

Determining Seafood Safety in an Oil Spill



There is a great deal of concern over the safety of seafood since the explosion of the Deepwater Horizon drilling platform and subsequent oil spill. Rather than posting signs indicating that they are proudly serving Louisiana seafood, restaurants are posting signs stating that they are *not* serving Louisiana seafood. Negative media attention is perpetuating this misconception.

The first step to assure seafood safety.

The reality dictates that in the event of an oil spill, waters are closed to seafood as a *precautionary* measure. This is an added measure of caution to protect the consumer from accidentally consuming contaminated seafood. The Food, Drug and Cosmetic Act (FD&C) empowers the U.S. Food and Drug Administration (FDA) to prohibit the entry of adulterated food into interstate commerce. The National Marine Fisheries Service (NMFS, a division within NOAA) is authorized to close waters 3 to 200 miles from shore to harvesting activities. The Louisiana Department of Wildlife and Fisheries oversees waters up to 3 miles from the shoreline.

The second step to assure seafood safety: The field inspector.

Fancy scientific equipment is not always needed to detect if seafood has been contaminated by oil. For centuries, dogs have been trained to track by scent and more recently detect illegal drugs. They are not used to detect contamination by oil because their sense of smell is about 100,000 times greater than that of a human. A human **field inspector** is trained to screen by taking “bunny sniffs” of a seafood product, contaminated with known quantities of oil, that is held in a covered glass dish.

Their **level of sensitivity is about 10 parts per million (ppm)**. **Other trained experts can detect** the aromatic compounds down to a level of **0.5 ppm**.

What is the contamination?

The contamination is termed “taint” in seafood, and the aromatic compounds are polycyclic aromatic hydrocarbons (PAHs). The oil in the Louisiana spill is light crude, unlike that of the Exxon Valdez which was heavy crude. The PAHs are of concern because they may be carcinogenic or cancer causing.

Knowing seafood is safe.

Regulators began collecting seafood that was harvested in the days before the oil spill began. The purpose was two-fold: First, to have product with a known history and second, to have native species that could be tainted for training purposes. Field inspectors are the first line of defense. Samples deemed positive for oil taint are sent for aroma evaluation by a panel of experts. If the sample is determined to be positive for taint, it is split and half is cooked and tasted. If this is positive, the remaining half is sent to the NMFS laboratory in Seattle for testing for the type and quantity of PAH.

How much seafood is tainted?

On June 17, 2010, NMFS released results of initial testing of seafood samples taken both outside and inside closed waters. More than 600 samples were tested and shown to be pristine to a detection level of 2 parts per billion (ppb). FDA has deployed its mobile laboratory to the Florida Department of Agriculture to enhance testing for selected organic compounds. Other FDA field and state laboratories in Arizona, California, Florida and Wisconsin are ramping up to increase the laboratory capacity for testing.

Lucina E. Lampila, Ph.D., R.D. is the LSU Seafood Specialist with the Louisiana Sea Grant College Program and AgCenter. Rev: June 24, 2010