Dioxin: how great is the real danger?

By PETE EARLEY
The Washington Post

Army Major Charlie Hubbs used to drink Agent Orange during the Vietnam War to convince American reporters that the herbicide was safe.

"It tasted terrible," recalled Hubbs, now a 52-year-old resident of Camp Springs, Md. "But I haven't changed my mind." He still believes the herbicide, that was used to clear jungle and kill crops, has not harmed anyone's health, including his own.

Michael Ryan never drank Agent Orange, but the Long Island policeman was exposed to it in Vietnam. He believes it caused his 12-year-old daughter, Kerrie, to be born with 18 birth defects including missing bones, twisted limbs, a hole in her heart, deformed intestines, a partial spine, shrunken fingers and no rectum.

The controversy is at the core of the $33 million political decision made by the Environmental Protection Agency last week to buy out the entire town of Times Beach, Mo.

The chemical that the EPA says rendered Times Beach unfit for its 2,400 residents to inhabit is dioxin. Dioxin, which was found in Agent Orange at levels more than six times greater than that found in Times Beach, is the substance that some Vietnam veterans charge has caused them everything from headaches to fatigue, skin rashes, nausea, cancer, loss of sex drive, nervousness, and birth defects in their children. So far, 16,102 of those veterans have filed disability claims.

Moreover, some estimates have claimed that as many as 165 million Americans may have been exposed to dioxins in the years they have been sprayed on forests, crops and roadsides. Weekend garderners have used millions of gallons of dioxin-laden herbicides since they were introduced in the 1940s. The herbicides have been used to control weeds at the Washington Monument and keep dandelions from growing on the White House lawn.

There is still another twist to the dioxin saga. EPA still allows chemical manufacturers to sell dioxin-ridden herbicides for use on rangeland and rice – 1.3 million gallons were sprayed on rangeland last year. In fact, EPA has moved recently to ease restrictions on the dioxin contaminated herbicide, 2,4,5-T.

All these contradictions simply underscore the key point about the federal government's conflicting stands on dioxin: political decisions are being made more on headline appeal than on scientific evidence.

The bulk of reputable science indicates simply that no one knows whether dioxin is toxic to humans and if so, how much.

As strange as it may sound coming after a week of news reports which described dioxin as a threat to mankind, the scientific community remains deeply divided over whether exposure to dioxin causes health problems to humans.

Consider these comments by two nationally recognized experts on dioxin: Drs. Samuel Epstein, a cancer researcher at the University of Illinois, and Matthew Meselson, a Havard University biochemist who is considered a pioneer in dioxin research.

Epstein: "The evidence is overwhelming that dioxin is carcinogenic (causes cancer) in humans."

Meselson: "Anyone who says that it is a clear and present danger cannot prove it and anyone who asserts that it is not a danger cannot prove that either. We simply don't know."

Dioxin is formed as an unwanted byproduct when "phenoxy" herbicides are made. Just how much dioxin is formed depends upon how well the manufactuer controls the temperature and pressure when making a herbicide. Methods have been developed to make herbicides almost dioxin-free, but they are expensive.

In 1979, the President's Council on Environmental Quality announced that dioxin had caused cancer in test animals when 2.2 parts per billion of their normal diet consisted of dioxin. It caused birth defects in monkeys at doses of 2.5 parts per trillion.

The council called dioxin "one of the most toxic substances ever studied."

The Centers for Disease Control in Atlanta now says dioxin at levels higher than part per billion may be dangerous humans.

But dioxin effects animals differen making some scientists skepti cal at comparisons with humans. For instance, dosage required to kill a hamster is 5 times greater than the dose needed to ki guinea pig, according to Dr. Barclay Shepard, the VA's expert on Agent Oran

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Most of what is known about the effect dioxin on humans is based upon studies of dustrial accidents, primarily one in 1949 a chemical plant in Nitro, W.Va., and anot in 1976 in Seveso, Italy.

The Nitro accident occurred when a va popped, spraying fumes inside a buildi After that mishap 121 workers develo chloracne, a skin problem caused by diox Studies have documented numerous sh term effects after the accident includi nausea, headaches, blood disorders, li abnormalities and impaired nerve functi But the symptoms diminished over a per of time and eventually disappear altogether. Recent studies show the dea rate among the 121 men actually was low than normal. There also were no signs t the men had developed higher rates cancer.

At Seveso, an explosion spewed estimated 10 ounces of dioxin over 700 acr Within six days, 11 children had be hospitalized with skin inflammation and 1 cases of chloracne had been diagnosed. T Italian government evacuated 212 famili who lived near the plant, after the diox level was found to be 50 parts per millio Two months after the accident, more th 2,000 small animals had died, mostly rabbit Another 78,000 animals, including horse cows and sheep, had to be slaughted to pr vent dioxin from entering the food chain.

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The Nitro accident occurred when a value popped, spraying fumes inside a building. After that mishap 121 workers developed chloracne, a skin problem caused by dioxin. Studies have documented numerous short-term effects after the accident including: nausea, headaches, blood disorders, liver abnormalities and impaired nerve function. But the symptoms diminished over a period of time and eventually disappeared altogether. Recent studies show the death rate among the 121 men actually was lower than normal. There also were no signs that the men had developed higher rates of cancer.

At Seveso, an explosion spewed an estimated 10 ounces of dioxin over 700 acres. Within six days, 11 children had been hospitalized with skin inflammation and 175 cases of chloracne had been diagnosed. The Italian government evacuated 212 families, who lived near the plant, after the dioxin level was found to be 50 parts per million. Two months after the accident, more than 2,000 small animals had died, mostly rabbits. Another 78,000 animals, including horses, cows and sheep, had to be slaughted to prevent dioxin from entering the food chain.