

Facts about Agent Orange and Dioxin

21 million gallons of defoliants and herbicides were sprayed by plane, helicopter and hand over southern Viet Nam for more than 10 years during the Vietnam War. Laos and Cambodia were also sprayed to lesser extents. Two-thirds of the defoliants and herbicides were contaminated with TCDD or dioxin.



The defoliants came in 55 gallon drums such as these barrels of Agent Orange in a storage depot near Saigon during the war. The barrels were often re-used by the military and civilians for showers, BBQs and water storage - further contaminating the users with the traces of dioxin that remained in the barrels.



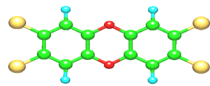
MONSANTO



The herbicides were provided to the US military by Dow, Monsanto, Diamond Shamrock, Occidental, Hercules and other American chemical companies. The companies were aware of methods of manufacturing that would reduce the level of TCDD to minimal levels (about 1 ppt) however they did not follow standard manufacturing guidelines and as result dioxin levels in the batches of 2,4,5-T averaged 13 ppt according to research by Jeanne Stellman of Columbia University.

Agent Orange, was the most commonly used defoliant. It was made up of an equal mixture of the herbicides 2, 4-D and 2,4,5-T.

During the manufacturing process 2,4,5-T was contaminated by 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD). Agents Purple, Pink and Green which were used between 1962-64 before the introduction of Agent Orange also contained TCDD. TCDD has been classified by the EPA as a known human carcinogen.



TCDD



US Veterans who served in Vietnam during the war are presumed by the Veteran's Administration to have been exposed to dioxin. They are eligible for compensation from the VA if they have one of the disease associated with service in Viet Nam. (photo Pfeiffer)

Diseases recognized by the Veteran's Administration as related to service in Viet Nam: Prostate cancer, Peripheral neuropathy (acute and sub-acute) , Diabetes Type II , Chloracne [one year after exposure] , Non-Hodgkin's Lymphoma, Porphyria cutanea tarda [one year after exposure], Respiratory cancers, including cancer of the lung, bronchus, larynx, trachea, Multiple myeloma, Hodgkin's disease, Soft Tissue Sarcomas and Chronic lymphomic leukemia.

Birth Defects in children of male and female Veterans recognized by the VA: Spina Bifida

Birth defects in children of female Veterans recognized by the VA as related to service in Viet Nam: Achondroplasia, Cleft lip and cleft palate, Congenital heart disease, Congenital talipes equinovarus (clubfoot), Esophageal and intestinal atresia, Hallerman-Streiff syndrome, Hip dysplasia, Hirschsprung Disease, Hydrocephalus due to aqueductal stenosis, Hypospadias, Imperforate anus, Neural tube defects (including spina bifida, encephalocele, and anencephaly), Poland syndrome, Pyloric stenosis, Syndactyly (fused digits), Tracheoesophageal fistula, Undescended testicle, Williams syndrome

According to research by Jeanne Stellman et al of Columbia University as many as 4.8 million Vietnamese civilians were living in the areas sprayed by airplane. This figure does not include the Vietnamese soldiers (on both sides of the war), Vietnamese civilians who traveled through the sprayed regions, or those that worked on the military bases which were frequently sprayed. The Viet Nam Red Cross believes about 150,000 Vietnamese children are disabled from their parent's exposure to dioxin. Women living in sprayed regions have experienced high rates of premature birth, spontaneous abortions, stillbirths, molar pregnancy, uterine cancer, and severe birth defects.

Diseases and birth defects in Viet Nam officially recognized by the US government as related to dioxin exposure: None

Laos, especially the border region of Vietnam was also sprayed though little is known about the extent of the spraying and nothing is known about the spraying done during the secret war in Laos, conducted by the CIA.

AREAS SPRAYED WITH HERBICIDES

Parts of Cambodia were also sprayed

Southern
VIETNAM

5 million acres of mangrove and upland forest were defoliated and 500,000 acres of crops were destroyed, approximately 12% of southern Viet Nam.



2.1 million acres in southern Viet Nam are still barren and unproductive today. It is estimated it will take more than 100 years of intensive replanting to bring the upland forests back to their original state. (Photo by Goro Nakamura 1976)



Hot spots: A limited number of areas with high residual dioxin exist today. The Vietnamese have listed the former airbases at Da Nang, Bien Hoa and Phu Cat as priority hotspots in need of containment or clean-up. (Photo Hatfield Group 2002)

What is being done to address these consequences?

In 2004, representatives of the Agent Orange Victims Association (VAVA) in Vietnam brought suit in New York against the chemical companies that manufactured the herbicides. The case was dismissed in 2005. The Second Circuit Court of Appeals upheld the dismissal in February 2008. Lawyers for the Vietnamese has asked the complete panel of Second Circuit judges to reconsider.

The Viet Nam Red Cross, VAVA, Buddhist and Catholic churches, U.S. veterans groups, the War Legacies Project and other not-for-profit organizations have started projects supporting individuals, families, and communities in Viet Nam impacted by Agent Orange. However, these projects are not sufficient to meet the needs of the hundreds of thousands of Vietnamese who have been impacted by Agent Orange/Dioxin.

The US EPA has begun a joint US - Vietnam environmental remediation project at Da Nang Airbase one of the largest dioxin 'hotspots.' In a significant first step to address the impact of Agent Orange/Dioxin in Viet Nam Congress allocated \$3 million in 2007 for the environmental remediation of hotspots and to address the public health needs of the surrounding communities. To date the US does not provide humanitarian assistance specifically to Vietnamese who are believed to be affected by Agent Orange. The US government position is to assist the disabled regardless of cause.

For more information about the long term impacts of Agent Orange/Dioxin visit the War Legacies Project's Website: <http://www.warlegacies.org>

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