



Enjoying Louisiana Crawfish

Enjoy Louisiana crawfish for delicious taste and good nutrition.

Crawfish are an excellent source of high-quality protein and are low in calories, fat and saturated fat. They also are a good source of vitamin B12, niacin, iron, copper and selenium. Better yet, crawfish are easy to prepare, and they taste great!

Crawfish, which are freshwater crustaceans, are abundant in the swamps and marshes of south Louisiana.



Crawfish have long been part of Louisiana culture and an important and favorite food of Native Americans and early settlers. Centuries later, people enjoy crawfish in season with

backyard boils and neighborhood get-togethers, as well as on the table all year long.

Although rivers, bayous, swamps and lakes are still significant sources of crawfish, there are thousands of acres of crawfish ponds managed by farmers in the lower Gulf Coast regions that provide a consistent and readily available supply of fresh crawfish. Wild crawfish production, primarily from the Atchafalaya Basin, is quite unpredictable. A bumper crop may be produced followed by a year of poor production. Either way, tens of millions of pounds of crawfish are harvested each year from both ponds and from the wild.

In the 1960s, crawfish farming made its debut with the cultivation of crawfish in manmade ponds, using controlled water levels and forage management techniques to produce a highly marketable product. During the next 35 years, crawfish farming developed into the largest freshwater crustacean aquaculture industry in the United States.

Louisiana leads the nation, producing more than 99 percent of the domestic crop. More than 1,300 farmers

produce crawfish in some 184,000 acres of ponds. More than 1,000 commercial fishermen harvest crawfish from natural wetlands, primarily the Atchafalaya Basin. The combined annual yield ranges from 100 million to 120 million pounds. The total economic contribution to the Louisiana economy exceeds \$300 million annually, and more than 7,000 people depending directly or indirectly on the crawfish industry.

Types of crawfish

According to the Louisiana Crawfish Promotion and Research Board, Louisiana has at least 35 different species of crawfish, but only two species are commercially important to the industry – the red swamp crawfish (*Procambarus clarkii*) and the white river crawfish (*Procambarus zonangulus*).

Red crawfish and white crawfish have slightly different color patterns but can be more easily distinguished by looking at their heads and claws. The meat of both species is similar in taste, but the fat (hepatopancreas) is much different. Red crawfish fat is orange with a rich flavor. White crawfish fat is greenish and slightly less tasty.

Red crawfish far outnumber white crawfish in statewide production. Occasionally both species are mixed in the same catch. Red crawfish dominate most farms, especially in south Louisiana and in most places in the Atchafalaya Basin. White crawfish are slightly more plentiful on north Louisiana farms and in Mississippi River overflow swamps.



When crawfish is available

Most crawfish are harvested between December and June, but March, April and May are the peak months when Louisiana supplies are greatest, quality is best and prices generally are lowest. On rare occasions, crawfish may be harvested in July and August in the state.

Ways you can buy crawfish

Crawfish are available in a variety of forms, including whole in shell - live (to be cooked) and cooked (ready-to-serve or frozen); peeled tail meat - fresh and frozen; and cooked specialty products.

Live: Live, whole crawfish usually are marketed in 35- to 45-pound plastic mesh sacks.

Cooked: Whole, cooked crawfish are available as ready-to-serve and frozen.

Peeled: Peeled crawfish meat usually is marketed in 1-pound sealed clear bags. It is usually sold with the fat left on the meat for enhanced flavor. It may also be specially ordered for a slightly higher price with the fat washed off for improved storage. Crawfish fat becomes rancid within two to six months when frozen.

How much meat can you expect to get?

Some, but not all crawfish are sized or graded, but small to medium ones give the highest meat yield and are easier to peel.

Meat yield will be as high as 20 percent on immature small to medium crawfish and as low as 8 percent on very large mature crawfish. The larger the crawfish are, the lower the tail meat yield percentage will be – because as the animal matures, the head and claws become disproportionately larger.

Based on a yield of 15 percent meat, 6-7 pounds of live crawfish will provide 1 pound of peeled tails. You should plan on purchasing 3-4 pounds of live crawfish per person per meal or 1 pound of fresh or frozen tails to feed three people.

Care of crawfish at home before preparation

Live crawfish

Because of their brittle shell covering, crawfish are fragile products and should be treated gently.



For best results, bags or sacks of crawfish should be carried just like you would carry an infant. Set crawfish sacks down gently, letting the whole sack reach

the ground at the same time. Avoid stacking crawfish sacks more than three high.

Crawfish spoil rapidly and should be kept alive, active and cold from the time they are caught until they

are prepared for cooking or placing in the freezer. The crawfish can stay alive for about 24 hours, but since, in most cases, you will not know when the crawfish were caught, they should be prepared as soon as possible.

Keep them moist, make sure they have plenty of air and protect them from exposure to the sun and from being crushed.

If transporting live crawfish in a cooler, make sure the lid is left slightly open to allow the crawfish to have oxygen. Sprinkle water on the crawfish to keep them moist in the cooler, and if transporting for a long distance or time, place ice on top the sack.

Prior to boiling, carefully inspect your crawfish. Discard dead crawfish, bait and other debris. Wash thoroughly several times in cool water to remove mud and dirt. Wash in batches until the water is reasonably clear. There is no need to add salt to the wash water to “purge” or clean the crawfish.



Keep live crawfish cold – 42 to 45 degrees Fahrenheit, until preparation.

Crawfish tail meat

Store fresh, peeled, tail meat in the refrigerator at 40 degrees F or below and use within one or two days (or freeze within that time). Keep frozen meat in the freezer until you are ready to use it.

Care at home after preparation

Boiled and prepared crawfish dishes should be refrigerated at 40 degrees F or below or frozen until they can be reheated and eaten.

Freezing crawfish

Whether you peel your own crawfish or buy tail meat at the market, freezing is the ideal way to preserve crawfish. You also can make your favorite crawfish dishes and freeze the whole entrees for future consumption.

Peel uneaten crawfish left from a boil and store in the refrigerator a couple of days or freeze. You also can freeze the whole cooked crawfish, but they take up more storage space when left in the shells.

Steps in freezing crawfish

After washing crawfish, blanch them in boiling water before peeling and freezing. Blanching is necessary to deactivate the natural enzymes that can cause mushiness to the meat and rancidity in long-term frozen storage.

To blanch, put live crawfish in enough boiling water to cover completely. Bring back to a boil. This usually takes 7 to 8 minutes for a large pot.

Quickly remove from water. Let them cool enough to handle. Then pull off tails, peel and de-vein. They are easier to peel while warm.

Remove the fat before freezing unless the crawfish meat is to be cooked in a prepared dish within a few weeks. Crawfish fat becomes rancid and causes unpleasant flavor changes in as little as two to six months when it's included with frozen tail meat.

Dip peeled tails in a weak solution of lemon juice and water for about 1 minute. Use 1/3 cup regular strength lemon juice to 1 quart water. This helps prevent the blue color that often develops when frozen crawfish are cooked.

Drain and package in freezing containers or freezer bags. Remove all air. It's a good idea to barely cover crawfish with cold water after you fill the containers, unless you are vacuum sealing them. Seal airtight. Freeze at 0 degrees F or below.

When properly prepared, packaged and frozen, crawfish should maintain high quality for about nine months or longer.

Freezing prepared crawfish dishes

Many prepared crawfish dishes freeze well and maintain high quality for several months if properly packaged and frozen at 0 degrees F or below. It's easy to double-batch your favorite recipes. Serve one and freeze the other to reheat and enjoy when you're busy or when unexpected company comes.

Prepare dishes such as crawfish etouffee, crawfish stew and crawfish dip. After cooking, pour them into shallow containers to cool quickly. Package in airtight, moisture-proof freezing containers or freezer jars. Be careful to leave at least 1/2 inch of headspace in the container to prevent breakage as the contents expand during freezing.

You may also want to freeze in casserole dishes so they will be ready for the oven or microwave. Put a moisture- and vapor-proof plastic film snugly against the top of the food in the casserole dish. This excludes the air and helps to retain a quality product after several months of frozen storage. After placing the plastic covering, seal airtight with heavy-duty aluminum foil or tape the casserole dish's lid securely in place (if it has one). Freezer or masking tape works well on glass tops.

Nutrition information

Mixed, farm-raised, cooked crawfish – 3 ounces

Calories: 74

Protein: 14.89 grams

Fat: 1.1 grams

Saturated fat: 184 grams

Cholesterol: 116 milligrams

Sodium: 82 milligrams

Calcium: 43 milligrams

Iron: 94 milligrams

Phosphorus: 205 milligrams

Potassium: 202 milligrams

Mixed, wild, cooked – 3 ounces

Calories: 70

Protein: 13.57 grams

Fat: 1.02 grams

Saturated fat: 154 grams

Cholesterol: 113 grams

Sodium: 80 milligrams

Calcium: 51 milligrams

Iron: 71 milligrams

Phosphorus: 230 milligrams

Potassium: 252 milligrams

Source: USDA National Nutrient Database for Standard Reference, Release 20 (2007)

Crawfish myths:

1. Crawfish is high in fat and cholesterol.

Crawfish actually is low in fat, saturated fat and trans fat. Three ounces of cooked crawfish contain 116 milligrams cholesterol, about a third of the maximum daily amount recommended by the 2005 Dietary Guidelines and the American Heart Association.

The bright yellow to orange crawfish "fat" that is squeezed from the heads and that also sticks to the tail meat is not fat in the usual sense. It actually is an organ in the head called the hepatopancreas that functions much like the liver in higher animals. The actual pure fat content of this material is probably 30 percent, but as packaged for use in cooking, it may be closer to 10 percent, according to a recent study. On the other hand,

cholesterol content of the pure head “fat” is high – more than 500 milligrams per 100 grams (3.5 ounces).

2. Crawfish don’t fit in a heart healthy eating plan.

High intakes of saturated fats, trans fats and cholesterol may raise unhealthy blood lipids and increase heart disease risk. Since crawfish are low in fat, saturated fat, trans fat and calories and high in protein and minerals, they can be included in the diet of anyone who is concerned about cholesterol, fat or calories. Although shellfish (shrimp and crawfish) tend to be higher in cholesterol than fish, poultry and meat, a 3-ounce serving of crawfish provides 116 milligrams cholesterol (see Myth 1).

Crawfish fat is mostly unsaturated and contains a high proportion of omega-3 fatty acids that seem to significantly reduce the risk of heart disease and stroke. It’s important to remember that frying or preparing crawfish in rich sauces adds extra calories and fat, however.

3. If I find a crawfish with a straight tail on my plate of cooked crawfish, this means it was dead before cooking.

Studies by the LSU AgCenter have shown that a crawfish with straight tail after boiling may or may not have been dead prior to cooking. A cooked crawfish with a straight tail does not necessarily mean the crawfish is spoiled. Sometimes crowded conditions in the boiling pot will prevent the tail of a live crawfish from properly curling. So the bottom line on straight and curled tails is that a straight tail doesn’t mean the crawfish was dead when it went into the pot and a curled tail doesn’t mean it was alive. It’s important to following recommended food safety guidelines to keep food safe to eat.

4. Eating boiled crawfish makes me feel bloated (have too much fluid).

Crawfish are good for you – just don’t make them too salty! As with everything, too much of a good thing is not good. Too much spicy, salted, boiled crawfish and all the accompaniments – corn, potatoes and onions – can lead to sodium overload and edema (excess body fluid). Crawfish, corn, potatoes and onions are naturally low in sodium, but their sodium content increases after boiling in salted water. Crawfish that are boiled for meat production at peeling plants do not use salt or spices in the cooking water.

Salt, which is sodium chloride and therefore contains sodium, is important in helping the body maintain normal cell function and a proper fluid balance. Too much salt, though, can lead to too much sodium in the blood, causing water retention and uncomfortable swelling of the hands and feet and sometimes the abdomen.

For healthy people, this is a temporary condition, and the fluid will be excreted. In addition, any weight gain associated with the excess fluid accumulation – water weight – will disappear with fluid loss.

A serious problem related to too much salt is high blood pressure. High blood pressure increases the risk for heart disease and strokes. Approximately one-third of people with high blood pressure in the United States are especially salt-sensitive.

The 2005 Dietary Guidelines for Americans, the most recent, recommend eating no more than 2,300 milligrams of sodium per day, about the amount in a teaspoon of table salt. The average American adult consumes between 4,000 and 9,000 milligrams of sodium daily.

While enjoying crawfish, be sure to munch on the fresh vegetable appetizers and follow it with fruit for dessert. Fruits and veggies are high in potassium and help blunt the effects of salt on blood pressure and may reduce the risk of kidney stones.

Preparing crawfish a more healthful way

Whether you like them boiled, fried or in a stew, crawfish are a Louisiana favorite. Crawfish can be found on dinner tables and in backyard boils across the state.

Louisiana crawfish are the best in the world, but seafood dishes often are high in total fat, saturated fat, cholesterol and sodium, all of which are associated with heart disease and high blood pressure. Good Cajun cooks say you must use butter and crawfish fat in crawfish dishes to have a good flavor. You can, however, make a few simple changes and still have a delicious flavor as well as a food that is better for you.

Boiled crawfish:

Wash crawfish thoroughly. Cover them with cool water in a tub or large container (kid’s swimming pool). Let them sit 10 minutes during the first wash for the crawfish to clean themselves. Repeat washings two or three times until the wash water is reasonably clear. Carefully inspect and discard dead crawfish, bait and other debris.

A suggested method for more healthful boiling of crawfish:

When boiling crawfish, you can use a large boiling pot that is usually heated by a butane flame for outdoor gatherings, or you can use the stovetop and a large, deep pot for indoor cooking. For a 35- to 45-pound sack of crawfish, fill an 18- to 20-gallon pot with about 10 gallons of water.



Add 1 ½ pounds of salt, 3 lemons cut in half, 3 or 4 onions cut in half, 3 tablespoons red pepper, 2 tablespoons black pepper (if desired), 2 or 3 boxes dried crab boil mix, 2 or 3 small bottles liquid crab boil and garlic, and bring mixture to a boil. (Most cooks use a pound of salt for each 5 gallons of water, but you can get a good flavor with less.) Carefully add live crawfish to pot, cover with lid and bring back to a boil. Use sufficient heat to have them boiling in about 7 minutes. Boil gently for 5 to 10 minutes after the water has returned to a boil; remove from heat and let stand 6 to 10 minutes to soak up seasonings. Then use a basket or strainer to remove crawfish quickly so they don't overcook. Serves 10-12.

Use the same water for other batches of crawfish, adding only about ½ pound of salt for the next sack. If you want more seasoning, sprinkle salt and pepper lightly on the crawfish when you take them out. Too much salt or too high a temperature for too long will cause the crawfish to be tough and difficult to peel.

If you wish, when crawfish are finished, boil small potatoes about 20 minutes and corn for 5 to 10 minutes, depending on size.

Crawfish etouffee a more healthful way

Here's a typical crawfish etouffee recipe showing the potential changes to lower total fat, saturated fat, calories, cholesterol and sodium. It has passed lots of "taste tests" – even in Cajun Country!

Ingredients

- 2 pounds peeled crawfish tails*
- 2 teaspoons light salt (instead of regular salt)
- 1/2 teaspoon black pepper
- 1/4 to 1/2 teaspoon red pepper
- 1/4 cup polyunsaturated oil (instead of 1 stick butter)
- 1 cup chopped onions
- 1/2 cup chopped celery
- 1/4 cup chopped bell pepper
- 2 cloves minced garlic
- Omit 1/2 cup crawfish fat *
- 2 tablespoons cornstarch (instead of 4 tablespoons flour)
- 2 cups water
- 2 tablespoons finely chopped green onions and tops
- 2 tablespoons minced parsley
- 1 teaspoon low-sodium Worcestershire sauce (instead of regular Worcestershire)

Directions: Season crawfish tails with salt, black pepper and red pepper. Set it aside.

Put oil in a heavy pot. Add onions, bell pepper, garlic and celery. Cook until soft, stirring often. Add tails, and cook over medium heat for 5 to 10 minutes, stirring often. Add 1 ½ cups water, bring just to a boil and simmer for 15 minutes. Stir occasionally.

Dissolve cornstarch in remaining ½ cup water; add to mixture, stirring until sauce is smooth. Add green onions, parsley and Worcestershire sauce and simmer 10 minutes.

Adjust liquid if necessary. Cover and wait 10 minutes for flavors to blend. Serve over hot, fluffy rice. Serves 8.

The flavor often is better if etouffee is made the day before and refrigerated in shallow containers. It also freezes well.

*NOTE: About 2 teaspoons of tomato paste will give the red color you normally get from the crawfish fat.

Nutritional information per serving

	Traditional recipe	Altered recipe
Calories	240	186
Protein	220 grams	22 grams
Fat	14.9 grams	8.9 grams
Cholesterol	220 milligrams	127 milligrams
Sodium	327 milligrams (with 2 teaspoons light salt) or 500 milligrams (with ½ teaspoon regular salt)	768 milligrams

Crawfish stew

Crawfish stew is similar to etouffee except that you begin with a roux – browning flour and fat, which often is solid shortening, bacon drippings or butter. You can make changes in your stew recipe similar to ones we showed for the etouffee, reducing the amount of fat and flour and substituting polyunsaturated oil or margarine for other fat.

You can alter other crawfish dishes such as pies, gumbos, dips and creoles the same way. Experiment for a healthier diet!

Oil-Free Roux

Ingredients

2-3 cups flour

Directions: Spread flour evenly in large cookie pan with sides. Bake in 350 degree oven for 30-45 minutes. Check, and if not brown, stir and return to oven for additional 10-minute intervals, checking and stirring after each interval until desired color (about the color of peanut butter) is reached. Cool and sift browned flour. Store in airtight container in the refrigerator. To use, measure desired amount of browned flour and small amount of cold water to form a smooth paste. Add gradually to gumbos, gravies, tomato sauces and stews.

Nutrition information

1 tablespoon of oil-free roux:

28 calories

6 grams carbohydrate

1 gram protein

0 grams fat

Numerous recipes for crawfish are available in Louisiana seafood cookbooks and on the Internet. Also, crawfish can be substituted in most recipes that call for shrimp.



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Acknowledgement:

Grateful appreciation for assistance in preparing this publication is extended to

Robert P. Romaire, Professor, and Greg C. Lutz, Professor, Aquaculture Research Station, LSU AgCenter

Adapted from:

Enjoying Louisiana Crawfish, LSU AgCenter, Pub. 2353, 1989, by Ruth M. Patrick, Ph.D., Specialist/Nutrition (retired), and Michael W. Moody, Ph.D., Specialist/Seafood Technology (retired)

and

Crawfish A Healthy Choice! Human Nutrition Section, Animal Science, Texas A&M University. Kathleen F. Ladewig, Professor and Extension Nutrition Specialist, and Senae L. Schaer, Southern Region Aquaculture Center, September 1993

References:

Louisiana Crawfish Promotion and Research Board
Louisiana Seafood Promotion and Marketing Board
USDA National Nutrient Database for Standard Reference, Release 20 (2007)



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Pub. 2353 (online only) 06/11 Rev.

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