The Agent Orange Saga

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Beginning in years immediately after World War II, the value of the phenoxy herbicides, 2,4-D and 2,4,5-T, was quickly recognized and extensively used in American and global agriculture. They were effective at very low concentrations against a wide array of broadleaf weeds and shrubs, low in toxicity, and with minimal environmental impact. When the Vietnam conflict began in the early 1960s, the need for chemical methods to control vegetation, thus enhancing observation and restricting ambushes, became a high priority for scientists in the U.S. Department of Defense and U.S. Department of Agriculture. Methods and equipment were developed for aerial applications, and chemicals were evaluated for effective control of jungle vegetation. The most effective formulation for the control of jungle vegetation was a mixture of the n-butyl esters of 2,4-D and 2,4,5-T, subsequently named "Agent Orange" after the 4-inch orange band painted on the 55-gallon drums that were shipped to Vietnam. Operation RANCH HAND aircraft were responsible for the aerial spraying of more than 10 million gallons of Agent Orange in Vietnam in the years 1964-197_, a time period when more than 2.5 million men and women from the United States, Australia, and Korea served in military operations in South Vietnam.

In l968, laboratory studies on 2,4,5-T confirmed that the toxic and teratogenic (fetus deforming) contaminant 2,3,7,8-tetrachoro-dibenzo-p-dioxin (TCDD/dioxin) was present in formulations of Agent Orange. The U.S. Department of Defense terminated the use of Agent Orange in 1970, and the newly formed U.S. Environmental Protection Agency began a systematic program to ban all products and processes that contained or resulted in the formation of the dioxin (an effort that continues today). In 1978, CBS-TV aired a television documentary entitled "Agent Orange: Vietnam's Deadly Fog". The public outcry after this film resulted in Congressional inquiries, thousands of Vietnam Veterans seeking medical treatment, injury claims with the U.S. Department of Veterans Affairs, and class action suits against the manufacturers of Agent Orange.

Dr. Young will briefly relate his experiences with the controversy including the development of the aerial spray equipment, the destruction of the surplus herbicide after the war, and the ecological and human health studies of the impact of the herbicide and TCDD. A key lesson is that science alone cannot resolve issues that have significant political and emotional components.