
## COMPOSITION OF ROCKFISH

Rockfish are valuable nutritionally because of the large proportion of high-quality protein they contain. These protein-rich fish are very low both in fat and in sodium content. These characteristics make rockfish valuable for use in special diets as well as in normal diets.

Rockfish are economically important in the fresh and frozen fish industry of the Pacific Coast. The total catch of rockfish landed in Washington, Oregon, and California in 1956 was 26 million pounds. During the same year the amounts of some other species of fish landed in the same area were Pacific salmon 54 million, flounder 52 million, halibut 22 million, and Pacific cod 10 million.

The part of the rockfish that is eaten represents about one-fourth of the whole fish. The remainder of the fish is used to feed mink, trout, poultry, and livestock. Because all of the rockfish is used to feed either human beings or animals, it is important to have a true picture of the nutritive value of (1) the edible meat or fillets, (2) the trimmings, and (3) the whole fish.

Chemists at the Seattle Technological Laboratory of the U. S. Bureau of Commercial Fisheries have determined the composition of nine species of rockfish. The fish they analyzed represented differences in size of fish and in method by which the fish were preserved until they were analyzed. The chemists wished to determine the composition of the more important species of rockfish and to discover if the composition varied in relation to these differences in species, size, and treatment.

The composition of the different species of rockfish was found to be quite uniform regardless of the size of fish or whether they were frozen, iced, or prepared as frozen fillets.

The nonedible parts of the rockfish were found to contain more than 5 percent of oil and more than 5 percent of ash. The protein content of these parts was found to average more than 16 percent.

Rockfish, which are low in cost and abundant on the west coast of the United States, constitute a highly nutritive source of protein food.

## IRRADIATION PRESERVATION OF PACIFIC COD FILLETS

The storage life of Pacific cod fillets that had been subjected to pasteurization dosages of irradiation and then held at refrigerator temperatures was increased by about three times compared with unirradiated fillets stored at the same temperature. A pasteurization level of irradiation is a level at which most of the bacteria present

are destroyed but does not completely sterilize the food. Pasteurized food must be stored under refrigeration.

Chemical and bacteriological tests made on irradiated fish during storage indicate that the changes taking place in fish after irradiation are different from those that take place in unirradiated fish. This can be attributed to the fact that irradiation alters the type and number of bacteria that survive, and apparently changes the manner in which spoilage takes place. The usual laboratory tests for freshness cannot be used to judge the quality of irradiated fillets of Pacific cod. The judgment of an experienced taste panel therefore was used to compare the quality of the irradiated samples and determine their storage life.

These studies were undertaken by chemists at the U. S. Bureau of Commercial Fisheries Seattle Technological Laboratory in cooperation with the Quartermaster Food and Container Institute for the Armed Forces as a part of their program for determining the potential value of ionizing radiation for the preservation of fishery products.

All of the irradiated samples tended to have a slight radiation odor and flavor, which is described by most tasters as scorched or burnt. The taste panel could not distinguish among samples of cod fillets that had been subjected to pasteurization at several low levels of irradiation. Samples of Pacific cod that had been subjected to large doses of irradiation, however, were judged to be unacceptable.

The approximate storage life of the various samples of cod fillets stored at 32° to 35° F. was as follows:

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| Control sample (no irradiation) | 1 to 2 weeks |
| 0.1-, 0.2-, 0.23-, and 0.46-megarad samples | 6 to 9 weeks |
| 0.7-megarad samples | 6 to 12 weeks |

Note: Megarad = 1 million Rads. Rad = The quantity of ionizing radiation which results in the adsorption of 100 ergs per gram of irradiated material at the point of interest. Erg = Unit of energy. 1-foot pound = 1,356,000 ergs.

## IT'S FISH 'N' SEAFOOD TIME

The U. S. Bureau of Commercial Fisheries is cooperating with the Commercial Fishing Industry in its first annual industry-wide Lenten Promotion. The theme of the 1960 Lenten promotion, which peaks March 2 to April 17, will be "It's Fish 'N' Seafood Time." Menu variety will be emphasized in advertising, publicity, and merchandising material.

The Bureau has developed and distributed a variety of educational and informational materials for use during this year's Lenten promotion. This includes: A fish-fact bulletin for newspaper food editors and other food publicists; five school lunch bulletins; bulletins for restaurant and institutional use; black and white food photographs for use by the newspaper food editors; and two special animated public service television spots, in 60-, 20-, and 10-second versions, for distribution to the major television stations in the United States. In addition, Bureau marketing specialists and home economists will be appearing on radio and television. Bureau materials will stress menu variety, ease of preparation, nutritional value, and other health benefits accruing from increased use of fish and shellfish in the diet.