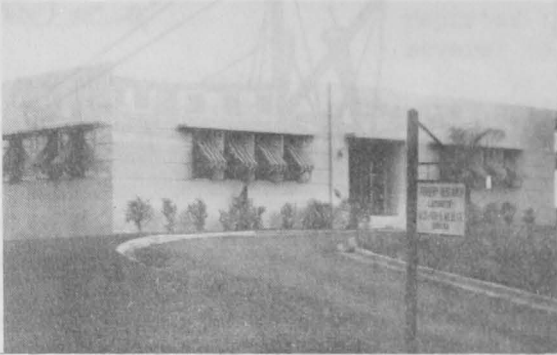


TECHNOLOGICAL RESEARCH IN SERVICE LABORATORIES

Mayaguez, Puerto Rico

The general survey of the fisheries of Puerto Rico is nearing completion and the data are being edited and tabulated for analysis and interpretation.

Fish poisoning investigations have been continued with fish shipped to the laboratory from St. Thomas, Virgin Islands. No toxic effects have been noted in mice. Fresh and fried fish which were suspected of causing poisoning in four persons also were tested in mice, with negative results. When ingested by a human volunteer, a mild gastro-intestinal disturbance was observed.



Studies of coco fiber cordage have been terminated because of its unsuitability for fishing operations. It was found to rot and lose its strength within five weeks of normal wear.

Additional facilities for housing animals used in experimental work have been installed at the laboratory.

Instructions in the preparation of seafood was given to a seafood restaurant in Santurce.



Boston, Mass.

Equipment was installed at the field laboratory at Eastport, Maine, to facilitate the study of Maine sardines. A mechanical fish scaling and grading device of the type used in the California pilchard canneries was studied for possible application in the Maine canneries.

The efficiency of certain commercial anti-oxidants as a preservative for sardines prior to packing was tested, but no preserving effect was observed.

The equipment for the Boston laboratory is arriving and is being installed as rapidly as possible.



College Park, Md.

The 12-month storage test with packaged, frozen shucked oysters has been completed. In general, the packages were satisfactory. The stored specimens retained their flavor and received better scores in the palatability tests than the fresh controls.

A new series of tests with packaged oysters was started, using packages made of metal foil laminated to paper, cellulose acetate, vinyl films, and other materials. Storage time will be 12 months at 0° F.

To test several specially constructed insulated paper containers, fresh-shucked oysters were shipped by air to Chicago. Results were excellent. Arrangements also have been made to ship live lobsters by air.

Experiments are under way to determine the effect of several types of pre-treatment on the freezing and keeping quality of shucked oysters.

Data have been obtained on various phases of fish curing, including designs of smoke houses and artificial driers; types of cure for ground fish, finnan haddie, kippers, and dulse; preparation for smoking of skinless and boneless salt cod, codfish bricks and shredded cod, etc.

A survey of the vitamin literature is being made to be included in a report dealing with the experimental findings obtained during the past year.

Preliminary experiments are being conducted on samples of canned fish to determine the level of vitamin B.

A series of feeding tests have been made using white rats fed salmon "cannery loaf," using canned salmon as a control. The control animals made small gains in weight; whereas, those fed two types of "loaf" lost weight.

Experiments are in progress to prepare a blown menhaden oil which will be satisfactory for use in the paint and varnish industry. Samples of cold-pressed menhaden oil were blown with air and oxygen at various temperatures and with various additions to obtain adequate viscosity. The rate of development of color in these oils seems to be affected by the temperature at which the oil is blown.

A synthetic oil was prepared by re-esterifying unsaturated menhaden acids with pentaerythritol. When one part of this was mixed with three parts of cold-pressed oil, the mixture blown with air at 95° C., the color appears to be satisfactory.

A sample of menhaden oil containing cobalt oleate and blown at 58° C., promises to have a light final color. The organic peroxides formed during the oxidation appear to be very effective in bringing about an increase in viscosity.

Studies of the toxicity for chickens of DDT-treated crab meal are being continued. There is no apparent influence on egg production, but some chicks fed 0.032 percent DDT over a period of six weeks have shown slight tremors. Growth rate, apparently, is not affected.

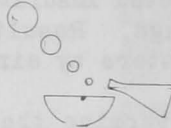
Palatability tests have been made on fresh and frozen oysters, seal liver paste, and dehydrated clams.

An exhibit of bacteriological methods and sanitation technics was set up at Crisfield, Md. Watermen, producers, and other residents of the community, including high school students, visited the exhibit.

A search for antibiotics of marine and fresh-water origin is being initiated.

A study is being made of the effect of sodium nitrate, lactic acid, citric acid, and other bactericides upon bacterial spoilage of oysters. Spoilage is being determined by bacteriological and organoleptic tests.

Ecological studies of the enterococci are being continued. Recent experiments indicate that these forms may be found in abundance in certain frozen foods.



Ketchikan, Alaska

Recipes for Alaskan fish have been developed and tested by various methods of cooking.

Experiments are being conducted to develop a rapid procedure for the determination of riboflavin in fishery products.

Information has been gathered on a variety of Alaskan species of fish and is being made a part of the permanent file at the laboratory.



Seattle, Wash.

With the exception of a few references not available in Seattle, a bibliography on fish spoilage has been completed.

Recipes for use on the labels of fishery products have been developed, including fish recipes that were worked out for the Seattle Times, which featured them in an article on Lenten suggestions.

A comprehensive table of the vitamin A and D content of fish liver oils has been prepared, and a manuscript begun on the fish liver oil industry.

Preliminary experiments were run on the stability of vitamin A oils.

A demonstration of methods of preparing fish for home freezing was given to home economists from public utility companies and newspapers.

A general chemical laboratory is being equipped to facilitate a new project for fellowship students.

Assistance was given to the Pacific Exploration Company in regard to the alteration of the factory ship, Pacific Explorer. Efforts were directed to effecting economies in the work and in locating fish and crab handling conveyors. Problems concerning the installations of electrical mechanical driving equipment, and an improved steering system in the trawlers were considered.

On the evenings of March 4 and 5 the annual open house was held. The demonstrations and displays explained several important phases of the work of the laboratory. The attendance for the two evenings totalled 390. This included persons from fish canneries, fresh and frozen fish plants, fishery supply houses, colleges, naval architects' offices, reduction plants, publication concerns, fishery associations and fisheries, vitamin A processors, and government agencies.



FOOD WRAPPINGS

Improved mechanical heat-sealers are needed to make waxed paper wrappings for frozen food and other food products fully satisfactory and protect the quality of the food inside, according to scientists of the Western Regional Research Laboratory of the Department of Agriculture at Albany, California (from Food and Home Notes, April 10). The scientists believe the present need is for sealers that have carefully controlled temperature and pressure.

All of the various waxed papers in use for bags, bag linings for packages and overwraps are sealed by hot pressing. The heat of the sealer melts the wax coating and the pressure holds the paper surfaces together until the wax cools in an "adherent bond" and becomes solid again. This requires carefully controlled heat. Too high or too low a temperature results in an imperfect seal.

Very often, waxed paper wrappings on foods have proved unsatisfactory because the water-vapor resistance of the paper was broken down in the sealing process, and the food inside has lost quality as a result.