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Brantley Reservoir Fish Consumption Advisory Questions and Answers

1. **What is DDT?**
   DDT is a pesticide that was widely used in agriculture and mosquito control in the United States before 1972. Its sale has been banned in the U.S. since that time.

2. **How did DDT get into fish in Brantley Reservoir?**
   DDT was apparently used in the Pecos River valley, probably for agricultural and mosquito control purposes, some time ago. After being applied, rain would have washed it into the river (for mosquito control, it may have been applied directly to water) where it tends to attach to the sediment. That's why bottom-dwelling fish (e.g., catfish) tend to have higher concentrations than fish that live higher in the water (e.g., walleye).

3. **Are DDT levels in Brantley fish unusually high?**
   The U.S. Environmental Protection Agency (EPA) recently (2000 – 2003) conducted a nation-wide study of contaminants in fish tissue in several hundred lakes. Brantley was one of the lakes included in the study. Total DDT levels in Brantley channel catfish were the highest of the entire study, more than three times the EPA-recommended "Do Not Eat" level. Brantley walleye were at the EPA-recommended "no more than one meal in two months" level.

4. **If DDT hasn't been used in so long, why are there unusually high amounts in fish in Brantley Reservoir?**
   DDT breaks down into DDD and DDE. When we talk about total DDT, we mean the total amount of all three of these. DDE is very stable and lasts a long time in the environment. The total DDT in Brantley Reservoir fish is almost entirely DDE, which means that it has been there for a long time. No one knows for sure, but it is likely that DDT used over several decades accumulated in the sediment of McMillan Reservoir. After Brantley was built, McMillan was drained and all that sediment got stirred up, making several decades worth of accumulated DDT (by then, it had probably mostly broken down into DDE) available to be absorbed by fish when the old McMillan sediment settled in Brantley.

5. **Will I get sick from eating DDT-tainted fish?**
   You won't feel sick in the short term. The health effects of eating DDT-tainted fish can be compared to smoking. If you smoke one cigarette, it won't give you cancer. But it is impossible to say how many cigarettes you have to smoke before it results in negative health effects. The safest thing to do is not to smoke at all. Similarly, EPA guidance recommends not eating or limiting consumption (depending on how much DDT it contains) of DDT-tainted fish. Over the long term, it may increase your risk of cancer and other health problems.

6. **What are the health effects of DDT?**
   DDT and its breakdown products (DDD and DDE) are considered probable human carcinogens (cancer-causing agents). Its acute toxic effects (quite unlikely to occur from eating Brantley fish) include pulmonary edema (filling of the lungs with fluid) and heart problems. Acute toxicity is more of a concern for people who would be directly exposed to large doses, such as people who are accidentally overexposed while working with DDT spray. Its chronic toxic effects (these are the sorts of effects that are possible from eating fish over a long period of time) may include liver damage and immune system problems, as well as increased cancer risk. DDT may also cause reproductive and developmental problems. DDT and its breakdown products have been shown to mimic estrogen (a female sex hormone). Studies have shown that DDT interferes with the normal sexual cycles and functions of animals – and so potentially with those of humans. It is especially important for children and women of child-bearing age to avoid eating DDT-tainted fish. DDT is known to concentrate in mother's milk, and as such, a nursing infant can be exposed to as much as 20 times the amount of DDT that is in their mother's body. Because DDT is stored in a mother's body tissues, her DDT exposure before a pregnancy can result in exposure to her unborn baby.

7. **If I am concerned about contaminants in fish, is there a way to prepare and cook the fish to reduce exposure?**
   For contaminants that tend to be stored in fatty tissues (e.g., DDT, PCBs), you can trim away the fat and grill, bake, or broil the fish so that most remaining fat drips away during cooking. Do not fry the fish because the contaminants will remain in the fish. Mercury, however, is stored in muscle tissue, so there is no way to prepare fish to reduce mercury. A brochure describing how to prepare fish to reduce contaminants is available on the internet at http://epa.gov/waterscience/fish/30cwafish.pdf or http://www.nmenv.state.nm.us/swqb/advisories.

The above information was derived largely from the EPA document *Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories, Volume 2: Risk Assessment and Fish Consumption Limits, Third Edition* which is available on the internet at http://www.epa.gov/waterscience/fish/guidance.html.

Other links with information on DDT:

http://www.epa.gov/iris/subst/0147.htm

http://www.atsdr.cdc.gov/tfacts35.html

http://en.wikipedia.org/wiki/DDT

The State is in the process of collecting more data from Brantley Reservoir fish. As more information becomes available, the fish consumption advisory may be updated as necessary.

For more information on fish consumption advisories, contact the New Mexico Environment Department, Surface Water Quality Bureau at **(505) 827-2470** or (toll-free) **(866) 885-2997** or visit http://www.nmenv.state.nm.us/swqb/advisories.

For more information on the possible health effects of eating contaminated fish, contact the New Mexico Department of Health, Environmental Health Epidemiology Bureau at **(505) 461-1734**.