

WEIGHTS AND MEASURES ACTIVITIES IN THE USDI FISHERY PRODUCTS STANDARDS AND INSPECTION PROGRAM

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BACKGROUND

The complexities of today's processing and distribution of food demand that there be an acceptable document between buyer and seller to facilitate orderly marketing. Standards are a yardstick to measure the quality of a product. They thus constitute the needed common measuring device upon which buyer and seller can base their contracts.

Those standards are composed of two or more levels of product quality designated by grades, and are also composed of other related factors--such as class, style, or condition that may affect the economical use and the desirability of the product. Accordingly, national quality standards tend to improve the overall quality and uniformity of the products being standardized. The consumer thus gains by getting better quality, and the industry in turn gains by creating greater demand for its products.

United States Standards for Grades of Quality for Fish and Fishery Products help to define the level of quality for those food products. The standards are voluntary and reflect the desire of the fishing industry to improve its product quality. The Bureau of Commercial Fisheries of the U. S. Department of the Interior (USDI) has developed and promulgated U. S. Standards for Grades for 14 fishery products in the past 6 years. Those standards were developed with the aid of the fishing industry.

U. S. Standards for Grades of Fishery Products Developed and Promulgated by the U. S. Bureau of Commercial Fisheries	
1. Frozen fried fish sticks	8. Raw headless shrimp
2. Raw breaded shrimp	9. Raw breaded fish portions
3. Fish blocks	10. Ocean perch fillets
4. Haddock fillets	11. Fried scallops
5. Halibut steaks	12. Fried fish portions
6. Cod fillets	13. Breaded fish sticks
7. Salmon steaks	14. Flounder and sole fillets

The standards, of course, would have no value as acceptable documents between buyer and seller unless the grading of the products according to the standards were done by a neutral party. Since 1958 the Bureau of Commercial Fisheries has therefore operated a Voluntary Inspection Service for fishery products. This service has grown steadily. In 1963, for example, over 215 million pounds of fishery products were inspected and certified. That quantity of inspected products represents about one-third of all the domestically processed fishery products for human consumption, exclusive of canned fish.

Proper labeling of packaged fishery products not only is required by law but also is essential in marketing them. As part of the inspection program, the USDI accordingly reviews labels for fishery products that are to bear the USDI shield.

To show the role of weights and measures activities in the USDI Fishery Products Standards and Voluntary Inspection programs, the following three main subjects must be considered:

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1. Relation of weights and measures to the development of the Quality Standards.
2. Relation of weights and measures to the Voluntary Inspection Service.
3. Relation of weights and measures to label approval.

RELATION OF WEIGHTS AND MEASURES TO QUALITY STANDARDS DEVELOPMENT

The Bureau's program of standards development goes beyond product standardization of such aspects as quality and wholesomeness because two additional important aspects are also considered: (a) the packaged product with regard to size, volume, net weight, amount delivered, or the number of units per measure, and (b) the amount of fish or shellfish ingredients contained in certain fabricated or processed products. In our consideration of those two aspects, we encountered problems relating to glaze and breading.

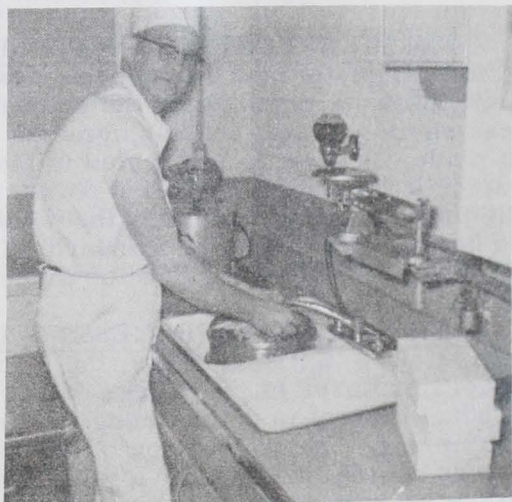
PROBLEM OF GLAZE: Four fishery products for which U. S. standards were developed presented a problem of ice glaze. Those products were halibut steaks, salmon steaks, sole and under fillets, and raw headless shrimp.

In the usual market form, those products are protected by a surface glaze of ice in addition to the packaging materials in which they are contained. To determine how much product is usually present, we had to develop and incorporate into the standards a specific procedure for determining the net weight. A slightly different procedure was required for each of the products because of inherent differences.

In the standard for frozen halibut steaks, the consideration of glaze is unique in that excessive glaze is treated as a factor of quality. The maximum allowable amount of glaze to protect the product was established at 6 percent of the net weight. Beyond that percentage, it is considered to be excessive glaze, and the product is downgraded for quality.

PROBLEM OF BREADING: Another fishery-products category that required special consideration was breaded and precooked products. That group includes breaded fish sticks, breaded shrimp, breaded fish portions, fried fish sticks, and fried fish portions. A problem of the "utility" of the packaged contents was encountered in developing those standards. This problem involved two factors: (1) loose breading, and (2) excessive breading.

Loose Breading: During the processing of breaded and precooked products, any loosely adhering breading is usually removed by passing the products over a vibrating large-mesh stainless-steel wire belt. When, however, samples of those products were obtained at the distribution level for evaluation during the early stages of developing the standards, substantial amounts of loose breading were, in some instances, found in the package. This indicated either that good commercial practices had not been exercised in the processing of the product by eliminating the loose breading, or that loose breading was being added to meet the net-weight requirements when the weight of the contents were slightly under the declared net weight.



USDI Inspector debreading shrimp to determine the percentage of shrimp material.

This problem was resolved in the Standards for Breaded and Precooked Products by cataloging large amounts of loose breading as a factor of quality. Those standards deduct points, depending upon the amount of loose breading remaining in the package. The unit of measure used for determining excessive breading is the teaspoon. Less than $\frac{1}{2}$ teaspoon of

loose breading is considered to be a "small amount"; and over 1/2 teaspoon is considered to be a "large amount."

Excessive Breading: USDI Standards of Quality establish levels for the amount of fish meat required in breaded and precooked fishery products. The Bureau of Commercial Fisheries believes that it has a responsibility to the consumer to see that he gets a proportionately large amount of fish or shellfish ingredient in the breaded-type products.

In establishing the level of fish or shellfish content for a given product, we take a number of factors into consideration. The factors most frequently evaluated are flavor, appearance in both the raw and cooked states, texture, and the industry's capability evidenced by what has been marketed in the past.

When standards are developed for breaded products, a technique is also developed for determining the amount of the fish or shellfish ingredient that is present. This method, incorporated into the standard, involves the removal of the breading and a determination of the percentage of fish or shellfish ingredient by weight. The levels of the principal ingredient established in USDI Standards are given in the table.

Amounts of Fish or Shellfish Required in Breaded Products USDI Standards	
Breaded Product	Relative Amount of Fish or Shellfish Required Percent
Fish portions	75
Fish sticks	72
Fried fish portions	65
Fried fish sticks	60
Fried scallops	60
Shrimp	50

RELATION OF WEIGHTS AND MEASURES TO VOLUNTARY INSPECTION SERVICE

Continuous inspection of processing operations is the major type of inspection service performed by the U. S. Department of the Interior (USDI). Under this type of service, the principal duties of the USDI inspector include (a) inspecting for plant sanitation, (b) examining the raw material for quality, (c) checking the processing technique, (d) determining the quality of the end product, and (e) certifying the product.

In the execution of all but the first of those duties, the USDI inspector is concerned with some aspect of weight or measurement. A review of the pertinent duties (b through e) will illustrate the degree of involvement of the inspector in weighing or measuring.

EXAMINING THE RAW MATERIAL: If we visit the breaded shrimp industry for a specific example of how the inspector examines incoming raw material, we find that the raw material usually comes to the plant in the form of 5-pound cartons of block-frozen raw headless shrimp. When those shipments arrive at the processing plant and before a settlement is made, the firm is interested in the quality of the shrimp and whether or not each 5-pound carton will actually deliver 5 pounds. The USDI inspector samples the shipment, examines the product, and determines the net weights of the selected packages, using the official method defined in the Quality Standard. The information he thus obtains is then provided to the firm and is used as a basis for a decision by the firm to accept or reject the shipment.

CHECKING THE PROCESSING TECHNIQUE: During the processing of products such as fish sticks and fish portions, the inspector frequently conducts line checks of the weight of a specific number of raw sticks or portions. This information is used as a guide to continuous product control in determining whether the amount of fish meat is adequate. To produce, for example, a 1-pound package of fish portions containing four 4-ounce pieces, the 4 unbreaded pieces of fish must weigh a minimum of 12 ounces in order for the final product to conform to the requirement of 75 percent of fish meat. Frequent weighing of 4 random pieces provides the information that the input weight of raw material is adequate and that the net weight will probably be adequate, since the batter and breading can be controlled very closely.

DETERMINING THE QUALITY OF END PRODUCT: End-product examination for quality by the inspector includes a determination of the amount of the product in the package. Samples for examination are drawn randomly during production in accordance with a sampling

so as to be representative of the lot. The net contents of each package is determined by the method defined in the U. S. Standard for the product being examined. The net contents of each package is reported on the inspector's work sheet along with the other pertinent information found during the examination. An average calculated from the net weight of the individual packages indicates whether or not the lot complies with the net weight declared on the label.

CERTIFYING THE PRODUCT: In the certification procedure for fishery products, the pertinent information about the examined lot is recorded on an official inspection certificate. These certificates of findings are admissible in all courts of the country as prima facie evidence. Two types of information about the contents of the packaged product are always given when fishery products are certified: (a) the net content as declared on the label, and (b) the determined average net content of the examined packages as observed by the inspector. When the contents of one or more packages are found to deviate beyond the range of good commercial practice, such deviations are noted on the certificate for the benefit of the processor or buyer of the lot.

RELATION OF WEIGHTS AND MEASURES TO LABEL APPROVAL

Fishery product labels that are to bear inspection marks of the USDI must be reviewed and approved by the Bureau of Commercial Fisheries prior to use. The primary reason for reviewing the labels is to ensure that whatever reference is made to USDI inspection--either through a grade shield, inspection shield, or statement of inspection--is accurate and in accordance with USDI regulations.

The second reason for reviewing the labels is to ensure that USDI inspection marks will not be affixed to a label that is in violation of the mandatory requirements of the U. S. Food, Drug, and Cosmetic Act. The presence of a statement of net contents is one of several items that are ensured on the label. However, it should not be construed that the USDI is determining that labels comply with the U. S. Food and Drug Act. Rather, it should be considered that this thorough label review is a service to the industry.

Although the USDI review program includes verification that the label bears a quantity statement, guidelines as to the prominence and placement of the quantity statement on the label have not been developed. This is a regulatory matter and is beyond the Bureau's authority. We believe, however, that this question of prominence and placement should be nationally coordinated with the various industry groups having an interest in it and that a single set of guidelines or regulations should be developed and adopted at all levels of government that regulate this activity.

In the past, the Bureau of Commercial Fisheries has cooperated fully with other governmental agencies and with industrial organizations where common interest exist. The Bureau plans to continue this policy of cooperation in the future. When difficulties or inconsistencies of a technical nature are encountered with fishery products, we suggest that the matter be brought to our attention.



Created in 1849, the Department of the Interior--a department of conservation--is concerned with the management, conservation, and development of the Nation's water, fish, wildlife, mineral, forest, and park and recreational resources. It also has major responsibilities for Indian and Territorial affairs.

As the Nation's principal conservation agency, the Department works to assure that nonrenewable resources are developed and used wisely, that park and recreational resources are conserved for the future, and that renewable resources make their full contribution to the progress, prosperity, and security of the United States--now and in the future.