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Author

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Report/Article Title Correspondence from Erik Jansson of Friends of the Earth to the Environmental Protection Agency

Journal/Book Title

Year 1978

Month/Day

Color

Number of Images 0

Description Notes Letters and attachments express concern over 2,4,5-T and other herbicides.

FRIENDS OF THE EARTH

620 C STREET, S.E., WASHINGTON, D. C. 20003
(202) 543-4313

AL Young
from M. Henry
7/11/78

3

DAVID BROWER, President

May 11, 1978

Received in
Federal Register Section
MAY 24 1978

Mr. Harvey Warnich
Office of Pesticide Programs
Environmental Protection Agency
401 M Street, S.W.
Washington, D.C.

Dear Mr. Warnich:

We have copied a large portion of our files so that you will have them available when you upgrade the RPAR document.

In looking through this material, I hope that you can note the following:

- (1) The study by Dr. Knight from Santa Monica shows two things. First, it shows extensive contamination of American blood samples by 2,4,5-T, Silvex, 2,4-D and other herbicides. This seconds the Florida State study of urine and semen samples.

Extensive
Blood Contam-
ination

Doughty +
Piotrowska

Secondly, he has analyzed the blood of his patients that had the virus outbreak after the spray program in his area. 70 percent of the patients affected with this virus had significant levels of herbicides in their blood. This indicates that the Bionetics finding of lowered resistance in test animals after exposure to 2,4,5-T likely applies to humans also.

Relation to
Virus

- (2) I talked with Dr. A.L. Young (Captain) who has run the 2,4,5-T and TCDD dioxin studies at Elgin Air Force Base.



Bioaccumulation

He tells me that they have proved without a doubt that TCDD dioxin bioaccumulates. They found bioaccumulation (dioxin levels higher than the soil levels) in insects, mice, snakes, fish, and a whole series of components.

Hazard of
Rice Application

If you look at their recently published report (1978) they try to discover why mice are picking up such high TCDD levels in fat and livers. They found seeds of switchgrass in the stomachs, yet this did not show TCDD above the present levels of measurement capability which is 10 parts per trillion.

This suggests that application of 2,4,5-T to rice may offer a very serious health hazard to the average American.

25A [3000/26]
Etha Copy

Since your RPAR document de-emphasizes bioaccumulation, it appears that it will have to be changed to reflect these studies. It is also another reason for an imminent hazard designation.

- (3) The RPAR document fails to note the literature that is available on the effect of fire and heat on 2,4,5-T. Temperature, as you know, turns this chemical into TCDD dioxin.

It appears that cooking a roast may be sufficient to produce dioxin, which means that any traces of 2,4,5-T in the meat offers an imminent hazard to the housewife and her family.

Firewood contaminated with 2,4,5-T is hazardous to burn and handle. Incidents of four persons suffering serious harm are reported in the paper on health episodes.

- (4) Your RPAR fails to mention or analyze the numerous affidavits and doctor's reports of Americans who have literally foundered as a result of spray drift from planes applying 2,4,5-T, Silvex and 2,4-D.

Also, large numbers of serious health problems have been seen among people employed in the forests.

These affidavits are available for your scrutiny and examination, as you know. Should you be unable to locate any information along this line, please contact me.

- (5) In three spray episodes, spontaneous abortions far exceeded the normal 10 percent expected for American women. These episodes occurred in Arkansas, Minnesota, and Oregon.

- (6) James Allen, Wilbur McNulty, and George Streisinger all note very pointedly that TCDD dioxin is a cumulative poison. In the monkey experiments, it does not matter whether 3 ug/kg of TCDD dioxin is added in one dose or over time in small doses. The monkeys still die. Captain Young's group have found damage to spleen and liver in the microscope analysis of the mice in their test area.

McNulty used only one monkey at each dose (20,000 and 2000 ppt in diet)

With best regards,

Erik Jansson

Erik Jansson

MAY 24 1978

FEDERAL REGISTER DIVISION

c. Barry Flamm
c. Doug Costle

TCDD Dioxin
Produced by
Fire or
Cooking

Firewood
Problem

Affidavits
and Doctor's
Analysis

Spontaneous
Abortions
Above 10
Percent

Cumulative
Poison



1) W
2) Wells

FRIENDS OF THE EARTH

620 C STREET, S.E., WASHINGTON, D. C. 20003
(202) 543-4313

June 2, 1978

DAVID BROWER, *President*

PETITION

Mr. Doug Costle
Administrator
Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20460

RECEIVED

JUN - 2 1978

Received in
Federal Register Section
JUN 05 1978

Dear Mr. Costle:

Office of the Assistant Administrator
For Toxic Substances
Handcarried

The undersigned organizations petition you and the Environmental Protection Agency to take the following actions to protect the health of Americans and American women, the health of wildlife, the safety of food, and the quality of the environment.

- (1) We petition you to declare an imminent hazard designation under FIFRA for 2,4,5-T, a chemical which has come under the RPAR process.
- (2) We petition you to declare an imminent hazard designation under FIFRA for all pesticides containing TCDD dioxin, as a generic ban. Silvex is projected to come under the RPAR process in the next few weeks.

Reasons for (1) and (2)

Reasons for this petition are outlined in the attached factual background paper. The conclusion that these pesticides pose an imminent hazard is clearly documented in the attached book, Affadavits from the Field.

To summarize, an imminent hazard designation is necessary because at present levels of application using customary methods of application the TCDD containing pesticides have been shown to cause: (a) high rates of spontaneous abortions and stillborn children (70 percent rate where skin, gardens or water supply were contaminated); (b) death for some of the spray victims; (c) hospitalization for others of the spray victims; (d) chronic illness for spray victims; (e) health problems for many spray victims; (f) high rates of death and illness in wildlife; (g) dangerous levels of contamination of food.

- (3) If there is any delay between now and your action, we petition you to change the labels of these chemicals containing TCDD dioxin in the following manner:

- (a) change the labels to prohibit use on grazing land in view of the TCDD dioxin found in animal fat and in milk. *HOR R...*

- (b) change the labels to prohibit aerial application explicitly, because aerial spray guarantees spray drift and because so many Americans have been seriously harmed by that spray drift.
 - (c) change the labels to prohibit use around the home.
 - (d) change the labels to prohibit all uses presently prohibited since 1970 by the label of 2,4,5-T.
- (4) We petition you to hire a private lawfirm to represent the Environmental Protection Agency if your staff cannot put together an imminent hazard program for the TCDD containing pesticides.

The Label Program

During the course of reviewing the TCDD containing pesticides, we have learned a lot about the Environmental Protection Agency label program. We make two additional petitions relating to that.

- (5) We petition you to rewrite all of your pesticide labels in clear layman's language to inform them specifically of the following:
- (a) a clear list of medical problems in layman's language that can result from misuse of the pesticide or contact with the pesticide. (such as miscarriages)
 - (b) a clear definition of restrictions of the pesticides. (For example, it is not enough to say do not use on water, homesites, or recreation. One aerial sprayer said that he was permitted within 15 feet of a house.)
- (6) We petition you to prohibit aerial application of any pesticide where label restrictions prohibit spray drift.

Studies by the Environmental Protection Agency and other government agencies makes it amply clear that spray drift cannot be prevented even in mild winds if aerial application is used. It is clearly a contradictory policy of the Environmental Protection Agency to permit aerial application of a pesticide whose label makes spray drift unlawful.

Sincerely,

Erk J. Jansson

Friends of the Earth

Environmental Policy Center

Brent Blackwell

Fund for Animals: Authorized by Leon Regenstein

W. D. Cooper

Defenders of Wildlife

Leslie M. Hunter

Wilderness Society

Donna M. Waters

Citizens National Forest Coalition

John C. Atwater

Coalition for Economic Alternatives

Susan J. Parker

Citizens Against Toxic Sprays, Inc.

Shirley A. Briggs

Rachel Carson Trust

D. Blakeman Early

Environmental Action

T. Destiny Jarvis

National Parks and Conservation Assoc

Natural Resources Defense Council: Authorized in writing by Tom Barlow

Gary Eastman

Maryland Conservation Council

Jack F. Witten
Jack F. Witten
President

Potomac River Association

FRIENDS OF THE EARTH

620 C STREET, S.E., WASHINGTON, D. C. 20003

(202) 543-4313

DAVID BROWER, *President*

June 2, 1978

Cover Letter to the Petition

Mr. Doug Costle
Administrator
Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20460

Dear Mr. Costle:

The attached petition is being forwarded to you for the following reasons:

- diaries of
Vertnik and
Pavel
deaths
- (1) It shows that many in the environmental community believe that there is an imminent hazard in the continued use of pesticides containing TCDD dioxin, like 2,4,5-T. There is a body count already, as you can see from the diaries of Marion Vertnik and Gladys Pavel. We invite you to read these. As you can see, people have been killed.

For every year that the Environmental Protection Agency permits these pesticides to be sold, the body count will increase by about 10 percent. This is unreasonable.

- (2) It shows our concern that a pesticide should be sold that produces spontaneous abortions and stillborn children (upon contact with the skin or pollution of water supply or gardens). We invite you to read the Affidavit of Debra Marano. As you can see, the TCDD level of her garden due to spray drift from a forestry project exceeded 90 parts per trillion, and she had four miscarriages as a result.

0 Percent
Spontaneous
Abortion Rate

As you can also see from the book of affidavits and the fact paper, of the 23 women reporting that their skin was wet or their water supply or gardens were contaminated with 2,4,5-T, 16 lost their babies. This is a rate of 70 percent.

Many of these reports come from small villages that have been sprayed, and so it is likely that this may be statistically significant. It is also outrageous.

Contamination
of Mother's
Milk

Contamination of mother's milk with TCDD is a matter of extreme concern, as are the birth defects associated with these chemicals.

The experiences of American women with regard to spontaneous abortions, stillborn children, contaminated milk, and birth defects are similar to the findings of women in Vietnam and Seveso, Italy. High levels of TCDD were found in mother's milk in Vietnam by Messelson.

- (3) We have concluded that the Environmental Protection Agency has substantially deviated from the legislative intent of FIFRA, which was to avoid body counts in humans. The use of a judicial or "reasonable man" test

#258 (3000/26)

Committed to the preservation, restoration, and rational use of the biosphere

seems sufficient to remove 2,4,5-T from the market.

Indeed, the judges in the recent Oregon District Court and in the recent Superior Court case in California (brought by the Indian Action Council against the Humboldt County Agricultural Commissioner) raised questions about the failure of the government to suspend 2,4,5-T.

Secondly, the Environmental Protection Agency has the right to require the registration of TCDD, and require manufacturers to submit safety data before TCDD can be sold as a part of the pesticide. *not so!*

Third, you can change the label to minimize exposure during the R.P.A.R. period.

Clearly, the time has come for you to take some immediate action of some nature on these chemicals.

- (4) You now have a substantial amount of evidence, including body counts.
- (a) Vietnam: Barely covered in the R.P.A.R. document.
 - (b) Seveso: Barely covered in the R.P.A.R. document.
 - (c) New laboratory tests.
 - (d) Substantial numbers of affidavits from village type of situations. This means that they can be statistically significant without sophisticated epidemiological analysis. Also, you have doctor's reports. You have clear evidence of massive spray drift- from all over the United States. This material also is barely covered in the R.P.A.R. document.

Obvious and Weight of Evidence Overwhelming

We submit to you that the case for suspension of 2,4,5-T has become obvious and the weight of evidence overwhelming. A body count is not required for removal of a chemical from the market, only a "reasonable man" or prudent man proof is required.

You do not need any more milk measurements from American women, because a body count is not required. You do not need any more laboratory studies- because you have enough for a "reasonable" man test. You do not need any more American health data than is available already to your staff, if they would just pick up the phone or read the affidavits that we have enclosed.

The Public Is Not Going to Understand

In the fact of such large numbers of deaths, spontaneous abortions, and cases of chronic illness in American citizens, I fail to see how the public is going to understand the decision of the Environmental Protection Agency to take a leisurely approach to 2,4,5-T.

Sincerely,



Erik Jansson
Research Associate

FRIENDS OF THE EARTH

620 C STREET, S.E., WASHINGTON, D. C. 20003

(202) 543-4313

Received in
Federal Register Sect.

JUN 02 1978

DAVID BROWER, *President*

June 2, 1978

Federal Register Section, Technical Services Division (WH-569)
Office of Pesticide Programs, EPA, Room 401
East Tower, 401 M Street, S.W.
Washington, D.C. 20460

Re: OPP-30000/26 (2,4,5-T Rebuttable Presumption Against Registrat

Dear Sirs:

The attached PETITION, are our response to the RPAR
Factual Paper supporting PETITION
Book of Affidavits from the Field
Xeroxed Studies

process. As you can see, we have met your first deadline
of June 5, 1978, because Friends of the Earth asserts that
the Environmental Protection Agency has had sufficient information
since 1970 to suspend the registration of 2,4,5-T.

Request to Leave Our File Open for 60 Days

We request that you keep our file open for 60 days
so that during this period we can submit further affidavits
of injury to people and wildlife due to exposure to 2,4,5-T.

Sincerely,

Erik Jansson

Erik Jansson
Research Associate

c. Peter Kirby, National Wildlife Fed.
c. Tom Barlow, NRDC

#25B [30000/26]

Etha copy

FRIENDS OF THE EARTH

620 C STREET, S.E., WASHINGTON, D. C. 20003

(202) 543-4313

DAVID BROWER, *President*

BACKGROUND PAPER to PETITION FOR AN IMMINENT
HAZARD FOR 2,4,5-T and the TCDD CONTAINING
PESTICIDES

Prepared by:
Erik Jansson
Research Associate
May 26, 1978

#25B [30000/26]
attachment

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In 1973 and 1974, a series of decisions by the management of the Environmental Protection Agency led to a considerable change in who must bear the burden of proof in regulating pesticides and removing them from the market.

Shift from a Judicial Standard of Proof

The Federal Insecticide, Fungicide, and Rodenticide Act had envisaged that there would be a judicial standard of proof that would make experimentation upon humans not necessary. A standard of "reasonable" man was the trend of this legislation.

In 1974, the management of the Environmental Protection Agency decided to leave 2,4,5-T on the market, while they developed instrumentation to detect the TCDD dioxin and determine whether it might be entering the food chain.

This decision basically asserted that from that time on the Environmental Protection Agency would be required to prove in the strictest scientific sense (as opposed to the judicial standard of proof) that humans were actually being harmed by the pesticide (a body count) before the pesticide could be removed from the market.

As William Butler, counsel for the Environmental Defense Fund, said at the time, this meant that the EPA was giving herbicide manufacturers the go-ahead to use the environment as their laboratory. "The EPA apparently has decided that the EPA (rather than the manufacturer) must shoulder the burden of proving or disproving the safety of 2,4,5-T and related compounds; and that continued use should be allowed as long as the severity of the hazards remains uncertain."

Scientific Standard of Proof Still Prevails at EPA

Now that instruments have been developed to measure TCDD dioxin to the 10 parts per trillion level, the worst fears of food contamination have been realized. Dr. Meselson et al of Harvard University have found TCDD dioxin in mother's milk at levels up to 1.6 parts per trillion in the Oregon and Texas spray areas.

Extraordinary levels of TCDD have been found in beef fat from treated rangelands and in wildlife in the spray areas of Oregon. Average beef fat levels were found to be 10 parts per trillion with a range of 5 ppt to 65 ppt.

2.

One third of the beef fat samples from the treated areas were found to be contaminated.

This contamination of food has been determined to be proof enough for beef, according to EPA monitoring specialists. But, conforming to the 1974 decision to shift from the intent of FIFRA and away from the judicial standard of proof, EPA says that contaminated food is not sufficient. We have to have perfect scientific proof (to meet the scientific standard of proof that is not envisaged by FIFRA). We must have body counts in humans, and actually detect TCDD in human tissue. We must also detect TCDD on the basis of three laboratory tests, according to present scientific protocol.

Considering the fact that Dr. James Allen has found that TCDD produces cancer in laboratory rats at 5 parts per trillion, and Dr. Jacqueline Verrette has shown that 2 parts per trillion produces embryo defects in chicken eggs and 8 parts per trillion produces a 50 percent mortality of those embryos, we believe that the performance of EPA shows an outrageous interpretation of FIFRA, and a callous disregard for the safety of Americans.

The Need for an Imminent Hazard Declaration for the TCDD Pesticides Including 2,4,5-T

Any time that the contamination of food or the contamination of people with pesticides reaches a level which produces harmful effects in laboratory animals, it is clear that that pesticide should have been banned long ago. A prudent person and prudent scientific thought indicates that there should be a wide margin between human exposure to a toxic chemical and exposure levels found to cause serious effects in laboratory animals.

It has become clear from laboratory tests and measurements of TCDD in food that a one to one relationship between exposure levels to humans and levels that produce effects in laboratory animals now exists.

Furthermore, this one to one relationship has been demonstrated in numerous health epidemics due to the use of 2,4,5-T in the field since 1970.

Lack of Information on the TCDD Contaminant Is Grounds for Suspension of the Registration of Pesticides Containing It

TCDD has never been registered as a pesticide, yet it is sold as part of the pesticide package. The Environmental Protection Agency has the right to require its registration, and proof from the manufacturer in the form of scientific tests that it is safe. It is contrary to the provisions of FIFRA to require the Environmental Protection Agency to prove that an unregistered chemical used as a pesticide component be proved safe, rather than the manufacturer.

SUMMARY OF OUR FACTUAL FINDINGS

PART I: PRESENT LEVELS OF EXPOSURE OF AMERICANS TO 2,4,5-T COMPOUNDS and TCDD ARE IN A ONE TO ONE RELATIONSHIP TO LABORATORY FINDINGS

Cancer at 5 Parts Per Trillion

Dr. James Allen at the Primate Lab of the University of Wisconsin has found that 5 parts per trillion of dioxin in the diet of rats over 18 months produced a significant amount of cancer.(1)

Mother's milk in the spray areas of Oregon and Texas have been found to contain dioxin (TCDD) levels up to 1.6 parts per trillion by Meselson et al of Harvard University. Since babies are fed for 4 months, this suggests that these mothers are giving their own children cancer. (2) TCDD was also found in human milk in Vietnam.

Birth Defects at 2 Parts Per Trillion

Dr. Jacqueline Verrett of the Food and Drug Administration has found that 2 parts per trillion of dioxin causes embryo defects in chicken embryos. At 8 parts per trillion 50 percent of the embryos die. (3)

This means that when a pregnant woman reduces and releases the dioxin from her fat that she can cause birth defects in her own child. The large number of stillborn children among women contacted by spray drift from 2,4,5-T in spray areas of America show an impact upon the fetus.

Many doctors recommend that women reduce during pregnancy.

Blood Measurements and Urine and Semen Measurements of 2,4,5-T in Americans Indicate a Widespread Contamination at Levels Shown to be Harmful

Dr. Granville F. Knight, M.D. from Santa Monica has analyzed 100 plus blood samples from patients, and found more than half of them to have measurable levels of 2,4,5-T, 2,4-D, 2,4-DP, or Silvex. (4)(5)

A distinct fit has been shown by Dr. Knight with the large scale virus epidemic that fit the spray areas. It appears that human resistance to infection is reduced by exposure to 2,4,5-T, just as resistance of laboratory animals is reduced. 70 percent of his patients with this virus had measureable levels of herbicides in their blood.

Dougherty and Piotrowska found measurable levels of 2,4,5-T in the urine of 36 percent of Florida State University dormitory students, Silvex in 36 percent of the dormitory students and 24 percent of the FSU football team, 60 percent had 2,4,5-Trichlorophenyl, and food and city water were found contaminated with Silvex and 2,4,5-T. (6)

For comparison, a worker in the Hoedad group in Oregon had his blood levels measured after suffering phenoxy symptoms and found 5.5 parts per billion of Silvex and less than 5.0 parts per billion of Krenite. (7)

TCDD Levels in Food and Wildlife Have Been Measured At Levels Harmful to Humans

Dr. Meselson found that one third of his samples of fat from beef fat grazing on rangeland treated with one pound or more of 2,4,5-T were found to contain TCDD at concentrations of 5 ppt to 65 ppt. The average level of TCDD in the beef fat of all the animals from treated rangeland is of the order of 10 ppt. (7)

There was a distinct relationship between the poundage of 2,4,5-T applied per acre and the quantity of TCDD found in the beef fat (suggested at a ratio of 1 pound of 2,4,5-T produces 4 ppt of TCDD in the fat).

In the Siuslaw National Forest in Oregon, TCDD levels measured under the auspices of EPA found 15 percent to contain TCDD. The mean level in all animals examined (including the 85 percent in which no TCDD was detected) was about 10 ppt, with values ranging from 12 ppt to 143 ppt. This indicates a distinct hazard to hunters eating game from sprayed areas. (8)

Mahle et al found six positives for TCDD in cow's milk, five from sprayed pasture areas and one from Midland, Michigan. (9)

Very high levels of TCDD have been found in wildlife and fish in Vietnam, and one sample of codfish from Boston was found by Meselson to have 3 ppt. (10)

All these measurements are at levels known to produce very serious effects in laboratory animals.

Burning of Wood Contaminated with 2,4,5-T and Probabjy Cooking Produces TCDD Dioxin

Another area of exposure is the burning and handling of sprayed wood. Five cases of acute medical harm are reported in Part IV due to exposure to treated wood or burning of the same.

High temperatures are known to produce TCDD from 2,4,5-T. The attached paper describes some of the literature on this subject, (11) and further studies are described in the attached British Columbia study. (12)

Roasting of meat and vegetables at typical oven temperatures recommended by cookbooks will also produce TCDD, if the food is contaminated with 2,4,5-T. This was testified to by EPA in 1970. (13)

Application of 2,4,5-T and 2,4-D Mixtures and Work in Sprayed
Areas Pose Severe Public Health Issues

The affidavits of workers to severe health problems after working in spray areas of Oregon that were sprayed with 2,4,5-T or Silvex are presented in the attachments in full.

Yoders study of chromosome abnormalities among herbicide applicators show a marked increase in chromosome abnormalities among workers exposed to herbicides during the spray season. (14)

Axelsson and Sundell in looking at the epidemiology of Swedish railroad workers applying 2,4-D and 2,4,5-T and Amitrole found the following: For the group exposed to Amitrole (with some exposure to diuron and or monuron) tumor incidence and mortality significantly increased. Those applying 2,4-D and 2,4,5-T showed slightly more than the expected tumor incidence and mortality. (87 workers were involved in the study.) Males had more tumors. (15)

The R.P.A.R. document is clear in its opinion that exposure to persons during the spray operation for 2,4,5-T offers too little a margin for safety for those workers, and this is one of the grounds for the R.P.A.R. proceedings.

Konstatintinova's study shows the possibility of fetus change in the second and third generation of mice. (15a)

CONCLUSIONS, PART I: A one to one relationship between present food and environmental levels of 2,4,5-T and TCDD and levels that have shown to cause serious health problems in laboratory animals would be unacceptable under the "reasonable" man test of FIFRA.

In view of the extreme health effects shown to come from exposure of humans to 2,4,5-T and TCDD (Part IV), the Environmental Protection Agency should take these compounds off the market immediately.

PART II: THE TCDD DIOXIN HAS BEEN SHOWN TO BIOACCUMULATE
IN THE ENVIRONMENT AND TO HAVE A CUMULATIVE EFFECT
ON HEALTH

Bioaccumulation

Captain A.L. Young, M.D. has finished the Air Force studies of TCDD at the test plots at Elgin Air Force Base. They confirm the initial findings of the 1974 study (16) that TCDD bioaccumulates in the environment in insects, mice, snakes, fish, and a whole series of components. (17)

The studies of Meselson in Vietnam and Suislaw National Forest show distinctive bioaccumulations. (18)

Hazard of Application to Rice

The 1974 report of Young (16) tries to discover why mice are picking up such high levels of TCDD in fat and liver. They found seeds of switchgrass in the stomachs, yet the seeds did not show TCDD above the present levels of measurement capability which is 10 ppt.

This suggests that application of 2,4,5-T to rice may offer a very serious health hazard to the average American. It has been shown that TCDD can be transported into oat and bean plants, and oat seeds. (19)

Toxicity of TCDD and Cumulative Effect on Health

Various authors have commented on the relative toxicity of TCDD. It has been noted that it is somewhat more toxic than mustard warfare gas and suggested that it was similar to the toxicity of radiation.

Numerous scientists have suggested that the Allen tests of monkeys with TCDD show a cumulative effect on health. This has been pointed out by Streisinger, McNulty, Jacqueline Verrett. (20)

It is pointed out that in the monkey experiments, it does not matter whether 3 ug/kg of TCDD is added to the monkey's diet in one dose, in 500 ppt doses or 10 ppt doses over a longer period of time. In every case, once the lethal level is reached the monkeys die. Furthermore, TCDD appears to continue to work adversely upon health after the diet addition is ceased.

Captain Young's group has found damage to the spleen and liver in microscope analysis of the mice from their test area. (21)

Streisinger goes even further, suggesting that it is quite possible that it would only take 65 meals contaminated with present levels of TCDD to get humans into a difficult health situation. Furthermore, these meals do not have to take place all at once, but over a lifetime. (22)

Ability to Cross the Placenta

Moore's rat study traced TCDD across the placenta into the fetus, using radioactive carbon. A single oral dose of 5 ug/kg was given to 344 rats, and radioactive TCDD was found in the fetal liver. There was a high concentration also in postnatal experiments, because the TCDD was secreted in the mother's milk. (22a)

Dancker's mice experiment showed that fetal defects were affected by the time of exposure to 2,4,5-T. During the first 10th to 11th day when the yolk sac and placenta was the only route to the fetus, there was no measured 2,4,5-T. But in the 11th to 18th day period, there was an increased passage. Birth defects showed up only in the 13th or 14th day or beyond when there was significant amounts of 2,4,5-T found in the fetus. (22b)

Konstatintinova's study shows the possibility of fetus change in the second or third generation of mice. (22c)

CONCLUSIONS, PART II: A prudent man or "reasonable" man- the test that FIFRA established as the one that the Environmental Protection Agency was to use- would not permit a chemical (a) a little more toxic than mustard gas (b) about equal in toxicity to radiation to be sprayed over people's homes, to be used on the lawns of the average American, to be used on pasturelands when it had been proven that that chemical was moving into the food chain.

A prudent or "reasonable" man would take a chemical off the market immediately if it was shown to have cumulative effects of substantial nature.

A prudent or "reasonable" man would take a chemical off the market immediately if it bioaccumulated in the environment. EPA has a responsibility to the environmental also.

PART III: EXTENT OF POTENTIAL HEALTH DAMAGE

Forest Workers

The State of Oregon employment division lists 12,700 workers in logging in the annual average 1977. Many of these work in areas that are affected by spray drift. There are also large thinning crews in many states that work directly in spray areas, and who have shown a substantial health effect due to exposure to 2,4,5-T. 4,000 transplanter workers work in Oregon.

Residents of Spray Areas

Without their permission, spray drift can affect residential areas, and has in several cases with catastrophic effects. (See Part IV)

It is estimated that 1 out of 8 persons in Oregon live in or adjacent to forested areas or a total of 100,000.

Inversions

Several California incidents show that inversions can spread herbicides far beyond the spray areas, and cause epidemics of health effects. (See Part IV)

Forest Fires

Production of TCDD dioxin by forest fires in spray areas offers the potential of an epidemic situation. Furthermore, fires are encouraged in such areas because the herbicides do not cause the dead leaves of the hardwoods to fall to the ground.

Food

Just about everyone eats beef and drinks bovine milk. The contamination shown for these products indicates a possible epidemic through this route. Symptoms may range from loss of child to untimely death, none of which would be picked up except through a sophisticated epidemiological survey after the fact.

The contamination of wildlife has been suspected in some of the poisonings that have occurred in the Western states.

Use Around the Home

Labels of Silvex sold in hardware stores do not presently inform the reader that miscarriages and stillborn babies, birth defects, acute health problems, chronic health problems such as cancer can result.

CONCLUSIONS, PART III: It would be a reckless person who would permit the exposure of such a large population to TCDD as that listed in Part III, in view of the extreme toxicity of that compound.

FIFRA was passed to prevent catastrophes, and a reasonable man would suspend the registration of TCDD containing compounds.

PART IV: EPIDEMIC OF HEALTH EFFECTS REPORTED FROM AMERICANS

(1) Abortions and stillborn children:

The 2,4,5-T and TCDD mixture appears to be remarkably efficient in producing spontaneous abortions and stillborn children, far above the 10 percent level expected for American women.

Since the reported incidents below (which are backed up by the attached affidavits) occurred generally in small self-contained settlements, they are as valid indications of the epidemiology of spontaneous abortions and stillborn children as a self-contained laboratory experiment. A "reasonable" or prudent man would be flabbergasted.

All of the women involved testify that 2,4,5-T spray wet their skin, or contaminated water supplies or gardens.

- (a) 6 out of 8 women lost their babies in Fayetteville, Arkansas after a field was sprayed with 2,4,5-T above a spring supplying water to 20 people. (26)
- (b) 4 out of 9 women contacted with spray drift in Oregon lost their children. (See Kailan report) (27)
- (c) 1 out of 1 woman had a stillborn child after walking in a back yard that had been contaminated with 2,4,5-T spray drift two days before. (See diary of Marion Vertnik). (28)
- (d) An estimated 5 out of 5 lost their babies after spray in a small settlement in northern Wisconsin (less than 40 families) after spraying that was done over their homes. This high rate has continued in this area, with stillborns and spontaneous abortions.

Last summer there was a deformed baby, with one side of the head flattened and side of the body stiff. These problems occurred within a half mile of the original 1971 spray area, and roadside spraying has gone on since. (29)

- (e) For comparison, a ratio of 1 out of 4 women lost their children in Sevesco, Italy after the TCDD disaster. 51 spontaneous (as compared to the many medical) abortions were recorded or 22 percent rate. (30)
- (f) A woman who had her skin wet from a 2,4-D spray on a campus in northern Wisconsin lost her child in a spontaneous abortion soon after. (Report of John Stauber)
- (g) For comparison, at Hospital A, Dr. Ton That Tung and colleagues reported 22 out of 73 pregnant women interviewed had miscarriages following spray applications, and there were similar cases in farm animals. The stillborn rate doubled at Tay Ninh City provincial hospital. They reported a rate of 58 out of 1000 in a spray area compared to low spray area of Saigon where the stillborn rate was 29 out of 1000 for the same period. (30b)

For comparison, a woman in West Virginia, well along in pregnancy, did not have her skin wet by the Appalachia Power Company, but they had to "live with the odor" for a day. She had cramps as a result, but did not lose her baby. (30a)

(2) General phenoxy related illness:

The enclosed reports on several hundred affected people in 8 states due to spray drift from 2,4,5-T show all the classic symptoms of phenoxy herbicide poisoning.

- (a) Summary report of the 8 states.(phone numbers enclosed for EPA)
- (b) Affidavits from Oregon and report of Dr. Kailan.
- (c) Affidavits from California where an inversion caused 2,4,5-T air pollution, with serious health effects.
- (d) Affidavits from Arkansas.
- (e) Diary of Marion Vertrnick, Minnesota.
- (f) Description of West Virginia cases.
- (g) Affidavit of Cathy O'Hagan- spray of a school by the Appalachia Power Company.
- (h) The Arizona account printed in the 1970 House Hearings.

(3) Relation of 2,4,5-T and herbicides levels in blood to virus infections.

2,4,5-T and TCDD have been shown to attack the thymus, reducing resistance to infection in laboratory animals. Similar effects appear in humans, shown by the outbreak of virus attacks right after spray drift affected some areas of California.

- (a) In Branscomb, California in 1974, 36 residents demanded an investigation.(31)
- (b) Dr. Granville, Knight finds that in his patients 70 percent affected by the 1977 virus had measurable levels of herbicides in their blood. The sample size was over 100. (32)

(4) Birth defects.

Theodor Sterling testifies that 50 percent of the birth defects in British Columbia are of the phenoxy herbicide type. (33)

After the spray of the Tonto National Forest at Globe, Arizona, there was indication of birth defects of the phenoxy type. In July 1970, the Arizona Commissioner of Health wrote a letter to the Gila County Board of Health saying that "...your county is leading the state in deaths caused by diseases of early infancy and fetal deaths... there are excessive deaths from congenital malformations." (34)

CONCLUSIONS, PART IV: A reasonable or prudent man- the test under which FIFRA was intended to operate- would be flabbergasted and shocked by the numerous spray episodes involved with 2,4,5-T.

It is quite clear that the public cannot be protected from extremely serious health effects from the chemical and TCDD contaminant with the standard application method. In California, the possibility of inversions and 2,4,5-T air pollution is a matter of great concern.

No reasonable or prudent man would leave the 2,4,5-T type of chemicals on the market, and would suspend the registration of these chemicals to protect the public from the epidemic type of health problems that are already occurring.

PART V: EPIDEMIC OF WILDLIFE EFFECTS

The Environmental Protection Agency has the mandate to protect the environmental quality as well as human health. The use of 2,4,5-T has had a substantial effect on wildlife, effects that have been recorded, as well as unknown effect upon endangered species. For example the following:

- (a) 400 deer were killed in the Superior National Forest, as estimated from deaths in sampling pens. This was after spraying, and during a mild winter when stresses were minimal. (35)
- (b) Large deer kills were found in Oregon- a substantial percentage reduction in deer populations. (36)
- (c) Boils on deer and rabbits were observed in Minnesota, an indication of a breakdown of the immune system. (37)
- (d) 8,000 steelhead trout were killed by spray drift in Oregon. (38)
- (e) Dead or defective born wildlife were observed at many and indeed most of the spray sites such as Trinity County, Calif. where massive deer kills were reported. (39)

fingerlings

Contamination of Waterways

The U.S. Geological Survey in every year from 1968 to 1976 has detected 2,4,5-T in 30 to 65 percent of its 60 sampling stations. Silvex was found in up to 10 percent of the 60 sampling stations. (39a)

This has happened despite label restrictions against application to waterways.*

Further Wildlife Information Available

We believe that there is a great deal more information on adverse effects of 2,4,5-T on wildlife. The Environmental Protection Agency can develop more information by contacting the wildlife managers of the National Forests and the residents of the spray areas. Furthermore, Meselson's study shows a great buildup of TCDD in the spray areas of Suislaw.

Violation of the Endangered Species Act is suggested by the attached letter from Thomas Morley, U. of Minnesota Department of Botany.

*There is every reason to believe that aerial application should be considered a point source of water pollution by the Environmental Protection Agency.

CONCLUSIONS, PART V: A reasonable or prudent man - the test under which FIFRA was intended to operate- would find the very heavy wildlife kills to be unacceptable.

It is clear that wildlife (and endangered species) cannot be adequately protected if 2,4,5-T and the TCDD pesticides are used on large scale control of weeds.

Since it has proved impossible to prevent the buildup of TCDD in wildlife through bioaccumulation (similar to DDT) a reasonable or prudent man would suspend the registration of the chemical carrying it.

14.

PART VI: LACK OF EMERGENCY TREATMENT CAPABILITY

There is no emergency treatment capability for the following health effects:

Acute

- (a) chloracne: only time or plastic surgery can handle this problem.
- (b) birth defects
- (c) stillborn children
- (d) spontaneous abortions
- (e) behavioral changes
- (f) skin rash, diarrhea, intestinal problems and all the other symptoms.

The physician listed by Chevron to assist with poisonings with Silvex (Ortho) does not have any knowledge of the literature on birth defects for Silvex. (Call by John Stauber, May 18, 1978)

Chronic

There is no effective medical treatment to prevent the following effects:

- (a) cancer
- (b) birth defects
- (c) untimely and early death (See Streisinger)

CONCLUSION, PART VI: One of the tests for removal of a pesticide from the market is the availability of emergency treatment to solve the health effects. No such treatment programs exist for 2,4,5-T and the TCDD pesticides.

Indeed many of the health effects for TCDD have been shown to be chronic. Permanent damage to body organs and storage of the TCDD in fat, for later release, are effects that medical science has no solution for.

This is one more argument, using the "reasonable" man or prudent man test, that the registration of 2,4,5-T and the TCDD pesticides should be suspended.

15.

PART VII: ECONOMICS: 2,4,5-T IS A MARGINAL ECONOMIC PESTICIDE

Several economic papers are attached to this fact sheet with the following conclusions:

Forestry (41) (42)

2,4,5-T and herbicides used to promote pine growth appear to reduce yields in the pine. Visible damage and growth stunting are two areas of concern.

Secondly, most hardwood spray programs leave the hardwoods standing. When they rot at the base, they fall, crushing the pine. In one plot 36 percent of the pine were crushed, which means a 36 percent reduction of fiber yield.

Third, hardwoods produce a higher quality fiber that brings a higher price per acre, even after one adjusts for the longer growing period.

We have concluded that at the most, 2,4,5-T is a marginal pesticide in forestry, and suspension of its registration would not have a great impact (possibly favorable) upon forest yields and profits, and the national balance-of-payments.

Rangeland (43)

Use of 2,4,5-T to control sagebrush and mesquite is a marginal operation presently due to the high price of the chemical, and due to the recovery of the sagebrush.

Furthermore, the proven bioaccumulation of TCDD dioxin in beef fat could and may cause a panic in the meat market, similar to the cranberry scare and numerous other scares of the past.

Utility Lines (44)

The high price of 2,4,5-T almost certainly makes this a marginal chemical if utilities were to compute costs, as they often do not.

Furthermore, there is good reason to believe that over a period of time a stable vegetation can be grown on powerline and utility right of ways. (These utility right-of-ways are long term investments and vegetation management can take a longer viewpoint.)

The beginning of a period of damage suits against sprayers also changes the cost equation.

Rice (45)

Due to the low resolution quality of present instruments, it is presently impossible to measure TCDD residues of less than 10 parts per trillion. And so we cannot be certain that rice does not contain TCDD. The capacity of this chemical to come into the plants and seeds has been demonstrated at high application levels.

In Arkansas, 2,4,5-T is used to control morning glory. There are likely substitutes. For example, the Rohm & Haas Blazer, being registered for soybeans, will likely do a good job on morning glory in rice without harming the rice.

Mice feeding on seeds have been shown to have high levels of TCDD in their fat and livers, despite the fact that TCDD cannot be measured in the seeds.

The rice industry also appears ripe for a cranberry scare.

CONCLUSIONS, PART VII: A "reasonable" or prudent man would have a hard time buying the argument that heavy health and environmental risks should be undertaken for a marginal economic chemical, for which substitutes exist and whose price is so high that the substitutes are quite comparable in economics.

PART VIII: LACK OF ADMINISTRATIVE SAFEGUARDS BY THE ENVIRONMENTAL PROTECTION AGENCY

It is not possible to use 2,4,5-T safely, or any of the TCDD pesticides for the following reasons.

Label Definitions: Lack of Layman Clarity About Health Effects

It is possible to buy TCDD pesticides (Silvex) off the shelf in hardware stores and drugstores. The label instruction for Silvex contains only a warning to keep away from children.

From this label, it is impossible for the consuming public to know that the compound causes birth defects, spontaneous abortions, or stillborn children.

Furthermore, in aerial applications of 2,4,5-T, the label is equally unclear about what is meant about keeping the pesticide away from houses, recreation areas, water areas etc. Because of this lack of clarity, the chief forester of the Appalachia Power Company testified at a public hearing that it was his understanding that they could spray within 15 feet of a house. (46) He felt that this was lawful.

It is quite clear that at the present time the Environmental Protection Agency does not have a label program.

Reliance on the manufacturer for health information is no program at all. John Stauber called the physician at Chevron, who is supposed to tell people in an emergency what to do. He was uninformed about the effect of Silvex upon spontaneous abortions, birth defects, and stillborn children. (47)

Lack of Manpower for Label Enforcement

Even if the labels were informative, which they are not, the Environmental Protection Agency lacks the manpower to enforce the label.

It is quite clear that the Environmental Protection Agency does not have a label enforcement program.

This is shown quite clearly by the Environmental Impact Statements filed by the Forest Service for the Idaho region, which proposed to use 2,4,5-T in all the forbidden use areas.

Lack of Control Over TCDD

The ability of TCDD to bioaccumulate makes it impossible to control.

Furthermore, the ability of TCDD to be generated by heat of fire or cooking makes it impossible to control.

The present manufacturer's agreement to reduce the levels of TCDD in 2,4,5-T is not sufficient, because it has been shown that TCDD may accumulate if the 2,4,5-T is stored in the sun for a period of time. (48)

Furthermore, there is no government program that is established to reject high TCDD containing shipments of 2,4,5-T. Even if this were done, the bioaccumulation of TCDD in the environment would make this a meaningless program.

CONCLUSIONS, PART VIII: A prudent or "reasonable man, which is the test for FIFRA, would insist that the registration of the TCDD pesticides be suspended, because there are no present Environmental Protection Agency safeguards to minimize exposure to the population and secondly, because the TCDD content of the chemicals, before and after application cannot be guaranteed to remain small.

FOOTNOTES

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HUMAN HEALTH EFFECTS REPORTED FROM THE FIELD
AS A RESULT OF EXPOSURES TO 2,4,5-T SPRAY DRIFT
and EXPOSURE TO OTHER HERBICIDES CONTAINING
TCDD DIOXIN

Prepared by Erik Jansson
Research Associate
May 26, 1978

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Letter from Gladys Pavel of Beaver, Washington

(Description of the change in ecology and people
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Affadavit from Coos Bay, Oregon

(Blood samples and water tap samples)

Affadavit from Oregon Rancher

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Court Affidavits from Citizens Against Toxic Sprays vs
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Interview with Robbie Pardue, Little Rock, Arkansas

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(Loss of vegetation and hospitalization)

Interview with Mr. and Mrs. Freedlund, Wisconsin

2,4-D levels Found in Snowshoe Hares and Least Chipmunks
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Thomas Morley, U. of Minnesota

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(What happened when 4 families were sprayed: Information
on other spray drift problems in Minnesota)

House to House Survey of Health Effects in Globe, Arizona

Two Years After Spray with 2,4,5-T and 2,4-D by Adelaide Frick

Affadavits from Miranda, California

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Interview with Woman and Couple Sprayed in Kermit, West Virginia

Sworn Testimony of Kathleen O'Hagan from Kermit, West Virginia

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Attachment

SUMMARY OF FINDINGS

In reviewing state by state the illness that resulted from spray drift from 2,4,5-T and similar herbicides, several conclusions became clear:

- (1) It is impossible to avoid spray drift if aerial application is used.
- (2) Hospitalizations and deaths occurred in some cases due to the spray drift.
- (3) But, the most striking effect was induced spontaneous abortions and stillborn children. 2,4,5-T and the pesticides containing TCDD appear to be very efficient in producing stillborn children or spontaneous abortions.

Of the 23 women who testified that herbicides containing TCDD dioxin contacted their skin, or polluted their water supply or gardens, 16 lost their children. This is a 70 percent loss of child.

6 out of 8 lost their babies in Fayetteville, Arkansas

4 out of 9 lost their babies in Oregon.

1 out of 1 lost their babies in Britt, Minnesota.

An estimated 5 out of 5 lost their babies in northern Wisconsin.

- (4) In the laboratory 2,4,5-T and its dioxin contaminant have been shown to reduce the capacity of animals to resist infection by damaging the thymus. In California, Dr. Granville Knight found that 70 percent of his patients who were struck by a virus epidemic had measurable levels of herbicides in their blood, suggesting a similar effect for humans.

The Question of Spray Drift

The labels of 2,4,5-T and many herbicides prohibit spray drift. Yet, the Environmental Protection Agency has refused to prohibit the use of aerial spray for these herbicides, even though there is substantial scientific evidence that spray drift is inevitable in even mild winds if aerial application is used.

It is quite clear that the Environmental Protection Agency is permitting unlawful use of the herbicides. The result has been this epidemic of severe health effects.

At Redway, California, spray during an air pollution inversion in 1977 produced 2,4,5-T air pollution.