

Agent Orange: A Tragic Tactic

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Writer's comment: Writing this brief research paper made me realize just how much more there was to be said about the issue of defoliant use during the Vietnam War. More significantly, encountering the depth of this one issue led me to greater understanding about the amazing complexity of the war. While the research and effort that went into this essay was very educational, I see it as more of an exercise that increased my awareness of the war and of the impossibility of accurately simplifying its issues.

I express my thanks and respect for my course instructor, Eric Schroeder, whose introduction to the Vietnam experience taught me, among other things, that there's a lot more to learn.

-Allan Cordova

Instructor's comment: I designed this Integrated Studies course as an interdisciplinary approach to the Vietnam War. We use history, literature, and films as different lenses to examine various problems and issues—personal and political—raised by the war. For their first paper, students choose a research topic to explore a controversial aspect of the war in some detail: the Tet Offensive, the draft, Post Traumatic Stress Disorder. Allan picked a subject which remains one of the war's most controversial issues even today. He did a very thorough job researching Agent Orange, its use, and its effects. Equally impressive, however, is his writing itself; his tone is impassioned without being overly emotional as he slowly builds a very powerful case against the U.S. government's irresponsible (and short-sighted) use of defoliants in South Vietnam.

-Eric Schroeder, Lecturer, English Department

While the war in Vietnam escalated, the Department of Defense increasingly perceived guerilla warfare in the moldering jungles to be a major dilemma. Fighting on alien soil for principles which grew hazier and hazier, conventional troops were ill-prepared to do battle with indigenous people defending their homeland. The Pentagon therefore embarked on a program of herbicide spraying in order to strip away the guerrillas' vegetative concealment. During the war, the U.S. military showered Vietnam with 12 million gallons of Agent Orange, the most infamous of the war defoliants. Though the government promised that the herbicides were harmless, a host of serious medical problems accompanied the spraying, and an awful legacy of illness and disease continues today. The use of Agent Orange and other herbicides failed to achieve stated military goals, instead wreaking havoc upon U.S. soldiers and the people and the land of Vietnam.

The esters 2,4-D and 2,4,5-T are the principle components of Agent Orange. Agents Blue, Purple, and White were similar compounds sprayed in Vietnam, differing slightly in their ingredients. Orange, Purple, and White act on plants by entering their internal vascular systems, slowly killing them from the inside out. Agent Blue was used mainly as a crop-destroying agent, killing food crops on contact.

These herbicides were originally developed for use against the Japanese during World War II, in the campaign in the South Pacific islands. The objectives were primarily the same as in Vietnam: to deny the enemy cover in dense jungle habitat. However, before defoliant use really got under way in the South Pacific, the war was concluded by the nuclear blasts in Hiroshima and Nagasaki. Herbicide spraying in Vietnam began roughly fifteen years later, in July 1961. The war spurred herbicide manufacture in the United States, stimulating the multi-million dollar chemical industry. During his presidency, John F. Kennedy tripled spending for the development of biological and chemical weapons (Uhl, 112).

At the outset, the American military had several well-defined objectives for its use of defoliants. They were intended to destroy the dense jungle cover, to flush out the Viet Cong guerrillas and force them to engage in traditional warfare, to reduce the possibility of ambush along travel routes, to clear areas around military encampments to provide greater security, and to impose hardship on the Viet Cong by denying them food crops. Additionally, defoliants could clear sites for artillery emplacements, open up fields of fire, and even demarcate boundaries (Lewallen, 63).

In the early sixties, the herbicide campaign got its formal start. It was code-named Operation Hades but was publicly referred to as Operation Ranch Hand. Ranch Hand pilots sported shoulder patches featuring a smiling devil holding a pitchfork, and the pilots' preparation room bore a sign that reminded them, "Only you can prevent forests" (Baritz, 272). Old C-123 cargo planes were used for the defoliation missions. Just before dawn, carrying 11,000 pounds of chemicals, the planes would spray at 150 feet, 130 knots, for about four minutes. Having delivered their merchandise, planes would often reload and fly several more missions that day. In case any mechanical problems developed, or, more likely, if enemy fire damaged the craft, the planes used special valves to void their tanks in just thirty seconds, dropping an extra-concentrated dose of herbicide.

Though vast amounts of land were deforested and converted into eerie, withered brown landscapes, the defoliation campaign was unsuccessful. Agents Orange, Purple, and White, acting on the plants internally, took anywhere from one to three months to destroy the vegetation. Thus, during battle, guerilla forces could not effectively be flushed out of hiding. Once the defoliants actually took effect, the VC could simply avoid the treated areas, retreating, if necessary, farther back into the jungle. And while cleared areas reduced the likelihood of ambush, once American forces were ambushed by the enemy, they themselves had nowhere to retreat. The direct result of herbicide spraying was not to smoke VC guerrillas out of the jungle, but rather to drive many South Vietnamese villagers from their homes in the

countryside. Their rice paddies devastated and their health failing, many families were uprooted and moved to the cities (Lewallen, 67).

The ecology of South Vietnam is a sometimes forgotten casualty of the U.S. defoliation program. Two-thirds of South Vietnam was covered by dense, triple canopied forests, and four-fifths of the population was thought to live there (Uhl, 114). By 1970, it is thought that one-seventh of the land had been sprayed, and 20% of the forests defoliated. When Ranch Hand pilots flew above the 150 foot level during spray missions, the wind could disperse the spray across untargeted territory. The careless spraying increased the possibility of contaminating fresh water ecosystems and "friendly" farmers' crops. Vietnamese farmers claimed that herbicides killed fish in rice paddies and canals, a claim supported by a Midwest Research Institute report that 2,4-D is dangerous to freshwater food chains. A Rand survey showed that 88% of the villagers interviewed blamed the U.S. and the South Vietnam governments for the destruction of their food crops, while 74% expressed "outright hatred" towards the governments (Uhl, 154). The damage didn't end with the cessation of defoliation missions; reports show that in sprayed areas, herbicides enter the food chain, detectable in beef fat and mothers' milk.

Not surprisingly, the plant-destroying chemicals used in Vietnam have long been linked to serious medical problems. In 1953, a German 2,4,5-T factory accident resulted in workers developing chloracne (much like the acne which adolescents experience) and liver complications. By 1957, German researchers had traced the health problems to the compound dioxin, produced through the manufacture of 2,4,5-T. A West Virginia factory accident in 1949 similarly resulted in 228 workers developing chloracne and other disorders. Dow Chemical, a major producer of Agent Orange and other herbicides, was aware of the correlation between disease and dioxin by 1964 (at the latest), before defoliation programs were fully underway (Uhl, 166).

While researchers began to assess the correlations between defoliants and health problems, the U.S. government was understandably concerned about public outcry that might impede the herbicide campaign. The National Cancer Institute commissioned the Bionetics Laboratory to conduct tests to determine the teratogenic (fetus-deforming) and carcinogenic properties of herbicides. Their results indicated that in small doses, 2,4,5-T causes birth defects in mice. The FDA and the Departments of Agriculture and Defense were the only groups who saw this report (Lewallen, 114-5).

When an Herbicide Assessment Commission team went to Vietnam to conduct research, they requested that the Defense Department declassify information about spray missions but were refused. Nonetheless, leaks and independent research eventually put pressure on the government to issue a statement. A March 1966 State Department report asserted that "the herbicides used are nontoxic and not dangerous to man or animal life." A Defense Department contracted research group reported that "the committee was unable to gather any definitive indication of direct damage by herbicides to human health" (Uhl, 141, 163-4).

Despite the soothing lullabies of the U.S. government, direct evidence was to the contrary. Of 4,000 abnormal births in the Saigon Childrens' Hospital from 1959-68, there was a sudden rise in the incidence of cleft palate and spina bifida deformities. This abnormal rise coincided with the onset of heavy defoliant spraying in 1966 (Lewallen, 117). Not only did South Vietnamese suffer illness and disease from the spraying, but Ranch Hand pilots and other American troops were also victims of exposure to defoliant toxins.

Dow Chemical Manufacturers placed urgent warnings on cans of herbicides for domestic use, alerting the user to hazards of direct contact. Yet no warnings were to be found in Vietnam. The pilots who loaded and flew their toxic cargo remained uneducated as to its dangers. Their commanders maintained that the chemicals were harmless (Uhl, 123), and operation standards were accordingly lax. In the tropical heat, the pilots flew with their windows open, often getting soaked by spray from other aircraft in their formation. Men hand-pumped 1,000 gallon tanks of defoliant. "No one wore gloves or protective gear, just combat fatigues; most guys didn't even wear shirts 'cause it was so hot. When a guy got splashed, he just kept on goin'" (Uhl, 206)). Those who didn't handle the chemicals weren't exempt from contact either. Troops often ate fruit and drank water where defoliants had been sprayed. Agent Orange was often sprayed right up to U.S. base camps to clear the area and eliminate cover for sneak attacks.

As Vietnamization began to take place, American troops came home, bearing a host of medical disorders. Chloracne, liver disease, abdominal cancer, pituitary tumors, lymphoma, soft-tissue sarcoma, and metabolic disorders are a few of the common ailments experienced by exposed veterans. Mental and neurological disorders, such as sleeplessness, irritability, nervousness, and tingling and numbness in the extremities, are also commonly reported. Possibly more horrifying than these afflictions are the repeated miscarriages experienced by vets' wives, and children born with abnormalities such as spina bifida.

Approximately 240,000 vets believe that they were exposed and have requested physical examinations to determine their medical status. Since the war about 35,000 veterans have filed claims asserting a connection between exposure to war-time herbicides and a variety of medical ailments (*SF Chronicle*, A2). Limited compensation payments by the government have begun, though it is difficult to imagine an appropriate monetary equivalent for years of deceit and a legacy of ill-health and deformed offspring.

The United States military's use of Agent Orange and other herbicides in South Vietnam was a tactical failure which negligently imperiled the health of American troops and inflicted far-reaching damage upon the Vietnamese and their ecosystem. While defoliation appeared to be a technologically advanced method of achieving victory over the Viet Cong guerilla forces, the military neglected to investigate the prudence of such a tactic. When reports strongly indicated that herbicides were causally linked to medical problems, the military bureaucracy issued vacant reassurances rather than accept blame and act to correct the situation. The plight of diseased veterans may be aided through an honest and open attitude

on the part of the U.S. government. However, the tragic fact remains that the damage has already been done. As a helicopter pilot terminally ill with abdominal cancer said, "I got killed in Vietnam; I just didn't know it at the time" (Uhl, 202).

Sources Cited

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