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**Item ID Number** 05273

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**Author**

**Corporate Author** United States Environmental Protection Agency (EPA)

**Report/Article Title** Respondent's Exhibit List, and Submission of  
Respondent on Cross-Examination - both in re:  
Emergency Suspension Orders for 2,4,5-T and Silvex,  
FIFRA Docket Nos. 409, 410, April 12, 1979

**Journal/Book Title**

**Year** 1979

**Month/Day** April 12

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**Description Notes** Item includes a cover letter from L. Mark Wine of Kirkland  
and Ellis.

# KIRKLAND & ELLIS

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April 13, 1979

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Chicago, Ill. 60601

To: Potential Dow Witnesses at EPA Hearing

I have enclosed for your information a copy of the Environmental Protection Agency's Exhibit List and Submission on Cross-Examination.

Sincerely yours,



L. Mark Wine

LMW:bac  
Enclosures



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

APR 13 1979

OFFICE OF  
GENERAL COUNSEL

Ms. Sonia G. Anderson  
Hearing Clerk  
U.S. Environmental Protection Agency  
4th and M Streets, S.W.  
Washington, D.C. 20460

Re: FIFRA Docket Nos. 409, 410

Dear Ms. Anderson:

Respondent Environmental Protection Agency herewith submits an exhibit list representing with considerable specificity its best estimate, as of this time, of the exhibits which respondent will introduce at the hearing.

Furthermore, respondent became aware yesterday that many copies of its statement of direct evidence were missing a page listing the names of several witnesses and the subject of their testimony. This page is attached.

Very truly yours,

*Michael S. Winer*

Michael S. Winer  
Deputy Associate General Counsel  
Environmental Protection Agency

April 12, 1979

Dr. William Loy, Geographer, University of Oregon

Dr. Loy will discuss the geography of Oregon areas in which 2,4,5-T and silvex are used.

Allen Pumphrey, Farmer

Mr. Pumphrey will describe damage to vegetation on his farm resulting from the use of 2,4,5-T in an adjacent forest area.

Kathleen O'Hagan, Teacher

Ms. O'Hagan will describe an exposure incident involving the use of 2,4,5-T on a right-of-way adjacent to a school yard and building.

Gisella Green, Homeowner

Ms. Green will describe an exposure incident involving spray drift onto her property.

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing "Respondent's Exhibit list" were hand-delivered or mailed express postage paid, on April 12, 1979, to the following persons:

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*Michael S. Winer*

---

Michael S. Winer

April 12, 1979



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

In re Emergency Suspension Orders  
for 2,4,5-T and Silvex

FIFRA Docket Nos.  
409, 410

RESPONDENT'S EXHIBIT LIST

In preparing its statement of intended direct evidence due April 10, 1979, respondent EPA concentrated foremost on developing a witness list consisting of the best qualified witnesses. It simply was not possible to provide a complete exhibit list at the same time the witness list was filed. Many of the Agency's witnesses have only recently been contacted, and for those witnesses it was not possible to identify exhibits in time to meet the April 10, 1979 deadline. In many instances a final compilation of exhibits cannot be made until a final witness statement is prepared and ready for service on the Hearing Panel and the parties.

A further reason for the tentativeness of this list is that some exhibits are listed prior to conferring with the witness regarding the exhibits. For these reasons we expect that some exhibits will be deleted, while others will be added, as hearing preparation progresses.

The list which follows consists of the names of witnesses who will introduce exhibits, followed by a tentative listing of the exhibits.

Dr. Roy Albert

Kellerman, Luyten-Kellerman and Shaw. " Genetic Variation of Aryl Hydrocarbon Hydroxylase in Human Lymphocytes." Amer. J. Hum. Gen. Vol. 25 , 1978. p. 327.

CAG Preliminary Report on 2,4,5-T, 2,4,5- TCP and TCDD.  
October 19, 1977.

Buu-Hoi, N.P., Do-Phuoc Hien, etc. "Biochemistry: Carcinomimetic Properties of Tetrachloro-2,3,7,8-Dibenzo-p-Dioxine." C.R. Acad. Sc., Vol. 272. March 3, 1971. p. 144..

Schwetz, B. A., J. M. Norris, G. L. Sparschu, V. K. Rowe, P. J. Gehring, J. L. Emerson, and C. G. Gerbig. 1973. Toxicology of chlorinate dibenzo-p-dioxins. Environ. Health Perspec. 5:87-99.

International Agency for Research on Cancer, 1978 Long-term Hazards of Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans

National Research Council of Canada, 1978. Report #16075: Phenoxy Herbicides - Their Effects on Environmental Quality

CAG Risk Assessment 2,4,5- T and TCDD. February 23, 1979. Summary and Conclusion on 2,4,5- T (DRAFT).

Innes, Ulland, Valerio, etc. " Bioassay of Pesticides and Industrial Chemicals for Tumorigenicity in Mice: A Preliminary Note." Journal of the NCI, 1969. p.1101.

Muranyi-Kovacs, Rudali, Imbert. " Bioassay of 2,4,5-Trichlorophenoxyacetic Acid for Carcinogenicity in Mice." Brit. J. Cancer, 1976.p.626.

Muranyi-Kovacs, Rudali, Imbert. " Study of the Carcinogenicity of 2,4,5- T in Mice." Fourth Meeting of the European Association of Cancer Research, September, 1977.

Kociba, Keyes, Lisowe, Kalnins, etc. " Results of a Two-year Chronic Toxicity and Oncogenic Study of Rats Ingesting Diets Containing 2,4,5- Trichlorophenoxyacetic acid (2,4,5-Toxicology Research Laboratory, Health and Environmental Research, Dow Chemical USA, September 27, 1978. (CONFIDENTIAL)

Leuschner, Neuman, Dontenwill, Rogulja, etc. " Chronic Oral Toxicity of 2,4,5- T, Batch 503, Control No. 153574B- Short '2,4,5- T'- In a Reproduction Study Covering Three Generations of Spragne- Dawley Rats." Laboratorium für Pharmakologie und Toxikologie, Hamburg, Germany, May 2, 1978.  
(CONFIDENTIAL)

Kociba, R.J. to Ralph T. Ross (letter) " 13 Week Oral Toxicity Study of TCDD in Spragne- Dawley Rats," Dow Chemical USA, January 20, 1976.

Kouri, R.E. " Relationship Between Levels of Aryl Hydrocarbon Hydroxylase Activity and Susceptibility to 3-Methylcholanthrene and Benzo [a] pyrene- Induced Cancers in Inbred Strains of Mice." Carcinogenesis, Volume I. Polynuclear Aromatic Hydrocarbons: Chemistry, Metabolism and Carcinogenesis. 1976.

Kouri, R.E., etc. " Relationship Between Aryl Hydrocarbon Hydroxylase Inducibility and Sensitivity to Chemically Induced Subcutaneous Sarcomas in Various Strains of Mice." Journal of the NCI, Vol. 50, 1973. p. 363.

Kociba, R.J. Keyes, Beyer, etc. " Results of a Two-year Chronic Toxicity and Oncogenicity Study of 2,3,7,8- Tetrachlorodibenzo-p- Dioxin in Rats." Toxicology and Applied Pharmacology, Vol. 46, 1978. p.279.

VanMiller, J.P., Lalich and Allen. " Increased Incidence of Neoplasms in Rats Exposed to Low Levels of 2,3,7,8- Tetrachlorodibenzo-p-Dioxin." Chemosphere, No.9, 1977. p. 817.

EPA Laboratory Audit of Van Miller et al. , Memorandum from Dr. Spencer to Dr. Reisa. February 8 1979

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NCI Bioassay of TCDD; Preliminary  
Animal Pathology Report

Seiler, J. P.: Inhibition of testicular DNA synthesis by chemical mutagens and carcinogens. Preliminary results in the validation of a novel short term test. Mutation Research 46:305-310, 1977.

Hussain, S., G. Ehrenberg, C. Lofroth, and T. Cejvall. 1972. Mutagenic effects of TCDD on bacterial systems. Ambio 1(1):32-33.

Poland, A., and E. Glover. 1974. Comparison of 2,3,7,8-tetrachlorodibenzo-p-dioxin, a potent inducer of aryl hydrocarbon hydroxylase, with 3-methylcholanthrene. *Molec. Pharmacol.* 10:349-359.

Poland, A., and E. Glover, and A. S. Kende. 1976. Stereospecific, high affinity binding of 2,3,7,8-tetrachlorodibenzo-p-dioxin by hepatic cytosol. *J. Bio. Chem.* 251(16):4936-4946.

Green, S. 1975. Cytogenetic evaluation of several dioxins in the rat. (DRAFT, unpublished.)

Majundar, S. K., and R. C. Hall. 1973. Cytogenetic effects of 2,4,5-T on in vivo bone marrow cells of Mongolian gerbils. *J. Hered.* 64:213-216.

Davring, L., and K. Hultgren. 1977. Cytogenetic effects on in vivo bone-marrow cells of Mus musculus induced by a commercial 2,4,5-T ester product. *Hereditas* 85:123-134.

Davring, L., and M. Sunner. 1971. Cytogenetic effects of 2,4,5-trichlorophenoxy-acetic acid on oogenesis and early embryogenesis in Drosophila melanogaster. *Hereditas* 68(1):115-122.

CAG, April 4, 1979

Response to Rebuttal Comments on "Risk Assessment on 2,4,5-Trichlorophenoxy acetic acid (2,4,5-T) and 2,3,7,8-tetrachloro-dibenzo-p-dioxin (TCDD)"

Exhibit 4, cited a p. 14, "TCDD Toxicity in Various Animal Models", Spencer 1979.

---

Courtney, K. D., and J. A. Moore, 1971. Teratology studies with 2,4,5-trichlorophenoxyacetic acid and 2,3,7,8-tetrachlorodibenzo-p-dioxin. Toxicol. Appl. Pharmacol. 20:396-403.

Neubert, D., and I. Dillmann. 1972. Embryotoxic effects in mice treated with 2,4,5-trichlorophenoxyacetic acid and 2,3,7,8-tetrachlorodibenzo-p-dioxin. Naunyn-Schmiedeberg's Arch. Pharmacol. 272:243-264.

Sparschu, G. L., F. L. Dunn, and V. K. Rowe. 1971. Study of the teratogenicity of 2,3,7,8-tetrachlorodibenzo-p-dioxin in the rat. Fd. Cosmet. Toxicol. 9:405:412.

Khera K. S., and J. A. Ruddick. 1973. Polychlorodibenzo-p-dioxins; perinatal effects and the dominant lethal test to Wistar rats. Pages 70-84 in E. A. Blair, ed., Chlorodioxins--origin and fate. Advances in Chemistry Series, No. 120. Am. Chem. Soc., Washington, D. C.

Courtney, K. D. 1977. Prenatal effects of herbicides; evaluation by the prenatal development index. Arch. Environ. Contam. Toxicol. 6, 33-46.

Smith, F. A., B. Z. Schwetz, and K. D. Nitschke. 1976. Teratogenicity of 2,3,7,8-tetrachlorodibenxy-p-dioxin in CF-1 mice. Toxicol. Appl. Pharmacol. 38:517-523.

F. A. Smith, K. D. Nitschke, C. G. Humiston, R. J. Kociba, and B. A. Schwetz, 1977, Three-generation Reproduction Study of Rats Ingesting 2,3,7,8-tetrachlorodibenzo-p-dioxin. Toxicol. App. Pharmacol. 41:201.

---

Poland, A., and E. Glover. 1973. Studies on the mechanism of toxicity of the chlorinated dibenzo-p-dioxins. Environ. Health Perspec. 5:245-251.

World Health Organization, International Agency for Research on Cancer. 1977. IARC monographs on the evaluation of the carcinogenic risk of chemicals to man: some fumigants, the herbicides 2,4-D and 2,4,5-T, chlorinated dibenzodioxins and miscellaneous industrial chemicals. Vol. 15. International Agency for Research on Cancer, Lyon, [France].

Courtney, K. D. 1976. Mouse teratology studies with chlorodibenzo-p-dioxins. Bull. Environ. Contam. Toxicol. 16:(6)674-681.

Sparschu, G. L., F. L. Dunn, R. W. Lisowe, and V. K. Rowe. 1971. Study of the effects of high levels of 2,4,5-trichlorophenoxyacetic acid on foetal development in the rat. Fd. Cosmet. Toxicol. 9:527-530.

F. A. Smith, B. A. Schwetz, F. J. Murray, A. A. Crawford, J. A. John, R. J. Kociba, and C. G. Humiston, 1978. Three generation reproduction study of rats ingesting 2,4,5-trichlorophenoxyacetic acid in the diet. Toxicol. App. Pharmacol. 45:293.

Highman, B., T. B. Gaines, and J. H. Schumacher. 1977. Retarded development of fetal renal alkaline phosphatase in mice given 2,4,5-trichlorophenoxyacetic acid. J. Toxicol. Environ. Health 2:1007-1018.

Collins, T. F. X., and C. H. Williams. 1971. Teratogenic studies with 2,4,5-T and 2,4,5-D in the hamster. Bull. Environ. Contam. Toxicol. 6(6):559-567.

---

Schwetz, B. A., J. M. Norris, G. L. Sparschu, V. K. Rowe, P. J. Gehring, J. L. Emerson, and C. G. Gerbig. 1973. Toxicology of chlorinate dibenzo-p-dioxins. Environ. Health Perspec. 5:87-99.

International Agency for Research on Cancer, 1978 Long-term Hazards of Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans

EPA Laboratory Audit of Van Miller et al., Memorandum from Dr. Spencer to Dr. Reisa. February 8, 1979

Leuschner, Neuman, Dantenwill, Rogulja, etc. "Chronic Oral Toxicity of 2,4,5-T, Batch 503, Control No. 1535743-Short '2,4,5-T'- In a Reproduction Study Covering Three Generations of Sprague-Dawley Rats." Laboratorium für Pharmakologie und Toxikologie, Hamburg, Germany, May 2, 1  
(CONFIDENTIAL)

Clegg, D. J. 1971. Embryotoxicity of chemicals contaminants of foods. *Fd. Cosmet. Toxicol.* 9:195-205.

Courtney, K. D., D. W. Gaylor, M. D. Hogan, H. L. Falk, R. R. Bates, and I. Mitchell. 1970. Teratogenic evaluation of 2,4,5-T. *Science* 108:864-866.

Khera, K. S., and W. P. McKinley. 1972. Pre- and postnatal studies on 2,4,5-trichlorophenoxyacetic acid, 2,4-dichlorophenoxyacetic acid and their derivatives in rats. *Toxicol. Appl. Pharmacol.* 22:14-28.

Sokolik, I. Yu. 1973. Effect of 2,4,5-trichlorophenoxyacetic acid and its butyl ester on embryogenesis of rats. *Bull. Exp. Biol. Med.* 76(7):831-833.

J. A. Goldstein, P. Hickman, H. Bergman and J. G. Vos, 1973. HEPATIC PROPHYRIA INDUCED BY 2,3,7,8-TETRACHLOR DIBENZO-P-DIOXIN IN THE MOUSE. *Res. Comm. in Chem. Path. and Pharm.* 6:919.

J. A. Moore, B. H. Gupta, J. G. Zinkl, and J. G. Vos, 1973. POSTNATAL EFFECTS OF MATERNAL EXPOSURE TO 2,3,7 Tetrachlorodibenzo-p-dioxin (TCDD). *Env. Health Perspectives* 5:81.

Thompson, et al., 1973. Teratology and Postnatal Study in Rats Treated Orally with 2-(2,4,5-Trichlorophenoxy) propionic Acid (Silvex) and 2-(2,4,5-Trichlorophenoxy) propionic Acid, Propylene Glycol Butyl Ether Esters (Silven-PGEE), Dow Chemical Company, EPA Pesticide Registration No. 8F0675. [CONFIDENTIAL]

Neubert, D., P. Zens, A. Rothenwallner, H. J. Merker. 1973. A survey of the embryotoxic effects of TCDD in mammalian species. *Environ. Health Perspec.* 5:67-79.

Roll, R. 1971. Studies of the teratogenic effect of 2,4,5-T in mice. (Trans. from German.) *Fd. Cosmet. Toxicol.* 9:671-676.

Roll, R. 1973. Toxicological evaluation of special organochlorinated compounds. *Environ. Qual. Safety* 2:117-124.

Bage, G., E. Cekonova, and K. S. Larsson. 1973. Teratogenic and embryotoxic effects of the herbicides di- and trichlorophenoxyacetic acids (2,4-D and 2,4,5-T) *Acta Pharmacol. Toxicol.* 32(6):406-416.

Emerson, J. L., D. J. Thompson, R. J. Streging, C. G. Gerbig, and V. B. Robinson. 1971. Teratogenic studies on 2,4,5-trichlorophenoxyacetic acid in the rat and rabbit. *Fd. Cosmet. Toxicol.* 9:395-404.

Exhibit 1, cited at p. 14, "Reproductive Dysfunction. . .", Barsotti, 1977.

Exhibit 2, cited at p. 14, "Hormonal Alternatives . . .", Barsotti, 1979.

Exhibit 3, cited at p. 15, "Environment and Birth Defects", 1973.

Exhibit 5, cited pp. 15-16, "The non-teratogenicity . . .", Dougherty, 1975.

Exhibit 6, cited at p. 16, "Abnormalities of Intrauterine Development . . .", 1971, Wilson.

S. L. Schantz, D. A. Barsotti and J. R. Allen, Toxicological effects produced in nonhuman primates chronologically exposed to fifty parts per trillion 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD). (Abstract of Paper to be presented at the Eighteenth Annual Meeting of the Society of Toxicology on March 11-15, 1979.

Allen, J.R., J.P. VanMiller, etc. "Morphological Changes Monkeys Consuming a Diet Containing Low Levels of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin" Food Cosmet Toxicol Vol. 15, 1977. p. 401.

McNulty, Wilbur P., M.D. to Federal Register Section (let Preliminary Laboratory results of Spontaneous Abortions Primates- July 27, 1978.



Dr. Robert Duncan  
Dr. Jack Griffith  
Ms. Ann Barton  
Dr. Thomas Keefe  
Dr. Eldon Savage  
Dr. John Davies

Letter from Dr. John Davies to Mr. Edwin Johnson, February 27, 1979, re Review of Alsea II. (ARI-118)

Affidavit of Dr. Robert Duncan for Dow v. Blum, Civil Action No. 79-100064, United States District Court for the Eastern District of Michigan, Northern Division, April 2, 1979.

Literature reviewed for Oregon Miscarriage Study

Zip Code Map of Study Area

Spray data map from the Bureau of Land Management

Spray data map from the U.S. Forest Service

Spray data map from Starker

Spray data map from Willamette

Final Alsea Report - February 28, 1979

Chart of Spray Usage in Alsea Area

First Alsea Report

Literature reviewed for Oregon Miscarriage Study

Zip Code Map of Study Area

Spray data map from the Bureau of Land Management

Spray data map from the U.S. Forest Service

Spray data map from Starker

Spray data map from Willamette

Final Alsea Report- February 28, 1979.

Chart of Spray Usage in Alsea Area

Exhibit 1, cited a p. 44, "Status Report", EPA,  
Feb. 8, 1979.

Exhibit 2, cited at p. 44, "Congenital Abnormali-  
ties", Infante.

Exhibit 3, cited at p. 45, "Proceedings, Conference  
on Women in the Workplace, Infante 1976.

Exhibit 4, cited a p. 45, "Significant Factors . . .".  
Bailar, 1967.

Exhibit 5, cited p. 45, "The Effects of Maternally  
Inhaled Vinyl Chloride . . .", John, 1977.

Wagoner, Dr. Joseph K. to Dr. Robert Verhalen (Memorandum)  
" Final Documentation Guidelines for Epidemiologic Studies:  
Transmittal for Agency Review and IRLG Publication in Federal  
Register." October 13, 1978.

Anonymous. " Cleaning Up Seveso; Science, Politics and Chaos," Chemistry,  
Vol. 50, November, 1977, p. 21.

Anonymous. " Twelve Months After Seveso," Nature, Vol. 268,  
July 14, 1977. p.90.

Hay, Alastair. "Seveso: Poche's Reply," Nature, Vol. 267, June 30, 1977.  
p. 749.

Hay, A. " Seveso Solicitude," Nature, Vol. , 1977.

Hay, A. " Seveso: Dioxin Damage," Nature, Vol. 266, March 3, 1977. p.

Hay, A. " Seveso: The Aftermath," Nature, Vol. 263, October 14, 1976.  
p. 538.

Norman, Colin. " Seveso: The Problems Deepen,"

McGinty, Lawrence. "The Graveyard on Milan's Doorstep," New Scientist,  
Vol. 71, No. 1014, August 19, 1976. p. 383.

Hay, A. "Dioxin Meeting Recommends Cancer Study," Nature, Vol. 271,  
January 19, 1978. p.202.

Hay, A. " Towards Anticipating Disaster," Nature, Vol. 264,  
November 25, 1976. p.310.

Anonymous. "Dioxin Aftermath," Chemical Week, Vol. 120, No. 22,  
June 1, 1977. p. 15.

Anonymous. " TCDD- Seveso," Naturwissenschaften, Vol. 64, No. 2, 1977.  
p. 87.

Editorial. " Accidental Contamination from Tetrachlorodibenzo-p-Dioxin.  
Considerations on the IC-ESA Incident," Medicine in the Workplace,  
Vol. 67, No. 5, Sept.-Oct., 1976. p. 371.

Hay, A. " Identifying Carcinogens," Nature, Vol. 269, No. 5628,  
October 6, 1977. p. 468.

Anonymous. " Seveso Pow," Nature, Vol. 268, NO. 5619, August 4, 1977.  
p. 395.

Hay, A. " Toxic Cloud Over Seveso," Nature, Vol. 262, August 19, 1976.  
p. 636.

Hay, A. " What Caused the Seveso Explosion?" Nature, Vol. 273, No. 5668,  
June 22, 1978. p. 582.

McCinty, Lawrence. "Too Late to Clean Up Seveso's Poisoned Land," New Scientist, Vol. 72, 1976. p. 260.

Giorgini, B. "Return to Seveso," La Recherche, Vol. 9, No. 85, January, 1978. p. 71.

Farks, Marion. "An Environmental Calamity: The Seveso Case," EPA Journal, September, 1978. p. 11.

Breuer, Georg. "Seveso- A Year After the Catastrophe," Naturw. Wissch. Vol. 30, No. 7, 1977. p. 256.

Jauber, Allain. "Le Poison de Seveso," La Recherche, Vol. 7, No. 71, October, 1976. p. 368.

Anonymous. "Seveso," The Lancet, Vol. II, No. 7980, August 7, 1976. p. 297.

Hawkes, Nigel. "Seveso Revisited," Science, Vol. 197, No. 4299, July, 1977. p. 143.

Walsh, John. "Seveso: The Questions Persist Where Dioxin Created a Wasteland," Science, Vol. 197, September 9, 1977. p. 1064.

Garattini, S. "TCDD Poisoning at Seveso," Biomedicine, Vol. 26, No. 1, 1977. p. 28.

Dewse, C.D. "Dangers of TCDD," (letter) The Lancet, Vol. II, No. 7981. August 14, 1976. p. 363.

Anonymous. "On the Seveso Accident," A Technical Report from the Quarterly Report of Pollution Atmospheric, July- Sept., 1976, No. 71. p. VIII, 221-222.

Rappe, C. "Seveso: Seven Months After the Catastrophe," Kemisk Tidskrift, Vol. 89, No. 1-2, 1977. p. 24.

Schulz, K.H. "Dermatologic Aspects of Dioxin Intoxication," Zeitschrift für Hautkrankheiten, Vol. 52, No. 6, March 15, 1977. p. 198.

Fara, G.M. "Seveso: Studies on Teratogenic and Other Chronic Effects of Chemical Pollutants Following an Accident in a Chemical Plant," Teratology, International J. of Abnormal Devel., Vol. 16, Aug.-Dec., 1977. p. 365.

Gianotti, F. "Chloracne au Tetrachloro-2,3,7,8- dibenzo-p-Dioxine Chez Les Enfants," Ann. Dermatol. Venerol., Vol. 104, 1977. p. 825.

Dolphin, R.J. and F.W. Willmott. "Separation of Chlorinated Dibenzop-dioxins From Chlorinated Condensers," Journal of Chromatography, Vol. 149, 1978. p. 161.

Crosby, D.G. "Conquering the Monster- The Photochemical Destruction of Chlorodioxins," Paper presented at the 174th National Meeting of the American Chemical Society, Chicago, Illinois, August 30, 1977.

Bertoni, G., Brocco etc. "Gas Chromatographic Determination of 2,3,7,8-Tetrachlorodibenzodioxin in the Experimental Decontamination of Seveso Soil by Ultraviolet Radiation," Analytical Chemistry, Vol. 50, No. 6, May, 1978. p. 732.

Camoni, I., DiMuccio, etc. "Communication on TCDD Determination," Rapp. Istisan, Vol. 3, 1977. p. 1-25.

Fuller, John G. "The Poison that Fell From the Sky," Will be published by Random House, Inc, New York. (Condensed in Reader's Digest Book Section.

Tuchmann-Duplessis, H. M.D. "Embryo Problems Posed by the Seveso Accident: Le Concours Medical, Vol. 44, November 26, 1977.

Whiteside, Thomas. "The Pendulum and the Toxic Cloud," The New Yorker, July 25, 1977. p. 30.

Reggiani, G. "Medical Problems Raised by the TCDD Contamination in Seveso, Italy," Paper presented at the 5th International Conference on Occupational Health in the Chemical Industry, San Francisco, Ca. September 5-10, 1977.

Whiteside, Thomas. "Contaminated," The New Yorker, September 4, 1978.

Wasson, J.S., Huf and Loprieno. "A Review of the Genetic Toxicology of Chlorinated Dibenzo-p-dioxins," Mutation Research: Reviews in Genetic Toxicology, Vol. 47, No. 3/4, 1977/1978. p. 141.

Canonica, L. "Seveso: Considerations and Comments," La Clinica e l'Inferno, Vol. 59, No. 2, 1977. p. 87.

Jaraczewska, W. and Z. Myslak. "TCDD (Dioxine) Toxicity," Medycyna Pracy, Vol. 29, No. 1, 1975. p. 59.

Dr. David Severn

Kearney, Woolson, Isensee, Helling "Tetrachloro-dibenzodioxin in the Environment: Sources, Fate and Decontamination" Environmental Health Perspectives. 1973. p. 273.

Matsumura & Benezet. "Studies on the Bioaccumulation and Microbial Degradation of 2,3,7,8-Tetrachlorodibenzo-p-dioxin" Environmental Health Perspectives 1973. p. 253.

Durham & Wolfe. "Measurement of the Exposure of Workers to Pesticides." Bull. Wld. Health Org. 1962. p. 75.

Wolfe, Dunham, Armstrong. "Exposure of Workers to Pesticides." Archives of Environmental Health, 1967. p. 622.

Ramsey, Lavy, Braun. "Exposure to Forest Workers to 2,4,5-T Exposure of Forest Workers." August 30 to October 3. 1978. Project Completion Report to National Forest Products Association. 2/14/79

"Chlorodioxins in Pesticides, Soils and Plants", Helling, 1973.

"Persistence and Metabolism of Chlorodioxins in Soils", Kearney, 1972.

"Studies on Bioaccumulation . . .", Matsumura, 1973.

"Fate of 2,3,7,8 Tetrachloro-dibenzo-p-Dioxin. . .", Ward & Matsumura, 1978.

Meselson, M., O'Keefe, P.W. and Baughman, R. (1978) The evaluation of possible health hazards from TCDD in the environment. In: Symposium on the Use of Herbicides in Forestry, Arlington, Virginia, February 21-22, 1978.

Allen, J.R., Barsotti, D.A. and VanMiller, J.P. (1977) Reproductive Dysfunction in Nonhuman Primates Exposed to Dioxins. Tox.Appl.Pharm. 41:177.

Kociba, R.J. Keyes, Beyer, etc. " Results of a Two-year Chronic Toxicity and Oncogenicity Study of 2,3,7,8- Tetrachlorodibenzo p- Dioxin in Rats." Toxicology and Applied Pharmacology, Vol. 46, 1978. p.279.

VanMiller, J.P., Lalich and Allen. " Increased Incidence of Neoplasms in Rats Exposed to Low Levels of 2,3,7,8- Tetrachlorodibenzo-p-Dioxin." Chemosphere, No.9,1977.p.537.

S. L. Schantz, D. A. Barsotti and J. R. Allen, Toxicological effects produced in nonhuman primates chronologically exposed to fifty parts per trillion 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD). (Abstract of Paper to be presented at the Eighteenth Annual Meeting of the Society of Toxicology on March 11-15, 1979.

Allen, J.R., J.P. VanMiller, etc. " Morphological Changes in Monkeys Consuming a Diet Containing Low Levels of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin" Food Cosmet Toxicol., Vol. 15, 1977. p. 401.

11

Thomas Ellwanger

Yates, Akesson, Contts. Drift Hazards Related to Ultra-Low-Volume and Diluted Sprays Applied by Agricultural Aircraft." Transactions of the Am. Soc. of Agric. Eng. 1967. p. 628.

Akesson & Yates. "Pesticides in the Air Environment."

Report to Congress/ Study and Summary/ Recommendations on Pesticide Application Methods and Ultra-Low Volumes. 1979



Dr. Bernard Smale

Mitchell, J.W., B.C. Smale, "Bioassay Plants," Analytical Methods for Pesticides and Foods I: 443-469. 1963

Leopold, Carl, Plant Growth and Development, McGraw-Hill 1964.

Klaingman, G.C. Weed Control as a Science. John Wiley & Sons. 1961

Dr. George Streisinger

- Allen, J.R. and L.A. Carstens, 1967. Light and electron microscopic observations in Macaca mulatta monkeys fed toxic fat. American Journal of Veterinary Research 28: 1513-1526.
- Baughman, R. (1974). Tetrachlorodibenzo-p-dioxin in the environment: High resolution mass spectrometry at the picogram level. Ph.D. dissertation, Harvard University.
- Harris, M.W., J. A. Moore, J.G. Vos, and B.N. Gupta, 1973. General Biological effects of TCDD in laboratory animals. Environmental Health Perspectives 5: 101-109.
- Kearney, P.C., E.A. Woolson, A.R. Insensee, and C.S. Helling, 1973. Tetrachlorodibenzodioxin in the environment: sources, fate and decontamination. Environmental Health Perspectives 5: 273-277.
- Neubert, D., P. Zens, A. Rothenwallner, and H. J. Merker, 1973. A survey of the embryotoxic effects of TCDD in mammalian species. Environmental Health Perspectives 5: 67-79.
- Schwetz, B.A., J. M. Norris, G. L. Sparschu, V.K. Rowe, P. J. Gehring, J. L. Emerson, and E. G. Gerbig, 1973. Toxicology of chlorinated dibenzo-p-dioxins. Environmental Health Perspectives 5: 87-99.
- Van Miller, J. P., R. J. Marlar, and J. R. Allen, 1976. Tissue distribution and excretion of tritiated tetrachlorodibenzodioxin in non-human primates and rats. Id. Cosmet. Toxicol. 14: 31-34.

Ames, B.N., W.E. Durston, E. Yamasaki and F.D. Lee. 1973.  
Carcinogens are mutagens: A simple test system combining liver homogenates for activation and bacteria for detection.  
Proc. Nat. Acad. Sci., U.S.A. 70: 2281-2285.

Gentile, J.M. and M.J. Plewa. 1975.  
A bio-assay for screening host-mediated proximal mutagens in agriculture.  
Mutation Res. 31: 317.

Kociba, R. J., P.A. Keeler, C. N. Park and P. J. Gehring. 1976.  
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD): Results of a 13 week oral toxicity study in rats.  
Toxicol. Appl. Pharmacol. 35: 553-574.

McCann, J., E. Choi, E. Yamasaki and B. Ames. 1975.  
Detection of carcinogens as mutagens in the Salmonella/microsome test: Assay of 300 chemicals.  
Proc. Nat. Acad. Sci., U.S.A. 72:5135-5139.

Meselson, M.S., A. H. Westing and J. D. Constable. 1971.  
Preliminary report of Herbicide Assessment Commission of the American Association for the Advancement of Science and background material relevant to presentations at the 1970 Annual Meeting of the AAAS.  
U.S. Congressional Record, 92nd Congress, 2nd Session, 118 (32): S 3226-3233, March 3, 1972.

Plewa, M.J. and J. M. Gentile. 1976.  
Mutagenicity of Atrazine: a maize-microbe bioassay.  
Mutation Res. in press (probably August, 1976 issue).

Rose, J. Q., J.C. Ramsey, T.H. Wentzler, R. A. Hummel, and P.J. Gehring. 1976.  
The fate of 2,3,7,8-Tetrachlorodibenzo-p-dioxin following single and repeated oral doses to the rat.  
Toxicol. Appl. Pharmacol. 36: 209-226.

Tomkins, D.J. and W.F. Grant. 1976.  
Monitoring natural vegetation for herbicide-induced chromosomal aberrations.  
Mutation Res. 36: 73-84.

Yoder, J., M. Watson and W.W. Benson. 1973.  
Lymphocyte chromosome analysis of agricultural workers during extensive occupational exposure to pesticides.  
Mutation Res. 21: 335-340.

- Allen, J. R., D. A. Busotti, J. P. Van Miller, L. J. Abrahamson, and J. J. Lalich. 1977. Morphological changes in monkeys consuming a diet containing low levels of 2,3,7,8-tetrachlorodibenzo-p-dioxin. *Food Cosmet. Toxicol.* 15: 401-410.
- Allen, J. R., and L. A. Carstens. 1967. Light and electron microscopic investigations in Macaca mulatta monkeys fed toxic fat. *Am. J. Vet. Res.* 28: 1513-1526.
- Baughman, R., and M. Meselson. 1973. Analytical method for detecting TCDD (dioxin): levels of TCDD in samples from Vietnam. *Environ. Health Perspect.* 5: 27-33.
- Blair, E. H., ed. 1973. *Chlorodioxins—Origin and Fate*. Advances in Chemistry Series 120, American Chemical Society, Washington, DC.
- Clark, D. E., J. S. Palmer, R. D. Radeleff, H. R. Crookshank, and F. M. Farr. 1975. Residues of chlorophenoxy acid herbicides and their phenolic metabolites in tissues of sheep and cattle. *J. Agric. Food Chem.* 23(3): 571-578.
- Crosby, D. G., and A. S. Wong. 1973. Photodecomposition of 2,4,5-trichlorophenoxyacetic acid (2,4,5-T) in water. *J. Agric. Food Chem.* 21(6): 1052-1054.
- Davis, D. E. 1979. Herbicides in peace and war. *BioScience* 29:84, 91-94.
- Dougherty, R. C., and K. Piotrowska. 1976. Screening by negative chemical ionization mass spectrometry for environmental contamination with toxic residues: application to human urines. *Proc. Natl. Acad. Sci. USA* 75(6): 1777-1781.
- Environmental Health Perspectives*. 1973. Experimental Issue No. 5, 1-313. U.S. Department of Health, Education and Welfare, NIEHS, Research Triangle Park, NC.
- Environmental Protection Agency (EPA). 1978. Rebuttable presumption against registration and continued registration of pesticide products containing 2,4,5-T. *Fed. Reg.* 43(78): 17116-17157.
- Epstein, S. 1970. A family likeness. *Environment* 12(6): 16-25.
- Fahmy, O. G., and M. J. Fahmy. 1954. Cytogenetic analysis of the action of carcinogens and tumour inhibitors in *Drosophila melanogaster*. II. The mechanism of induction of dominant lethals by 2:4:6-tri (ethyleneimino)-1:3:5-triazine. *J. Genet.* 52: 603-619.
- . 1955. Cytogenetic analysis of the action of carcinogens and tumour inhibitors in *Drosophila melanogaster*. III. Chromosome structural changes induced by 2:4:6-tri (ethyleneimino)-1:3:5-triazine. *J. Genet.* 53: 181-199.
- Fitzgerald, C. H., C. L. Brown, and E. G. Beck. 1967. Degradation of 2,4,5-trichlorophenoxyacetic acid in woody plants. *Plant Physiol.* 42: 459-460.
- Gentile, J. J., and J. Plewa. 1976. Mutagenicity of atrazine: a maize-microbe bioassay. *Mutat. Res.* 38: 287-292.
- Gentile, J. M., E. D. Wagner, and M. J. Plewa. 1977. The detection of weak recombinogenic activities in the herbicides alachlor and propachlor using a plant activation bioassay. *Mutat. Res.* 48: 113-116.
- Grunow, W., and C. Bohme. 1974. Metabolism of 2,4,5-T and 2,4-D in rats and mice. (Translated from the German.) *Arch. Toxicol.* 32: 217-225.
- Helling, C. S., A. R. Isensee, E. A. Woolson, P. D. J. Ensor, G. E. Jones, J. R. Plimmer, and P. C. Kearney. 1973. Chlorodioxins in pesticides, soils, and plants. *J. Environ. Qual.* 2(2): 171-178.
- Herskowitz, I. H. 1956. Mutagenesis in mature *Drosophila* spermatozoa by "triazine" applied in vaginal douches. *Genetics* 41: 605-609.
- Isensee, A. R., and G. E. Jones. 1971. Absorption and translocation of root and foliage applied 2,4-dichlorophenol, 2,7-dichlorodibenzo-p-dioxin and 2,3,7,8-tetrachlorodibenzo-p-dioxin. *J. Agric. Food Chem.* 19(6): 1210-1214.
- . 1975. Distribution of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) in aquatic model ecosystem. *Environ. Sci. Technol.* 9(7): 668-672.
- Johnson, J. E. 1971. The public health implications of widespread use of the phenoxy herbicides and picloram. *BioScience* 21(17): 899-905.
- Kearney, P. C., E. A. Woolson, and C. P. Ellington, Jr. 1972. Persistence and metabolism of chlorodioxins in soils. *Environ. Sci. Technol.* 6(12): 1017-1019.
- Kearney, P. C., E. A. Woolson, A. R. Isensee, and C. S. Helling. 1973. Tetrachlorodibenzodioxin in the environment: sources, fates, and decontamination. *Environ. Health Perspect.* 5: 273-277.
- Lang, A., ed. 1974. *Effects of Herbicides in South Vietnam*. Summary and Conclusions. National Academy of Sciences, Washington, DC.
- Lang, M. L. 1972. Residues in milk and meat and safety to livestock from the use of phenoxy herbicides in pasture and rangeland. *Down Earth* 28(1): 12-20.
- Liang, G. H., and Y. T. S. Liang. 1972. Effects of atrazine on chromosomal behavior in sorghum. *Can. J. Genet. Cytol.* 14: 423-427.
- Meselson, M., P. O'Keefe, and R. Baughman. 1978. The Evaluation of Possible Health Hazards from TCDD in the Environment. Symposium on the use of herbicides in forestry, Arlington, VA. 21-22 February.
- Meselson, M. S., A. H. Westing, and J. D. Constable. 1972. Background material relevant to presentations at the 1970 meeting of the AAAS. *U.S. Congr. Rec.* 118: 6807-6813.
- Mrak, E. 1969. Report of the secretary's commission on pesticides and their relationship to environmental health. Ch. 8 in *Teratogenicity of Pesticides*. U.S. Department of Health, Education and Welfare, Washington, DC.
- Muranyi-Kovacs, I., G. Rudali, and J. Imbert. 1976. Bioassay of 2,4,5-trichlorophenoxyacetic acid for carcinogenicity in mice. *Br. J. Cancer* 33: 626-633.
- Murnik, M., and C. L. Nash. 1977. Mutagenicity of the triazine herbicides atrazine, cyanazine, and simazine in *Drosophila melanogaster*. *J. Toxicol. Environ. Health* 3: 691-697.
- Nickell, L. G. 1978. Plant growth regulators. *Chem. Eng. News* 56(41): 18-34.
- Norris, L. A. 1966. Degradation of 2,4-D and 2,4,5-T in forest litter. *J. Forest.* 64(7): 475-476.
- O'Keefe, P. W., M. Meselson, and R. W. Baughman. 1978. A neutral cleanup procedure for 2,3,7,8-tetrachlorodibenzo-p-dioxin residues in bovine fat and milk. *J. Assoc. Off. Anal. Chem.*, in press.
- Shadoff, L. A., R. A. Hummel, L. Lamparski, and J. H. Davidson. 1979. A search for 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) in an environment exposed annually to 2,4,5-trichlorophenoxyacetic acid ester (2,4,5-T) herbicides. *Bull. Environ. Contam. Toxicol.*, in press.
- Shafiq, M. T., H. C. Sullivan, and H. F. Enos. 1971. A method for determination of low levels of exposure to 2,4-D and 2,4,5-T. *Int. J. Environ. Anal. Chem.* 1: 23-33.
- Sharpe, K. 1973. *Microbial Degradation of Phenoxy Herbicides in Culture, Soil, and Aquatic Ecosystems*. Ph.D. Thesis. University Microfilms, Ann Arbor, MI.
- Smith, R. J. 1978. Dioxins have been present since the advent of fire, says Dow. *Science* 202: 1166-1167.
- Stroev, V. S. 1970. The cytogenetic activity of the herbicides atrazine, chloro-IPC and paraquat. *Genetika* 6: 31-37.
- Tung, T. T., T. T. An, N. D. Tam, P. H. Phiet, N. N. Bang, T. T. Bach, H. Van Son, K. D. Son. 1973. Le cancer primaire du foie au Viet-nam. *Chirurgie* 99: 427-436.
- U.S. Department of Agriculture (USDA), Agricultural Stabilization and Conservation Service. 1976. *The Pesticide Review 1975*. USDA, Washington, DC.

Van Miller, J. P., J. J. Lalich, and J. R. Allen. 1977. Increased incidence of neoplasms in rats exposed to low concentrations of 2,3,7,8-tetrachlorodibenzo-p-dioxin. *Chemosphere* 10: 625-632.

Westing, A. H. 1973. AAAS Herbicide Assessment Commission. *Science* 179: 1278-1279.

———. 1976. *Ecological Consequences of the Second Indochina War*. Stockholm International Peace Research Institute. Almqvist and Wiksell, Stockholm, Sweden.

———. 1978. Ecological considerations regarding massive environmental contamination with 2,3,7,8-tetrachlorodibenzo-p-dioxin. *Ecol. Bull* (Stockholm) 27: 285-294.

Whiteside, T. 1977. A reporter at large. The pendulum and the toxic cloud. *New Yorker* 25 July: 30-35.

———. 1978. Contaminated. *New Yorker* 4 Sept.: 34-31.

Wiese, A. F., and R. G. Davis. 1964. Herbicide movement in soil with various amounts of water. *Weeds* 12(2): 101-103.

Wong, A. S., and D. G. Crosby. 1978. Decontamination of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) by photochemical action. In F. Cattabeni, A. Cavallaro, and G. Galli, eds. *Dioxin: Toxicological and Chemical Aspects*. S. P. Medical and Scientific Books, New York.

Wuu, K. D., and W. F. Grant. 1966. Morphological and somatic chromosomal aberrations induced by pesticides in barley (*Hordeum vulgare*). *Can. J. Genet. Cytol.* 8: 481-501.

———. 1967. Chromosomal aberrations induced by pesticides in meiotic cells of barley. *Cytologia* 32: 31-41.

Dr. Arnold Aspelin

Draft of Renewable Resources Assessment. Chapter 6,  
Timber (received from USFS 01/31/79)

Industrial Vegetation Management, Dow, Vol. 2.,  
November 3, 1970.

Professional Markets for Pesticides and Fertilizers  
[Proprietary]

Lawn, Garden and Houseplant Chemicals, Consumer  
Industry Analysis [Proprietary]

Personal Communication, D. Graham, 2/7/79.

Production Distrib. & Use and Env. Impact Potential  
of Selected Pesticides.

Personal Communication, Association of American Rail-  
roads, Washington, D.C., 3/2/79.

Personal Communication, U.S. DOT, Office of Highway  
Statistics, 3/2/79.

U.S. Dept. of Energy, Energy Information Administration.  
Monthly Energy Review, Washington, D.C., Jan., 1979.

Personal Communication, Herbicide prices, 12/18/78,  
from Harvey Holt via Herman Delvo.

U.S. EPA, 1975, Suspect Chemical Review Silvex, Draft.

List of principal Railroads in the United States.

U.S. Dept. of Commerce, Bureau of the Census, June, 1978.  
Population Estimates and Projections.

Tegelman, D., 1975, Silvex Consumption and Use, Draft,  
U.S. EPA.

Price list of turf herbicides from Economic Analysis  
Branch files, 1977-78-79.

\*Lists of Alternatives for Silvex and 2,4,5-T, 2/28/79.

A compilation of chemicals that could be used as alternative herbicides for Silvex in aquatic sites, and both 2,4,5-T and Silvex in forestry, pastures, and rights-of-way. Delivered to B. Brown, A. Aspelin, J. Touhey and S. Sherman on 2/28/79.

Definitions of pastures and rangelands. Memo from Chief, PSB to B. Brown, Project Manager for Silvex, 2/13/79.

Prepared by PSB staff to provide the laymen with a general definition of pastures and rangeland.

Distribution of Silvex-Containing Products Among Registrants, by Product Type, delivered 2/27/79.

Shows number of commercial and consumer products for each type (granular, with fertilizer, etc.) and groups the registrants by type of active ingredients incorporated into products distributed in 1976. Not a definitive list of registrants because some retailers' products were included under their formulators to more closely reflect the sources.

Matrix Presentations of the Registered Uses of Silvex Against the Same or Comparable Uses of Alternates. Delivered to B. Brown 2/27/79.

Registered uses of silvex are compared with alternates with the same or comparable uses in a matrix format. This matrix was from the Suspect Chemical Review of Silvex, 1976, and was updated by PSB staff.

Silvex Suspect Chemical Review, 1976. Memo from Chief, PSB to Acting Deputy Director, Benefits and Field Studies Division, 2/6/79.

Review by CED, OPP, EPA to provide comprehensive scenario on extent and significance of the health and environmental hazards associated with the registered uses of silvex. The primary area of concern being the contaminant, tetrachlorodioxin (TCDD).

The Biologic and Economic Assessment of 2,4,5-T.  
A Report of the USDA-States-EPA 2,4,5-T RPAR Assessment Team,  
February 15, 1979.

Application -  
OM: Herd  
The biologic and economic role of 2,4,5-T in: timber production, use on pasture and rangelands, management of rights-of-way, and production of rice. In addition, information is provided on the behavior and impact of 2,4,5-T and TCDD in the environment and accidents due to application of herbicides and the use of mechanical hand labor and burning for brush control.

The draft and final reports on 2,4,5-T were provided to C.R. Lewis, a member of the Assessment Team, by L.A. Harris, Co-Leader of the USDA-States-EPA 2,4,5-T RPAR Assessment Team.

Silvex Data. Memo from Chief, PSB to Chief, EFB, 2/13/79.

Tabular summaries of prerequisite exposure data of the Silvex uses on forestry, rangeland and rights-of-way. Information is also provided on formulation, application and applicators.

Second installment of Silvex Data. Memo from Chief, PSB to H. Boyd, EFB, 2/14/79.

Tabular summaries of prerequisite exposure data of the Silvex uses on aquatic, turf and crop areas. Information is also provided on formulation, application and applicators.

---

Farmer's Use of Pesticides in 1971: Extent of Crop Use  
Economic Research Service, U.S.D.A. Ag. Econ. Report  
#268 September 1975.

Pesticide Application Equipment Owned by Farmers: 48 States  
Economic Research Service, U.S.D.A., Ag. Econ. Report. #161  
May 1969.

Farmer's Expenditures for Pesticides in 1964. Economic  
Research Service, U.S.D.A., Ag. Econ. Report #106  
January 1967.

Extent of Farm Pesticide Use on Crops in 1966. Economic  
Research Service, U.S.D.A., Ag. Econ. Report #147.

Farmer's Pesticide Expenditures for Crops Livestock, and  
Other Selected Uses in 1964. Economic Research Service,  
U.S.D.A., Ag. Econ. Report #145.

Farmer's Expenditures for Custom Pesticide Services, 1971.  
by Walter L. Ferguson, Economic Research Service, U.S.D.A.,  
Ag. Econ. Report #114. September 1975.



Pesticide Usage Survey of Agricultural, Governmental, and Industrial Sectors in the United States, 1974.

Julian E. Keil, Samuel T. Caldwell, C. Boyd Leadholt  
EPA Contract 68-01-1950 June 1, 1977

The Biologic and Economic Role of 2,4,5-T in the Production of Rice, Timber, and Forage and the Management of Rights-of-Way in the United States. A Report of the USDA-EPA-STATES 2,4,5-T RPAR Assessment Team (OPP-30000126) Corvallis  
June 15, 1979.

The Biologic and Economic Assessment of 2,4,5-T. A Report of the USDA-EPA-STATES 2,4,5-T RPAR Assessment Team.  
February 15, 1979.

Printout of Total Usage for 2,4,5-T

Printout of Pest Tabulation for 2,4,5-T.

Farmers Use of Pesticides in 1971: Quantities. USDA Economic Research Service, Ag. Econ. Report #252 July 1974

Farmers Use of Pesticides in 1976. Theodore R. Eichers, Paul A. Andrilonas, and Thelma W. Anderson. U.S.D.A. Economics, Statistics, and Cooperative Service. Ag. Econ. Report #418 December 1978.

Agricultural Statistics 1978 USDA

Agricultural Statistics 1977 USDA

A closer look at the Pesticide Question for Those Who Want the Facts. Dow

The Pesticide Review 1976. USDA Agricultural Stabilization and Conservation Service July 1977.

EPA Index to Inventory of State Pesticides Recommendations December 15, 1978. Prepared by Tracor-Jitco, Rockville, Maryland Contract #68-01-4989.

1978 Chemical Crop Protection Guide. Land-o-Lakes Felco.

Rolling Plains Economic Program Report. College of Agriculture, Texas Agricultural Extension Service, Texas Agricultural Experiment Station, Texas A & M University.

Report on 2,4,5-T: A Report of the Panel on Herbicides of the President's Science Advisory Committee. Executive Office of the President, Office of Science and Technology, March 1971.

Restricting the Use of Phenoxy Herbicides: Costs to Farmers Economic Research Service and Agricultural Research Service, U.S.D.A., Ag. Econ. Report #194 November 1970.

Restricting the Uses of 2,4,5-T: Costs to Domestic Users. Economic Research Service and Agricultural Research Service, U.S.D.A., Ag. Econ. Report #199.

Farmer's Use of Pesticides in 1971: Expenditures. Economic Research Service, U.S.D.A., Ag. Econ. Report #296 November 1975.

1974 Census of Agriculture. Vol. IV Special Reports. Part 1. Graphic Summary. U.S. Department of Commerce, Bureau of the Census April 1, 1978.

1974 Census of Agriculture. Vol. I Part 51 United States Summary and State Data. U.S. Department of Commerce, Bureau of the Census. December 1977.

Pesticide Usage Survey of Agricultural, Governmental, and Industrial Sectors in the United States, 1974.

Julian E. Keil, Samuel T. Caldwell, C. Boyd Loadholt  
EPA Contract GU-01-1950 June 1, 1977

The Biologic and Economic Role of 2,4,5-T in the Production of Rice, Timber, and Forage and the Management of Rights-of-Way in the United States. A Report of the USDA-EPA-STATES 2,4,5-T RPAR Assessment Team (OPP-30000126) Corvallis June 15, 1979.

The Biologic and Economic Assessment of 2,4,5-T. A Report of the USDA-EPA-STATES 2,4,5-T RPAR Assessment Team. February 15, 1979.

Printout of Total Usage for 2,4,5-T

Printout of Pest Tabulation for 2,4,5-T

Farmers Use of Pesticides in 1971: Quantities. USDA Economic Research Service, Ag. Econ. Report #252 July 1974

Farmers Use of Pesticides in 1976. Theodore R. Eichers, Paul A. Andrilenas, and Thelma W. Anderson. U.S.D.A. Economics, Statistics, and Cooperative Service. Ag. Econ. Report #418 December 1978.

Agricultural Statistics 1978 USDA

Agricultural Statistics 1977 USDA

A closer look at the Pesticide Question for Those Who Want the Facts. Dow

The Pesticide Review 1976. USDA Agricultural Stabilization and Conservation Service July 1977.

EPA Index to Inventory of State Pesticides Recommendations December 15, 1978. Prepared by Tracor-Jitco; Rockville, Maryland Contract #68-01-4989.

1978 Chemical Crop Protection Guide. Land-o-Lakes Felco.

Rolling Plains Economic Program Report. College of Agriculture, Texas Agricultural Extension Service, Texas Agricultural Experiment Station, Texas A & M University.

Early Brush Control Promotes Growth of Ponderosa Pine Planted on Bulldozed Site. by J. R. Bentley, Stanley B. Carpenter, and David A. Blakeman. U.S.D.A., Forest Service, Research Note PSW-238. 1971.

Repeated Spraying to Control Four Coastal Brush Species. R. E. Stewart. U.S.D.A., Forest Research Note PNW-238. 1974.

Repeated Spraying to Control Southwest Oregon Brush Species. H. Gratkowski. U.S. Forest Service, Research Paper PNW-59. 1968.

Effects of Herbicides on Some Important Brush Species in Southwestern Oregon. H. Gratkowski. U.S. Forest Service Research Paper 31. March 1959.

Project 3. Undesirable Woody Plants. Steven R. Radosevich, West. Soc. Weed. Sci. Res. Prog. Rep. 1975.

Ecological Considerations in Brush Control. H. Gratkowski. In: Herbicides and Vegetation Management in Forests, Ranges, and Non-Croplands. School of Forestry, Oregon State University, Corvallis, Oregon. 1967.

Releasing Douglas-Firs from Varnishleaf Ceanothus. by H. Gratkowski and P. Lauterbach. Journal of Forestry. March 1974, pp. 150.

Constructive Use of Herbicides in Forest Resource Management. Michael Newton, Journal of Forestry Vol. 73, No. 6, June 1975.

Herbicidal Drift Control: Aerial Spray Equipment, Formulations, and Supervision. H. Gratkowski. U.S.D.A., Forest Service, General Technical Report PNW-14. 1974.

Reclamation of Non sprouting Greenleaf Manzanita Brushfields in the Cascade Range. H. Gratkowski and Lyle Anderson. U.S.D.A., Forest Service, Research Paper PNW-72. 1968.

Foliage Sprays for Site Preparation and Release from Six Coastal Brush Species. R. E. Stewart. U.S.D.A., Forest Service, Research Paper PNW-172. 1974.

Repeated Spraying to Control Four Coastal Brush Species. R. E. Stewart. U.S.D.A., Forest Service, Research Note PNW-238. November 1974.

Letter to Mr. C. D. Mattson, EPA-C & E, OPP (WH-568)  
401 M St., S.W., Washington, D.C. 20460 from  
Timothy R. Plumb, Plant Physiologist, U.S.D.A., Forest  
Service. October 31, 1975.

Silvicultural Use of Herbicides in Pacific Northwest  
Forests. by H. J. Gratkowski. U.S.D.A., Forest Service  
General Technical Report. PNW-37. 1975.

Herbicides in Forestry. Proceedings John S. Wright  
Forestry Conference 1975. Dept. of Forestry and Natural  
Resources, Purdue University, West Lafayette, In.

Proceedings. Site Preparation Workshop West Alexandria,  
La., April 27, 28, 1977. by Southeastern Area, State and  
Private Forestry, Southern Forest Experiment Station,  
Kisatchie National Forest and U.S.D.A., Forest Service.

Forest Statistic of the U.S., 1977. (Review Draft of All  
Data Subject to Revision) U.S.D.A., Forest Service.

The Nation's Renewable Resources - An Assessment. 1975.  
U.S.D.A., Forest Service, Forest Resource Report No. 21.

The Outlook for Timber in the United States. U.S.D.A.,  
Forest Service, FRP-20, October 1973.

Site Preparation: Why and How by William E. Balmer,  
Hamlin L. Williston, George E. Dasmeyer, and Carl Pierce.  
Forest Management Bulletin June 1976.

Journal of Forestry, March 1973.

Aerial Spray Tests of Drift Control Additives for  
Herbicides in Oil and Oil-in-Water Carriers. by  
H. Gratkowski and R. Stewart. Proceedings of the Western  
Society of Weed Science. Vol. 29, Portland, Or. U.S.D.A.,  
Forest Service.

A Study of Economic Management Opportunities to Increase  
Timber Supplies in the Southeast United States. by  
George F. Dutrow. FOREM. Spring 1978.

The Economics of Converting Red Alder to Douglas Fir.  
by James G. Yoho, Daniel F. Chappelle, Dennis L. Schweitzer,  
U.S.D.A., Forest Service. Research Paper PNW-88,  
Portland, Or. 1969.

Mid-Summer Foliage Sprays on Salmonberry and Thimbleberry.  
by H. Gratkowski. U.S.D.A., Forest Research Note PNW-171.  
December 1971.

Fuelbreaks and Other Fuel Modification for Wildland Fire Control. U.S.D.A. Forest Service, Agricultural Handbook No. 499, April 1977.

Chemical Control of Brush Regrowth on Fuel-Breaks by T. R. Plumb, J. R. Bentley and V. E. White. State of California, Department of Conservation, Division of Forestry, Los Angeles County Fire Department and U.S. Department of Agriculture, Pacific Southwest Forest and Range Experiment Station, Forest Service, Region 5. Fuel-Break Report No. 11, December 11, 1963.

Seasonal effects of Phenoxy Herbicides on Ponderosa Pine and Associated Brush Species. by H. J. Gratkowski, Forest Science. Vol. 23, No. 1, March 1977. pp. 2-12.

Chemical Control of Vegetation in Southern Forests. by H. L. Williston, W. E. Balmer and L. P. Abrahamson, Forest Management Bulletin. November 1976.

Chemical Site Preparation in the Inland Empire. by R. E. Stewart, Project Leader, Forestry Sciences Laboratory, Pacific Northwest Forest and Range Experiment Station, Forest Service, U.S.D.A., Corvallis, Or. in Tree Planting in the Inland Northwest, Conference Proceedings at Washington State University, Pullman, Wa., February 17-19, 1976.

Use of Herbicides on Forest Lands in Southwestern Oregon. by H. J. Gratkowski. U.S.D.A., Forest Service Research. Note, Pacific Northwest Forest and Range Experiment Station, No. 217, Portland, Or. December 1961.

Personal Communication, Joseph Dose, Division of Forestry, BLM/USD1, 2/28/79.

Personal Communication, Joseph Dose, Division of Forestry, BLM/USD1, 2/23/79.

Personal Communication, Gordon Baker, 11/7/75.

Silvex Prerequisite Exposure Data for Forests.

Veg. Mngt. w/Herbicides - Western Oregon, FEIS/BLM/USD1-78 Vols. 1 & 2.

Personal Communication, Harvey Holt, Dept. of Forestry, Purdue University, 2/14/79.

The Toxicology, Environmental Fate, and Human Risk of Herbicide Orange and Its Associated Dioxin. USAF, OEHHL, Technical Report TR-78-92. October 1978.

Production, Distribution, Use and Environmental Impact Potential of Selected Pesticides. 1974. Office of Pesticide Programs, EPA.

Memos Prior to January 1977.

Maps showing 2,4,5-T use in commercial forest land, 1/15/79.

Maps (four) concerning approximate acreage of commercial U.S. forest land, pounds used, and percentage of forest land treated with 2,4,5-T. The main source of information was the Biologic and Economic Assessment of 2,4,5-T. February, 1979. Draft and Final Reports. USDA-States-EPA Assessment Team.

Budbreak Sprays for Site Preparation and Release from Six Coastal Brush Species. R. E. Stewart. U.S.D.A., Forest Service, Research Paper PNW-176. 1974.

Weed Control Handbook 1975. Cooperative Extension Service, College of Agriculture, Washington State University; Pullman, Washington

The Pacific Coast and Northern Rocky Mountain Region. H. Gratkowski, D. Hopkins, and P. Lauterbach. Journal of Forestry Vol. 71. No. 3, March 1973.

Chemical Weeding and Release of Conifers in Southwestern Oregon. P. A. Theisen. In: Herbicides and Vegetation Management in Forests, Ranges, and Non Crop Lands. School of Forestry, Oregon State University, Corvallis, Oregon.

Chemical Weeding and Release of Conifers in Western Oregon. P. G. Lauterbach. In: Herbicides and Vegetation Management in Forests, Ranges, and Non Crop Lands. School of Forestry, Oregon State University, Corvallis, Oregon.

The Biologic and Economic Role of 2,4,5-T in the Production of Rice, Timber and Forage and the Management of Rights-of-Way in the United States A Draft Report of the USDA-EPA-States 2,4,5-T RPAR Assessment Team. Corvallis, Oregon, January 15, 1979.

John J. Cameron  
John W. Anderson

Cameron, John J. and Anderson, John W. 1978. Results of the Stream Monitoring Program Conducted During FY 1977, Herbicide Spray Project, Coos Bay District. Bureau of Land Development, United States Department of the Interior.



Exhibits lists for the following witnesses will be provided with their witness statements:

Dr. Frederick Kutz  
Mr. Donald Marlowe  
Dr. William Loy  
Mr. Allen Pumphrey  
Ms. Kathleen O'Hagan  
Ms. Gisella Green  
Mr. Howard Horowitz  
Mr. Edwin Johnson

Respectfully submitted,

*Michael S. Winer/ap*

Michael S. Winer  
Deputy Associate General Counsel  
Environmental Protection Agency

April 12, 1979

APR 13 1979

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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In re Emergency Suspension Orders )  
for 2,4,5-T and Silvex )  
.....

FIFRA Docket Nos.  
409, 410

SUBMISSION OF RESPONDENT ON CROSS-EXAMINATION

Michael S. Winer  
Deputy Associate General Counsel  
Environmental Protection Agency  
Kevin Lee  
Timothy Backstrom

April 12, 1979

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

In re Emergency Suspension Orders )  
for 2,4,5-T and Silvex )

FIFRA Docket Nos.  
409, 410

SUBMISSION OF RESPONDENT ON CROSS-EXAMINATION

I. General Overview

Pursuant to the Hearing Panel's order of April 4, 1979 Respondent EPA hereby submits its tentative designation of the registrants witnesses for whom it believes it will request cross-examination, a statement of the need for such cross-examination, and an estimate of the time such cross-examination will require.

It is important that the Panel understand that the following outline of the Agency's hearing plans is extremely tentative. In the absence of a witness statement, it is not possible to determine, with any degree of confidence, how critical a given witness will be or how long cross-examination might take. It is our experience that the number or identity of exhibits is not a valuable guide to the necessity or length of cross-examination. Indeed, even the identity of the witness sheds little light on these questions. It is only through substantive written submission which provide reasonable notice as to the critical points upon which the witness will testify that reasonable estimates of the need for and length of cross-examination can be formulated. Even then, the length of the

cross-examination may be difficult to estimate because the degree of cooperation and forthrightness varies among witness. In short, we believe that the estimates which we are now providing to the hearing panel are extremely crude and may bear little relationship to the ultimate course of the hearings.

The Panel has asked for a brief statement of the likely benefit of cross-examination. This also poses a problem due to the limited information available to us regarding the actual content of registrants' general direct testimony. As a general matter we are familiar with Dow's theory of their case, but we cannot reliably predict which evidence Dow will submit in support of their position. We are even less familiar with the direct case which the other active parties intend to present. Since it is unlikely that registrants will present witnesses who will agree with the Agency position on any major issue, we can predict that we will disagree with the thrust of the testimony of registrants' witnesses. It follows that we will desire cross-examination of these witnesses in order to demonstrate that they have not met their burden of persuasion.

We do not mean to imply by the foregoing that we will, in fact, necessarily ask to cross-examine every witness. Once we have actually seen the proposed testimony we may be in a position to waive cross-examination on some occasions, particularly if the direct testimony of a given witness is irrelevant and unduly repetitive. Indeed, due to the time constraints we will make every effort to waive cross-examination as frequently as possible.

We are mindful of the dilemma of the Hearing Panel insofar as it must make some preliminary allocation of time between the opposing parties. It is our experience that an allocation of time for cross-examination, in the absence of a review of actual witness statements, can best be made by comparing the number of witnesses opposing parties intend to present. It will no doubt be necessary to make adjustments and set priorities during the course of the hearings. However, we believe that a sound initial estimate can be made by allocating time for cross-examination in proportion to the number of opposing witnesses.

Finally, it is important to emphasize the need to reserve some time for rebuttal. The Agency will need to present a brief rebuttal case following conclusion of the registrants direct case. Rebuttal is an absolutely indispensable component of the Agency's presentation because it is its only opportunity to introduce evidence in response to the registrants direct presentation. Because the Agency introduces its direct evidence first, registrants are able in their direct case to respond to every point raised by the Agency. Rebuttal provides a similar opportunity for the respondent, and the applicable section of the EPA Rules of Practice, 40 CFR § 1674.80(a), provides that the party making the initial evidentiary presentation is entitled to rebuttal. Therefore, respondent requests that the panel allocate at least 3 days for rebuttal introduction of evidence by the Agency at the conclusion of the last phase of registrants'

direct case. We agree with Dow that "five days for the Panels' witnesses is probably much more time than is necessary" and that the Panel should thus "limit itself to two days and should reserve several days for rebuttal testimony." Dow Direct Evidence Submission, at 3.

## II. Anticipated Benefits of and Preliminary Estimates of Time Needed for Cross-examination

The estimates of the time which EPA will require for cross-examination of opposing witnesses which follow are based on the Hearing Panel's current intention to afford all active parties only twenty-two days for presentation of evidence. We agree with Dow that twenty-two days is not likely to be sufficient for the parties' presentation of evidence and cross-examination." Dow Direct Evidence Submission, at 3. However, we believe that the inevitable difficulties which will be associated with the current allocation of remaining hearing time can only be aggravated by the excessive oral direct testimony which Dow has requested. Moreover, Dow's intention to present such a large number of witnesses enhances the already considerable potential for repetitive testimony. Respondent will submit separate pleadings addressing these issues prior to the third pre-hearing conference.

The estimates which follow reflect our basic conviction that the interests of fundamental fairness will be best served if the time accorded each party for cross-examination is proportionate to the number of opposing witnesses. Thus, any reduction in the number of opposing witnesses which the petitioners will present will enable a corresponding adjustment in the portion of the total available time required for cross-examination of such witnesses.

We have assigned each opposing witness to an evidentiary category which appears to best describe his area of expertise and intended testimony. These categories were created to assist the Panel in setting priorities for scheduling of testimony. We recognize that many of these witnesses will testify on matters in more than one of the following categories.

A. Toxicological Effects

On the basis of the prior comments by Dow and other registrants, and the accompanying exhibits, EPA expects the proposed witnesses on risk to challenge the Administrator's findings that 2,4,5-T, silvex, and/or TCDD have carcinogenic and adverse reproductive effects in test animals. In view of the vast literature which shows that these chemicals do in fact produce such effects in test animals, EPA expects to request time as indicated to cross-examine the following witnesses in order to demonstrate that the registrants' contentions have insufficient merit to sustain their statutory burden of persuasion.

Dow Witnesses

Perry J. Gehring - five hours  
Ray Harbison - two hours  
Richard J. Kociba - three and one-half hours  
Colin N. Park - three hours  
John C. Ramsey - one and one-half hours  
Bernard A. Schwetz - three hours  
H. Tuchmann-Duplessis - four hours  
Philip G. Wantanabe - one and one-half hours

Other Witnesses

Harvey Warnick (Chevron) - one hour



B. Exposure

On the basis of the prior comments by Dow and other registrants, and the accompanying exhibits, EPA expects the proposed witnesses on risk to challenge the Administrator's findings that use of 2,4,5-T and silvex on pastures, timber, and rights-of-way leads to exposure to these chemicals which creates a risk of carcinogenic and adverse reproductive effects in humans. In view of information showing that use of these pesticides results in dissemination to the environment and to places of human habitation and work, EPA expects to request time as indicated to cross-examine each of the following witnesses in order to demonstrate that the registrants' contentions have insufficient merit to sustain their statutory burden of persuasion.

Dow Witnesses

Norman Akesson - two hours  
R. W. Bovey - one and one-half hours  
Werner H. Braun - one and one-half hours  
Donald Crosby and/or Anthony Wong - two and one-half hours  
Fred Decker - one and one-half hours  
Milton E. Getzendaner and/or David J. Jensen - two hours  
Byland R. Johns - one and one-half hours  
Donald Morehouse - one and one-half hours  
Michael Newton - one and one-half hours  
Louis Shadoff - one and one-half hours  
James M. Witt - one and one-half hours  
➤ Alvin Young - two hours

Other Witnesses

Richard Cavalli (Chevron) - two hours  
J. David Nickerson (Agri-Chem) - two hours  
Kevin Foley (Andersons') - one hour

C. Alsea II and Other Epidemiological Evidence

On the basis of the prior comments by Dow and other registrants, and the accompanying exhibits, EPA expects the proposed witnesses to challenge the Administrator's findings that the Alsea II study, considered in conjunction with data on animal toxicity and data on exposure, indicates that the use of 2,4,5-T and silvex create a risk of adverse reproductive effects in humans. In view of analyses showing that there are excess miscarriages in the Alsea area relative to the control area, a finding which is corroborated by the data on animal toxicity and human exposure, EPA expects to request time as indicated to cross-examine each of the following witnesses in order to demonstrate that the registrants' contentions have insufficient merit to sustain their statutory burden of persuasion.

Dow Witnesses

Philip D. Darney - one and one-half hours  
Thomas Downs - one and one-half hours  
Benjamin Holder - one and one-half hours  
Cecil B. Jacobsen - two hours  
Richard Jones - one and one-half hours  
Steven H. Lamm - five hours  
Nathan Mantel - three hours  
Kenneth R. Niswinder - one and one-half hours  
Logan Norris - two hours

D. Benefits

On the basis of the prior comments by Dow and other registrants, and the accompanying exhibits, EPA expects the proposed witnesses to challenge the Administrator's findings

that a temporary suspension will not result in unacceptable adverse impacts. In view of information which demonstrates that viable alternatives are available and that a temporary interruption of application will have little lasting impact, EPA expects to request time as indicated to cross-examine each of the following witnesses in order to demonstrate that the registrants' contentions have insufficient merit to sustain their statutory burden of persuasion.

Dow Witnesses

William C. Bramble - one hour  
Boysie Day - one and one-half hours  
O. Hale Fletchall - one hour  
Carl Hendrickson - one hour  
Dennis Holewinski - one hour  
Garlyn O. Hoffman - one and one-half hours  
Harvey A. Holt - one hour  
Dayton L. Klingman - one hour  
B. Ted Kuntz - one and one-half hours  
Robert A. Nosse - one hour  
Clark Row - one hour  
Steven K. Shapiro - one hour  
Eugene Smith - one hour  
Ronald E. Stewart - one hour  
Michael Towns - one hour  
Ruffin Van Bossuyt, Jr. - one hour  
Clay Williams - one hour  
John D. Walstad - one hour  
Noel Yoho - one hour

Other Witnesses

D. P. Hogan (Chevron) - one and one-half hours  
Joseph White (Chevron) - one and one-half hours  
J. E. Wells, Jr. (Agri-Chem) - one and one-half hours  
Dwight Habermehl (Old Fort, Imperial) - one hour  
Gene Currie (Old Fort, Imperial) - one hour  
Ronald A. Meier (Andersons') - one hour

Respectfully submitted,

*Michael S. Winer*  
Michael S. Winer  
Kevin Lee  
Timothy Backstrom  
Environmental Protection Agency

April 12, 1979

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing "Submission of Respondent on Cross-Examination" were hand-delivered or mailed first class postage prepaid, on April 12, 1979, to the following persons:

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April 12, 1979