TUNA

- **Class:** Osteichthyes: Boney Fishes
- **Order:** Perciformes
- **Family:** Scombridae: Tunas & Mackerels

Tuna

The United States, the United Kingdom and Japan catch and consume the greatest amounts of tuna, and Americans eat almost one third of all tuna caught. Almost a quarter of all seafood America consumes is tuna. There are thirteen species of tuna, two of which appear regularly in the fresh fish market: Bluefin and Bigeye. Most canned tuna is either Albacore (known as "white" tuna), Tongol, Skipjack or Yellowfin (all known as "light" tuna). Crown Prince Natural packs Albacore, Tongol and Yellowfin tuna. The skin of tuna is tough and leathery. The top half of the tuna is leaner 'white meat' and of better quality than the rest, which is known as 'red meat' and is typically used for pet food production.

Tuna is one of the largest of the dark-fleshed fish and can reach weights of well over a thousand pounds. Mainly occupying surface waters and usually in warm seas, tuna are noted for their wide-ranging migrations. They have an aerodynamic, torpedo-like body with a deeply forked tail. Tuna feed on herring, squid and crustaceans and lay their eggs in the open ocean. A single female can shed 1-3 million eggs. Water temperature plays a key role in locating albacores, with the fish commonly found at 60-66° F. Swift swimmers, schools of tuna may cruise at 30 miles per hour attacking other fish that cross their path. Most tuna are ocean blue or greenish on the back grading into silver on the sides and the belly. However, some notable exceptions occur in the roughly 75 widely distributed species. Classification is still in a state of flux.

Tuna are members of the family Scombridae; heavily muscled fish built for their roving, predaceous existence near the ocean's surface. Many tuna maintain a body temperature several degrees higher than that of the surrounding waters because of their rapid metabolic rate and the specialized heat exchange mechanisms in their circulatory system. Mackerel are also members of the Scombridae family.

TYPES OF TUNA

Albacore Tuna, ***Thunnus alalunga,*** are oceanic tuna found in greatest concentrations along thermal discontinuities where warm and cold waters meet. This is the only tuna that can be legally sold in the United States as "white meat tuna". The albacore's extremely long, sickle-shaped, black pectoral fins set it apart from the other tunas. The fins extend past the bases of the soft dorsal and anal fins. The fish is dark green above, grading to greenish blue near the tail. In live fish, there is a metallic bronze cast over the entire body. The dorsal and pelvic fins are dark, but not black, and the anal fin is nearly colorless. While they can grow to about 4 1/2 feet and 96 pounds, albacore average about 10 pounds in weight with 20-pounders not uncommon. Albacore make incredible trans-Pacific migrations from Mexican, U.S. and Alaskan waters to Japan and back again - a 12-15,000 mile journey. The albacore's range is worldwide in most tropical and temperate seas but rarely in the tropics of the eastern Pacific. Atlantic fish tend to be larger than those in the Pacific.

Crown Prince Natural packs only line-caught albacore from Thailand. The U.S. Department of Commerce and Earth Island Institute monitor international fishing fleets to make sure they abide by dolphin-safe fishing practices.

Tongol Tuna, ***Thunnus tonggol,*** is also known as Longtail tuna. Increasingly important to commercial tuna fisheries, tongol is fished mainly in the Malay Archipelago and the Sea of Japan, though it is found from Japan south to Australia and through the East Indies to both coasts of India. Australian fisheries have been restricted because of unacceptably high by-catches of porpoises. A small species, tongol is an important constituent of the production of canned "light meat tuna". Best if brined before cooking, the meat is firm and compares well to albacore. The lower sides and belly are silvery white with colorless elongate oval spots arranged in horizontally oriented rows.

Crown Prince Natural packs net-caught tongol from Thailand. Tongol are fished by net since they travel in schools relatively close to shore, as opposed to albacore which tend to travel in fewer numbers far out to sea. Tongol avoid very turbid waters and areas with reduced salinity such as estuaries. They feed on a variety of fish, squid and crustaceans. The U.S. Department of Commerce and Earth Island Institute monitor international fishing fleets to make sure they abide by dolphin-safe fishing practices.

Yellowfin Tuna, ***Thunnus albacares,*** can grow to 6 feet, 4 inches and 400 pounds (though it averages 15-25 pounds). A brilliantly iridescent fish when taken from the water, with gold, blue and yellow reflections pulsing across the body, the yellowfin differs from the bluefin in having a long pectoral fin reaching but not extending past the base of the anal fin. All fins are tinged with yellow and the finlets by the tail are bright yellow. Wide-ranging across the tropical Atlantic, Pacific and Indian oceans, yellowfin were formerly thought to be two separate species. Now the Atlantic and Pacific forms of yellowfin are considered to be one. Found in tropical and subtropical waters around the world, yellowfin seem to be nonselective in their feeding habits; a great variety of fish, crustaceans and squids have been found in their stomachs. They are taken commercially in great abundance in all tropical regions of the world. The species is primarily found in the Eastern Pacific Ocean but was once the mainstay of the now defunct California-based tuna fleet. Yellowfin is the species most commonly associated as swimming with dolphins. Crown Prince Natural packs unassociated net caught Yellowfin from the Malay Archipelago and the Andaman Sea. The U.S. Department of Commerce and Earth Island Institute monitor international fishing fleets to make sure they abide by dolphin-safe fishing practices.

Skipjack Tuna, ***Katsuwonus pelamis,*** can grow to 3 feet, 4 inches and 40 pounds. These fish are small (usually less than 2 feet) but splendid fish with a brilliant blue back, silver- white sides, and dark stripes on the belly. They are scaleless except for an area around the pectoral fins. Skipjacks prey on squid, fish and crustaceans, and are often found offshore in great schools that at times may include 50,000 fish. Skipjack gets its name from its habit of seeming to "skip" over the surface as it chases smaller fish in feeding.

Skipjack is also called Oceanic Skipjack, Striped Tuna and many other names. It is a fish of the mackerel family with prominent dark longitudinal stripes on the lower half of the body. This species is found around the world in tropical and subtropical seas and is one of the most important commercial fishes, particularly in the Pacific and Indian oceans where many are taken near Japan, the Philippines, Indonesia, the Seychelles, and the Central American coast. Skipjack accounts for significantly more than half of all tuna caught and packed as "light" tuna worldwide.

ADDITIVES IN CANNED TUNA Many extra ingredients appear in most tuna canned for the grocery store trade. In general, these additives are not allowed in tuna specifically packed for the natural product industry. Additives include hydrolyzed casein, hydrolyzed soy protein, pyrophosphate, sodium pyrophosphate, sodium tripolyphosphate, calcium sodium EDTA and vegetable broth.

Hydrolyzed casein is a thickening agent that increases a packer's yield by helping to bind water to the tuna. Another ingredient that serves this function is hydrolyzed soy protein that can also act as a flavor enhancer. Pyrophosphate and sodium pyrophosphates are used to prevent the formation of struvites, natural constituents of fish that can crystallize after the fish is sterilized in a can. These ingredients also act as bleaching agents. Calcium sodium EDTA is a bleaching agent, as well as a preservative and a mask for odors. Vegetable broth serves as a flavor enhancer and frequently includes MSG as an ingredient. Vegetable broth is also closely related to the other hydrolyzed proteins.

Crown Prince Natural adds nothing to our canned tuna. We do not have to worry about struvite formation in our products since they tend to form only with larger fish. This is one of the reasons we choose to pack smaller Albacore tuna.

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MERCURY IN TUNA Mercury is a naturally occurring metallic substance. It exists in both inorganic (mercury, or Hg) and organic (methyl mercury, or MeHg) forms. Organic mercury is the most toxic to humans. Because animals evolved in the earth's environment, they contain natural trace quantities of mercury. Mercury is cycled back and forth between inorganic and organic forms by animals in their normal life cycles.

In 1979, the FDA raised the mercury action limit from 0.5 parts per million (ppm) to 1 ppm. In 1984, the FDA switched from enforcing the mercury action level based on total mercury to only methyl (organic) mercury. It should be kept in mind that the FDA's limit of 1 ppm was established to limit consumers' mercury exposure to levels 10 times lower than the lowest levels associated with adverse effects. Parts per million is an easier way to a say a very small percentage of total mass. Whereas 1% is 1/100, 1 ppm is 1/1,000,000.

Mercury levels in fish are normally associated with older, larger fish where amounts have accumulated over long periods of time. Tuna fish used for canning are typically small in size, as these are not suitable for sale in the fresh market. Canned Skipjack are normally 4-10# each, Yellowfin and Albacore are from 7-20# and Tongol are smaller than Skipjack.

Analysis of museum specimens of tuna caught from 1879 to 1909 reveal that they contain levels of mercury as high as those in fish being caught today. Currently the issue of whether youngsters or pregnant women need to limit their consumption of canned tuna due to concerns about mercury levels is being debated.

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