

Dieldrin in Sport Fish: Information for Fish Consumers

WHERE DOES DIELDRLIN COME FROM?

Dieldrin is a synthetic chlorinated insecticide widely used in the United States from the 1950s to 1970 on crops such as corn and cotton. In subsequent years, it was used to kill termites until its registration was cancelled by U.S. EPA in 1989. When applied as an insecticide to plants or structures, dieldrin binds tightly to soil particles and cannot readily be washed away. These soil particles can then be picked up by the wind, transporting dieldrin to areas far from where it was originally applied. If dieldrin is deposited on water bodies, it sinks to the bottom and attaches to sediment particles where it can be taken up by fish and other aquatic organisms. Because of its chemical properties, dieldrin does not break down easily in the environment and accumulates in the food chain.

HOW MIGHT I BE EXPOSED TO DIELDRLIN?

The most common way that people are exposed to dieldrin is through the food that they eat. Meat, dairy products, fish, garden fruits and root vegetables contain the highest dieldrin concentrations of any food products, although these levels are generally low. Dieldrin levels in fish are usually highest in areas where corn is grown. Babies may be exposed to dieldrin through the placenta during pregnancy or through breast milk after they are born. People who live in homes that were treated with dieldrin for termites or who live near or work at hazardous waste sites where dieldrin is found may also be exposed to this chemical.

AT WHAT LOCATIONS IN CALIFORNIA HAVE ELEVATED LEVELS OF DIELDRLIN BEEN FOUND IN FISH?

For most California water bodies where chemical analyses have been conducted on fish, dieldrin has either not been detected or has been found at very low levels. At San Pablo Reservoir in Contra Costa County, however, high levels of dieldrin were found in carp and channel catfish. As a result, OEHHA recommends that no one consume these species caught at this reservoir. The source of dieldrin at San Pablo Reservoir is not known.

HOW CAN DIELDRLIN AFFECT HEALTH?

Exposure to high levels of dieldrin in the workplace or in accidental poisonings has been shown to affect the nervous system. Dieldrin has been shown to cause liver toxicity in animals, but there is no evidence that this occurs in humans. Animal studies have also shown that dieldrin may affect reproduction and development of the nervous system. Dieldrin has been found to cause cancer in some animal studies. As a result, the state of California and the United States Environmental Protection Agency say that dieldrin probably can cause cancer in humans.

CAN DIELDRIN POISONING OCCUR FROM EATING SPORT FISH IN CALIFORNIA?

No cases of dieldrin poisoning have been reported from eating California sport fish. Eating California sport fish is not expected to result in obvious signs of toxicity from exposure to dieldrin. Fish consumption advisories are designed to prevent dieldrin from building up in your body to levels that could increase the risk of cancer.

IS THERE A WAY TO REDUCE DIELDRIN IN FISH TO MAKE THEM SAFER TO EAT?

A significant percent of dieldrin found in fish can be removed by specific cooking and cleaning techniques. OEHHA recommends that you clean and gut the fish you catch before cooking it because dieldrin and some other chemicals tend to concentrate in the organs, particularly in the liver. OEHHA also recommends consuming only the meat or fillet of the fish. For shellfish such as crabs and lobster, do not eat the soft “green stuff” (called “crab butter,” mustard, tomalley, liver, or hepatopancreas) in the body section of these shellfish.

Dieldrin is mainly stored in fat and can be reduced by getting rid of the fat. Trim the fat, remove the skin, and fillet the fish before cooking. Fat is located along the back and the belly, and in the dark meat along the lateral line running along side of the fish. Skinning fish will remove the thin layer of fat under the skin. Use a cooking method such as baking or grilling that allows the juices to drain away, and then discard the cooking juices. Do not use the fat, skin, organs, juices, or whole fish in soups or stews. These methods may eliminate half or more of the dieldrin in fish. Consumption advice is based on contaminant levels in skin-off fillets. OEHHA strongly advises fishers to eat only the safest part of fish, skin-off fillets.

OEHHA also recommends fishing in different locations in case the location where you usually fish is contaminated. Eating a variety of fish species is likely to reduce your exposure to a species that has high contamination. Eating smaller fish of a species may also reduce your exposure because smaller younger fish tend to contain less dieldrin than larger older fish.

WHERE CAN I GET MORE INFORMATION?

Health advisories for sport fish in all parts of California are printed in the California Sport Fishing Regulations booklets, which are available wherever fishing licenses are sold. Health advisories and safe eating guidelines are also available from the Office of Environmental Health Hazard Assessment, including new updates. OEHHA has educational materials and reports on fish contamination in the state at www.oehha.ca.gov/fish.html. Further information about dieldrin is also available at <http://www.atsdr.cdc.gov/toxprofiles/tp1.html>.