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Agent Orange's lethal legacy: Defoliants more dangerous than they had to be

By Jason Grotto and Tim Jones

Tribune reporters

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Part 5 of a Tribune investigation unearths documents showing that decisions by the U.S. military and chemical companies that manufactured the defoliants used in Vietnam made the spraying more dangerous than it had to be. Complete coverage >>

As the U.S. military aggressively ratcheted up its spraying of Agent Orange over South Vietnam in 1965, the government and the chemical companies that produced the defoliant knew it posed health risks to soldiers and others who were exposed.

That year, a Dow Chemical Company memo called a contaminant in Agent Orange "one of the most toxic materials known causing not only skin lesions, but also liver damage."

Yet despite the mounting evidence of the chemical's health threat, the risks of exposure were downplayed, a Tribune review of court documents and records from the National Archives has found. The spraying campaign would continue for six more years.

Records also show that much of the controversy surrounding the herbicides might have been avoided if manufacturers had used available techniques to lessen dioxin contamination and if the military had kept better tabs on levels of the toxin in the compounds. Dow Chemical knew as early as 1957 about a technique that could eliminate dioxin from the defoliants by slowing the manufacturing process, according to documents unearthed by veterans' attorneys.

Since the Vietnam War, dioxin has been found to be a carcinogen associated with Parkinson's disease, birth defects and dozens of other health issues. Thousands of veterans as well as Vietnamese civilians were directly exposed to the herbicides used by the military.

Debilitating illnesses linked to defoliants used in South Vietnam now cost the federal government billions of dollars annually and have contributed to a dramatic increase in disability payments to veterans since 2003.

Documents show that before the herbicide program was launched in 1961, the Department of Defense had cut funding and personnel to develop defoliants for nonlethal purposes. Instead it relied heavily on the technical guidance of chemical companies, which were under pressure to increase production to meet the military's needs.

The use of defoliants led to massive class-action lawsuits brought by veterans and Vietnamese citizens against the chemical firms. The companies settled with U.S. veterans in the first of those suits in 1984 for \$180 million.

Since then, the chemical companies have successfully argued they are immune from legal action under laws protecting government contractors. The courts also found that the military was aware of the dioxin contamination but used the defoliants anyway because the chemicals helped protect U.S. soldiers.

A 1990 report for the secretary of the U.S. Department of Veterans Affairs found that the military knew that Agent Orange was harmful to personnel but took few precautions to limit exposure. The report quotes a 1988 letter from James Clary, a former scientist with the Chemical Weapons Branch of the Air Force Armament Development Laboratory, to then- Sen. Tom Daschle, who was pushing legislation to aid veterans with herbicide-related illnesses.

"When we initiated the herbicide program in 1960s, we were aware of the potential for damage due to dioxin contamination in the herbicides," Clary wrote. "We were even aware that the 'military' formulation had a higher dioxin concentration than the 'civilian' version due to the lower cost and speed of manufacture. However, because the material was to be used on the 'enemy,' none of us were overly concerned."

Military scientists had been experimenting with herbicides since the 1940s, but funding cuts in 1958 left few resources in

place to fully evaluate the chemicals for use in Vietnam.

"I was given approximately 10 days notice to come to Vietnam to undertake 'research' in connection with the above tasks," wrote Col. James Brown of the U.S. Chemical Corps Research and Development Command in an October 1961 report to top brass just as the defoliation program was ramping up. "Thus, a large order was placed on a very poorly supported research effort."

The military launched a limited herbicide program in 1962 that involved 47 missions. At the time, relatively little was known about the health effects of dioxin, in part because cancer and other illnesses can take decades to develop and the herbicides had only been in wide use since 1947.

But documents uncovered by veterans' attorneys show the chemical companies knew that ingredients in Agent Orange and other defoliants could be harmful.

As early as 1955, records show, the German chemical company Boehringer had begun contacting Dow about chloracne and liver problems at a Boehringer plant that made 2,4,5-T, the ingredient in Agent Orange and other defoliants that was contaminated with dioxin.

Unlike U.S. chemical companies, Boehringer halted production and dismantled parts of its factory after it discovered workers were getting sick. The company studied the problem for nearly three years before resuming production of 2,4,5-T.

In doing so, the company found that dioxin was the culprit and that they could limit contamination by cooking the chemicals at lower temperatures, which would slow production.

In response to questions from the Tribune, Dow said it didn't purchase the proprietary information on the technique until 1964 and didn't start using it until 1965. Records show it did not inform other manufacturers or the government about the technique until the military began planning construction of its own chemical plant to make herbicides in 1967.

By that time, Dow also had developed a procedure to test dioxin levels in batches of 2,4,5-T. The company provided that technique to other companies in 1965 but not to the military until 1967, the company said.

Earlier in the decade, nearly two dozen military officials and chemical industry scientists met in April 1963 to issue a "general statement" about the health hazards from 2,4-D and 2,4,5-T. No one raised concerns about using the chemicals in Vietnam, according to minutes from the meeting.

Evidence focused largely on the fact that more than 300 million gallons of the compounds had been used domestically since 1947, even though the formulations for Vietnam would be far more concentrated and contain more dioxin.

"The committee concluded that no health hazard is or was involved to man or domestic animals from the amounts or manner these materials were used in aforementioned exercise," the minutes show.

Nonetheless, Dow told the Tribune it had been sharing information about health issues with the military. "In fact, the chemical manufacturers, including Dow, were in dialogue with the U.S. government regarding the potential hazards of chloracne in production workers beginning as early as 1949 and continuing through the 1960s," Dow spokesman Peter Paul van de Wijs said in a written response.

In 1965, the chemical companies involved in producing the defoliants met at Dow's headquarters in Midland, Mich., to discuss the contaminant's threat to consumers.

"This material (dioxin) is exceptionally toxic; it has a tremendous potential for producing chloracne and systemic injury," Dow's chief toxicologist, V.K. Rowe, wrote to the other companies on June 24, 1965.

But none of the companies informed the military personnel charged with overseeing the defoliation contracts of the safety concerns until late 1967, according to depositions from the lawsuits.

Internal documents from multiple companies indicate they were worried about the specter of tighter regulation.

Only after a study for the National Institutes of Health showed that 2,4,5-T caused birth defects in laboratory animals did the military stop using Agent Orange, in 1970.

Alan Oates, a Vietnam veteran who chairs the Agent Orange committee for Vietnam Veterans of America, said veterans have had little luck in their legal fight for compensation since the 1984 settlement.

Veterans have argued unsuccessfully in court that the settlement was insufficient because it came too early for thousands of people whose illnesses did not develop until after all the settlement money had run out.

One unresolved issue, Oates said, is whether chemical companies can be held liable for health costs associated with birth defects seen in the children of Vietnam veterans. "Now that it's starting to show it has an impact on future generations, what is the recourse for those folks?" Oates said.

Source: <http://vets4politics.blogspot.com/2009/12/agent-oranges-lethal-legacy-defoliants.html>