firm, and cook foods containing eggs thoroughly.

Who is "at risk" for eating raw or undercooked eggs?

Infants, young children, older adults, pregnant women, and people with weakened immune systems are particularly vulnerable to SE infections. A chronic illness weakens the immune system, making the person vulnerable to foodborne illnesses.

No one should eat foods containing raw eggs. This includes "health food" milk shakes made with raw eggs, Caesar salad, Hollandaise sauce, and any other foods like homemade mayonnaise, ice cream, or eggnog made from recipes in which the egg ingredients are not thoroughly cooked. However, in-shell pasteurized eggs may be used safely without cooking.

Who is working on eliminating the *Salmonella* in eggs?

Federal and state governments, the egg industry, and the scientific community are working together to solve the problem. Involved government agencies include: USDA's Food Safety and Inspection Service (FSIS), Agricultural Research Service (ARS), and the Animal and Plant Health Inspection Service (APHIS); the U.S. Food and Drug Administration (FDA); and State departments of agriculture.

What government agencies are responsible for the oversight of shell eggs?

Many government agencies cooperate to oversee shell eggs from farm to table.

USDA Agencies:

Agricultural Marketing Service (AMS)

- AMS is responsible for the Shell Egg Surveillance Program to assure that eggs in the marketplace are as good as or better than U.S. Consumer Grade B quality standards. AMS conducts inspection of handlers and hatcheries four times each year to ensure conformance with these requirements. Eggs exceeding the tolerance for checks or loss must be diverted from the marketplace for further segregation or processing.
- AMS also administers a voluntary egg-quality grading program for shell eggs paid for by processing plants.
- The USDA grade mark on egg cartons means the plant processed the eggs following USDA's sanitation and good manufacturing processes.
- As of April 1998, AMS has prohibited the repackaging of eggs previously shipped for retail sale that were packed under its voluntary grading program.

Animal and Plant Health Inspection Service (APHIS)

- APHIS conducts activities to reduce the risk of disease in flocks of laying hens.
- APHIS administers the voluntary National Poultry Improvement Plan (NPIP), which certifies that poultry breeding stock and hatcheries are free from certain diseases. Participation is necessary for producers that ship interstate or internationally.

Food Safety and Inspection Service (FSIS)

- FSIS is responsible for the import of eggs destined for further processing and for assuring that imported shell eggs destined for the retail market are transported under refrigerated conditions.
- FSIS verifies shell eggs packed for the consumer are labeled "Keep Refrigerated" and stored and transported under refrigeration and ambient temperature of no greater than 45 °F.
- USDA also educates consumers about the safe handling of eggs. FSIS has developed several English and Spanish publications on egg safety and uses a variety of networks (such as the USDA Meat and Poultry Hotline, "Ask Karen," "Pregúntele a Karen," Podcasts, Twitter, blogs, and USDA cooperative extension agents) to get this information to consumers.

Agricultural Research Service (ARS)

- USDA also carries out food safety research through ARS and through a program administered by USDA's National Institute of Food and Agriculture (NIFA).
- In 2005, ARS established the Egg Safety and Quality Research Unit at the Russell Research Center in Athens, GA, to expand egg safety and egg processing research. A 2006-2011 five-year project is addressing issues of concern for the shell egg and egg products industry, regulatory personnel, allied industry and consumers.

National Agricultural Statistics Service (NASS)

- USDA collects processing and distribution information for the economic analysis of the egg products industry through NASS.

Other Government Agencies

FSIS/FDA Cooperation

- FSIS and the FDA share authority for egg safety and are working together toward solving the problem of SE in eggs.
- FSIS and FDA are working to strengthen the Food Code and to encourage its adoption by States and local jurisdictions.

U.S. Food and Drug Administration

- The Egg Safety Rule went into effect July 9, 2010 for egg producers with 50,000 or more laying hens. Under the requirements of this rule, egg producers are required to implement safety standards to control risks associated with pests, rodents, and other hazards; to purchase chicks and hens from suppliers who control for salmonella in their flocks; and to satisfy testing, cleaning, and refrigeration provisions to prevent SE.
- These facilities must register with FDA and are required to maintain written plans summarizing their safety practices.
- Under this new rule, FDA will inspect more than 600 farms over the next 14 months (through 2011) to ensure that producers are complying with the new provisions of the Egg Safety Rule.

State Agriculture Departments

- State agriculture departments monitor for compliance of the official U.S. standards, grades, and weight classes by egg packers who do not use the USDA/AMS shell egg grading service.

State and Local Health Departments

- State and local health departments monitor retail food and foodservice establishments for compliance with state and local health department requirements.
- State and local health departments, in cooperation with FDA, monitor safe handling and good manufacturing practices in shell egg processing plants that do not use the USDA shell egg grading service.

What is candling?

Candling is the process of using light to help determine the quality of an egg. Automated mass-scanning equipment is used by most egg packers to detect eggs with cracked shells and interior defects. During candling, eggs travel along a conveyor belt and pass over mechanical sensors integrated with computerized systems for segregation of defective eggs. Manual scanning techniques involve conveying the eggs over a light source where the defects become visible and the defective eggs are segregated. Hand candling—holding a shell egg directly in front of a light source—is done to spot check and determine accuracy in grading. Advanced technology, utilizing computerized integrated cameras and sound wave technology, is also being applied for the segregation of eggs.

How are eggs transported safely to stores?

The U.S. Department of Commerce's 1990 Sanitary Food Transportation Act requires that vehicles be dedicated to transporting food only. On August 27, 1999, FSIS made effective a rule requiring:

- Shell eggs packed for consumers be stored and transported under refrigeration at an ambient (surrounding) air temperature not to exceed 45 °F;
- All packed shell eggs be labeled with a statement that refrigeration is required; and
- Any shell eggs imported into the United States, packed for consumer use, include a certification that they have been stored and transported at an ambient temperature of no greater than 45 °F.·
- FDA's Egg Safety Rule requires those transporting eggs to maintain an ambient temperature of 45 °F beginning 36 hours after laying of the eggs.

What is included under the Egg Products Inspection Act?

The term "egg products" refers to eggs that have been removed from their shells for processing at facilities called "breaker plants." The safety of these products is the responsibility of FSIS. Basic egg products include whole eggs, whites, yolks, and various blends — with or without non-egg ingredients — that are processed and pasteurized. They may be available in liquid, frozen, and dried forms. Most are not available in supermarkets, but are used in restaurants, hospitals, and other foodservice establishments as well as by bakers, noodle makers, and other food manufacturers.

Egg products are pasteurized. The 1970 Egg Products Inspection Act (EPIA) requires that all egg products distributed for consumption be pasteurized. They are rapidly heated and held at a minimum required temperature for a specified time. This destroys *Salmonella*, but it does not cook the eggs or affect their color, flavor, nutritional value, or use. Some dried egg products are pasteurized by heating in the dried form.

While inspected pasteurized egg products are used to make freeze-dried egg products, imitation egg products, and egg substitutes, these products are not covered under the EPIA and are under FDA jurisdiction. No-cholesterol egg substitutes consist of egg whites, artificial color, and other non-egg additives. Direct questions about egg substitutes to the manufacturer or to the FDA. For more information about egg products, read "Egg Products and Food Safety" at www.fsis.usda.gov/Fact_Sheets/Egg_Products_and_Food_Safety/index.asp

Can shell eggs be pasteurized?

Shell eggs can be pasteurized by a processor if FDA accepted the process for the destruction of *salmonella*. Pasteurized shell eggs are now available at some grocery stores. Like all eggs, they must be kept refrigerated to retain quality. The equipment to pasteurize shell eggs isn't available for home use, and it is very difficult to pasteurize shell eggs at home without cooking the contents of the egg.

Are powdered egg whites pasteurized?

Yes. Egg white powder is dried egg white (pure albumen). It can be reconstituted by mixing the powder with water. The reconstituted powder whips like fresh egg white and, because it is pasteurized, can be used safely without cooking or baking it. The product is usually sold along with supplies for cake baking and decorating.

What points should you consider when buying eggs?

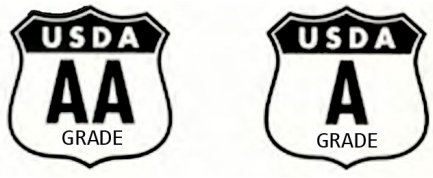
Always purchase eggs from a refrigerated case. Choose eggs with clean, uncracked shells. Don't buy out-of-date eggs. Look for the USDA grade shield or mark. Graded eggs must meet standards for quality and size. Choose the size most useful and economical for you. Refrigerate shell eggs as soon as possible after purchase.

Is grading of eggs mandatory?

Inspection, for wholesomeness, is mandatory but grading, for quality, is voluntary. If companies choose to have their eggs graded, they pay for this USDA service. The USDA grade shield on the carton means that the eggs were graded for quality and checked for weight (size) under the supervision of a trained USDA grader. Compliance with quality standards, grades, and weights is monitored by USDA. State agencies monitor compliance for egg packers who do not use the USDA grading service. These cartons will normally bear a term such as "Grade A" on their cartons without the USDA shield.

What are egg grades?

There are three consumer grades for eggs: U.S. Grade AA, A, and B. The grade is determined by the interior quality of the egg and the appearance and condition of the egg shell. Eggs of any quality grade may differ in weight (size).



U.S. Grade AA eggs have whites that are thick and firm; yolks that are high, round, and practically free from defects; and clean, unbroken shells. Grade AA and Grade A eggs are best for frying and poaching where appearance is important.

U.S. Grade A eggs have characteristics of Grade AA eggs except that the whites are "reasonably" firm. This is the quality most often sold in stores.

U.S. Grade B eggs have whites that may be thinner and yolks that may be wider and flatter than eggs of higher grades. The shells must be unbroken, but may show slight stains. This quality is seldom found in retail stores because they are usually used to make liquid, frozen, and dried egg products.

Sizing of Eggs

Size tells you the minimum required net weight per dozen eggs. It does not refer to the dimensions of an egg or how big it looks. While some eggs in the carton may look slightly larger or smaller than the rest, it is the total weight of the dozen eggs that puts them in one of the following classes:

Size or Weight Class	Minimum net weight per dozen
Jumbo	30 ounces
Extra Large	27 ounces
Large	24 ounces
Medium	21 ounces
Small	18 ounces
Peewee	15 ounces

Dating of Cartons

Egg processors typically print dates commonly called "Code Dates" on cartons for purposes of rotating stock or controlling inventory. "EXP," "Sell By," and "Best if Used Before" are examples of terminology used for code dating. Use of code dates on USDA graded eggs is optional; however, if they are used, certain rules must be followed.

If an expiration date is used, it must be printed in month/day format and preceded by the appropriate prefix. "EXP," "Sell By," and "Not to be sold after the date at the end of the carton" are examples of expiration dates. Expiration dates can be no more than 30 days from the day the eggs were packed into the carton.

Another type of code dating used indicates the recommended maximum length of time that the consumer can expect eggs to maintain their quality when stored under ideal conditions. Terminology such as "Use by", Use before", "Best before" indicates a period that the eggs should be consumed before overall quality diminishes. Code dating using these terms may not exceed 45 days including the day the eggs were packed into the carton.

Why should eggs be refrigerated?

Temperature fluctuation is critical to safety. With the concern about *Salmonella*, eggs gathered from laying hens should be refrigerated as soon as possible. After eggs are refrigerated, they need to stay that way. A cold egg left out at room temperature can sweat, facilitating the movement of bacteria into the egg and increasing the growth of bacteria. Refrigerated eggs should not be left out more than 2 hours.

Should you wash eggs?

No. It's not necessary or recommended for consumers to wash eggs and may actually increase the risk of contamination because the wash water can be "sucked" into the egg through the pores in the shell When the chicken lays the egg, a protective coating is put on the outside by the hen. Government regulations require that USDA-graded eggs be carefully washed and sanitized using only compounds meeting FDA regulations for processing foods.

Why do hard-cooked eggs spoil faster than fresh eggs?

When shell eggs are hard cooked, the protective coating is washed away, leaving bare the pores in the shell for bacteria to enter and contaminate it. Hard-cooked eggs should be refrigerated within 2 hours of cooking and used within a week.

Safe Storage in Stores

At the store, choose Grade A or AA eggs with clean, uncracked shells. Make sure they've been refrigerated in the store. Any bacteria present in an egg can multiply quickly at room temperature. When purchasing egg products or substitutes, look for containers that are tightly sealed.

Bringing Eggs Home from the Store

Take eggs straight home and store them immediately in the refrigerator set at 40 °F or below. Keep them in their carton and place them in the coldest part of the refrigerator, not in the door.

Is it safe to use eggs that have cracks?

Bacteria can enter eggs through cracks in the shell. Never purchase cracked eggs. However, if eggs crack on the way home from the store, break them into a clean container, cover it tightly, keep refrigerated, and use within 2 days. If eggs crack during hard cooking, they are safe. Remember that all eggs should be thoroughly cooked.

How are eggs handled safely?

Proper refrigeration, cooking, and handling should prevent most egg-safety problems. Persons can enjoy eggs and dishes containing eggs if these safe handling guidelines are followed:

- Wash utensils, equipment, and work areas with hot, soapy water before and after contact with eggs.
- Don't keep eggs out of the refrigerator more than 2 hours.
- Raw eggs and other ingredients, combined according to recipe directions, should be cooked immediately or refrigerated and cooked within 24 hours.
- Always cook eggs until both the white and yolk are firm.
- Casseroles and other dishes containing eggs should be cooked to a safe minimum internal temperature of 160 °F. Use a food thermometer to be sure.
- Serve cooked eggs and dishes containing eggs immediately after cooking, or place in shallow containers for quick cooling and refrigerate at once for later use. Use within 3 to 4 days.

Are Easter eggs safe?

Sometimes eggs are decorated, used as decorations, and hunted at Easter. Here are some safety tips for Easter eggs.

- *Dyeing eggs*: After hard cooking eggs, dye them and return them to the refrigerator within 2 hours. If eggs are to be eaten, use a food-safe coloring. As with all foods, persons dyeing the eggs should wash their hands before handling the eggs.
- *Decorations:* One Easter bread recipe is decorated with dyed, cooked eggs in the braided bread. After baking, serve within 2 hours or refrigerate and use within 3 to 4 days.
- *Blowing out eggshells:* Because some raw eggs may contain *Salmonella*, you must use caution when blowing out the contents to hollow out the shell for decorating, such as for Ukrainian Easter eggs. Use only eggs that have been kept refrigerated and are uncracked. To destroy bacteria that may be present on the surface of the egg, wash the egg in hot water and then rinse in a solution of 1 teaspoon liquid chlorine bleach per half cup of water. After blowing out the egg, refrigerate the contents and use within 2 to 4 days.

- *Hunting Eggs:* We do not recommend using hard cooked eggs that have been lying on the ground, because they can pick up bacteria, especially if the shells are cracked. If the shells crack, bacteria could contaminate the inside. Eggs should be hidden in places that are protected from dirt, moisture, pets, and other sources of bacteria. The total time for hiding and hunting eggs should not exceed 2 hours. The "found" eggs must be washed, re-refrigerated and eaten within 7 days of cooking.

Does the color of the shell affect the egg's nutrients?

No. The breed of the hen determines the color of her eggs. Nutrient levels are not significantly different in white and brown shell eggs.

Araucuna chickens in South America lay eggs that range in color from medium blue to medium green. Nutrition claims that araucuna eggs contain less cholesterol than other eggs haven't been proven.

Are Fertilized Eggs More Nutritious?

No. There is no benefit in eating fertilized eggs. There is no nutritional difference in fertilized eggs and infertile eggs. Most eggs sold today are infertile; roosters are not housed with the laying hens. If the eggs are fertile and cell development is detected during the candling process, they are removed from commerce.

Per Capita Consumption

Egg consumption in America was on a 40-year downward slide until the 1990's. Then eggs became increasingly popular. The following figures are from USDA's Economic Research Service.

Year	Eggs per Person
2008	247
2004	256
1990	236
1950	389

Is the appearance of eggs related to food safety?

Sometimes, but not usually. Variation in egg color is due to many factors.

- *Blood spots* are caused by a rupture of one or more small blood vessels in the yolk at the time of ovulation. It does not indicate the egg is unsafe.
- A *cloudy white* (albumen) is a sign the egg is very fresh. A clear egg white is an indication the egg is aging.
- *Pink or iridescent egg white* (albumen) indicates spoilage due to *Pseudomonas* bacteria. Some of these microorganisms - which produce a greenish, fluorescent, water-soluble pigment - are harmful to humans.
- The *color of yolk* varies in shades of yellow depending upon the diet of the hen. If she eats plenty of yellow-orange plant pigments, such as from marigold petals and yellow corn, the yolk will be a darker yellow than if she eats a colorless diet such as white cornmeal. Artificial color additives are not permitted in eggs.

- A *green* ring on a hard-cooked yolk can be a result of overcooking, and is caused by sulfur and iron compounds in the egg reacting on the yolk's surface. The green color can also be caused by a high amount of iron in the cooking water. Scrambled eggs cooked at too high a temperature or held on a steam table too long can also develop a greenish cast. The green color is safe to consume.

How do time and refrigeration affect egg quality?

The egg, as laid at 105 °F, normally has no air cell. As the egg cools, an air cell forms usually in the large end of the egg and develops between the two shell membranes. The air cell is formed as a result of the different rates of contraction between the shell and its contents.

Over time, the white and yolk of an egg lose quality. The yolk absorbs water from the white. Moisture and carbon dioxide in the white evaporate through the pores, allowing more air to penetrate the shell, and the air cell becomes larger. If broken open, the egg's contents would cover a wider area. The white would be thinner, losing some of its thickening and leavening powers. The yolk would be flatter, larger and more easily broken. The chalazae (kah-LAY-zuh), the twisted cord-like strands of egg white that anchor the yolk in the center of the white, would be less prominent and weaker, allowing the yolk to move off center. Refrigeration slows the loss of quality over time.

What does it mean when an egg floats in water?

An egg can float in water when its air cell has enlarged sufficiently to keep it buoyant. This means the egg is old, but it may be perfectly safe to use. Crack the egg into a bowl and examine it for an off-odor or unusual appearance before deciding to use or discard it. A spoiled egg will have an unpleasant odor when you break open the shell, either when raw or cooked.

Safe Cooking Methods

Many cooking methods can be used to cook eggs safely including poaching, hard cooking, scrambling, frying and baking. However, eggs must be cooked thoroughly until yolks are firm. Scrambled eggs should not be runny. Casseroles and other dishes containing eggs should be cooked to a safe minimum internal temperature of 160 °F. Use a food thermometer to be sure.

Use Safe Egg Recipes

Egg mixtures are safe if they reach 160 °F, so homemade ice cream and eggnog can be made safely from a cooked egg-milk mixture. Heat it gently and use a food thermometer.

- Dry meringue shells are safe. So are divinity candy and 7-minute frosting, made by combining hot sugar syrup with beaten egg whites. Avoid icing recipes using uncooked eggs or egg whites.
- Meringue-topped pies should be safe if baked at 350 °F for about 15 minutes. Chiffon pies and fruit whips made with raw, beaten egg whites cannot be guaranteed to be safe. Instead, substitute pasteurized dried egg whites, whipped cream, or a whipped topping.
- To make a recipe safe that specifies using eggs that aren't cooked, heat the eggs in a liquid from the recipe over low heat, stirring constantly, until the mixture reaches 160 °F. Then combine it with the other ingredients and complete the recipe.
- To determine doneness in egg dishes such as quiche and casseroles, the center of the mixture should reach 160 °F when measured with a food thermometer.
- Eggs and egg dishes, such as quiches or soufflés, may be refrigerated for serving later but should be thoroughly reheated to 165°F (74°C) before serving.
- Use pasteurized eggs or egg products when preparing recipes that call for using eggs raw or undercooked.

What makes hard-cooked eggs hard to peel?

The fresher the egg, the more difficult it is to peel after hard cooking. That's because the air cell, found at the large end of the shell between the shell membranes, increases in size the longer the raw egg is stored. As the contents of the egg contracts and the air cell enlarges, the shell becomes easier to peel. For this reason, older eggs make better candidates for hard cooking.

What are thousand-year-old eggs?

These Chinese eggs are not really 1,000 years old, but are somewhere between a month and several years old. The egg is not retained in its original state, but rather converted into an entirely different food, probably by bacterial action. They are exempt from inspection and grading by FSIS, but imported products may be subject to other USDA and FDA regulations. Several types of thousand-year-old Chinese eggs are *Hulidan, Dsaudan*, and *Pidan*.

Hulidan results when eggs are individually coated with a mixture of salt and wet clay or ashes for a month. This process darkens and partially solidifies the yolks, and gives the eggs a salty taste.

Dsaudan eggs are packed in cooked rice and salt for at least 6 months. During this time, the shell softens, the membranes thicken, and the egg contents coagulate. The flavor is wine-like.

Pidan**,** a great delicacy, is made by covering eggs with lime, salt, wood ashes, and a tea infusion for 5 months or more. The egg yolks become greenish gray and the albumen turns into a coffee-brown jelly. Pidan smell ammonia-like and taste like lime.

Do pickled eggs keep a long time?

Pickled eggs are hard-cooked eggs marinated in vinegar and pickling spices, spicy cider, or juice from pickles or pickled beets. Studies done at the American Egg Board substantiate that unopened containers of commercially pickled eggs keep for several months on the shelf. After opening, keep refrigerated and use within 7 days. Home-prepared pickled eggs must be kept refrigerated and used within 7 days. Home canning of pickled eggs is not recommended.

EGG STORAGE CHART

PRODUCT	REFRIGERATOR	FREEZER
Raw eggs in shell	3 to 5 weeks	Do not freeze.
Raw egg whites	2 to 4 days	12 months
Raw egg yolks	2 to 4 days	Yolks do not freeze well.
Raw egg accidentally frozen in shell	Use immediately after thawing.	Keep frozen; then refrigerate to thaw.
Hard-cooked eggs	1 week	Do not freeze.
Egg substitutes, liquid Unopened	10 days	Do not freeze.
Egg substitutes, liquid Opened	3 days	Do not freeze.
Egg substitutes, frozen Unopened	After thawing, 7 days, or refer to "Use-by" date on carton.	12 months
Egg substitutes, frozen Opened	After thawing, 3 days, or refer to "Use-by" date on carton.	Do not freeze.
Casseroles made with eggs	3 to 4 days	After baking, 2 to 3 months.
Eggnog, commercial	3 to 5 days	6 months
Eggnog, homemade	2 to 4 days	Do not freeze.
Pies, pumpkin or pecan	3 to 4 days	After baking, 1 to 2 months.
Pies, custard and chiffon	3 to 4 days	Do not freeze.
Quiche with any kind of filling	3 to 4 days	After baking, 1 to 2 months.

Food Safety Questions?

Call the USDA Meat & Poultry Hotline

If you have a question about meat, poultry, or egg products, call the USDA Meat and Poultry Hotline toll free at **1-888-MPHotline (1-888-674-6854)** The hotline is open year-round Monday through Friday from 10 a.m. to 4 p.m. ET (English or Spanish). Recorded food safety messages are available 24 hours a day. Check out the FSIS Web site at **www.fsis.usda.gov**.

Send E-mail questions to **MPHotline.fsis@usda.gov**.

Ask Karen!

FSIS' automated response system can provide food safety information 24/7 and a live chat during Hotline hours.

AskKaren.gov

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