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Louisiana Seafood Delight

The CRAWFISH



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The CRAWFISH

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When spring approaches, the minds of most Louisianians turn to that unique seafood delight—crawfish. These small, tasty shellfish have been a tradition with folks in South Louisiana for more than two centuries. Although freshwater crawfish are found in every state, Louisiana grows, processes and consumes approximately 90 percent of all crawfish produced for human consumption in this country.

Years ago, crawfish were caught only in natural rivers, bayous, swamps and lakes. The Atchafalaya river basin system, located in south central Louisiana, has historically been the state's most important source of crawfish. Today, this area is still dominant, but with the help of fisheries biologists and other experts, more and more landowners are constructing shallow ponds for crawfish production. In 1979, Louisiana had nearly 50,000 acres of managed crawfish ponds. With proper management of water depth and quality, undesirable natural effects such as low water or low oxygen in the water can be overcome, making production more consistent and predictable. In addition, by controlling the water level, pond-raised crawfish can be harvested earlier than "wild" crawfish.

Most commercial producers harvest crawfish in special wire traps baited with fish such as shad, carp or buffalo. Traps are run daily if the weather permits. Crawfish are sacked in 50-pound mesh onion sacks for delivery to processors, restaurants or retail markets.

"Crawfishing" is also a popular springtime family sport in Louisiana. With abundant shallow waters near roads and highways, crawfishing areas are easily accessible. Recreational crawfishermen often use small lift nets made from a square panel of cotton netting and wire bows.

Bait such as beef melt, fish or chicken necks is secured in the middle of the net. Since the crawfish are not restrained by the net—except at the moment of capture—nets must be checked every 10-15 minutes. You can bet that after a good day of crawfishing, a crawfish boil will soon be underway.

Some General Characteristics

Crawfish, like shrimp, crabs and lobsters, belong to the scientific class Crustacea. These animals have a hard shell

called an exoskeleton, which provides some protection and gives rigidity to their bodies. Since the exoskeleton does not increase in size as the crawfish grows, it must be shed periodically. Recently shed crawfish are soft, hence their designation as soft-shell crawfish. A hard shell forms again after a very brief period of body expansion. Although soft-shell blue crabs are considered to be a culinary delight, soft-shell crawfish—though tasty—are rarely eaten by man. However, many people consider them to be superior bait for finfish, especially bass and catfish.

Louisiana crawfish are aquatic animals and must spend most of their lives in water. Occasionally, crawfish are found walking on land near the water's edge. In late summer and early fall the females leave the water to burrow in the ground. This burrowing activity results in numerous crawfish "chimneys," much to the dismay of many Louisiana homeowners. While in burrows, the females will lay and hatch their eggs (about 400).

There are two species of crawfish consumed in Louisiana, the red swamp crawfish and the white river crawfish. Each is best adapted to a different water environment; however, mixtures of the two are sometimes harvested. Both species are handled and processed in exactly the same manner. The red swamp crawfish is by far the most common, making up about 60 percent of the total catch from the Atchafalaya basin.

It is easy to distinguish between the two species. The live red swamp crawfish is red to nearly black in color while the white river crawfish is light to dark brown. In addition, the claws of the white river crawfish are much longer and slimmer. Of course, both species turn bright red upon cooking. There is little or no difference in the taste of the meat.

Crawfish processors recover only the tail meat. The meat from the claws is also edible and tasty, but very meager and difficult to pick.

Live crawfish and fresh tail meat are usually available to Louisiana consumers from December until June. March, April and May are the months when crawfish are most plentiful and are of the best quality. Although fresh crawfish and crawfish meat are seasonal, frozen crawfish tail meat can usually be obtained throughout the year. Crawfish harvested

in July, August or September are usually of poor quality, with extremely hard shells and tough meat. The tail meat in some crawfish harvested from October through December is apt to appear shrunken, hence the term "hollow tails."

The prices of whole crawfish and tail meat vary greatly throughout the season. During a normal year, the highest prices are paid early in the season (December, January and February). A drop in price usually occurs as the season progresses. Crawfish sometimes sell for only one-third as much at the end of the season as they did in the beginning. Although processors peel crawfish throughout the season, many of the choice early season crawfish are moved directly to seafood retail outlets for sale as live crawfish by the sack or as whole boiled crawfish. As the season progresses and prices to the fishermen fall, a larger percentage of the crawfish are peeled for meat. Ironically, the crawfish's shell becomes harder and is more difficult to peel late in the season.

Processing plants are not necessarily idle during the off-season when crawfish are not available. The Louisiana blue crab is plentiful at this time and many processors pick crabs when they are unable to peel crawfish.

Crawfish Processing

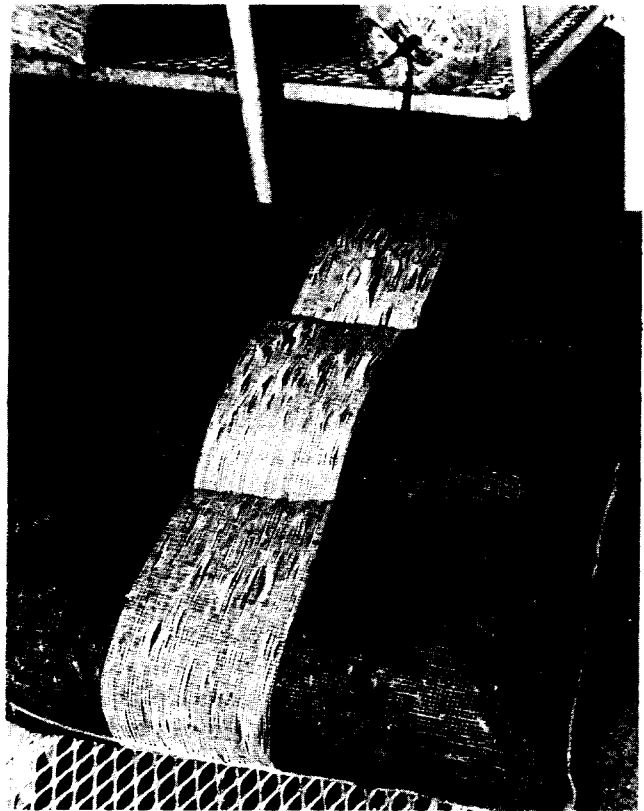
Processing crawfish, both commercially and at home, requires care to achieve highest quality. This section offers tips on proper handling of live crawfish and peeled tail meat.

The Commercial Operation

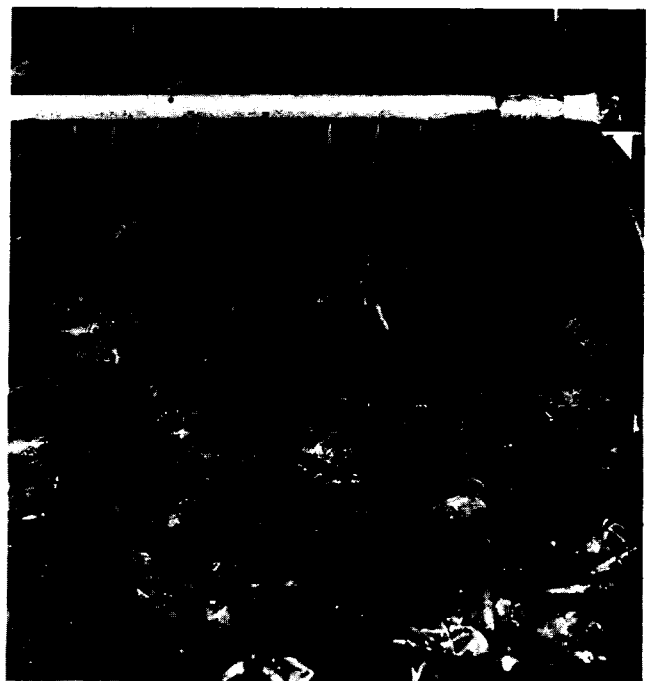
Commercial fishermen deliver crawfish to the processing plant alive and tightly packed in onion sacks. Each sack holds 40-50 pounds of crawfish. Because of their aggressive nature, crawfish should always be packed tightly to restrict their movement.

At the processing plant, the crawfish may be processed immediately or stored in a cooler for processing the next day. Temperatures in the cooler are usually maintained at around 40°F for live crawfish. Crawfish will survive out of water for several days, provided they are kept cool and have not undergone excessive stress prior to being refrigerated. A common source of stress is "dead water" (water with inadequate oxygen). Crawfish taken from such waters do not survive as well as those harvested from well oxygenated water. Sacks of crawfish should never be carelessly thrown about or stacked more than two layers high, since the crawfish may be injured or crushed. Young crawfish are especially susceptible to crushing because of their tender shells.

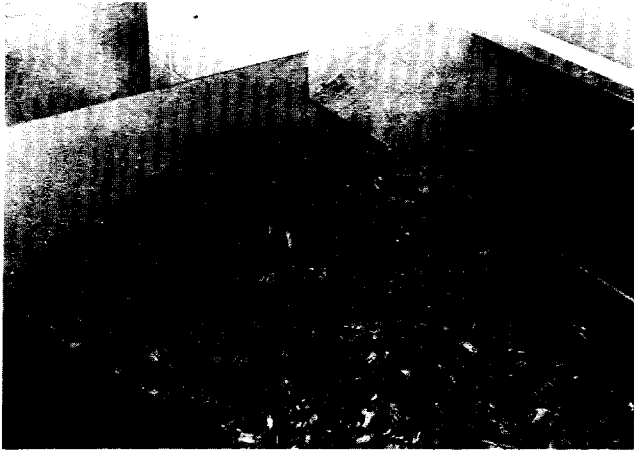
Crawfish are not sized or graded, as are shrimp. Each sack may contain a range of crawfish sizes. Large, mature crawfish give a relatively low yield of meat. This is because the crawfish claws and head enlarge, making up a larger percentage of the body weight, as the animal matures. Crawfish with extremely large claws and heads are not common until May or early June at season's end. On the other hand, small



Live crawfish arrive at the processing plant tightly packed into onion sacks. Each sack holds 40-50 pounds of crawfish.



Live crawfish are washed with a spray of fresh clean water prior to being cooked. Dead crawfish are picked out and discarded as the crawfish move along the inspection belt.



These freshly boiled crawfish await picking.

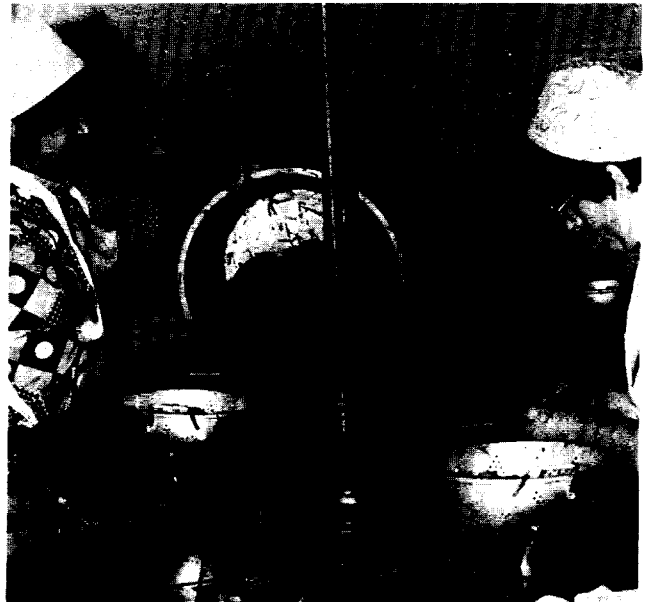
crawfish, while yielding more meat, take longer to peel. The processor prefers a medium to medium-large crawfish. This gives him his highest yield, and peelers have no difficulty in quickly removing the meat.

The first steps in commercial crawfish processing are washing and inspecting. Washing removes debris such as bait and mud. This is usually done in a large vat of fresh water. The sacks of live crawfish are opened and poured into the water. A conveyor belt lifts them from the bottom of the washing vat, carries them past an inspector who removes any debris and dead crawfish, and drops them into steel cooking baskets. Each basket may hold 100 pounds of crawfish or more.

Louisiana processors cook crawfish in boiling water without salt or other seasonings. The typical cooker consists of a large rectangular vat of water that may be divided into several sections for several baskets, and is heated by gas jets. The baskets of live crawfish are lowered with a chain hoist into the boiling water. Crawfish normally cook in about five minutes or less, once the water returns to boiling. If the crawfish are overcooked, the meat may become mushy and difficult to peel.

After cooking, crawfish are allowed to cool at room temperature until they can be safely handled. The cooled crawfish are then moved to the peeling room, where the tail meat is removed. For the most part, meat removal is done by hand, although several crawfish peeling machines have recently become available. These will probably be used more commonly in the future, but because of the seasonal nature of the crop and other factors, many processors prefer manual peeling at present.

Peelers are stationed at long tables built of stainless steel or aluminum. The peelers are normally paid according to the weight of meat peeled. A skillful worker can peel from eight to ten pounds of crawfish tail meat per hour. The number of peelers in any particular plant depends upon the number of tables available and the quantity of crawfish to be peeled. As in most seafood processing plants, peelers are provided all



For the most part, crawfish meat is removed by hand.



These one-pound packages are heat sealed, iced, and shipped directly to restaurant and retail markets.

the necessities of a sanitary operation—running water, sanitizing hand dips, and hand washing facilities. No special tools or knives are used to extract the tail meat from the crawfish. The only instruments needed are a pair of skilled hands.

The meat is placed into a colander as it is removed from the tail. At the same time, the "fat" may be squeezed from the heads and collected in a separate container. The fat also sticks to the crawfish tail meat as it is peeled.

The use of the crawfish fat in cooking most crawfish dishes is a long-time tradition with South Louisianians. Many will not accept the crawfish meat without the fat. Crawfish connoisseurs declare that a crawfish dish without the fat is like bread without butter. Actually, the crawfish fat is not fat in the usual sense. It is an organ in the head of the crawfish called the hepatopancreas. It functions much like the liver in higher animals. Its color is brilliant yellow to orange and adds

eye-appeal to crawfish tail meat. However, there are several disadvantages to using the crawfish fat. It may harbor a high number of bacteria. Although not necessarily harmful, these bacteria can reduce the shelf life of fresh tail meat. The fat may also become rancid or oxidized when placed under frozen storage. If the crawfish meat is to be frozen, all fat should be thoroughly washed off prior to freezing. When cooking your favorite crawfish dish, margarine or butter can be substituted for fat with excellent results.

Crawfish meat is usually packaged in one-pound plastic bags, heat-sealed, and chilled immediately with liberal amounts of ice. Most of the frozen meat is sold fresh to consumers and restaurants. Surplus meat is frozen for use in the off-season. When chilled properly, high quality fresh-cooked crawfish tails should maintain their quality for about a week. Poor quality meat or incorrect chilling methods will reduce the shelf life.

Processing Crawfish at Home

In Louisiana, crawfish are often processed in the home. Whether you catch your own crawfish or purchase a sack of crawfish, it is important that the crawfish remain alive until time for cooking. Crawfish decompose rapidly after death. Although not necessarily a health hazard if cooked properly, decomposed dead crawfish have mushy, discolored meat unsuitable for consumption. Some say that a crawfish that was dead prior to boiling will have a straight tail after cooking (the tails on most crawfish curl upon cooking), however, this is not always the case.

When tightly packed in onion sacks and kept cool and moist with plenty of air, crawfish can be kept alive out of water for a considerable period of time. Never place live crawfish in small airtight containers, in small containers full of water, or in direct sunlight. Such conditions will quickly kill them. In addition, never place heavy objects on the sack of crawfish or handle the sack roughly. This could crush and injure many of them.

Just as in the commercial processing operation, you should wash and inspect your crawfish. Discard debris such as bait and dead crawfish and remove mud and dirt by washing. A number three wash tub serves as a good crawfish washer. Many people add salt to the wash water in order to "purge" the crawfish. This practice is unnecessary and, in fact, just puts the crawfish under stress. Commercial processing firms do not use this practice. Therefore, we recommend that home consumers do not add salt to their live crawfish to "purge" them.

Boiling Crawfish at Home

Boiling is the most popular method of cooking crawfish for home consumption in Louisiana. One way of boiling crawfish is as follows:

Bring a pot of water to a rolling boil. The size of the pot will depend upon the quantity of crawfish you intend to boil.

A good rule of thumb is to use one gallon of water for every two pounds of crawfish. For example, to boil 40 pounds of crawfish (approximately one sack) you would need a pot large enough to hold 20 gallons of water, plus the crawfish. Do not overfill the pot. The water and foam resulting from boiling will overflow if you do. If necessary, you can always boil two or more batches and use a smaller pot. For large quantities of crawfish, many home consumers purchase or have access to bottled gas burners and large aluminum or steel pots. Hardware stores in South Louisiana usually carry a line of such cookers and pots. Certainly a setup like this would require that the boiling be done outdoors. Smaller quantities of crawfish can be satisfactorily boiled on a kitchen stove.

Carefully pour the live crawfish into the boiling water. The crawfish are killed quickly upon contact with the hot water. The water will cease to boil as the crawfish are placed into the pot. As soon as the water resumes boiling, begin the timing. Cooking time depends upon how the crawfish will be eaten as noted below. To insure uniform cooking, make certain that all the crawfish are submerged in the water.

When crawfish are to be peeled for dishes such as etouffe or bisque, it is not necessary to add seasonings or spices to the cooking water. For this purpose, crawfish are usually boiled for five minutes or less.

For the traditional crawfish boil where the crawfish are peeled and eaten immediately, the cooking water should be well seasoned. Typically, onions, lemon wedges, red pepper, garlic, commercial crab boil and salt are added. As a general rule, use a one-pound box of salt for each five gallons of water. Add other seasonings according to your own taste. It is also a Louisiana tradition to boil potatoes, sweet corn and whole onions in the spicy water with the crawfish. These are eaten along with the crawfish. Boil the crawfish for ten minutes, turn off the heat and allow the crawfish to soak for another ten to fifteen minutes before removing them from the water. This will allow the crawfish to absorb the flavor of the spices. Plan on about four pounds of crawfish for each person.

After cooking, remove the crawfish from the water and allow them to air cool. A long handled wire or heat-resistant plastic net is useful for this purpose. When the crawfish have cooled sufficiently for handling, they are ready for peeling. Refrigerate those that will not be eaten immediately.

Picking the Meat from Crawfish

Medium to medium-large crawfish should yield about 15 percent meat. Crawfish with large claws will yield less. Generally, it takes about ten pounds of crawfish to get a pound and half of meat. Before peeling crawfish, always wash your hands well, since you will be handling the meat. If not eaten immediately, crawfish meat should be packaged in suitable cartons or bags, chilled with ice and stored under refrigeration between 32°F and 40°F (0°C and 4°C). Crawfish are usually easier to peel while still warm. Therefore, begin

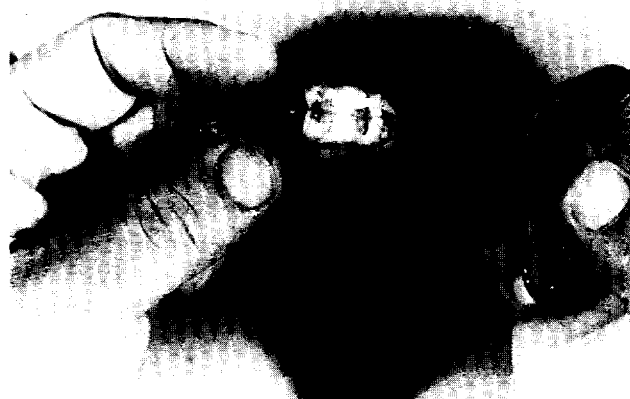
peeling them as soon as they can be safely handled. Peeling meat from crawfish tails is not difficult to learn. The following procedures are often used by professional crawfish peelers.



Crawfish are cooked alive. Upon cooking, they become bright red. This cooked crawfish is ready for picking.



Grasp the first three shell segments from the side and loosen by lifting up and pulling around the meat.



This piece can easily be pulled off now and discarded.

Separate the tail from the head by slightly twisting and firmly pulling the tail from the head. The head is discarded.



Holding the tail between the forefinger and thumb as shown, squeeze. Generally, you will hear the shell crack.



Firmly grasp the last segment and tail fin between the thumb and forefinger of one hand and the meat with the other hand and gently pull.



The meat should slide out of the shell and the vein should pull free from the meat.

Freezing Crawfish Tails

The availability and price of crawfish vary. For this reason, many commercial operations and home consumers freeze crawfish meat when crawfish are plentiful and low in cost for those times when crawfish are scarce and expensive. The proper method of freezing crawfish tails is as follows:

After peeling, wash all traces of the fat from the tails with clean cold water. If the fat is not removed, it may become rancid quickly in frozen storage, imparting an unpleasant taste to the meat. Just before packaging the tails for freezing, dip them in a weak lemon juice solution. Use $\frac{1}{4}$ -cup of regular strength lemon juice to $2\frac{1}{2}$ cups of water to make the solution. Too strong a solution will impart a lemon flavor to the meat. Concentrated lemon juice is also satisfactory, but reduce to regular strength before making solution.

Lemon juice will prevent the crawfish tails from turning "blue." This is a darkening of the meat resulting from freezing. Although harmless, this discoloration is unappetizing in appearance.

Crawfish meat may be frozen for long term storage with excellent results. However, the meat may, under some conditions, undergo certain undesirable changes in texture and flavor. To minimize these changes, crawfish meat should be frozen as rapidly as possible, using small containers designed for freezing foods. Prechilling the meat in your refrigerator prior to freezing will assist in a rapid freeze. In addition, water poured into the container with the crawfish meat can be chilled with ice. Freeze and store the meat at 0°F (-18°C) or



The meat is now ready for eating, freezing, or addition to your favorite crawfish dish.

lower. It is a good idea to check your freezer periodically to insure proper temperature. Use a thermometer designed for that purpose.

Common Market Forms

In season, crawfish may be purchased in three major market forms: live, boiled whole and fresh peeled tail meat. At other times, frozen meat is available.

Nutrition

Like most seafoods, crawfish are an excellent source of protein. Fat content of washed tail meat is low—only about 2 percent. Crawfish muscle fibers are shorter than the muscle fibers in red meats and are, consequently, more easily digestible. In addition, unlike many other meat items such as fish, poultry or red meats, there are no bones to contend with. Crawfish meat is versatile. Its delicate, unique taste comes through, whether the meat is eaten alone, fried or cooked in favorite dishes such as crawfish stew, bisque or etouffe.

Additional Information

For additional information concerning the processing and preparation of crawfish, contact your local Extension Service office, marine advisory agent, or the LSU Cooperative Extension Service office in Baton Rouge, Louisiana.

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