CALIFORNIA SEA GRANT

SAFE HANDLING AND STORING OF SEAFOOD

Seafood, like many other foods, are perishable and must be handled properly to avoid spoilage and food poisoning.

Seafood spoilage and food poisoning

Both food spoilage and food poisoning are caused primarily by bacteria. Bacteria cannot be seen with the naked eye, yet they are present almost everywhere: in water, air, and dirt, and on our skin, clothing and foods. These bacteria are usually harmless, but many of them can cause serious problems when they are present on foods that are mishandled.

It has been estimated that over one million Americans experience some type of "food poisoning" each year. Because this is such a common problem, you should be aware of food handling techniques that will prevent food poisoning outbreaks in the home.

Spoilage bacteria and disease-producing bacteria thrive at warm temperatures and can live very well on seafood. In the danger zone — between 40° and 120°F — bacteria can double in number ever 15 to 30 minutes.

Let us take 15 minutes per generation as an example to see what this means. If we started at 12:00 with one bacterium, at 1:00 there would be 16 bacteria; at 2:00 there would be 256; and by 5:00, only 5 hours later, there would be over one million.

Because fresh seafood normally contains thousands of bacteria, seafood held at room temperature for only a few hours will contain hundreds of millions of bacteria. This tremendous growth rate is not theoretical; it is exactly what happens in and on seafood and other perishable foods that have been mishandled by being left at the wrong temperature.

Handling seafoods

What can you do to prevent spoilage and food poisoning? The secret is to handle seafood properly right from the start, whether you purchase it at a store or catch it yourself. If you purchase seafood, always buy from a source that maintains high standards. Know the characteristics of quality seafood, and avoid low-quality products. When you leave the fish market, keep your seafood cold. Leaving a sackful of groceries in the car on a hot day hastens spoilage and may make seafood unsafe to eat.

If you're bringing home fish that you have caught, pack them in ice before starting home, rather than throwing them in the hot trunk of your car where they may spoil rapidly.

When you get home, place seafood in the refrigerator immediately.

Storing fresh seafood

Wrap fresh seafood in "cling wrap" or store in air-tight containers.

Store fresh seafood at 35° to 40°F to maintain quality, retard spoilage, and prevent the growth of food-poisoning bacteria. Fresh seafood spoils rapidly at temperatures above 40°F.

Seafood quality also decreases with storage time, and fresh fish and shellfish should not be held more than a day or two before being cooked.

Live crayfish, clams and oysters will stay alive in the refrigerator for a week or more. Store live shellfish in open containers covered with a damp cloth. Storing live shellfish in salt water shortens their shelf life, and storing them in fresh water kills them.

Storing precooked seafood products

Wrap and store precooked seafood products, including cooked crab and shrimp meat, and surimi-based products such as simulated crab, shrimp, lobster and scallops, as described under "Storing Fresh Seafood." Bacteria can grow rapidly on precooked seafood products.

Store precooked seafood separately from fresh seafood to prevent contamination of the cooked seafood with spoilage or food poisoning bacteria which may be present on the fresh seafood. Precooked seafood products should be used within a day or two.

Storing frozen seafood

Frozen seafood products should be placed in the freezer in their original moisture-vaporproof wrapping immediately after purchase, unless they are to be thawed for cooking.

Frozen products packaged in overwrap trays should be repackaged in "cling wrap" or other moisture-vaporproof material before being stored in the freezer.

A temperature of 0°F or lower is needed to maintain the quality of frozen seafood. At temperatures above 0°F, slow chemical changes cause the seafood to lose color, flavor, texture, and nutritive value.

Freezer storage is a convenient way to keep seafood, but storage time should be limited to maintain quality.

Shellfish and fatty fish, such as salmon and mackerel, should not be held longer than 3 to 4 months before being cooked.

Lean fish, such as sole and rockfish, can be stored satisfactorily for 9 to 12 months.

For the best flavor, **all** frozen seafood should be used within a month or two.

Thawing frozen seafood

Many frozen seafood products, such as fish sticks, fish portions, and breaded shrimp, should not be thawed before cooking. Other frozen products, such as fillets and steaks, may be cooked without thawing if additional cooking time is allowed. If you must thaw frozen seafood, use one of two recommended methods:

- Thawing in the refrigerator. This takes about 18 hours per pound.
- Thawing under cold running water. This takes only about half an hour per pound.

With either method, keep the seafood in its original wrapper until it has thawed.

Thawing at room temperature or in warm water **is not** recommended. Thinner parts of the seafood thaw faster than thicker parts, and the outer edges may start to spoil before the center has thawed.

Thawed seafood is more susceptible to spoilage than fresh seafood and should not be held more than a day before cooking.

If a package of frozen seafood has thawed, it is best not to refreeze it. Although refreezing will not make the product unsafe, it will lower the quality of the seafood considerably.

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