



University of North Carolina Sea Grant Program NEWSLETTER

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1235 Burlington Laboratories
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*Carteret women test
new seafood uses at
Morehead City lab.*



Cutting down on wasted seafoods

Mrs. Elmore Lawton was up to her elbows in a vat of slimy clams. Through rows of glass beakers and bottles of chemicals, she could see Mrs. Elsie Farlee across the room scrubbing clam shells. In the far corner, Mrs. Frances Turbyfill flipped shrimp toasties in and out of a frying pan.

Mrs. Lawton, Mrs. Farlee, Mrs. Turbyfill and the nine other women in the room weren't competing in a seafood cooking contest. In fact, they seemed to be more than at home working on the black-topped lab counters and dodging the scientific equipment at the Seafood Laboratory in Morehead City, a lab jointly supported by UNC Sea Grant and the North Carolina State University Department of Food Science.

Some of the women have been part of this setting once each month for almost two years. Called the Nutrition Leaders Advisory Committee, the dozen Carteret County women are contributing a special brand of expertise to seafood research. Each month they pitch in to help seafood scientists grapple with a number one problem: Reducing the waste of fish.

It's no secret. A lot of meat—protein that could be feeding hungry people today—is lost by commercial and sport fishermen. Com-

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Albacore: From trash fish to tasty salad

Folks have seen it happen for too long—this waste of good seafood. And some are so fed up that they've begun making better use of their catch right at home. At least one New Bern family found that a little imagination can save a lot of fish.

In a letter to the UNC Sea Grant Program, C. H. Hall, vice president and general manager of Seashore Transportation Co., New Bern, writes of how his family has put albacore to use. Albacore is a fish landed by the hundreds on party boats that often goes back overboard because of its dark flesh, Hall says.

"But on one off-shore trip some years ago, my 'Yankee' wife went along and asked why I was wasting tuna. She kept an albacore, cubed it, parboiled it in a couple of water changes and made a salad that put 'chicken of the sea' to shame," Hall writes. He adds that his family no longer wastes albacore.

The Halls' experience is just one example of how far a little imagination can go toward reducing the waste of tasty, nutritious seafood.

Holiday party treats with a seafood flavor

The following recipes are favorites among members of the Nutrition Leaders Advisory Committee. As holiday party foods they offer an unusual treat—a touch of seafood flavor.

SHRIMP TOASTIES

8 oz. shrimp (slit each lengthwise and chop fine)
4 water chestnuts (finely minced)
1 egg, slightly beaten
6 slices of 2-day-old bread
1 teaspoon salt
½ teaspoon sugar
1 teaspoon dry sherry
1 tablespoon cornstarch
2 cups vegetable oil

Mix chopped shrimp with chestnuts. Add salt, sugar, cornstarch, beaten egg and sherry. Mix. Trim crust from bread and cut each slice into 4 triangles. Spread 1 teaspoon shrimp mixture on each triangle.

In an electric frypan heat oil to 375°. Drop in 4 to 6 triangles, shrimp side down. (If mixture is of right consistency, it will stick to bread). When edges begin to turn brown (about a minute), turn and cook 5 more seconds. Remove from pan and drain. Keep warm in very low oven until ready to serve. These may be frozen. When ready to use, heat for 10 to 12 minutes at 400°. Makes 24 toasties.

HOBO CLAM DIP

1 8-oz. pkg. cream cheese
1 c. sour cream
2 teaspoons Worcestershire sauce
3 dashed hot pepper sauce
1 small green onion minced with top

¼ teaspoon celery seed
2 radishes chopped fine
1 7½-oz. can minced clams
salt to taste

Whip cheese and cream until fluffy. Blend in drained clams and other ingredients. Season to taste. Chill thoroughly before serving. Makes around 2½ cups.

STUFFED CLAM

2 c. toasted bread crumbs (prepared from sliced white bread toasted dark)
2 eggs
3 tablespoons mayonnaise
2 tablespoons Worcestershire sauce
1 small onion, grated
juice of ½ fresh lemon with scraping of rind
¼ lb. oleomargarine, melted
½ teaspoon parsley
pepper to taste
paprika
40 oz. canned minced clams, drained (reserve liquid) or 1 qt. shucked quohogs, minced
20 hard clam shells—about 4" in diameter

Wash and boil 20 hard clam shells. Toast bread and place in blender until ground fine. In large bowl, mix first 9 ingredients. Add quohogs or canned clams to mixture. Use liquid drained from clams to adjust consistency to that similar to bread dough.

Stuff mixture into cleaned, boiled hard clam shells. Sprinkle with paprika. Bake at 350° for 25-30 minutes or until slightly brown on top. Serves 7-8 people. To freeze, cook until bubbly at 400°. Freeze. When ready to serve, heat at 400° til bubbly and brown.

Carteret County women bring expertise to lab

(Continued from page 1)

mercial anglers often can't sell unusual species like albacore and grunt that they catch along with the fish they put their nets out to land. Frequently, the fish that folks don't commonly eat is just thrown back. Sport fishermen sometimes aren't sure how best to handle and prepare the trophies they haul in. It too often goes to waste.

The Nutrition Leaders are convinced that their efforts at the lab will help reduce waste.

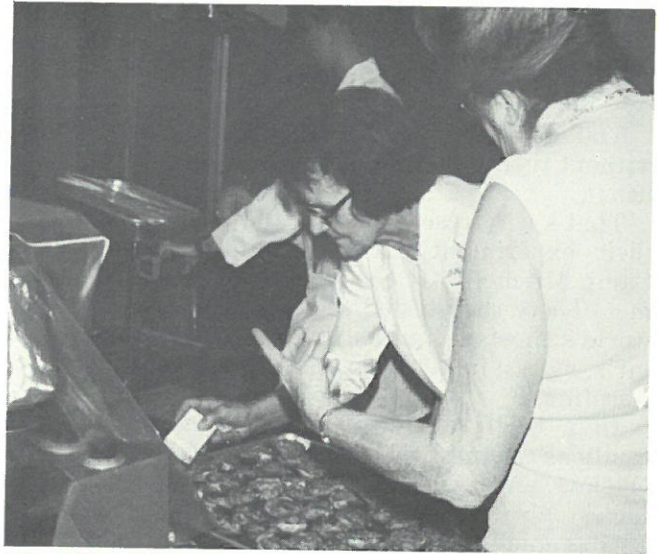
"We're trying to find recipes to show you can use fish and fish parts not considered edible before," said Mrs. Turbyfill as she plopped a shrimp toasty on a paper towel to cool. "We've made recipes with bonito, squid and other fish not now for sale to help begin developing a market for these," she added.

"We're finding new uses for seafood and making it attractive and appetizing," Mrs. Farlee said, adding that the group is looking for economical and practical ways to use seafood.

According to Ted Miller, director of the lab, the nutrition leaders are more than "good cooks." While they do bring handy skills and a history of food preparation with them, a major contribution is the information they provide on what North Carolinians like and dislike in seafoods. In judging the recipes they concoct, the women give scientists valuable insight into the flavors, textures and aromas that North Carolinians prefer in fish and seafood products.

Their work is but one part of an overall effort by Sea Grant to encourage better handling and use of ocean and coastal fisheries. Sea Grant advisory agents and researchers are concerned with improving seafood handling and processing from the moment it lands on the deck until it is frozen, thawed and cooked. Another more technical phase of seafood research supported by Sea Grant is being conducted at NCSU's Department of Food Science. There scientists are learning more about the nutritional, chemical and physical characteristics of seafood as it is treated in different ways.

Much of the Nutrition Leaders' work is aimed at finding ways to use "trash" fish, fish that haven't caught on as popular seafoods. Squid, bonito, grouper and dolphin are a few of the species they have worked with. Also, the women have used fish tissue separated from tiny bones by a magical



The Nutrition Leaders spend one morning each month concocting recipes that call for fish that folks are familiar with—and for fish they may find unusual.

deboning machine to stretch or even replace other seafoods, beef and pork. The deboned fish tissue is similar in texture to other ground meats. They've also looked for ways to use fish heads and bones as flavor enhancers.

Using the deboned tissue, the Carteret County women have replaced from one-half to all of the crab in crab imperial with deboned tilefish. They've used deboned menhaden to make stuffed clams and have even mixed it with ground beef to make hamburgers. In other recipes spot has replaced more than half of the pork in pork sausage, ravioli, won ton and egg rolls.

The Nutrition Leaders and seafood scientists hope their work will encourage fish markets to begin selling deboned fish for use at home, in school and hospital food programs and at restaurants.

Through their monthly visits to the lab, the women are helping Sea Grant researchers keep in tune with the needs and preferences of coastal Carolinians. And through presentations to the home extension clubs they represent, the Nutrition Leaders are taking information developed in laboratories to the people who can put it to use.

All about Sea Grant

Sea Grant in North Carolina, a 28-page booklet reviewing activities of the UNC Sea Grant Program during 1973, is available free upon request. Write UNC Sea Grant Program, 1235 Burlington Laboratories, North Carolina State University, Raleigh, N. C. 27607 for your copy.

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Putting fish pizza to the ultimate test

You don't just come up with a new product without trying it out on the people who might later use it.

That's why researchers at the Seafood Lab took their experiment with fish-topped pizza to the Camp Mitchell 4-H Camp in Swansboro this summer. There they tested their recipe on some of the world's most enthusiastic pizza eaters—boys and girls, ages 9 to 13, from central and coastal North Carolina.

In a brief survey of the campers, pizza won easily as the number one main dish favorite of both Onslow and Alamance County children. Hamburger also ranked near the top. Fish, fish sandwiches and hotdogs got a clear thumbs-down as main dish foods.

To find out how the new pizza which was topped with a mixture of deboned fish and hamburger, compared with hamburger pizza, campers ate samples of both and rated them. When ratings came in, researchers found that their experimental pizza had won few, if any, friends. On a scale of 3, campers rated the beef pizza at 1.9 and gave the fish pizza a rating of only 1.4.

Both pizzas suffered because they had to be reheated before serving, researchers say. The fish pizza, they believe, would have ranked higher had the staff not deliberately used spot, a strong-flavored fish, to find out how children would react to something easily identified as fish.

Not discouraged, the seafood lab staff has continued work on a combination fish-hamburger pizza and believe they have now come up with a recipe that will delight pizza eaters of all ages. According to Linda Burgess, lab technician, the fishy flavor is largely erased in the new recipe.

Ted Miller, lab director, points out that the fish-hamburger pizza could eventually be put to use in school and hospital food programs as a nutritious and economical main dish. This could lead to businesses handling and selling deboned fish and fish products, he adds.

Local land planning guidelines reviewed

Coastal and state government officials met in three workshops during November to iron out questions relating to local planning guidelines proposed by the state. Under the Coastal Area Management Act, the state is to prepare broad guidelines for use by local governments in developing land-use plans.

The workshops, held in Wrightsville Beach, New Bern and Elizabeth City, provided a forum for reviewing and commenting on tentative planning guidelines set forth by the state. UNC Sea Grant and the Institute of Government co-sponsored the workshops.

Suggestions for changes in the guidelines presented at the workshops are being compiled and relayed to the Coastal Resources Commission, the agency which will finally approve the guidelines.

Panel members at the workshops included Milton Heath and Philip Green, Institute of Government; Roy Paul, State Planning Office; and Mark Sullivan, Department of Natural and Economic Resources. Members of the Coastal Resources Commission and representatives of DNER regional and local organizations also participated.

The workshops were aimed at informing professional planners for city, county and regional planning agencies, city and county managers, planning board members and local government officials on the guidelines. Feedback from these groups heard at the workshops will go into the final guidelines.

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