

FREEZING AND COLD STORAGE OF PACIFIC NORTHWEST FISH AND SHELLFISH

Part V - Palatability and Cold-Storage Life of Blacktip Rockfish (Sebastes aleutianus) and Flag Rockfish (Sebastes rubrivinctus)

By D. T. Miyauchi* and D. L. Alverson**

ABSTRACT

The initial palatability and the cold-storage life of fillets from 12 blacktip rockfish (Sebastes aleutianus) and 12 flag rockfish (Sebastes rubrivinctus) were determined. The initial palatability rating was acceptable for the blacktip rockfish but was low for the flag rockfish, which had a tough texture. The cold-storage life was 4 to 6 months for the blacktip rockfish and 2 to 4 months for the flag rockfish.

INTRODUCTION

A number of species of rockfish (genera, Sebastes) are landed in commercial quantities along the Pacific coast. These fish are usually filleted, and the resulting fillets are marketed either fresh or frozen. Elliot and Osterhaug (1946) and Miyauchi and Stansby (1952) have shown that the fillets from the various species differ greatly in palatability, texture, and cold-storage keeping quality.

Among the rockfish yielding fillets that are superior in these respects is the Pacific ocean perch (Sebastes alutus). It is caught in the deep-water trawl fishery that has been developed off the coasts of Washington and Oregon during the past several years. Along with the Pacific ocean perch other species of rockfish are occasionally taken. Among them are the blacktip rockfish (Sebastes aleutianus) and the flag rockfish (Sebastes rubrivinctus). This paper reports on the initial palatability and the cold-storage life of these two species.

BLACKTIP ROCKFISH: The rockfish was first recorded on the Pacific coast of the United States in 1949 during the developmental period of the Pacific ocean perch fishery (Alverson and Welander 1952). Limited numbers of blacktip rockfish are landed in the ports of Astoria and Newport, Oregon, by boats engaged in deep-water trawling. Fishermen have reported occasional good catches from depths exceeding 150 fathoms.

The body of the blacktip rockfish is deep brick-red, and the fins are edged in black. The fish may attain more than 30 inches in length and 20 pounds in weight. Smaller specimens, from 13 to 20 inches, are at times confused with Pacific ocean perch; however, the blacktip rockfish may be distinguished by its white body-cavity lining (peritoneum), since that of the Pacific ocean perch is always black.

FLAG ROCKFISH: The flag rockfish has been recorded as ranging from San Diego north to the Strait of Juan de Fuca. Fishermen have, however, reported taking good quantities from the Hecate Strait trawl grounds. This species generally inhabits moderate depths, but is found in water ranging all the way from 50 to 200 fathoms.

The flag rockfish is one of the most colorful members of the genus Sebastes, being set off by brilliant carmine-red stripes on a pale-pink to white background.

* Fishery Products Technologist, Fishery Technological Laboratory, Branch of Commercial Fisheries, U. S. Fish and Wildlife Service, Seattle, Wash.

** Formerly Fishery Methods and Equipment Specialist, Exploratory Fishing and Gear Development Section, Branch of Commercial Fisheries, U. S. Fish and Wildlife Service, Seattle, Wash., and now with Washington State Department of Fisheries.

Individuals may attain a length of 24 inches or more. Those landed by the trawl fishery generally average somewhat larger than the Pacific ocean perch.

PROCEDURE

Twelve specimens each of blacktip rockfish and flag rockfish, caught by the U. S. Fish and Wildlife Service's vessel John N. Cobb and landed iced in excellent condition, were frozen in the round at Astoria, Ore. The fish were then shipped to the laboratory at Seattle, Wash., where they were thawed and filleted. Three fillets of each species were used in the initial organoleptic examination; the remaining fillets were wrapped in MSAT^{1/} cellophane, refrozen, and stored at 0° F. At intervals of about 2 months, 2 or more packages were taken from cold-storage, and the fillets were examined organoleptically after being thawed and again after being cooked.

RESULTS

In the initial organoleptic examination of the blacktip rockfish, the fillets were judged normal in appearance, flat in flavor, slightly sweet in odor, and coarse, fibrous, but tender in texture. No change in quality was observed in the fillets after 2 months of storage. After 4 months, the fillets were sweet in odor and flat in flavor, and the surfaces of the fillets were moderately discolored. After 6 months, the fillets were poor in appearance, slightly rancid in flavor, and fair to poor in texture; they were judged unacceptable.

In the initial organoleptic examination of the flag rockfish, the fillets were judged normal in appearance, flat in flavor, slightly sweet in odor, and somewhat tough or rubbery in texture. Because of the undesirable texture, these fillets received a low acceptability rating. No changes in quality were observed in the fillets after 2 months of storage. After 4 months, the fillets were darker in color, strongly sweet in odor, and moderately tough in texture. The light meat was flat in flavor, and the dark meat was rancid. The samples were judged unacceptable.

Although these fish had been frozen when first caught, and then thawed, filleted, and refrozen, this handling, which differs from usual commercial procedure, could have had no effect on the changes such as oxidation, rancidity, and discoloration, the development of which were the principal causes for the short storage life.

SUMMARY

On the basis of results with a limited number of fish (12 per species), fillets of blacktip rockfish have a storage life of only 4 to 6 months at 0° F., and fillets of flag rockfish are not suitable for freezing.

LITERATURE CITED

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^{1/} Moistureproof, heat sealing, anchored coating, and transparent.

