

# AGENT ORANGE/DIOXIN IS A WAR TOXIN

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During the Vietnam War, the U.S forces used more than 110.000 tons of toxic products from 1961 – 1971. This was obviously the biggest chemical warfare and also the first ecological destruction-war ever known in the history of mankind. Those about 30 sprayed-chemical substances, in accordance to different harmful properties, may be sorted into two principal groups as follows:

1. Ecological toxins
2. Military toxins

In this presentation, we would only talk about ecological toxins which were principally used in South Vietnam. They were Agent Orange, Agent White, Agent Green, Agent Pink, Agent Purple, Dinoxol and Trinoxol, which were capable of damaging both our ecosystem and health.

Generally, ecological toxins, especially Agent Orange/dioxin, are extremely poisonous, let's point out a few conclusions made by foreign and Vietnamese scientists for proving this

**1. Agent Orange, Agent Pink, Agent Purple and Agent Green are obviously toxic substances for warfare.**

Agent Orange, Agent Pink, Agent Purple, Agent Green, Dinoxol and Trinoxol were all containing 2,4,5-T which is contaminated with a considerable level of an extremely toxic substance, i.e. dioxin.

Agent Orange is a mixture of 50/50 of 2,4D and 2,4,5-T which are very harmful to humans if used in excess of permissible dose of 0.57 kg per hectare. Certain scientists have claimed that excessive use of 2,4-D, 2,4,5-T and carbarnat would be detrimental to humans and animals. Lethal dose (LD50) of 2,4-D for white mouse is 375 ppm and for salmon 0.5 ppm. Lethal dose of 2,4,5-T may be even less because it contains dioxin.

2,4,5-T has been widely used by the economically developed countries in agriculture for killing undesirable weeds right in the 1930s and 1940s of the last century. Hence, it is called herbicides. The United States used this scientific achievement in accomplishing military objectives. Right in the World War II, the United States already supplied funds for researching and delegated the National Scientific Council to find out chemicals which might destroy effectively Japanese crops. As a result, 2,4-D and 2,4,5-T were consequently experimented. The situation, however, then did not permit the U.S government to use them. Subsequently, Project Agile conducted by the

Advanced Research Agency belonging to the U.S Department of Defense made it possible for researching and developing these herbicides into a kind of war weaponry. (J. M. Stellman, University of Columbia U.S.A). This is an ideal suggested by the English successful use of 2,4,5-T in the destruction of food supplies provided to Malaysian guerrillas. In South Vietnam, 2,4,5-T contained in Agent Orange was supplied even at levels 10-20 or more times higher than that used in agriculture. With these high doses, Agent Orange could directly effect the human health.

By 1948 – 1949, from an incident in the 2,4,5-T plant owned by Monsanto, one of the greatest suppliers of toxins to the United States for use in South Vietnam, of 228 workers found contaminated, 121 were inflicted with chloracne.

At the beginning of 1964, the mass intoxication of workers took place in the Dow Chemical owned production plants as the demand of Agent Orange for the war supplies was increased and this company had to several times change its technologies and hence pushing up dioxin level to 2,000ppm. Sixty one (61) cases were found intoxicated, 49 out of them suffered chloracne.

In February 1967, 5,000 American scientists, including 17 Nobel laureates and 129 members of the U.S National Academy under the leadership of Dr. John Edsall of Harvard University signed a petition to the U.S President, Mr. Lyndon B. Johnson, to urge his administration to stop using herbicides in Vietnam, which were harmful to the Vietnamese human health and environments. Consequently, an inter-departmental decision was made on 15<sup>th</sup> April, 1970 by the U.S Departments of Agriculture, Health, Education and Interior Security to suspend all the agricultural use of 2,4,5-T. In its turn, the U.S Defense Department also decided to discontinue its military use. Obviously, right from 1948 and 1949, the harmful effects of

2,4,5-T on human health were already identified, but only until 1970, the U.S just ordered the suspension of its agricultural and military use.

**2. Among the major toxins used in South Vietnam, Agent Orange, Agent Green and Agent White were the most toxic substances.**

- Agent Orange containing dioxin – the most toxic substance ever known by mankind
- Agent Green containing arsenic an extremely toxic substance.
- Agent White containing hexachlorobenzene (POP), a harmful organic and persistent contaminant.

**3. Dioxin**

Dioxin is a toxin that other military toxins in the weaponry of great military powers such as Yperit, Tabun or Sarin can not be comparable. Yperit was used in the World War I, Sarin was a chemical used by Aum's religious sect in the sub-tramway of Tokyo, Japan.

The lethal dose of dioxin for monkeys is 70 ppb, while of Sarin 83, of Tabun 208. If 70ppb of dioxin constitutes the lethal dose for monkeys, then 1 gram of this substance may contain 14 million lethal doses. For humans, the respective lethal dose is certainly less.

Again, if one gram only contains 14 million killing doses, then 600 grams of dioxin sprayed by the United States may certainly demonstrate horribly powerful capacity. The United States Protection Agency (EPA) is 0.006pg, 160 times less than that determined by the World Health Organization.

As dioxin is a very powerful toxin, so the maximum permissible doses for exposed persons should be very minimal. The World Health Organization

stipulates the permissible dose to be between 1-4 ppt for one kg of body weight in one full day, hence a person of 50 kg may only sustain a maximum permissible dose between 50 – 200ppt. The United States even claims this substance to be more toxic and therefore the permissible dose set forth by the U.S Environment Protection Agency (EPA) is 0,006pg, 160 times smaller than the permissible doses set forth by this international body

Dioxin is enduring in the environments. Several world scientists have embarked on studies on the sustainability of dioxin. This sustainability has been established in accordance to half-life cycles (time for half of dioxin to be destroyed). The half-life of dioxin in soil is very long. According to Paustenbach D.J. (1992) and Puri P.K. (1989, 1990) dioxin in the surface layer of soil may fluctuate between 9 - 25 years and in the deeper layers between 25 – 100 years.

The controversial half-life circles in human bodies, as presented in the International Conference held in Ho Chi Minh City 1983, may perhaps be between 5 – 7 years. Professor A. Schechter even stated that dioxin in blood of persons may still be found after 35 years of contamination.

These views reflect that the harmful effects of dioxin would depend on its concentration and time if the former is shorter, the later will be longer and vice versa.

The U.S National Academy of Sciences has recognized that there are at least 13 dioxin-connected diseases. Even the former U.S President, Mr. Bill Clinton, once acknowledged the possibility of Agent Orange- connected diseases. Several world scientists and international conferences have confirmed the toxicity of Agent Orange/dioxin. They maintain that dioxin may cause immunity degradation, hormone disorders and adaptability disorders in humans. Many of them even view that dioxin may cause hereditary effects for successive generations. From the above-mentioned

causes, frequency of normal morbidity and congenial deformities occurring among those of unsprayed persons. The fact that high levels of dioxin persistence in many U.S former storing bases and locations and millions of residents living a wretched life due to diseases, poverty and mental distress, as a result of Agent Orange/dioxin exposures, has demonstrated this.

In meeting the U.S government's war requirements, the U.S chemical companies motivated by maximum profits had therefore increased highly the tempo of Agent Orange production. As a result, its dioxin contamination level was strikingly increased and the typical level of 13ppm could possibly reach to between 140 and 2.000.

Accordingly, Agent Orange/dioxin should nevertheless be considered as a war toxin. Nobody can separate Agent Orange from 2,4,5-T and dioxin. Because it is a mixture of many established substances, completely different from those were used in agriculture as far as doses, proportions components and dioxin levels, are concerned and therefore Agent Orange is absolutely an extremely harmful toxin.

The judgment issued on March 10<sup>th</sup>, 2005 by the U.S Court of First Instance was made 30 years later after the U.S government acknowledged the toxicity of dioxin and decided to cease the use of 2,4,5-T in agriculture and in military and 30 years later after the U.S Congress ratification of the 1925 Geneva Protocol. If these facts demonstrated that Agent Orange and similar products are by now outlawed, then how could the U.S Court still conceive substances used by the U.S forces in Vietnam to be a nontoxic ones, particularly in light of Weinstein's dismissal of our Vietnamese plaintiffs' claims.

# Appendix 2

## Hexachlorobenzene (In Agent White)

Hexachlorobenzene (HCB) is an organic mixture of contaminants which is hard to be destroyed and one among 12 substances prohibited by the Stockholm Convention on Hardly Destroyed Organic Substances signed by our international communities on May 25, 2001 in Stockholm, Sweden. The production and use of Hexachlorobenzene, a toxic substance, has been so far prohibited by the United States and many other countries.

HCB has been found with following concentrations in foods from several countries.

Mexico:	0.014 mg/kg (milk)
Spain:	0.077 mg/kg (meat)
Slovakia:	0.01 mg/kg (meat)
Poland:	0.04 mg/kg (milk)
	0.11 mg/kg(meat)

Depending on extents of contact with HCB, people may get different diseases; victims may at least suffer eyes and skin irritations and at least cancer or immunity decline.

The permissible dose for HCB is 0.01 mg/kg

Table 1: Production and discharged volumes into environments in the world.

<i>Production countries</i>	<i>Production volume (kg)</i>	<i>Discharged volume in TEQ (kg)</i>
World	1,10	1000
USA (1973)	3,10	30
U.S by products	4.1,10	413

# Appendix 1

## Arsenic (in Agent ~~Orange~~ <sup>Blue</sup>)

*Arsenic is a metal,*

*A common form of arsenic is gray and metallic in appearance.*

All the Arsenic compounds are toxins, including those are with trivalence such as Oxide Arsen, Arsenit, Arsenat and Arsin (an organic compound with  $AsH_3$  in gaseous form). The elimination cycle of As from body is 10 days for compounds of trivalence, and 30 hours for metals. Arsenic may cause both immediate and long-term toxic effects. The lethal dose of Oxide Arsen (III) for men is between 70 – 180mg. Its prolonged toxicity may reflect in symptoms like loss of appetite, loss of weight, gastritis, colitis and melanoma (in many instances, leading to cancer).

Several herbicides, pesticides and protective products may contain Arsenic. Those toxic compounds, once commonly used in agriculture and now prohibited, are Pb arsenat, Cu arsenat, and Natri.

### Permissible doses:

- In air of residential areas, for inorganic compounds is 0.003mg/m<sup>3</sup>, and for organic ones ~ 0.002mg/m<sup>3</sup>
- In soil: 2mg/kg
- In water: 0.05mg/l
- In food: Bread: 0.1mg/kg
  - Salt: 1.0 mg/kg
  - Sugar: 0.5 mg/kg
  - Milk: 0.05 mg/kg
  - Oil: 0.1 mg/kg
  - Fruit: 0.3 mg/kg
  - Meat: 0.1 mg/kg
  - Fresh water: 1 mg/kg
  - Salty water fish: 5 mg/kg