What are Surimi and Surimi Seafood?

By Jae W. Park and Pamela Tom

Originating in Japan several centuries ago, surimi is a uniquely functional food ingredient made of stabilized fish proteins. Surimi seafood is often used as an ingredient in seafood appetizers, salads and entrees. Until the discovery of cryoprotectants (an ingredient used to protect cells or tissues from damage during freezing) in 1959-1960, fresh surimi was used for kamaboko products. (Kamaboko is the most common surimi seafood in Japan which is cooked in steam and it often represents all types of surimi seafood in Japan.) Previously, freezing surimi altered fish myofibrillar proteins and surimi was no longer able to develop gel networks.

Surimi consists of fish myofibrillar proteins that are refined through heading, gutting and mincing the fish, then washing, removing water, and freezing the remaining protein with cryoprotectants (ingredients that protect and stabilize the protein and structure of surimi). Good quality surimi is odorless and has a creamy white appearance.

Surimi has excellent gelling properties so that it can be formed into various shapes. Frozen surimi has a two-year (use by) shelf life. The US is the leading country for the production of surimi. Alaska pollock is most often used followed by Pacific whiting in the manufacture of surimi.

Frozen surimi block exhibiting white creamy color and odor free.

Surimi seafood consists of unique seafood ingredients with flavor similar to that of naturally occurring crab, shrimp, lobster and other shellfish with added convenience, safety and versatility.

Surimi seafood is formed by mixing various food ingredients and formed into various shapes before cooking and setting the gel structure of the final product. In manufacturing crab-flavored seafood made with surimi, shellfish flavors are added to give the food its recognizable character.

Surimi seafood is vacuum-packed and pasteurized to destroy harmful bacteria (pathogens). Frozen surimi seafood has 2-year shelf-life. As a chilled product, the shelf-life can range 90-100 days at a refrigeration temperature of 39°F (4° C) depending on how it is produced based on temperature, time, package size, formulation, etc. Most retail products are either fat-free and low in cholesterol. They are often nutritionally enhanced with the inclusion of omega-3 oil.

The development of crabstick in Japan in 1974-1975 was a cornerstone for the globalization of surimi seafood. The United States started to manufacture crabstick in 1981 and has its current market near 200 million pounds.

Jae W. Park, PhD. is a professor at the Oregon State University Seafood Research Laboratory at Astoria, Oregon. He is founder and managing director of the OSU Surimi School Around the World.

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