

majority of such respondents listed no particular reason for both cooked and uncooked breaded shrimp. Of the remaining respondents who gave a definite reason, most stated they had a general aversion for such products or they preferred other types of fishery products. Only a minor percentage of the group indicated the products were not available and, what was most interesting, another small minority indicated that they had not tried such products because of price. While very few actually stated that price is not a major problem in getting people to try breaded cooked or uncooked shrimp, it is possible that of those who listed no particular reason many really were interested in price, since the survey indicated that breaded shrimp consumption is concentrated among middle and upper income groups. This would indicate that price does have some effects upon general use of the product.

It is notable that out of the households that had tried breaded shrimp a very high percentage liked the products in all communities in which respondents were questioned. In all groups over 85 per cent liked either breaded uncooked or cooked shrimp and in urban area communities of various sizes over 90 per cent liked the uncooked product.

It was also indicated that consumption of these products increase moderately as household size increases, and younger housewives bought breaded shrimp more than older housewives. Furthermore, families of white-collar workers used these products more than families of workers engaged in occupations requiring manual skills.

Household size was found to be related directly to the package size preferred by the housewife. Families of two persons prefer a 10-oz. size, whereas larger families, particularly those with four or more persons, would prefer a 12-oz. package if it would be available. It was also indicated that the latter type family prefers a somewhat smaller sized shrimp than the small two-person families, which preferred to obtain the very largest size of shrimp when buying breaded shrimp products.

Breaded shrimp consumption is concentrated in urban areas. Consumption in the cities is about twice as high as in rural areas. Among the cities consumption is slightly higher in the very largest cities as compared to the smaller ones.

DISCUSSION

Economic Session

Discussion Leader: HARDEN F. TAYLOR

Discussion Panel: DONALD MCKEE

The Economic Research Of The Fish And Wildlife Service Under The Saltonstall-Kennedy Act With Special Reference To The Gulf And Caribbean Area

RICHARD A. KAHN

- Q. McKee: Would you explain further your statement that some of the Latin American countries would possibly be receptive to the U. S. shrimp industry operating from those countries.

- It seems almost contrary to what I hear about extending territorial waters and not wanting us to go down.
- A. Kahn: Some American enterprises are already established in Peru, Chile and Ecuador. We have two types of research in the South American countries going on. The first is biological and the second is to find out as much as possible about the production costs in these countries, compared with our production costs. Mr. Milton Lindnen, who speaks perfect Spanish and who is experienced in this type of studies, is stationed in Mexico City. From there he will visit all the countries and will report to us at Washington. We can publish the facts, and after that the industry has to find out how far they can exploit certain grounds which were found, and how far they can establish corporations in these countries.
- Q. Ringhaver: How long will it take to complete the economic survey which you are working on? Is it possible to get published reports from time to time?
- A. Kahn: Our contracts are set so that the last one will expire about the first of April, 1956, when we will start to write the final report. We hope to have it ready by the end of 1956 and we hope it will be considered the bible of the shrimp industry for many years to come.
- Q. Ringhaver: Who will receive this information?
- A. Kahn: This will be available to everybody as public information.
- Whiteleather (Comment): This publication will not give all the individual data that is collected, but it will be a compilation of the data in such a way that the facts can be drawn from the data without revealing anybody's business.

The Economic Factors Of The Shrimp Industry Of The Gulf Coast Area

REINHOLD P. WOLFF

- Q. Ringhaver: Does the growth of the shrimp fishery coincide with your theory of business in other fields?
- A. Wolff: The shrimp industry is going through the same type of development as the poultry industry did back in 1880's, from an industry with a relatively low amount of consumption into an industry with a popular product. This is the same in many industries, where the price had to be brought down to the consumer level. Eventually the price of shrimp will have to also be in line with any type of commodity that has such widespread consumer acceptance.
- Q. McKee: Do you believe that through increased production and exploration in foreign countries, that these imports will tend to dampen price fluctuations somewhat, and put stability in the market?
- A. Wolff: The production of foreign countries, such as Mexico, naturally has a mitigating influence on prices in this country. On the other hand, the opposite result is possible. As soon as

demand slackens, you naturally have surpluses, and the Mexican product then will appear as a surplus product and will make things worse. There is actually a trend in both directions.

- Q. McKee: I am not concerned with Mexican production. I am concerned about Pakistan and the areas of the Orient. It appears from reports that Pakistan would have very good shrimping grounds. I am afraid that with the lower labor costs we may possibly get into a condition such as the tuna fishery is in now. The Japanese were planning to go into Pakistan and help to promote the shrimp industry there. If they do that, the cost of production will be a great deal less than ours, and we can expect some difficulty. It could possibly parallel the tuna production. Essentially the cost of production is my main concern.
- A. Wolff: Several countries are suddenly showing the possibility of enormous enlargement of the supply of shrimp. On the other side, we see that Europe is following the United States in developing into a great user of shrimp. That is likely to happen all over the world. Just as the American automobile has spread to all parts of the world, and probably the world at large will repeat other things that have happened in this country. There will probably be space in the world for American shrimp, for Mexican shrimp, for Pakistanian shrimp and for shrimp from many more areas of the world. We are dealing with potential demand for a popular food product.
- Q. Bullis: Some day we might possibly get to a point where the world can be guaranteed a large supply of shrimp. Of course, as the demand grows more fishermen will go out to make a living catching these shrimp, but I gathered from your statements that you felt that demand could keep pace with whatever is produced for quite some time to come. Is that correct?
- A. Wolff: That is correct.
- Q. Taylor: As you know, a very large part of the fishing industry is characterized by unlimited competition because the natural resources are not subject to private ownership, and because a very large part of it involves very little capital investment, skill or knowledge. So it tends to become an industry of unlimited competition and is rewarded merely by a wage for labor involved, and very little return on capital, or very little enterprise. Do you find it true that since these vessels are now becoming so large, complicated and expensive that that very factor would tend to prevent the shrimp industry from degenerating into a profitless industry because of the element of protection that is afforded by the demand for large investment?
- A. Wolff: We know from general economic experience that wherever an industry grows to use large amounts of capital, there is also the danger of cutthroat competition. There are quite natural limitations for unlimited competition by the very fact that you have to have capital now to operate profitably in this field.

The Post-War Demand For Fisheries Products With Particular Reference To Shrimp And Oysters

GEORGE M. WOODWARD

- Q. Ringhaver: You mentioned that the consumption of fish in 1954 is similar to consumption in 1939, but that there is an increase of 22 per cent in red meats. I was under the impression that the per capita consumption of fish had been increasing in the past 10 or 15 years.
- A. Woodward: The figure that I have available is 11.1 pounds of fish per capita in 1954, which is the same as for 1939. Of course there is an absolute increase in fish consumption in that the population has increased, but not a per capita increase.
- Q. Taylor: With the growth of population in this country is the demand for oysters likely to be such that it can be supplied from natural wild oysters, or is it necessary that the production of the oysters on leased bottoms be increased?
- A. Woodward: A great part of the oyster production comes from privately controlled bottoms now. We could not rely on public bottoms now to supply even the reduced amounts at the present time. Public bottoms, unless very carefully handled, are not very productive of oysters.
- Q. Hoover: While it is true that the average fish consumption per capita in 1935-39 was 11.1, and the same in 1954, the kind of fishery products consumed was different, wasn't it? We know that shrimp has replaced oysters to a certain extent as a cocktail item. Do you have any breakdown on that figure?
- A. Woodward: What you say is true, but I do not have this breakdown with me. Of course there are these shifts in demand, but the overall consumption apparently has not increased per capita.

A Preliminary Report On Shrimp Vessel Efficiency Studies

C. ISAAC CAMBER AND GORDON C. BROADHEAD

- Q. Ringhaver: Did you give any thought to the number of pounds that have to be caught per year to have the boat at a break-even point?
- A. Camber: Cost of operations, and break-even points were all handled by the Federal Trade Commission. We computed everything on the basis gallons, of pounds of ice, pounds of shrimp and hours of operation.
- Q. Bullis: Do you feel that the establishment of minimal material and construction standards for boats would be justified?
- A. Camber: This is not common now. As the industry progresses there will be a demand for standards to protect both the builder and the industry as a whole.

- Ringhaver
(Comment): The Coast Guard, insurance man and the dealer himself all have requirements as to the boats' construction and maintenance.
- Q. Ringhaver: In the future, will you be able to give us the depreciation of these boats?
- A. Camber: There are two separate depreciation rates. The engine is usually fixed as soon as something goes wrong, but the hull is overlooked as long as it is not falling apart.
- Q. McKee: Do you make any surveys on freezer boats?
- A. Camber: Yes, we surveyed the freezer boat, brine tank boats, and ice boats with different types of insulation. We checked a couple of freezer boats in Tampa and in Brownsville, and we analyzed several boats with brine tanks, two in Brownsville and one in Morgan City. The brine tank boats were able to pay for themselves in about two years. Several captains discarded the brine tanks, but those who kept up a good maintenance found that they got a better product.
- Q. Morris: Did you find that many of the owners knew anything of maintaining their vessels? I find that maintenance as well as crew trouble is a big factor in the losses that we have in the fleet.
- A. Camber: It works both ways. The owner-operator may try to fix something and aggravate the situation, while the company owner would get a mechanic to fix it. It is true that the captain-owner, being constantly interested in the boat, is aware of the problems and will notice little things that maybe a company owner would not know of. Of course, some companies have a mechanic who goes from boat to boat to check on the condition.
- Q. Morris: In connection with training of crews, should not an educational program for owners and captains well be included?
- A. Camber: Yes, I believe that one remedy would be check lists. I know of some companies that issued a check list to the captain, and he would have to check off anything that he found wrong with the boat, and would file a report at the end of the trip.

Consumer Preferences For Breaded Shrimp

WALTER H. STOLTING

- Q. McKee: Do you feel that with the advent of home freezers that there will be a change in consumption in the rural areas?
- A. Kahn: The present indications are that fish did not profit much from home freezers in the rural areas. It is up to the industry to see that rural markets have different varieties of shrimp products.
- Q. McKee: Do you think that in the rural areas the competition for space in the freezer cabinet has prevented a complete line of shrimp products from being displayed?

- A. Kahn: That may be possible. Some food markets refuse to handle fish or shellfish. They feel that the smell of this product may have an influence on the sale of other products. A good fishery product never smells, so it is also up to the industry to bring such a good fishery product into this area.
- Q. Brawner: Don't you think also that the difference in the per capita income of the rural versus the urban individual partially accounts for the difference in the per capita consumption of shrimp, since it is a more expensive sea food product?
- A. Kahn: We have found that comparatively low income groups buy a large portion of breaded shrimp, so I do not think that this is a decisive point. The decisive point is the availability of a good product.