

# UN Report Outlines Dangers In Tear Gas, Defoliant Use

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UNITED NATIONS, NEW YORK—Defoliants and tear gases, exempted from the recent U.S. renunciation of chemical and biologic weapons of war, were described as potentially lethal and possibly genetically harmful in a report made public here by the United Nations.

A detailed analysis of the possible effects of these agents was contained in a voluminous report on the entire range of biologic and chemical weapons prepared

at the U.N.'s request by the World Health Organization with the assistance of 18 scientists, including three Americans. These experts, among whom were Dr. Joshua Lederberg, of the Stanford University School of Medicine, Dr. M. Meselson, of Harvard University, and Dr. Victor W. Sidel, of the Albert Einstein College of Medicine, sought to provide objective information for the U.N. Assembly debate on chemical and biologic warfare.

Defoliant chemicals, which are used "to destroy the enemy's food supply and to deny him concealment by foliage or vegetation," may cause severe damage to the developing human fetus, the WHO scientists warned. "It was found that the offspring of mice and rats given relatively large oral doses of 2,4,5-trichlorophenoxyacetic acid (2,4,5-T), showed a higher number of deformities than expected," they reported.

Although the agent's teratogenicity in the human fetus has not yet been proved, the Vietnamese civilians' exposure to rather high concentrations of defoliant

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chemicals is cause for alarm, the scientists said. "Something of the order of 50,000 tons of antiplant agents has been sprayed in military operations over about 10,000 sq. Km. of Vietnam," they reported.

"It must be borne in mind," they added, "that the military employment of antiplant chemicals may lead to their intake by humans, in water and food, in dosages far higher than those experienced when the same chemicals are used for agricultural purposes." Although the U.S. Government recently restricted the use of 2,4,5-T, the White House has also stated that the use of other defoliant chemicals in Vietnam will continue.

Aside from possible fetal damage, the report pointed out, mass destruction of plant life could tip the ecologic balance toward catastrophe. "New foci of human disease may be produced," the WHO report said, "as a result of the use of antiplant agents. Extensive damage to the flora over large areas may create conditions favoring the establishment of new vectors or reservoirs of disease infective to man. . . . Finally a profound long-term adverse effect on human health could result from any major reduction in the quality or quantity of the food supply. This could occur directly from the use of anticrop agents or indirectly through ecological changes that might result from chemical or biological warfare."

Labeled as harassing agents "capable of causing a rapid disablement that lasts for little longer than the period of exposure," tear gases have been freely used both in Vietnam and in drastic police actions, the scientists declared. No sharp line of demarcation can be drawn between lethal and harassing agents used in chemical and biologic warfare, they said, because harassing agents can be lethal or permanently disabling for the starving, the diseased, the aged, the very young, and those who are exposed to the agents in enclosed spaces or receive very high doses.

## Permanent Injury From Tear Gases

The two most commonly used tear gases, CN (chloroacetophenone) and the more powerful CS (o-chlorobenzalmalonitrile), the report warned, can inflict permanent injury. If gases could be delivered at precisely the right dosage, worked out in the laboratory, they would severely but only temporarily irritate the conjunctiva of the eyes and the inner surfaces of the upper respiratory tract, the WHO experts agreed, but they added the warning: "If enough of a sensory irritant is inhaled, it may produce the same sort of damage as that caused by a lethal lung irritant, such as phosgene."

A number of deaths caused by CN-induced pulmonary edema have been recorded in scientific literature. "No studies have yet been published on the long-term effects in man of exposure to CS," WHO stated, "despite the increasing use of this agent by police and military forces throughout the world. Thus, while there appears to be no evidence to suggest that CS is either carcinogenic or teratogenic, there is also no evidence to show that it lacks these properties."

Noting the abnormal effects of hallucinogens on troops, the report said, "It is thus impossible to predict the effect of such irrational behavior on a battle or on a war, particularly in situations involving the use of nuclear, chemical, or biological weapons in which a rational opponent is being counted upon not to escalate beyond given limits without provocation."

Deploring the stockpiling of chemical and bacteriologic agents as "deterrents" the report pointed out that "those in control of such weapons may use them in retaliation against an attack or to pre-empt what they have become convinced will be a certain and lethal attack."