

THE 2,4,5-T CONTROVERSYWHAT IS 2,4,5-T?

2,4,5-T is the common name for the selective herbicide 2,4,5-Trichlorophenoxyacetic acid. The technical product manufactured by Dow contains less than 0.1 ppm of a toxic impurity TCDD.

WHAT IS TCDD?

2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD or dioxin) is one of a family of 75 chlorinated dioxins. There are 22 isomers of TCDD. 2,3,7,8-TCDD is generally considered the most toxic of the chlorinated dioxins.

WHAT ARE THE USES OF 2,4,5-T?

2,4,5-T is used to control unwanted vegetation in rice, forests, pasture and rangeland and along highways, railroads, power lines and pipelines. It is generally sprayed onto vegetation either from the ground or the air.

HOW LONG HAS 2,4,5-T BEEN USED?

It has been commercially used for approximately 30 years.

WHAT BENEFITS DOES 2,4,5-T PROVIDE?

It reduces the cost of producing timber, rice and beef and also the costs of managing vegetation along highways, railroads, power lines and pipelines.

The joint assessment team of the Department of Agriculture, EPA and the State Land Grant Universities determined loss of 2,4,5-T would cost:

Forestry - \$801 million cumulative net income loss at the end of 10 years;

Pasture and Range - \$347.5 million cumulative loss to producers at the end of 16 years;

Rights-of-Way - \$33.9 million increase in annual vegetation management costs;

Rice - \$33 million cumulative yield and quality losses plus control cost increases at the end of six years.

WHY IS THE USE OF 2,4,5-T CONTROVERSIAL?

2,4,5-T was not a controversial product until it was used during the Vietnam war to defoliate forests. The purpose of forest defoliation was to expose the enemy and guard against surprise attacks. Individuals passionately opposed to American involvement in the Vietnam war were also opposed to the use of 2,4,5-T and these same people now oppose peacetime uses of the product.

The debate centers on the human hazard presented by 2,4,5-T due to the toxicity of TCDD.

IS 2,4,5-T HAZARDOUS TO HUMAN HEALTH?

The use of 2,4,5-T is not hazardous to human health. The commercial product contains about 1 part of TCDD in 50 million parts of 2,4,5-T. This concentration is so low that less than 1% of the toxicity of the product is attributable to the TCDD the product contains.

The technical product is about half as toxic as caffeine, twice as toxic as aspirin and about 10 times as toxic as salt. The acute toxicity safety margins for caffeine, aspirin and salt are in the range of 20 to 50 as normally consumed. 2,4,5-T does not occur either in our food or drinking water but if it did occur at the most sensitive levels of detection the acute toxicity safety margin would be at least two million.

DOES 2,4,5-T CAUSE BIRTH DEFECTS?

2,4,5-T, as conventionally used, is not teratogenic (causing birth defects) by mutagenic action. Both 2,4,5-T and TCDD will cause birth defects when fed to animals at fetotoxic concentrations but so will virtually all other chemicals including salt, sugar and vitamins. Birth defects can also be caused by subjecting animals to excessive stress.

The highest exposure to 2,4,5-T during conventional use is that of a backpack sprayer. The safety margin with respect to fetotoxicity for a female backpack sprayer is in excess of 500. The safety margin for accidental exposure to a conventional 2,4,5-T spray is approximately 20,000. By contrast, the safety margin for normal consumption of aspirin is 3 and for Vitamin A it is 40.

WILL EXPOSURE TO 2,4,5-T CAUSE CANCER?

Conventional applications of 2,4,5-T will not cause cancer. 2,4,5-T is not a carcinogen. TCDD is a weak carcinogen but only at toxic concentrations. Since TCDD is not a mutagen it

will not be a carcinogen at non-toxic concentrations. Even when inappropriately regarded as having no safe level with respect to carcinogenicity, the probability of 2,4,5-T causing cancer (as calculated by the methods currently employed by EPA) is much less than from drinking diet soda or eating peanut butter. Specifically, the risk of contracting cancer from 2,4,5-T calculated for a backpack sprayer working 5 days a week for 30 years is about one chance in 2,500,000. This risk is about 1/25th the risk from drinking one diet soda per day (exposure to saccharin), and 1/100th the risk from eating 4 tablespoons of peanut butter per day (exposure to aflotoxin).

Spraying 2,4,5-T in Vietnam has been reported to have increased the incidence of cancer in the Vietnam population and American veterans. There is no truth in this charge.

IS 2,4,5-T TOXIC TO WILDLIFE?

2,4,5-T is not toxic to wildlife under conventional use conditions. The safety margins with respect to wildlife toxicity are enormous. The increase in grass growth as a result of controlling woody vegetation increases the food supply for wildlife. Noxious weed control by 2,4,5-T greatly reduces the chances of deformities in newborn animals since many of these weeds contain naturally occurring teratogenic and fetotoxic chemicals.

DOES 2,4,5-T PERSIST OR ACCUMULATE IN THE ENVIRONMENT?

Neither 2,4,5-T nor the contaminant in the product TCDD persists nor accumulates in the environment. 2,4,5-T does not occur either in food or drinking water and can only be detected in the environment at the locations where it is sprayed for a short period after its application. As applied in commercial formulations, TCDD has been found to have a half-life of 6-8 hours due to ultraviolet degradation. Recent evidence obtained by Dow suggests that trace quantities of TCDD and other chlorinated dioxins can be formed by the combustion of naturally occurring organic materials.

IF 2,4,5-T IS SAFE, WHY DID THE EPA SUSPEND THE PRODUCT?

Opponents of peacetime applications of 2,4,5-T have repeatedly launched false malicious attacks on the safety of the product in the news media during the last 10 years. Investigation of these charges by government appointed scientific commissions from many different countries including the U.S. have invariably exonerated the product. Since its inception, the EPA has been under intense political pressure to ban the product. It has finally succumbed to that pressure and on the basis of trumped-up charges suspended the use of the product.

WHAT WAS THE REASON GIVEN BY EPA FOR THE SUSPENSION OF 2,4,5-T?

The EPA claims that an epidemiological study it conducted in the Alsea, Oregon area showed an excess of spontaneous abortions in women that was related to the spraying of 2,4,5-T in the Oregon forests.

WERE THE CONCLUSIONS DRAWN BY EPA FROM THE ALSEA STUDY VALID?

A number of independent experts have examined the Alsea study and have determined that EPA's conclusions are not valid for the following reasons: (1) The number of live births and spontaneous abortions claimed for the Alsea and control areas were not obtained by correct procedures and therefore the spontaneous abortion indices calculated were not indicative of the true situation; (2) the statistical procedures used for the analysis of the data and the conclusions reached were invalid and not indicative of the true situation; (3) there was no evidence in the report of any contact of the women involved with 2,4,5-T or TCDD since only 1 to 3 square miles were sprayed each year out of a 400 square mile area investigated for abortions. The conclusions was repeatedly reached that there was no evidence of a link between 2,4,5-T and spontaneous abortions in the Alsea area, nor has such a link been demonstrated in other studies.

WHAT ADDITIONAL INFORMATION IS AVAILABLE THAT CONTRADICTS EPA'S CONCLUSIONS FROM THE ALSEA STUDY?

At Seveso, Italy the worst exposure of a human population to TCDD occurred as a result of an accident in a nearby plant making 2,4,5-trichlorophenol. Three contaminated zones were identified. In the two most contaminated zones approximately 300 grams of TCDD were reported to have fallen on a populated area of about 1-1/2 square miles. No one in the area was killed. The only injury observed was the typical acnegienic lesions caused by TCDD on about 3 percent of the children. There was no indication of excessive abnormalities in the offspring of exposed mothers; there was no excess of spontaneous abortions; examination of fetuses from both spontaneous and deliberate abortions showed no indication of increased abnormalities.

The maximum amount of TCDD applied in any one year to the 400 square mile Alsea area studies was approximately 20 mg or 1/10,000th of the amount of TCDD that fell per one square mile at Seveso. The amount of TCDD per square mile of highly contaminated area at Seveso was 5 million times greater than for the 400 square mile area studied around Alsea, Oregon. Based on this comparison it is obvious that the conclusions arrived at by the EPA from the Alsea, Oregon study are invalid.

WHY WAS THE EMERGENCY SUSPENSION OF 2,4,5-T UPHELD BY THE UNITED STATES DISTRICT COURT IN MICHIGAN?

The scope of the hearing was confined to the question of whether EPA had been "arbitrary and capricious" in ordering the emergency suspensions. The court concluded with great reluctance that it would uphold the suspension even though in its own judgement it would not have ordered the suspension on the basis of the information before the EPA. It arrived at this conclusion because EPA has been vested by Congress with broad powers in this area, and the court is not empowered to substitute its judgement for that of the EPA.

WHAT IS DOW'S POSITION ON 2,4,5-T?

2,4,5-T (containing trace amounts of TCDD) does not represent a health risk because humans are not exposed to toxicologically significant amounts. The 6-7 million pounds of 2,4,5-T used in the U.S. each year contain between 1 and 8 ounces of TCDD and that is spread on 5 million acres.

Dow believes that the opponents of continued use of 2,4,5-T have repeatedly launched emotional attacks on the product by misinterpretation of animal toxicology data, and anecdotal or unverified reports of human toxicity. Dow believes that the EPA has chosen to ignore the judgement of the scientific community on this issue and has succumbed to political expediency. Dow considers the EPA's political decision to suspend the product to be an extremely dangerous precedent that has the potential to impact on every product of American commerce.

Therefore Dow will continue to seek relief from the arbitrary suspension of 2,4,5-T through the procedures defined by law. The most expeditious route appears to be through early Cancellation Hearings which will allow all the scientific evidence to be presented.