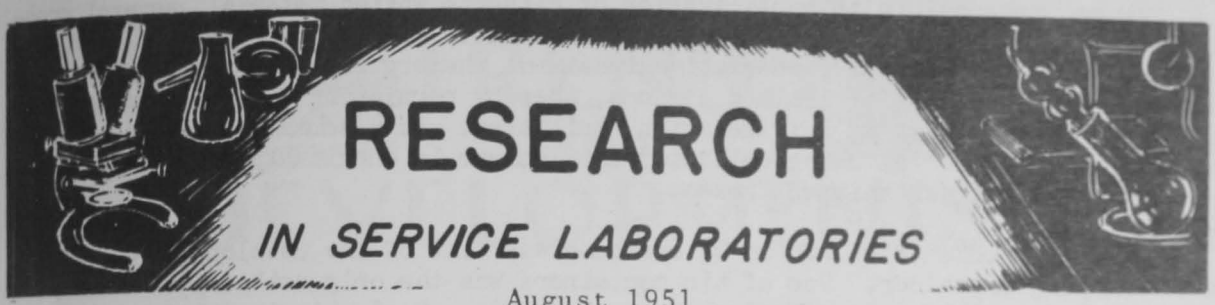

August 1951

REFRIGERATION: Freezing Pink Salmon: Laboratory work on this project was completed during the month. Freezing and storage studies indicated that the cold-storage life of frozen Alaska pink salmon fillets may be extended up to 10 months or more by use of improved packaging methods, lower storage temperatures, and anti-oxidant dips. The conclusions drawn from these studies were:

(1) UNTREATED ICE-GLAZED PINK SALMON FILLETS STORED AT -20° F. HAD A STORAGE LIFE OF 11 MONTHS OR LONGER.

(2) PINK SALMON FILLETS TREATED WITH 2-PERCENT ASCORBIC ACID (VITAMIN C) HAD A STORAGE LIFE OF 8 MONTHS OR LONGER AT 0° F. USE OF 0.2 PERCENT CITRIC ACID IN ADDITION TO THE 2-PERCENT ASCORBIC ACID DID NOT IMPROVE THE KEEPING QUALITY OF THE FILLETS.

(3) FILLETS TREATED WITH 2-PERCENT ASCORBIC ACID AND STORED AT -10° F. HAD A STORAGE LIFE OF APPROXIMATELY 10 MONTHS.

Detailed reports on these freezing and storing studies of Alaska pink salmon fillets will be issued as they are completed. These will include information on (1) quality changes in pink salmon during frozen storage, (2) application of anti-oxidant treatments, (3) effect of various packaging methods, and (4) effect of storage temperature.

* * *

BYPRODUCTS: Vitamin Content and Nutritive Value of Fishery Byproducts: The objective of this project is to determine the range of concentration of certain vitamins (especially vitamin B_{12} and riboflavin) in various types of fish meals and to determine the possible presence of unknown vitamins and other growth factors which may be present. Analyses for niacin, riboflavin, and vitamin B_{12} were begun on a series of about 25 samples (sardine and mackerel products at various stages of manufacture) collected at one reduction plant. These samples include raw fish, cooked fish, press cake, foots from the press, stickwater, and dried meal. Work has also begun on concentration of possible unknown growth factors from fishery products.

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TECHNICAL NOTE NO.11 -- ALASKA SALMON CANNERY WASTE BEING USED AT FISH AND WILDLIFE SERVICE HATCHERIES

As a result of experiments carried out during the past few years at the Seattle Fishery Technological Laboratory of the Service's Branch of Commercial Fisheries, trimmings (formerly dumped at sea) from salmon canneries in Petersburg, Alaska, are now being shipped to Federal fish hatcheries in the State of Washington where they are used as a rich source of protein and vitamins in the diet of hatchery fish. The first shipment of 60,000 pounds of such material has already been received at the Federal fish hatchery at Leavenworth, Washington, and an additional 50,000 pounds will be delivered shortly.

In making possible this utilization of hitherto wasted material, several problems had to be overcome. Experiments at the Seattle Fishery Technological Laboratory developed a chemical preservative treatment whereby fish eggs can be preserved without refrigeration for limited periods, thereby permitting their collection at localities not possessing refrigeration facilities. As a commercial-scale test, a portion of the material being collected this summer is chemically preserved in this way and the remainder shipped frozen.

Another problem that had to be overcome was that of the development of a suitable shipping container. Use of tin containers was the only method permitted by commercial steamship company vessels and the high cost of shipping the empty tins to Alaska made such a packaging method prohibitive. A method of bagging the waste prior to freezing was developed, using an inner plastic bag and an outer burlap bag, the latter being somewhat smaller than the former and bearing the strain during freezing and handling.

Finally a practical method of collection of the desired trimmings at the cannery had to be worked out. A wooden chute was built under the iron chinks so that the soft visceral portions of the waste were collected and the bony collar portions, fins, and heads were discarded. The desired portions are being flumed to a draining table where they are drained and sacked.

Even though the bags are very roughly handled in transit, 950 bags have been delivered to the Leavenworth Hatchery in excellent condition and without the loss of a single bag.

Careful cost records of this collection of Alaska salmon waste are being kept. Preliminary indications are that this material may be delivered to ports on Puget Sound at a cost of about 5 cents per pound. In addition to use as a feed for hatchery fish, this material may find large markets as a feed for fur-bearing animals.

"LITTLE TUNA" OF THE ATLANTIC AND GULF COASTS

In the fall of 1946, and again in 1947, an enterprising packer on the Eastern Shore of Maryland canned a few thousand cases of "little tuna." The 1947 pack was approximately double that of 1946. Labeled "Light Meat Tuna," it was distributed through brokers on the New York food market. A third pack was put up in 1948. The Fish and Wildlife Service canned a small experimental pack of little tuna at College Park, Maryland. The results were encouraging and some useful information was obtained. Further research into canning of this species is now in progress.

--Fishery Leaflet 353