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Review of Literature on Herbicides, Including Phenoxy Herbicides and Associated Dioxins

Volume IV
Annotated Bibliography of Recent Literature on Health Effects

Department of
Medicine and Surgery

VA Contract Number: V101(93)P-953

Review of Literature on Herbicides, Including Phenoxy Herbicides and Associated Dioxins

Annotated Bibliography of Recent Literature on Health Effects
Volume IV

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BIBLIOGRAPHY

Introduction

This volume is a bibliography of published and unpublished literature relevant to the human health effects of 2,4-D, 2,4,5-T, PCDD, cacodylic acid, and picloram that has become available since mid-1981. The citations are arranged alphabetically by author. Each citation is followed by a series of three-letter codes. These codes describe the information contained in the paper beginning with the health effects(s) or type of study and followed by the route of administration/exposure, the chemical, the species, and the type of report. Thus the coding MET TER INJ ORL DIO MUS ABS indicates that the article is an abstract (ABS) of a study of the metabolism (MET) and teratogenic effects (TER) that result from the parenteral (INJ) and oral (ORL) administration of a chlorinated dibenzo-p-dioxin (DIO) to mice (MUS). An alphabetical key for these codes is given in the table on the next page.

After the line of codes following each citation is a line that indicates those pages of the critical review (Volume 1) in which that document is discussed. Because most secondary sources, i.e., review articles, news reports, and commentaries, are not cited in the critical review, short narrative statements describing the contents of these documents are included in this bibliography.

KEY TO BIBLIOGRAPHIC CODES

ABS--abstract
ACN--chloracne
ACU--acute toxic effects
ADD--species other than those assigned specific codes
BRD--avian species
CAC--cacodylic acid
CAR--cancer
CEL--mammalian cells in culture
CHR--chronic toxic effects
COM--commentary
CVT--cardiovascular effects
CYT--cytotoxicity
24D--2,4-dichlorophenoxy acetic acid and its esters
DEM--dermal exposure
DIO--chlorinated dibenzo-p-dioxins including TCDD
DOG--dog
ENV--environmental exposure
ENZ--enzyme induction or inhibition
EPI--epidemiologic investigation
FSH--fish
GEN--genotoxicity including mutagenesis
GPG--guinea pig
HAM--hamster
HEM--hematological effects
HEP--hepatic effects other than ENZ
HUM--human
IMM--effects on the immune system
IMP--impurities in phenoxy herbicides other than PCDD, e.g., chlorinated dibenzofurans
INJ--exposure via injection
INL--inhalation exposure
IVT--in-vitro study
LET--lethality
MEC--mechanism of toxic action
MET--absorption, distribution, metabolism, storage, and excretion
MIC--microbial test system
MIS--study objective not otherwise classified
MKY--nonhuman primate
MUS--mouse
NEU--neurobehavioral effects
OCC--occupational exposure
OOG--target organ not otherwise specified
ORL--oral exposure
ORN--phenoxy herbicide formulations including agent orange
OTE--other route of exposure, e.g., egg painting
OTH--toxic effect not otherwise specified
PCT--porphyria cutanea tarda

KEY TO BIBLIOGRAPHIC CODES (continued)

PIC--picloram
PLA--plant species
RAB--rabbit
RAT--rat
REN--renal effects
REP--reproductive effects
REV--review article
SCR--subchronic toxic effects
SKN--skin effects other than chloracne
25T--2,4,5-trichlorophenoxyacetic acid and its esters
TER--teratogenic effects
UNS--unspecified route or means of exposure

BIBLIOGRAPHY

Anonymous. 1981a. Another call for a ban on 2,4,5-T. Chem. Week 128:23

25T HUM COM

This is a news report of a call by the International Federation of Chemical, Energy, and General Workers Union for a ban on 2,4,5-T.

Anonymous. 1981b. Dow study finds 2,4,5-T no pregnancy risk. Chem. Eng. News 59:6

EPI REP OCC DIO HUM COM

This is a comment on the study by Townsend et al. (1982).

Anonymous. 1981c. Dioxin: Teratogenicity and reproductive effects. Food Cosmet. Toxicol. 19:123-124

REP TER DIO REV

This is a brief review of teratogenicity and reproductive toxicity of TCDD as of 1981.

Anonymous. 1981d. Herbicide is real risk to birds and people. New Scientist 89:405

ACU NEU INJ 25T BRD COM

This is a news article describing the report of Sanderson and Rogers (1981).

Anonymous. 1981e. New EPA head may fix the future of 2,4,5-T. Chem. Week 128:13

25T HUM COM

This is a news report giving the status of the 2,4,5-T registration proceedings at EPA.

Anonymous. 1981f. Seveso after five years. Lancet (2):731-732

ACN IMM NEU REP ENV DIO HUM REV

This is an editorial marking the fifth anniversary of the Seveso accident and summarizing the health effects information available at the time.

Anonymous. 1981g. Second Dow sarcoma case found: Company suggests smoking as factor. Occup. Saf. Health Rept. 10: 1347-1348

CAR OCC DIO HUM REV

This is a news report describing the study by Cook (1981) that was reported in Lancet.

Anonymous. 1981h. Effects of 2,4,5-T on chicks. Search 12:97-98

NEU TER OTE 25T BRD COM

This is a news report and comment on the study of Sanderson and Rogers (1981) (see JRB 1981).

Anonymous. 1982a. Phenoxy herbicides, trichlorophenols, and soft-tissue sarcomas. Lancet (1):1051-1052

CAR DIO ORN HUM COM REV

This is an editorial summarizing and commenting on available evidence linking exposure to phenoxy herbicides and chlorinated phenols with soft-tissue sarcomas.

Anonymous. 1982b. Agent orange. Am. Fam. Physician 25:91-92

24D DIO 25T HUM COM REV

This is an editorial briefly reviewing human data on health effects of phenoxy herbicides and citing the AMA Council on Scientific Affairs (1981) report.

Anonymous. 1983a. Chlorinated dioxins and furans in the environment. Environ. Sci. Technol. 17:124A-128A

ACN CAR IMM DIO IMP HUM REV

This news report summarizes the presentations at the 1982 Symposium on Chlorinated Dioxins and Dibenzofurans in the Total Environment.

Anonymous. 1983b. Symposium updates health effects of dioxins, benzofurans. Chem. Eng. News. 61:26-30

CAR GEN OCC ENV DIO IMP HUM REV

This news report describes the 1983 Symposium on Chlorinated Dioxins and Dibenzofurans in the Total Environment and the controversy regarding the potential carcinogenic activity of these compounds.

Abate, L., Basso, P., Belloni, A., Bisanti, L., Borgna, C., Bruzzi, P., Dorigotti, G., Falliva, L., Fanuzzi, A., Formigaro, M., Maggiore, G., Marni, E., Meazza, L., Merlo, F., Puntoni, R., Rosa, A., Stagnaro, E., Vercelli, M., and Santi, L. 1982. Mortality and birth defects from 1976 to 1979 in the population living in the TCDD polluted area of Seveso. In Hutzinger, O., Frei, R.W., Merian, E., and Pocchiari, F., eds. Chlorinated Dioxins and Related Compounds, Impact on the Environment. Pergamon Press, New York. Pp. 571-587

CAR CVT EPI TER DIO HUM

This is a study of mortality patterns and birth defects in the Seveso area before and after the accident at the ICMESA plant. The results of the birth defects study are described more fully by Bruzzi et al. 1981. The mortality study provided no noteworthy results.

Abelson, P.H. 1983. Chlorinated dioxins. Science 220:1337

CAR DIO HUM COM

This is a brief editorial indicating that data on human health effects of PCDD are incomplete but on the basis of animal evidence PCDD should be treated with the utmost respect.

Al-Jabery, I.A.R. 1981. Pesticide exposure studies: Direct and indirect detection of absorption of 2,4-D and pronamide herbicides in the guinea pig and occupationally exposed workers. Diss. Abstr. Int. 41:2947B

MET DEM INL 24D GPG HUM ABS

This is a brief abstract indicating that the urinary excretion of 2,4-D metabolites in guinea pigs was proportional to the dermal dose, but that in humans spraying 2,4-D there was no correlation between urinary excretion and amounts of 2,4-D deposited on filter pads on the arms and clothing. No experimental details or results were given.

Althaus, F.R., Lawrence, S.D., Sattler, G.L., Longfellow, D.G., and Pitot, H.C. 1982. Chemical quantification of unscheduled DNA synthesis in cultured hepatocytes as an assay for the rapid screening of potential chemical carcinogens. Cancer Res. 42:3010-3015

GEN IVT DIO CEL RAT

See Page IV-65.

Andersen, M.E. 1981. Saturable metabolism and its relationship to toxicity: C. 2,4,5-Trichlorophenoxyacetic acid (2,4,5-T). CRC Crit. Rev. Toxicol. 9:105, 132

MET 25T REV

This is a one-paragraph review of evidence that 2,4,5-T is excreted via a saturable organic acid secretory pathway in the kidneys (1 reference).

Appelgren, L.E., Brandt, I., Brittebo, E.B., Gillner, M., and Gustafsson, J.A. 1983. Autoradiography of 2,3,7,8-tetrachloro-[^{14}C]-dibenzo-p-dioxin (TCDD): Accumulation in the nasal mucosa. Chemosphere 12:545-548

MET INJ DIO MUS

See Pages V-15 and V-37.

Australian Veterans Health Studies. 1983. Case-control Study of Congenital Anomalies and Vietnam Service (Birth Defects Study). Report to the Ministry for Veterans' Affairs, January. Australian Government Publishing Services, Canberra

EPI GEN REP ENV ORN HUM

See Page IV-148.

Baars, A.J., Mukhtar, H., Jansen, M., and Breimer, D.D. 1982. Induction of rat hepatic glutathione-S-transferase activities by 2,3,7,8-tetrachlorodibenzo-p-dioxin. In Hutzinger, O., Frei, R.W., Merian, E., and Pocchiari, F., eds. Chlorinated Dioxins and Related Compounds, Impact on the Environment. Pergamon Press, New York. Pp. 393-402

ENZ MEC INJ DIO RAT

See Page IV-91.

Baklien, A. 1981. Chemicals, cancer, and birth defects. Search 12:30-37

TER OCC ENV DIO 25T HUM REV

This is a detailed review and commentary about the interpretation of data on the ability of chemicals to cause cancer and birth defects in humans. It discusses 2,4,5-T and PCDD (31 references).

Ball, L.M., and Chhabra, R.S. 1981. Intestinal absorption of nutrients in rats treated with 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD). J. Toxicol. Environ. Health 8:629-638

ACU OTH ORL DIO RAT

See Page IV-247.

Barnes, D.G. 1983. Regulatory actions on dioxins and related compounds. In Tucker, R.E., Young, A.L., and Gray, A.P., eds. Human and Environmental Risks of Chlorinated Dioxins and Related Compounds. Plenum Press, New York. Pp. 23-31

ENV DIO ORN HUM COM REV

This is a cross-sectional look at EPA's regulatory activities related to 2,4,5-T and PCDD including a review of EPA risk assessments.

Barthel, E. 1981a. Increased risk of lung cancer in pesticide-exposed male agricultural workers. J. Toxicol. Environ. Health 8:1027-1040

CAR EPI ORN HUM

See Page IV-9.

Barthel, E. 1981b. [Cancer risk in pesticide exposed agricultural workers.] Arch. Geschwulstforsch 51:579-585 (German) (Summary in English)

CAR EPI ORN HUM

This is the original German language version of the paper published in English in J. Toxicol. Environ. Health (1981).

Bass, R., and Nau, H. 1981. Transfer of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) to the mouse embryo, fetus and neonate. Naunyn-Schmiedeberg's Arch. Pharmacol. 316 (suppl.):R23 (Abstract)

MET TER INJ ORL DIO MUS ABS

See Pages IV-164, IV-165, and IV-166.

This is an abstract of the study published in full in Toxicology by Nau and Bass (1981).

Bickel, M.H., Jondorf, W.R., Müehlebach, S., and Wyss, P.A. 1983. Adipose tissue storage of polychlorinated compounds. In Tucker, R.E., Young, A.L., and Gray, A.P., eds. Human and Environmental Risks of Chlorinated Dioxins and Related Compounds. Plenum Press, New York. Pp. 477-482

MET DIO IMP REV

This is a review of studies of the accumulation and storage of DDT and hexachlorobiphenyl in adipose tissue in rats and guinea pigs with a brief mention of the applicability to PCDD and PCDF (12 references).

Bishop, C.M., and Jones, A.H. 1981. Non-Hodgkin's lymphoma of the scalp in workers exposed to dioxin (letter). Lancet (2):369

CAR OCC DIO ORN HUM

See Pages IV-9 and IV-19.

Black, A.L. 1983. Dioxins as contaminants of herbicides: Australian perspective. In Tucker, R.E., Young, A.L., and Gray, A.P., eds. Human and Environmental Risks of Chlorinated Dioxins and Related Compounds. Plenum Press, New York. Pp. 13-16

ENV DIO ORN HUM COM REV

This is a review of the history of the regulation of phenoxy herbicides and PCDD in Australia (no references).

Blackburn, A.B. 1983. Review of the effects of agent orange: A psychiatric perspective on the controversy. Military Med. 148:333-340

ACN HEP NEU DIO ORN HUM MKY REV

See Page IV-227.

This is a review of phenoxy herbicide toxicity with particular emphasis on neurologic and psychiatric manifestations (30 references).

Blank, C.E., Cooke, P., and Potter, A.M. 1983. Investigations for genotoxic effects after exposure to crude 2,4,5-trichlorophenol. Br. J. Ind. Med. 40:87-91
GEN OCC DIO HUM

See Page IV-44.

Bloemen, A. 1982. Herbicides linked to vets' brain damage. World Environment Report, July 15, 1982:3

EPI NEU OCC ENV ORN 25T HUM COM REV

This is a brief summary of two Australian reports that exposure to phenoxy herbicides caused brain damage in humans. No details or references are given.

Brewster, D.W., Madhukar, B.V., and Matsumura, F. 1982. Influence of 2,3,7,8-TCDD on the protein composition of the plasma membrane of hepatic cells from the rat. Biochem. Biophys. Res. Commun. 107:68-74

HEP MEC INJ DIO RAT

This is a study of biochemical changes induced in the plasma membrane of liver cells in rats given a single injection of a high dose of TCDD. It has little relevance to human health.

Brogan, W.F., Brogan, C.E., and Dadd, J.T. 1980. Herbicides and cleft lip and palate (letter). Lancet (2):597

GEN TER ENV ORN HUM

See Page IV-142.

Bronzetti, G., Zeiger, E., Lee, I., Suzuki, K., and Malling, H.V. 1982. Genetic effects of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) in yeast in vitro and in vivo. In Hutzinger, O., Frei, R.W., Merian, E., and Pocchiari, F., eds. Chlorinated Dioxins and Related Compounds, Impact on the Environment. Pergamon Press, New York. Pp. 429-436

GEN INJ IVT DIO MIC MUS

See Pages IV-62 and IV-63.

Bronzetti, G., Bauer, C., Corsi, C., Del Carratore, R., Nieri, R., and Paolini, M. 1983. Mutagenicity study of TCDD and ashes from urban incinerator in vitro and in vivo using yeast D strain. Chemosphere 12:549-553

ENZ GEN IVT ORL DIO IMP MIC MUS

See Pages IV-62 and IV-63.

Bruzzi, P. 1983a. Health impact of the accidental release of TCDD at Seveso. In Coulston, F., and Pocchiari, F., eds. Accidental Exposure to Dioxins, Human Health Aspects. Academic Press, New York. Pp. 215-226

ACN CAR EPI HEM HEP NEU PCT REP ENV DIO HUM

See Pages III-7 and IV-219.

This is an excellent review summarizing the current status of all epidemiology studies being conducted in the Seveso region (no references).

Bruzzi, P. 1983b. Birth defects in the TCDD polluted area of Seveso: Results of a four-year follow-up. In Coulston, F., and Pocchiari, F., eds. Accidental Exposure to Dioxins, Human Health Aspects. Academic Press, New York. Pp. 271-280

GEN REP TER ENV DIO HUM

See Pages IV-134 and IV-135.

Bruzzi, P., Bisanti, L., Borgna-Pignatti, C., Marni, E., Abate, L., Basso, P., Formigaro, F., Strigini, P., and Santi, L. 1981. Birth defects in the TCDD polluted area of Seveso: Results of a 4-year follow-up. Presented in the IXth Scientific Meeting of International Epidemiological Association, Edinburgh, Scotland (August) (15 pages)

EPI REP TER ENV DIO HUM

See Pages IV-134, IV-135, and IV-136.

This is essentially the same study as that described in Bruzzi (1983b) above.

Buchet, J.P., Lauwerys, R., and Roels, H. 1981. Comparison of the urinary excretion of arsenic metabolites after a single oral dose of sodium arsenite, monomethylarsonate or dimethylarsinate in man. Int. Arch. Occup. Environ. Health 48:71-79

MET ORL CAC HUM

See Page VII-10.

Buslovich, Y.S., Koldobskaya, F.D., Davydenko, L.I., and Krysanova, A.I. 1982. [Role of mixed function oxidases in the detoxication of some herbicides--chloro derivatives of phenoxy acids.] Gig. Sanit. 10:76-77 (Russian)

MET IVT 24D RAT

This Russian language article describes a study of the metabolism of 2,4-D by rat liver microsomes and was judged to be of too little importance to translate.

Cantoni, L., Salmona, M., and Rizzardini, M. 1981a. Porphyrogenic effect of chronic treatment with 2,3,7,8-tetrachlorodibenzo-p-dioxin in female rats: Dose-effect relationship following urinary excretion of porphyrins. Toxicol. Appl. Pharmacol. 57:156-163

ENZ HEP MEC OTH PCT REN SCR ORL DIO RAT

See Page IV-84 and IV-218.

Cantoni, L., Rizzardini, M., Belvedere, G., Cantoni, R., Fanelli, R., and Salmona, M. 1981b. Induction of mixed-function oxidase by chronic treatment with 2,3,7,8-tetrachlorodibenzo-p-dioxin in female rats. Toxicology 21:159-167

CHR ENZ HEP MET ORL DIO RAT

See Page IV-86.

Caramaschi, F., Del Corno, G., Favaretti, C., Giambelluca, S.E., Montesarchio, E., and Fara, G.M. 1981. Chloracne following environmental contamination by TCDD in Seveso, Italy. Int. J. Epidemiol. 10:135-143

ACN EPI HEP OTH DIO HUM

See Page IV-206.

Caramaschi, F., Montesarchio, E., Del Corno, G., Favaretti, C., Giambelluca, S.E., Bonetti, F., and Volpato, C. 1982. Analysis of exposure to environmental contamination by TCDD in individuals affected by dermatological lesions. L'Igiene Moderna 77:681-706

ACN EPI ENV DIO HUM

See Page IV-209.

Carlson, E.A. 1983. International symposium on herbicides in the Vietnam war: An appraisal. Bioscience 33:507-512

EPI GEN REP ENV ORN HUM COM REV

This is a report by a delegate summarizing the proceedings of the International Symposium on Herbicides and Defoliants in War held in Ho Chi Minh City in January 1983.

Carlstedt-Duke, J., and Bickel, M.H. 1982. Biochemical toxicology (including metabolism). In Hutzinger, O., Frei, R.W., Merian, E., and Pocchiari, F., eds. Chlorinated Dioxins and Related Compounds, Impact on the Environment. Pergamon Press, New York. Pp. 603-604

MEC MET DIO COM REV

This is a short summary of presented papers and a description of research needs from a Workshop on Chlorinated Dioxins and Related Compounds held in Rome, Italy in 1980.

Carlstedt-Duke, J.M.B., Harnemo, U.B., Hogberg, B., and Gustafsson, J.A. 1981. Interaction of the hepatic receptor protein for 2,3,7,8-tetrachlorodibenzo-p-dioxin with DNA. Biochim. Biophys. Acta 672:131-141

MEC IVT DIO RAT

See Pages IV-102, IV-104, and IV-124.

This paper describes the isolation and characterization of the TCDD receptor from rat liver. All of the data in this paper are included in Carlstedt-Duke et al. (1982).

Carlstedt-Duke, J., Kurl, R., Poellinger, L., Gillner, M., Hansson, L.A., Toftgard, R., Hogberg, B., and Gustafsson, J.A. 1982. The detection and function of the cytosolic receptor for 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) and related cocarcinogens. In Hutzinger, O., Frei, R.W., Merian, E., and Pocchiari, F., eds. Chlorinated Dioxins and Related Compounds, Impact on the Environment. Pergamon Press, New York. Pp. 355-366

See Pages IV-102 and IV-104.

MEC INJ IVT DIO RAT

Cattaneo, M., Remotti, G., Coviello, D., Carini, A., and Cefis, F. 1981. [Placental histological findings in women from the area polluted with TCDD.] Ann. Ostet. Ginecol. Med. Perinat. 102:155-164. (Italian) (Summary in English)

REP ENV DIO HUM

See Page IV-137.

Chen, J.H.S. 1982. Application of a battery of microbial bioassays to evaluation of the genotoxic response of a contaminated herbicide 2,4,5-T containing dioxin. Presented at the 13th Annual Meeting of the U.S. Environmental Mutagen Society, Washington, D.C. (Abstract)

GEN IVT 25T MIC ABS

See Page IV-55.

Chernoff, N., and Kavlock, R.J. 1982. An in vivo teratology screen utilizing pregnant mice. J. Toxicol. Environ. Health 10:541-550

TER ORL CAC 25T MUS

See Pages IV-156 and VII-5.

Cheung, M.O., Gilbert, E.F., and Peterson, R.E. 1981a. Cardiovascular teratogenicity of 2,3,7,8-tetrachlorodibenzo-p-dioxin in the chick embryo. Toxicol. Appl. Pharmacol. 61:197-204

CVT TER OTE DIO BRD

See Pages IV-172 and IV-173.

Cheung, M.O., Gilbert, E.F., and Peterson, R.E. 1981b. Cardiovascular teratogenesis in chick embryos treated with 2,3,7,8-tetrachlorodibenzo-p-dioxin. In Khan, M.A.Q., and Stanton, R.H., eds. Toxicology of Halogenated Hydrocarbons, Health and Ecological Effects. Pergamon Press, New York. Pp. 202-208

CVT TER OTE DIO BRD

See Page IV-172.

Choudhary, G. 1983. Occupational exposure to polychlorinated dibenzo-p-dioxins and dibenzofurans: A perspective. In Choudhary, G., Keith, L.H., and Rappe, C., eds. Chlorinated Dioxins and Dibenzofurans in the Total Environment. Butterworth Publishers, Boston. Pp. 333-353

DIO REV

This is primarily a review of sources, analysis, and environmental disposition of PCDD and PCDF. It contains a short section on the structure-activity relationships in the toxicity of PCDD and PCDF (31 references).

Clark, D.A., Gauldie, J., Sweeney, G., and Szewczuk, M.R. 1981a. Selective suppression of cytotoxic T cell (CTL) generation by halogenated aromatic hydrocarbons. Fed. Proc. Fed. Am. Soc. Exp. Biol. 40:1096 (Abstract)

MEC INJ DIO IMP MUS

See Page IV-198.

This is an abstract describing the study which is published in full as Clark, et al. (1981b).

Clark, D.A., Gauldie, J., Szewczuk, M.R., and Sweeney, G. 1981b. Enhanced suppressor cell activity as a mechanism of immunosuppression by 2,3,7,8-tetrachlorodibenzo-p-dioxin. Proc. Soc. Exp. Biol. Med. 168:290-299

IMM MEC INJ IVT DIO IMP MUS

See Pages IV-198 and IV-201.

Clark, D.A., Sweeney, G., Safe, S., Hancock, E., Kilburn, D.G., and Gauldie, J. 1983. Cellular and genetic basis for suppression of cytotoxic T-cell generation by haloaromatic hydrocarbons. Immunopharmacology 6:143-153

IMM MEC INJ DIO MUS

See Page IV-199.

Cockerham, L.G., and Young, A.L. 1983. Ultrastructural comparison of liver tissues from field and laboratory TCDD-exposed beach mice. In Tucker, R.E., Young, A.L., and Gray, A.P., eds. Human and Environmental Risks of Chlorinated Dioxins and Related Compounds. Plenum Press, New York. Pp. 373-389

HEP ENV DIO MUS

See Page IV-255.

Coggon, D., and Acheson, E.D. 1982. Do phenoxy herbicides cause cancer in man? Lancet (1):1057-1059

CAR EPI OCC ENV ORN HUM REV

This is a critical review of all the available evidence linking exposure to phenoxy herbicides with cancer in humans (31 references).

Cohen, A.J., and Grasso, P. 1981. Review of the hepatic response to hypolipidaemic drugs in rodents and assessment of its toxicological significance to man. Food Cosmet. Toxicol. 19:585-605

CAR ENZ HEP MEC DIO REV

This is a secondary reference discussing the relationship between hypolipidemic drugs and cancer. The author concludes that animal models for cancer are inappropriate for this class of compounds including TCDD.

Cook, J., and Kaufman, C. 1982. Portrait of a poison: The 2,4,5-T story. (100 pages)

Unable to locate.

Cook, R.R. 1981. Dioxin, chloracne, and soft tissue sarcoma. Lancet (1):618-619

ACN CAR EPI OCC DIO HUM COM

See Page IV-21.

This is a letter commenting on Honchar and Halperin (1981) (see JRB 1981) discussing four cases of soft-tissue sarcoma among workers at Dow or Monsanto plants where 2,4,5-T or TCP was produced.

Cook, R.R. 1983. Soft tissue sarcomas: Clues and caution. In Tucker, R.E., Young, A.L., and Gray, A.P., eds. Human and Environmental Risks of Chlorinated Dioxins and Related Compounds. Plenum Press, New York. Pp. 613-618

CAR EPI OCC DIO ORN HUM COM REV

See Page IV-5.

This is an in-depth review and critique of evidence linking exposure to phenoxy herbicides and chlorinated phenols with soft-tissue sarcoma. It is particularly critical of epidemiologic studies conducted in Sweden by Hardell and co-workers (13 references).

Cook, R.R., and Bodner, K.M. 1983. Dioxin and reproductive events. In Tucker, R.E., Young, A.L., and Gray, A.P., eds. Human and Environmental Risks of Chlorinated Dioxins and Related Compounds. Plenum Press, New York. Pp. 593-604

REP TER OCC DIO HUM

See Page IV-140.

Cordle, F. 1983. Use of epidemiology in the regulation of dioxins in the food supply. In Coulston, F., and Pocchiari, F., eds. Accidental Exposure to Dioxins, Human Health Effects. Academic Press, New York. Pp. 245-258

CAR EPI ENV DIO HUM REV

This is a review of animal and epidemiology data linking exposure to TCDD to cancer. It describes the basis for the FDA action level for TCDD in Great Lakes fish (12 references).

Council on Scientific Affairs. 1981. The Health Effects of "Agent Orange" and Polychlorinated Dioxin Contaminants. American Medical Association Technical Report, Monroe, Wisconsin. (39 pages)

24D DIO ORN 25T COM REV

This is a thorough and critical review of the medical evidence relevant to the toxicity and long-term health

effects of Agent Orange and its associated contaminant, TCDD (191 references).

Council on Scientific Affairs, Division of Scientific Activities, American Medical Association. 1982. Health effects of agent orange and dioxin contaminants. J. Am. Med. Assoc. 248: 1895-1897

24D DIO ORN 25T COM REV

This is an executive summary of the AMA Council on Scientific Affairs (1981) report.

Courtney, K.D., and Ebron, M.T. 1981a. 2,4,5-T effects on cardiac and serum lactic dehydrogenase and creatine kinase isozymes. I. Maternal enzyme activities and isozyme profiles. Arch. Environ. Contam. Toxicol. 10:571-581

CVT TER ORL 25T MUS

See Pages IV-156 and IV-157.

Courtney, K.D., and Ebron, M.T. 1981b. 2,4,5-T effects on cardiac and serum lactic dehydrogenase (LDH) and creatine kinase (CK) isozymes. II. Neonatal enzyme activities and isozyme profiles. Arch. Environ. Contam. Toxicol. 10:583-595

CVT TER ORL 25T MUS

See Pages IV-156 and IV-158.

Crampton, M.A., and Rodgers, L.J. 1983. Low doses of 2,4,5-trichlorophenoxyacetic acid are behaviorally teratogenic to rats. Experientia 39:891-892

NEU REP ORL 25T RAT

In this study a single oral dose of 2,4,5-T containing 0.03 ppm TCDD was administered to pregnant female rats on day 8 of gestation. At a dose of 6 mg/kg, the performance of offspring in an open field ambulation test was significantly depressed when compared to offspring of vehicle-treated controls.

Crow, K.D. 1981a. Soft tissues sarcomas and chlorinated phenols (letter). Lancet (2):369

CAR OCC ORN HUM COM

This is a letter commenting on and criticizing the report of Johnson et al. (1981) in Lancet.

Crow, K.D. 1981b. Chloracne and its potential clinical implications. Clin. Exp. Dermatol. 6:243-257

ACN SKN DIO HUM REV

See Pages IV-205 and IV-206.

This is a detailed review concentrating on chloracne as a result of exposure to TCDD but also discussing its relationship to systemic poisoning in humans and in animal models (53 references).

Crow, K.D. 1982. Cutaneous effects of chloracneigens. In Hutzinger, O., Frei, R.W., Merian, E., and Pocchiari, F., eds. Chlorinated Dioxins and Related Compounds, Impact on the Environment. Pergamon Press, New York. Pp. 525-534

ACN EPI OCC ENV DIO HUM REV

This is a review of a number of halogenated hydrocarbons including PCDD and PCDF that cause chloracne with a discussion of other cutaneous effects (41 references).

Crow, K.D. 1983. Significance of cutaneous lesions in the symptomatology of exposure to dioxins and other chloracnegens. In Tucker, R.E., Young, A.L., and Gray, A.P., eds. Human and Environmental Risks of Chlorinated Dioxins and Related Compounds. Plenum Press, New York. Pp. 605-612

ACN DIO REV

See Page IV-206.

This is a review and discussion of animal and human data on chloracne including a discussion of the use of chloracne as an indicator of toxic exposure to PCDD (32 references).

Crow, K.D., and Reggiani, G. 1983. Human observations. In Tucker, R.E., Young, A.L., and Gray, A.P., eds. Human and Environmental Risks of Chlorinated Dioxins and Related Compounds. Plenum Press, New York. Pp. 795-797

DIO HUM REV

This is a summary of the conclusions of the Human Observations Panel at the International Symposium on Human and Environmental Risks of Chlorinated Dioxins and Related Compounds held in Arlington, Virginia, in October, 1981.

Cushman, J.R., and Street, J.C. 1982. Allergic hypersensitivity to the herbicide 2,4-D in BALB/c mice. J. Toxicol. Environ. Health 10:729-741

IMM DEM INJ 24D MUS

See Page IV-196.

Dagani, R. 1981. Seveso: Five years later, questions remain. Chem. Eng. News 59:18-20

DIO HUM REV

This is a news report summarizing status of health effects research which resulted from the Seveso accident.

Dardanoni, L., and Fava, G. 1982. TCDD (Italy). In Proceedings of an International Workshop on Plans for Clinical and Epidemiologic Follow-up After Area-wide Chemical Contamination, March 17-19, 1980. National Academy Press, Washington, D.C. Pp.3-33

EPI ENV DIO HUM

This is a detailed description of the Seveso accident and the methods used to define precisely the location and extent of contamination and to identify an exposed population for health effect studies.

Davis, M., and Simpson, M. 1983. Agent orange: Veterans' complaints and studies of health effects. Library of Congress, Congressional Research Service, Major Issue System. Issue Brief No. IB83043 (15 pages)

ORN REV

This is a review of health effects, legislation, veterans' complaints, and government sponsored studies of Agent Orange (15 references).

Dean, J.H., Luster, M.I., Boorman, G.A., Chae, K., Lauer, L.D., Luebke, R.W., Lawson, L.D., and Wilson, R.E. 1981. Assessment of immunotoxicity induced by the environmental chemicals 2,3,7,8-tetrachlorodibenzo-p-dioxin, diethylstilbestrol and benzo(a)pyrene. In Hadden, J., Chedid, L., Mullen, P., and Spreafico, F., eds. Advances in Immunopharmacology. Pergamon Press, New York. Pp. 37-50

IMM ORL DIO MUS

See Pages IV-199 and IV-201.

Dees, J.H., Masters, B.S.S., Muller-Eberhard, U., and Johnson, E.F. 1982. Effects of 2,3,7,8-tetrachlorodibenzo-p-dioxin and phenobarbital on the occurrence and distribution of four cytochrome P-450 isozymes in rabbit kidney, lung, and liver. Cancer Res. 42:1423-1432

ENZ INJ DIO ADD

See Pages IV-84 and IV-123.

DeHart, R. 1982. Herbicide orange health effects. Aviat. Space Environ. Med. 53:512

EPI ORN HUM COM

This is an editorial giving a brief outline of the protocol for the Air Force health study of Operation Ranch Hand personnel.

Del Corno, G., Favaretti, C., Caramaschi, F., Giambelluca, S.E., Montesarchio, E., Bonetti, F., and Volpato, C. 1982. Distribution of chloracne cases in the Seveso area following contamination by TCDD. L'Igiene Moderna 77:635-658

ACN EPI ENV DIO HUM

See Page IV-208.

Dencker, L., and Pratt, R.M. 1981. Association between the presence of the Ah receptor in embryonic murine tissues and sensitivity to TCDD-induced cleft palate. Teratog. Carcinog. Mutagen. 1:399-406

MEC TER IVT DIO MUS

See Page IV-112.

De Verneuil, H., Sassa, S., and Kappas, A. 1983. Effects of polychlorinated biphenyl compounds, 2,3,7,8-tetrachlorodibenzo-p-dioxin, phenobarbital and iron on hepatic uroporphyrinogen decarboxylase. Biochem. J. 214:145-151

PCT IVT DIO BRD

See Page IV-220.

Didier, R. 1982. [Study of the toxicity and some pathophysiological effects of 2,4,5-trichlorophenoxyacetic acid, an organochlorine herbicide, in the adult domestic quail (Coturnix coturnix japonica).] C.R. Soc. Biol. (Paris) 176:542-549 (French)

ACU LET ORL 25T BRD

This is a study of the acute oral toxicity of 2,4,5-T in Japanese Quail. It is of little relevance to human health.

Didier, R. 1983. [Hepatotoxicity of 2,4,5-trichlorophenoxyacetic acid--Ultrastructural and biochemical study in the quail embryo.] C.R. Soc. Biol. (Paris) 177:304-312. (French) (Summary in English)

HEP TER OTE 25T BRD

See Pages IV-162 and IV-163.

DiGiovanni, J., Decina, P.C., and Diamond, L. 1983. Tumor initiating activity of 9- and 10-fluoro-7,12-dimethylbenz[a]anthracene (DMBA) and the effect of 2,3,7,8-tetrachlorodibenzo-p-dioxin on tumor initiation by monofluoro derivatives of DMBA in SENCAR mice. Carcinogenesis 4:1045-1049

CAR MEC DEM DIO MUS

See Pages IV-114 and IV-125.

DiLernia, R., Crimaudo, C., and Pacchetti, G. 1982. The study of X-rays and TCDD effects on satellite associations may suggest a simple model for application in environmental mutagenesis. Hum. Genet. 61:42-47

EPI GEN OCC ENV DIO HUM

See Page IV-43.

Donatelli, L., Lampa, E., and Creso, E. 1981. Considerations on the epidemiology of the Seveso accident. Toxicol. Eur. Res. 3:9-16

ACN EPI NEU REP ENV DIO HUM COM REV

This is a review of the Seveso accident emphasizing the authors' viewpoint that it was not a major accident and that significant exposure to PCDD has not been demonstrated (37 references).

Dow Chemical Company. 1983a. Dioxin and human health: Executive Summary. Health and Environmental Information, The Dow Chemical Company, Midland, Michigan. (30 pages)

CAR EPI GEN REP TER DIO HUM REV

This is a comprehensive review of health effects data with particular emphasis on Seveso, Hardell and co-workers studies, and other epidemiologic studies of soft-tissue sarcoma and birth defects (55 references).

Dow Chemical Company. 1983b. Toxicology profile of Tordon herbicides: Toxicology of picloram. (Unpublished data) (9 pages)

MET SCR ORL PIC DOG HUM MUS RAT REV

See Pages VI-3, VI-4, and VI-5.

This is a toxicology profile of picloram prepared by the manufacturer summarizing the results of a large number of animal studies and a few human studies. It contains few details on experimental design, methods, and results.

Draper, W.M., and Street, J.C. 1982. Applicator exposure to 2,4,-D, dicamba, and a dicamba isomer. J. Environ. Sci. Health B17:321-339

MET DEM ORL 24D HUM

See Page V-6.

Duffard, R., Traini, L., and De Duffard, A.M.E. 1981. Embryotoxic and teratogenic effects of phenoxy herbicides. Acta Physiol. Lat. Am. 31:39-42

TER OTE 24D 25T BRD

See Pages IV-155, IV-161, and IV-163.

Duffard, R., Mori de Moro, G., and De Duffard, A.M.E. 1982. Hatching and lipid composition of chicks brain from eggs treated with 2,4-dichlorophenoxyacetic butyl ester. Toxicology 24:305-311

NEU TER OTE 24D BRD

See Pages IV-155 and IV-176.

Dwyer, J.H. 1982. Summary of proceedings of a conference on herbicide exposure and reproductive epidemiology in Viet Nam. Department of Medical Genetics, Mount Sinai School of Medicine, April 10. Mimeo. (36 pages)

REP TER ENV CAC ORN PIC HUM REV

See Pages IV-133 and IV-187.

Eaton, D.L. 1982. Biliary excretion of 2,4,5-trichlorophenoxyacetic acid in the rat. Toxicol. Lett. 14:175-181

MET INJ 25T RAT

See Page V-13.

England, J.F. 1981. Herbicides and coronary ectasia (letter). Med. J. Aust. (1):140

CVT OCC DIO 25T HUM

This is a letter continaing two case reports of coronary artery ectesia in men alleged to have had heavy exposure to 2,4,5-T while spraying. There is no documentation of occupational history, familial history, or exposure.

Eriksson, M., Hardell, L., Berg, N.O., Moeller, T., and Axelson, O. 1981. Soft-tissue sarcomas and exposure to chemical substances: A case-referent study. Br. J. Ind. Med. 38:27-33

CAR EPI OCC ORN HUM

See Page IV-3.

Evans, E.L., and Mitchell, A.D. 1980. An evaluation of the effect of cacodylic acid on sister chromatid exchange frequencies in cultured Chinese hamster ovary cells. Prepared for EPA by SRI International, Menlo Park, California. SRI Project LSU-7558, Contract No. 68-02-2947

GEN IVT CAC CEL

See Pages VII-3 and VII-4.

Fara, G.M., Del Corno, G., Bonetti, F., Caramaschi, F., Dardanoni, L., Favaretti, C., Giambelluca, S.E., Marni, E., Mocarelli, P., Montesarchio, E., Puccinelli, V., and Volpato, C. 1982. Chloracne after release of TCDD at Seveso, Italy. In Hutzinger, O., Frei, R.W., Merian, E., and Pocchiari, F., eds. Chlorinated Dioxins and Related Compounds, Impact on the Environment. Pergamon Press, New York. Pp. 545-559

ACN EPI IMM ENV DIO HUM

See Page IV-195.

Ferry, D.G., Gazeley, L.R., and Edwards, I.R. 1982. 2,4,5-T absorption in chemical applicators. Proceedings of the University of Otago Medical School 60:31-32

MET OCC 25T HUM

See Page V-3 and V-35.

Filippini, G., Bordo, B., Crenna, P., Massetto, N., Musicco, M., and Boeri, R. 1981. Relationship between clinical and electrophysiological findings and indicators of heavy exposure to 2,3,7,8-tetrachlorodibenzo-dioxin. Scand. J. Work Environ. Health 7:257-262

EPI NEU ENV DIO HUM

See Page IV-228.

Filler, R. 1981. Onset of embryonic capability to activate proteratogens by mixed function oxidase (MFO) system during the preimplantation period. Teratology 23:34A-35A (Abstract)

ENZ TER IVT DIO MUS ABS

See Pages IV-100, IV-123, and IV-164.

Fiskesjo, G., Lassen, C., and Renberg, L. 1981. Chlorinated phenoxyacetic acids and chlorophenols in the modified allium test. Chem.-Biol. Interact. 34:333-344

GEN CYT IVT 24D 25T PLA

This was a study of the cytotoxicity and genetic toxicity of 2,4-D, 2,4,5-T and MCPA to the roots of onion plants. All 3 compounds were toxic, reduced the mitotic index, and caused chromosomal damage. These effects are not considered to be relevant to human health.

Flicker, M.R., and Young, A.L. 1983. Evaluation of veterans for agent orange exposure. Presented at the Symposium on Chlorinated Dioxins and Dibenzofurans in the Total Environment, before the Division of Environmental Chemistry, American Chemical Society, Washington, D.C., September 1983. (12 pages)

ACN CAR EPI NEU OTH ENV ORN HUM

See Pages IV-27 and IV-227.

Fox, J.L. 1983. Dioxins' health effects remain puzzling. Science 221:1161-1162

CAR GEN OCC ENV DIO HUM REV

This is a news report reviewing recent studies on the carcinogenic and mutagenic activity of TCDD and highlighting the difficulty of interpreting the results of these studies (no references).

Garattini, S. 1982. Hepatic toxicity of TCDD. In Proceedings of an International Workshop on Plans for Clinical and Epidemiological Follow-up After Area-Wide Chemical Contamination, March 17-19, 1980. National Academy Press, Washington, D.C. Pp. 335-363

HEP IMM MET PCT ENV DIO REV

Despite its title, this paper, presented at an International Workshop in Washington, D.C., in 1980, describes the Seveso accident and the methods used to determine the extent of contamination. It also reviews the metabolism and toxicology of TCDD with emphasis on its hepatotoxic, porphyriogenic, and immunotoxic properties.

Garattini, S., Vecchi, A., Sironi, M., and Mantovani, A. 1982. Immunosuppressant activity of TCDD in mice. In Hutzinger, O., Frei, R.W., Merian, E., and Pocchiari, F., eds. Chlorinated Dioxins and Related Compounds, Impact on the Environment. Pergamon Press, New York. Pp. 403-410

IMM INJ ORL DIO MUS

Gasiewicz, T.A., Olson, J.R., Gieger, L.E., and Neal, R.A. 1983a. Absorption, distribution and metabolism of 2,3,7,8-tetrachlorodibenzodioxin (TCDD) in experimental animals. In Tucker, R.E., Young, A.L., and Gray, A.P., eds. Human and Environmental Risks of Chlorinated Dioxins and Related Compounds. Plenum Press, New York. Pp. 495-525

MET DIO REV

This is an extensive and detailed review of available information on the metabolism of TCDD (45 references).

Gasiewicz, T.A., Geiger, L.E., Rucci, G., and Neal, R.A. 1983b. Distribution, excretion, and metabolism of 2,3,7,8-tetrachlorodibenzo-p-dioxin in C57BL/6J, DBA/2J, and B6D2F_1/J mice. Drug Metab. Dispos. 11:397-403

MET INJ DIO MUS

See Page V-24.

Geiger, L.E., and Neal, R.A. 1981. Mutagenicity testing of 2,3,7,8-tetrachlorodibenzo-p-dioxin in histidine auxotrophs of Salmonella typhimurium. Toxicol. Appl. Pharmacol. 59:125-129

GEN IVT DIO MIC

See Page IV-62.

Ghezzi, I., Cannatelli, P., Assennato, G., Merlo, F., Mocarelli, P., Brambilla, P., Sicurello, F. 1982. Potential 2,3,7,8-tetrachlorodibenzo-p-dioxin exposure of Seveso decontamination workers: A controlled prospective study. Scand. J. Work Environ. Health 8 (Suppl. 1):176-179

EPI OTH OCC DIO HUM

This study is essentially a study of TCDD exposure among a group of workers who cleaned up after the Seveso accident. The authors measured a series of clinical parameters and on the basis of no alterations in these parameters concluded that the protective equipment prevented exposure.

Giavini, E., Prati, M., and Vismara, C. 1982a. Rabbit teratology study with 2,3,7,8-tetrachlorodibenzo-p-dioxin. Environ. Res. 27:74-78

REP TER ORL DIO RAB

See IV-170.

Giavini, E., Prati, M., and Vismara, C. 1982b. Effects of 2,3,7,8-tetrachlorodibenzo-p-dioxin administered to pregnant rats during the preimplantation period. Environ. Res. 29:185-189

REP TER ORL DIO RAT

See Page IV-168.

Giavini, E., Prati, M., and Vismara, C. 1983. Embryotoxic effects of 2,3,7,8-tetrachlorodibenzo-p-dioxin administered to female rats before mating. Environ. Res. 31:105-110

REP TER ORL DIO RAT

See Page IV-169.

Gilbertson, M., and Fox, G.A. 1983. Chick edema disease and hepatic porphyria in Lake Ontario herring gull embryos in the early 1970's. In Tucker, R.E., Young, A.L., and Gray, A.P., eds. Human and Environmental Risks of Chlorinated Dioxins and Related Compounds. Plenum Press, New York. Pp. 341-356

HEP PCT REP TER ENV DIO BRD

The authors studied the hatchability of eggs and the health of chicks from Herring Gull colonies on Lake Ontario and Lake Erie. They concluded that these birds were exposed to an agent in their food that caused embryotoxicity, subcutaneous edema, and hepatic porphyria. Retrospective chemical analysis of eggs revealed TCDD, DDE, PCBs, mirex, hexachlorobenzene, and other contaminants. No conclusions could be reached about the specific causative agent.

Goldsmith, R.M., Tepe, S.J., Zenick, H., and Manson, J. 1981. Spermatotoxic response of the rat to various xenobiotic insults. The Toxicologist 1:151-152 (Abstract)

REP ORL 25T RAT ABS

See Page IV-161.

Goldstein, J.A., Linko, P. and Bergman, H. 1982. Induction of porphyria in the rat by chronic versus acute exposure to 2,3,7,8-tetrachlorodibenzo-p-dioxin. Biochem. Pharmacol. 31:1607-1613

ACU PCT SCR ORL DIO RAT

See Page IV-218.

Gopalan, H.N.B., and Njagi, G.D.E. 1981. Mutagenicity testing of pesticides. III. Drosophila: Recessive sex linked lethals. Genetics 97 (Suppl. 1):S44 (Abstract)

GEN 24D ADD ABS

See Page IV-53.

This is a brief abstract of a study of the ability of a number of pesticides to induce sex-linked recessive lethal mutations in Drosophila melanogaster. 2,4-D was negative.

Gunby, P. 1982. Light at end of tunnel in Orange controversy. Medical news. J. Am. Med. Assoc. 247:1382

ORN HUM COM

This is an editorial describing the forthcoming Air Force study of Operation Ranch Hand personnel and the predicted effect on veterans compensation claims.

Gunby, P. 1983. More questions, not answers, emerge from agent orange studies. J. Am. Med. Assoc. 249:2743-2746

ACN CAR REP DIO ORN HUM COM REV

This is a news report describing recent studies and reports on PCDD toxicity and relating those reports to concerns about health effects in Vietnam veterans.

Hall, P., and Selinger, B. 1981. Australian 2,4,5-T. Nature 292:286

EPI ENV DIO ORN HUM

This is a letter to the editor revealing that a large quantity of 2,4,5-T imported into Australia was fire-damaged and contained high levels (19 ppm) of TCDD. The authors indicate that civilian exposure to this herbicide could confound epidemiologic studies of Vietnam veterans.

Hall, R.F. 1983. Herbicides: Liberators or poisoners of humankind? Vet. Hum. Toxicol. 25:92-95

DIO ORN

This is a review of the human and veterinary toxicology of phenoxy herbicides and PCDD impurities which includes a risk/benefit analysis and concludes that phenoxy herbicides should not be banned (9 references).

Halperin, W.E., Honchar, P.A., and Fingerhut, M.A. 1982. Dioxin: An overview. Am. Statistician 36:285-289

CAR REP DIO 25T HUM REV

This is a somewhat superficial review of the health effects of PCDD and 2,4,5-T discussing mortality, reproductive effects, and morbidity (23 references).

Hannah, R.R., Nebert, D.W., and Eisen, H.J. 1981. Regulatory gene product of the Ah complex. J. Biol. Chem. 256:4584-4590

MEC IVT DIO MUS

See Pages IV-110 and IV-124.

Hardell, L. 1981a. Case-control studies: Soft-tissue sarcomas and malignant lymphomas and exposure to phenoxy acids or chlorophenols. Prog. Mutat. Res. 2:105-108

CAR EPI OCC ORN HUM

This is an English-language version of a study published earlier in Lakartidningen (1977) and discussed in the JRB (1981) report.

Hardell, L. 1981b. Relation of soft-tissue sarcoma, malignant lymphoma and colon cancer to phenoxy acids, chlorophenols and other agents. Scand. J. Work Environ. Health 7:119-130

CAR EPI OCC DIO ORN HUM

See Page IV-5.

Hardell, L. 1983. Epidemiological studies on soft-tissue sarcoma, malignant lymphoma, nasal and nasopharyngeal cancer, and their relation to phenoxy acid or chlorophenol exposure. In Choudhary, G., Keith, L.H., and Rappe, C., eds. Chlorinated Dioxins and Dibenzofurans in the Total Environment. Butterworth Publishers, Boston. Pp. 367-374

CAR EPI OCC ENV DIO ORN HUM REV

This is a review of Scandinavian epidemiological studies linking occupational exposure to phenoxy herbicides and chlorinated phenols with various types of cancer (48 references).

Hardell, L., and Eriksson, M. 1981a. Soft-tissue sarcomas, phenoxy herbicides, and chlorinated phenols (letter). Lancet (2):250

CAR DIO ORN HUM COM REV

See Page IV-5.

This is a letter responding to the letter of Cook (1981) in Lancet. The author addresses Cook's assertion that smoking is a differentiating factor in soft-tissue sarcoma cases.

Hardell, L., and Eriksson, M. 1981b. [Phenoxy acids, chlorophenols, and cancer.] Lakartidningen 78:2862-2863 (Swedish)

CAR OCC DIO ORN HUM REV

This is a secondary reference which reviews the seven cases of soft-tissue sarcoma reported among U.S. workers occupationally exposed to phenoxy herbicides and PCDD.

Hardell, L., and Axelson, O. 1982. Soft-tissue sarcoma, malignant lymphoma and exposure to phenoxy acids or chlorophenols (letter). Lancet (1):1408-1409

CAR EPI DIO ORN HUM

This is a letter to Lancet commenting on the Lancet editorial (1981) discussing the relationship of various types of cancer to exposure to phenoxy herbicides and chlorinated phenols.

Hardell, L., Eriksson, M., Lenner, P., and Lundgren, E. 1981. Malignant lymphoma and exposure to chemicals, especially organic solvents, chlorophenols and phenoxy acids: A case-control study. Br. J. Cancer 43:169-176

CAR EPI OCC DIO ORN HUM

This is an English language version of the report by the same authors published in Lakartidningen (1980) and discussed in the JRB (1981) report.

Hardell, L., Johansson, B., and Axelson, O. 1982. Epidemiological study of nasal and nasopharyngeal cancer and their relation to phenoxy acid or chlorophenol exposure. Am. J. Industr. Med. 3:247-257

CAR EPI OCC DIO ORN HUM

See Page IV-6.

Hassoun, E.M., and Dencker, L. 1982. TCDD embryotoxicity in the mouse may be enhanced by beta-naphthoflavone, another ligand of the Ah-receptor. Toxicol. Lett. 12:191-198

ENZ MEC TER INJ DIO MUS

See Pages IV-112, IV-167, and IV-168.

Hatch, M., and Kline, J. 1981. Spontaneous abortion and exposure during pregnancy to the herbicide 2,4,5-T. Final Report. EPA-560/6-81-006; Order No. PB81-165789. (62 pages)

REP TER ENV ORN 25T HUM

See Page IV-185.

Hay, A. 1981a. Chlorinated dioxins and the environment. Nature 289:351-352

ENV DIO ORN HUM REV

This is a summary of the proceedings of the Workshop on the Impact of Chlorinated Dioxins and Related Compounds in the Environment held in Rome in October, 1980.

Hay, A. 1981b. Dioxin hazards: Secrecy at Coalite. Nature 290:729

HEP IMM OTH OCC DIO HUM COM REV

See Page IV-194.

This is a news report/editorial commenting on the apparent reluctance of Coalite and Chemical Products, Ltd. to sponsor or cooperate in follow-up studies of 90 workers who displayed signs and symptoms of TCDD toxicity when working at the plant 10 years earlier.

Hay, A. 1981c. Dioxin a sarcoma risk. Nature 290:729

CAR EPI DIO ORN HUM REV

This is a very brief note calling attention to recent publications by Honchar and Halperin (1981) and by Hardell and co-workers pointing out potential relationship between exposure to phenoxy herbicides and PCDD and soft-tissue sarcoma.

Hay, A. 1982a. The Chemical Scythe: Lessons of 2,4,5-T and Dioxin. Plenum Press, New York. (227 pages)

DIO 25T REV

This book reviews the toxicology and history of exposure to PCDD, 2,4,5-T, and other related chlorinated hydrocarbons. It contains extensive discussions of the politics and sociology connected with these issues as well.

Hay, A. 1982b. Exposure to TCDD: The health risks. In Hutzinger, O., Frei, R.W., Merian, E., and Pocchiari, F., eds. Chlorinated Dioxins and Related Compounds, Impact on the Environment. Pergamon Press, New York. Pp. 589-599

ACN CAR CVT GEN IMM DIO HUM REV

This is a review of 24 industrial accidents or manufacturing situations in which there was exposure to PCDD. The author assesses the evidence for long-term sequelae (31 references).

Hay, A. 1982c. Phenoxy herbicides, trichlorophenols, and soft-tissue sarcomas (letter). Lancet (1):1240

CAR EPI OCC DIO ORN HUM COM REV

This is a letter to the editor reviewing and commenting upon recent evidence linking soft-tissue sarcomas with exposure to phenoxy herbicides and/or chlorinated phenols.

Hay, A., Ashby, J., Styles, J.A., and Elliott, B. 1983. The mutagenic properties of 2,3,7,8-tetrachlorodibenzo-p-dioxin. American Chemical Society, Division of Environmental Chemistry 23:14-22 (Preprint extended abstract)

GEN IVT DIO CEL MIC REV

See Page IV-66.

Helder, T. 1982. Effects of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) on early life stages of two fresh-water fish species. In Hutzinger, O., Frei, R.W., Merian, E.,

and Pocchiari, F., eds. Chlorinated Dioxins and Related Compounds, Impact on the Environment. Pergamon Press, New York. Pp. 455-462

TER OTE DIO FSH

See Page IV-174.

Henck, J.M., New M.A., Kociba, R.J., and Rao, K.S. 1981. 2,3,7,8-Tetrachlorodibenzo-p-dioxin: Acute oral toxicity in hamsters. Toxicol. Appl. Pharmacol. 59:405-407

ACU ORL DIO HAM

See Page IV-243.

Herbicide Committee of the Inverness--Victoria Medical Society. 1983. Health effects of herbicides 2,4-D and 2,4,5-T. A Report to the Nova Scotia Forestry Commission. January 16, 1983 (49 pages)

CAR REP OCC ENV DIO ORN HUM REV

This is an extensive literature review of evidence for cancer and birth defects resulting from exposure to phenoxy herbicides with particular emphasis on defining a quantitative basis for a safe level of exposure (84 references).

Herbold, B.A., Machemer, L., and Rohrborn, G. 1982. Mutagenicity studies with 2,4,5-T on bacteria and mammalian germ cells. Teratog. Carcinog. Mutagen. 2:91-101

GEN REP IVT ORL 25T HAM MIC RAT

See Pages IV-51, IV-52, IV-57, and IV-158.

Hervonen, H., Elo, H.A., and Ylitalo, P. 1982. Blood-brain damage by 2-methyl-4-chlorophenoxyacetic acid herbicide in rats. Toxicol. Appl. Pharmacol. 65:23-31

MEC NEU INJ 24D RAT

See Page IV-235.

Hervonen, H., Ylitalo, P., Elo, H., and Kyottila, J. 1981. Blood brain barrier (BBB) damage during intoxication by chlorophenoxyacetic acid herbicides in rats. Acta Physiol. Scand. 112:19A (Abstract)

MEC NEU INJ 24D RAT ABS

This is an abstract of the paper published later as Hervonen et al. (1982).

Hobson, L.B. 1983a. Porphyria cutanea tarda. Report prepared for the Agent Orange Projects Office, Veterans Administration, Washington, D.C., April, 1983 (10 pages)

PCT OCC ENV DIO ORN HUM REV

See Page IV-215.

This is a review describing the condition known as porphyria cutanea tarda, identifying its causes and contributing factors, and discussing evidence that it is caused by TCDD (30 references).

Hobson, L.B. 1983b. Epidemiology of soft-tissue sarcoma and related human research. Report prepared for the Agent Orange Projects Office, Veterans Administration, Washington, D.C., April, 1983 (15 pages)

CAR EPI OCC ENV DIO ORN HUM REV

This is a summary and critical review of the epidemiologic evidence linking soft-tissue sarcoma with exposure to phenoxy herbicides and PCDD (47 references).

Hobson, L.B., Lee, L.E., Gross, M.L., and Young, A.L. 1983. Dioxin in body fat and health status: A feasibility study. American Chemical Society, Division of Environmental Chemistry 23:91-93 (Preprint extended abstract)

MET ENV DIO ORN HUM ABS

See Page V-9 and V-36.

Hoffman, D.J., and Eastin, W.C., Jr. 1982. Effects of lindane, paraquat, toxaphene, and 2,4,5-trichlorophenoxyacetic acid on mallard embryo development. Arch. Environ. Contam. Toxicol. 11:79-86

TER OTE 25T BRD

See Page IV-162.

Holden, C. 1981a. UCLA designing big agent orange study. Science 212:905

EPI ORN HUM COM

This is a news report describing a contract of the VA with UCLA to devise an epidemiology protocol to study

the effects of Agent Orange exposure on ground troops in Vietnam.

Holden, C. 1981b. Reviewers pan agent orange study plan. Science 214:1107

EPI ORN HUM COM

This is a news report indicating that the initial protocol for a cohort study of Vietnam ground troops was criticized by reviewers.

Hood, R.D. 1983. Toxicology of prenatal exposure to arsenic. In Lederer, W.H., and Fensterheim, R.J., eds. Arsenic: Industrial, Biomedical, Environmental Perspectives. Van Nostrand Reinhold Company, New York. Pp. 134-148

REP TER CAC REV

This review summarizes earlier studies on the reproductive effects of arsenic compounds.

Hood, R.D., Harrison, W.P., and Vedel, G.C. 1982a. Prenatal effects of arsenic metabolites in the hamster. Teratology 25:50A (Abstract)

TER INJ CAC HAM ABS

This is an abstract of the study published as Hood et al. (1982b) in the Bull. Environ. Contam. Toxicol.

Hood, R.D., Harrison, W.P., and Vedel, G.C. 1982b. Evaluation of arsenic metabolites for prenatal effects in the hamster. Bull. Environ. Contam. Toxicol. 29:679-687

TER INJ CAC HAM

See Page VII-7.

Horvath, E.P., Jr. 1981. The agent orange controversy: Physician's dilemma. Wis. Med. J. 80:16-18

ORN HUM REV

This is a brief review of the health effects of phenoxy herbicides and PCDD and a description of VA programs designed to aquaint physicians with appropriate procedures to follow when examining Vietnam veterans who may have been exposed to Agent Orange (no references).

Hudson, L.G., Shaikh, R., Toscano, W.A., Jr., and Greenlee, W.F. 1983. Induction of 7-ethoxycoumarin o-deethylase activity

in cultured human epithelial cells by 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD): Evidence for TCDD receptor. Biochem. Biophys. Res. Commun. 115:611-617

ENZ MEC IVT DIO CELL

See Pages IV-99 and IV-123.

Hunter, H.C., Rathus, E., Oxenham, B., Kelly, J., and Donohue, J. 1981. 2,4-D, 2,4,5-T and human health. A report by an Interdepartmental Committee appointed by Queensland Cabinet (38 pages)

CAR EPI GEN HEP MET REP OCC ENV 24D 25T HUM REV

This is a report prepared by an Australian government committee justifying conclusions that the use of 2,4-D and 2,4,5-T should be continued in Queensland. It reviews health effects and exposure information (82 references).

Ideo, G., Bellati, G., Bellobuono, A., Mocarelli, P., Marocchi, A., and Brambilla, P. 1982. Increased urinary D-glucaric acid excretion by children living in an area polluted with tetrachlorodibenzoparadioxin (TCDD). Clin. Chim. Acta 120:273-283

ENZ EPI ENV DIO HUM

See Pages IV-78 and IV-118.

Innes, J.R.M., Ulland, B.M., Walerio, M.G., Petrucelli, L., Fishbein, L., Hart, E.R., Pallotta, A.G., Bates, R.R., Falk, H.L., Gart, J.J., Mitchell, I., Klein, M., and Peters, J. 1969. Bioassay of pesticides and industrial chemicals for tumorigenicity in mice: A preliminary note. J. Natl. Cancer Inst. 42:1101-1114

CAR ORL CAC MUS

See Page VII-1.

International Agency for Research on Cancer (IARC). 1980. Some metals and metallic compounds. IARC Monographs on the Evaluation of Carcinogenic Risk of Chemicals to Humans. World Health Organization, Vol. 23. Pp. 39-142

CAC REV

This is a review of toxicology data on arsenic and its compounds (including cacodylic acid) with emphasis on potential carcinogenic activity in humans and animals.

International Agency for Research on Cancer (IARC) Ad Hoc Working Group. 1982. Chemicals, Industrial Processes and Industries Associated with Cancer in Humans. IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans. Inter. Agency for Res. on Cancer. Supplement 4, pp. 11-14, 89, 101-103, 205-206, 211-212, 235-243, 249-250

CAR EPI 24D DIO ORN 25T HUM REV

This is a series of conclusions regarding the potential carcinogenic activity of 2,4-D, 2,4,5-T, and TCDD.

International Steering Committee For The Study Of The Health Effects Of The Seveso Accident, 1982. Conclusions and Recommendations of the Fifth Meeting, January 9-12, 1982, Milano, Italy (21 pages) (Draft)

CAR EPI HEP NEU REP ENV DIO HUM REV

This report represents the conclusions reached by a panel of health experts reviewing the available evidence of the health consequences of the Seveso accident (no references).

Iyer, V.G., Ranish, N.A., and Fenichel, G.M. 1981. Ionic conductance and experimentally induced myotonia. J. Neurol. Sci. 49:159-164

NEU IVT 24D RAT

See Page IV-232.

Jensen, D.J., Hummel, R.A., Mahle, N.H., Kocher, C.W., and Higgins, H.S. 1981. A residue study on beef cattle consuming 2,3,7,8-tetrachlorodibenzo-p-dioxin. J. Agric. Food Chem. 29:265-268

MET ORL DIO ADD

See Pages V-17 and V-37.

Johansson, G., Gillner, M., Hoegberg, B., and Gustafsson, J.A. 1982. The TCDD receptor in rat intestinal mucosa and its possible dietary ligands. Nutr. Cancer 3:134-144
MEC IVT DIO RAT

See Page IV-100.

Johnson, F.E., Kugler, M.A., and Brown, S.M. 1981. Soft tissue sarcomas and chlorinated phenols (letter). Lancet (2):40

CAR OCC ORN HUM

See Pages IV-20 and IV-21.

Jones, K.G., and Sweeney, G.D. 1982. The role of iron in the toxicity of TCDD. In Hutzinger, O., Frei, R.W., Merian, E., and Pocchiari, F., eds. Chlorinated Dioxins and Related Compounds, Impact on the Environment. Pergamon Press, New York. Pp. 519-523

ACN HEP MEC OOG DEM INJ DIO MUS

See Page IV-219.

Jones, K.G., Cole, F.M., and Sweeney, G.D. 1981. The role of iron in the toxicity of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD). Toxicol. Appl. Pharmacol. 61:74-88

ACN HEP IMM MEC PCT DEM INJ DIO MUS

See Pages IV-84, IV-96, and IV-219.

Jotz, M.M., and Mitchell, A.D. 1980. An evaluation of mutagenic potential of cacodylic acid employing the L5178Y TK +/- mouse lymphoma assay. Prepared for EPA by SRI International, Menlo, California. SRI Project LSU-7558, Contract No. 68-0202947 (13 pages)

GEN IVT CAC CEL

See Pages VII-3 and VII-4.

Kang, H.K., Enzinger, F.W., Hobson, L.B., and Shepard, B.M. 1983. Research protocol: A matched case-control study of soft tissue sarcoma. Veterans Administration, Agent Orange Projects Office, Deparment of Medicine and Surgery, Deparment of Soft Tissue Pathology and the Armed Forces Institute of Pathology (21 pages)

CAR EPI OCC ORN HUM

This is a protocol for a study currently being conducted by the Veterans Administration.

Karenlampi, S.O., Marin, E., and Hanninen, O.O.P. 1982. Growth and cytochrome P-450 of yeasts subjected to various foreign chemicals. Arch. Environ. Contam. Toxicol. 11:693-698

MEC MET CYT IVT 25T MIC

See Page IV-98.

Kasza, L. 1980. Review of liver slides from the National Cancer Institute picloram experiment (letter--May 1, 1980).

Environmental Protection Agency, Toxicology Branch, HED, TS-769, Washington, D.C. (2 pages)

CAR ORL PIC MUS RAT COM

See Page VI-3.

Kearney, P.C. 1983. Problems in agriculture with TCDD. In Coulston, F., and Pocchiari, F., eds. Accidental Exposure to Dioxins, Human Health Effects. Academic Press, New York. Pp. 233-244

MET REP OCC ENV 24D ORN 25T HUM REV

This is a review of studies on absorption and reproductive toxicity of phenoxy herbicides in humans with emphasis on exposure through agricultural use (21 references).

Khalatkar, A.S., and Bhargava, Y.R. 1982. 2,4-Dichlorophenoxyacetic acid--A new environmental mutagen. Mutat. Res. 103: 111-114

GEN CYT OTH 24D PLA

The authors studied the mutagenic effects of 2,4-D in hull-less barley. Under the conditions of their assay, 2,4-D caused mutations. The significance of this finding for human health is not clear.

Kim, C.S., and O'Tuama, L.A. 1981. Choroid plexus transport of 2,4-dichlorophenoxyacetic acid: Interaction with the organic acid carrier. Brain Res. 224:209-212

MET NEU IVT 24D ADD

See Page IV-233.

Kim, C.S., O'Tuama, L.A., Mann, J.D., and Roe, C.R. 1983. Saturable accumulation of the anionic herbicide 2,4-dichlorophenoxyacetic acid (2,4-D) by rabbit choroid plexus: Early developmental origin and interaction with salicylates. J. Pharmacol. Exp. Ther. 225:699-704

MEC NEU INJ IVT 24D RAB

See Page IV-233.

Kimbrough, R.D. 1982. Disposition and body burdens of halogenated aromatic compounds: Possible association with health effects in humans. Drug. Metab. Rev. 13:485-497

MET DIO REV

This is a review of the absorption, distribution, and metabolism of halogenated hydrocarbons in humans. It contains a short paragraph stating that there are no studies relating TCDD body burdens to exposure (43 references).

Kimbrough, R.D. 1983a. Morphology of lesions produced by the dioxins and related compounds. In Tucker, R.E., Young, A.L., and Gray, A.P., eds. Human and Environmental Risks of Chlorinated Dioxins and Related Compounds. Plenum Press, New York. Pp. 527-538

HEP PCT OOG REV

This is a review with emphasis on the histopathology of pathological lesions in experimental animals treated with TCDD and related compounds (22 references).

Kimbrough, R.D. 1983b. Methodology of clinical studies on exposed populations. In Tucker, R.E., Young, A.L., and Gray, A.P., eds. Human and Environmental Risks of Chlorinated Dioxins and Related Compounds. Plenum Press, New York. Pp. 563-574

EPI DIO HUM REV

This is a general discussion of how to use epidemiology studies to assess the health effects of chemicals. It contains no specific data on TCDD (22 references).

Kirkhart, B. 1980. Micronucleus test on cacodylic acid. SRI Project No. LSU 7558-19, Contract No. 68-02-2947 (8 pages)

GEN INJ CAC MUS

See Pages VII-2 and VII-4.

Kiss, Z., Ando, A., Buzas, E., and Mazarean, H. 1981. Studies on metabolism of rats treated with 2,4-dichlorophenoxyacetate. III. Changes of nucleic acid content and lactate dehydrogenase activity in liver. Proc. 21st Hung. Annu. Meet. Biochem., Veszprem. Pp. 57-58

HEP MEC INJ 24D RAT

See Page IV-242.

Knutson, J.C., and Poland, A. 1981. 2,3,7,8-Tetrachlorodibenzo-p-dioxin: Toxicity in vivo and in vitro. In Khan, M.A.Q., and Stanton, R.H., eds. Toxicology and Halogenated Hydrocarbons, Health and Ecological Effects. Pergamon Press, New York. Pp. 187-201

ENZ MEC DIO REV

See Pages III-3 and III-4.

This is a thorough review of data on the relationship of the TCDD receptor to toxicity and the control of this receptor by the Ah gene locus. The authors include an extensive discussion of theoretical mechanisms of toxicity (29 references).

Knutson, J.C., and Poland, A. 1982. Response of murine epidermis to 2,3,7,8-tetrachlorodibenzo-p-dioxin: Interaction of the Ah and hr loci. Cell 30:225-234

ACN ENZ MEC MET SKN DEM DIO MUS

See Pages IV-84, IV-93, and IV-212.

Kociba, R.J., and Schwetz, B.A. 1982. Toxicity of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD). Drug Metab. Rev. 13: 387-406

ACN CAR GEN IMM MEC MET REP DIO REV

This is an extensive review of the toxicology of TCDD with special emphasis on animal experiments and interspecies comparisons of effects and potency (69 references).

Kohli, K.K., and Goldstein, J.A. 1981. Effects of 2,3,7,8-tetrachlorodibenzo-p-dioxin on hepatic and renal prostaglandin synthetase. Life Sci. 29:299-305

ENZ HEP MEC INJ DIO RAB

See Pages IV-84 and IV-92.

Kolbye, A.C., Jr. 1983. Mechanisms of carcinogenesis related to TCDD. In Coulston, F., Pocchiari, F., eds. Accidental Exposure to Dioxins, Human Health Aspects. Academic Press, New York. Pp. 191-195

CAR DIO HUM COM

This is essentially a theoretical discussion of possible mechanisms of chemical carcinogenesis with TCDD used as an example. This paper contains no experimental information.

Korgeski, G.P. 1981. Psychological, neuropsychological and medical correlates of self-reported and objective ratings of herbicide exposure among Vietnam veterans. University of Minnesota, Ph.D. Dissertation (142 pages)

EPI NEU ENV ORN HUM

See Page IV-228.

Korte, C., and Jalal, S.M. 1982. 2,4-D induced clastogenicity and elevated rates of sister chromatid exchanges in cultured human lymphocytes. J. Hered. 73:224-226

GEN IVT 24D CEL HUM

See Page IV-59.

Koschier, F.J., and Hong, S.K. 1981. Effect of 2,4,5-trichlorophenoxyacetate on renal function. Food Cosmet. Toxicol. 19:189-193

ACU REN INJ 25T RAT

See Page IV-239.

Kovsznay, B. 1982. A study of the health effects of herbicide exposure in highway maintenance workers. Report to the Governor and Legislature: Dioxin exposure. Article 24-B, Public Health Law, New York State Department of Health, Albany, New York 12237. Pp. 53-74

EPI OCC ORN HUM REV

The rationale and protocol for an epidemiologic study of New York State highway workers who have been engaged in the spraying of herbicides are given. It includes a review of health effects information (49 references).

Kriebel, D. 1981. The dioxins: Toxic and still troublesome. Environment 23:6-13

GEN REP TER DIO HUM REV

This is a review of PCDD emphasizing environmental sources and fate and human exposure. It contains a discussion of genetic and reproductive toxicity (55 references).

Kubinski, H., Gutzke, G.E., and Kubinski, Z.O. 1981. DNA-cell-binding (DCB) assay for suspected carcinogens and mutagens. Mutat. Res. 89:95-136

GEN IVT 24D MIC

See Pages IV-60 and IV-61.

Kunstadter, P. 1982. A study of herbicides and birth defects in the Republic of Vietnam: An analysis of hospital records. National Academy of Science/National Research Council (NAS/NRC). National Academic Press (73 pages)

EPI GEN REP TER ENV ORN HUM

See Pages IV-146, IV-147, and IV-148.

Kuntz, A.J., and Page, W.F. 1981. Morbidity among Vietnam era veterans. Proceedings of the Social Statistics Section, Meeting of the American Statistical Association (7 pages)

ACN EPI NEU ORN HUM

See Page IV-226.

Kurl, R.N., Furuhashi, N., and Villee, C.A. 1983. Further characterization of the dioxin receptor in the rat deciduoma. Biochem. Int. 6:393-401

MEC IVT DIO RAT

See Page IV-101.

Kurl, R.N., Lund, J., Poellinger, L., and Gustafsson, J.A. 1982a. Differential effect of 2,3,7,8-tetrachlorodibenzo-p-dioxin on nuclear RNA polymerase activity in the rat liver and thymus. Biochem. Pharmacol. 31:2459-2462

ENZ MEC INJ DIO RAT

See Page IV-111.

Kurl, R.N., Lund, J., Poellinger, L., and Gustafsson, J.A. 1982b. Interaction of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) with rat hepatic and thymic cell nuclei. In Hutzinger, O., Frei, R.W., Merian, E., and Pocchiari, F., eds. Chlorinated Dioxins and Related Compounds, Impact on the Environment. Pergamon Press, New York. Pp. 437-447

HEP MEC OOG INJ DIO RAT

This is essentially the same study as that described in Kurl et al. (1982a) and discussed in Section IV.C.

Kurzel, R.B., and Cetrulo, C.L. 1981. The effect of environmental pollutants on human reproduction, including birth defects. Environ. Sci. Technol. 15:626-640

EPI GEN REP TER OCC ENV 24D DIO ORN 25T HUM REV

This is a general and fairly detailed review of chemically induced reproductive impairment in humans as supported by results in experiments with animals (156 references).

Lake, B.G. 1981. Dioxin: Induction of xenobiotic metabolism. Food Cosmet. Toxicol. 19:387-389

MET DIO REV

This short review article summarizes studies on the metabolic, toxic, and enzyme-inducing effects of TCDD.

Lamb, J.C., IV., Moore, J.A., Marks, T.A., and Haseman, J.K. 1981a. Development and viability of offspring of male mice treated with chlorinated phenoxy acids and 2,3,7,8-tetrachlorodibenzo-p-dioxin. J. Toxicol. Environ. Health 8:835-844

GEN REP TER ORL 24D DIO ORN 25T MUS

This study was included in the JRB (1981) report as an NTP report No. NTP-80-44 and cited as Lamb, J.C., Moore, J.A., and Marks, T.A. 1980.

Lamb, J.C., IV., Marks, T.A., Gladen, B.C., Allen, J.W., and Moore, J.A. 1981b. Male fertility, sister chromatid exchange, and germ cell toxicity following exposure to mixtures of chlorinated phenoxy acids containing 2,3,7,8-tetrachlorodibenzo-p-dioxin. J. Toxicol. Environ. Health 8:825-834

GEN REP CYT INJ ORL 24D DIO ORN 25T MUS

See Pages IV-49 and IV-51.

Lamb, J.C., IV., Marks, T.A., McConnell, E.E., Abeywickrama, K., and Moore, J.A. 1981c. Toxicity of chlorinated phenoxy acids in combination with 2,3,7,8-tetrachlorodibenzo-p-dioxin in C57BL/6 male mice. J. Toxicol. Environ. Health 8:815-824

HEP SCR ORL 24D DIO 25T MUS

See Page IV-241.

Lave, L.B. 1983. Risk assessment for regulation of dioxin (TCDD). In Tucker, R.E., Young, A.L., and Gray, A.P., eds. Human and Environmental Risks of Chlorinated Dioxins and Related Compounds. Plenum Press, New York. Pp. 635-638

CAR DIO HUM REV

This is a discussion of assumptions and methods of quantitative risk assessment that mentions TCDD in passing.

LaVecchio, F.A., Pashayan, H.M., and Singer, W. 1983. Agent orange and birth defects (letter). N. Engl. J. Med. 308: 719-720

GEN REP TER OCC ORN HUM COM

See Page IV-146.

This letter to the editor gives an account of the author's experience with birth defects among children of men who served in Vietnam. This report is essentially anecdotal.

Lavy, T.L., Flynn, R.R., and Mattice, J.D. 1981. Exposure of aerial applicators to 2,4-D. Arkansas Farm Res. 30:7

MET DEM DIO HUM

See Page V-5.

Lavy, T.L., Walstad, J.D., Flynn, R.R., and Mattice, J.D. 1982. (2,4-Dichlorophenoxy)acetic acid exposure received by aerial application crews during forest spray operations. J. Agric. Food Chem. 30:375-381

MET DEM 24D HUM

See Page V-5.

Lee, I.P., Suzuki, K., and Nagayama, J. 1981. Metabolism of benzo(a)pyrene in rat prostate glands following 2,3,7,8-tetrachlorodibenzo-p-dioxin exposure. Carcinogenesis 2:823-831

ENZ HEP MEC OOG ORL DIO RAT

See Pages IV-84, IV-89, IV-90, IV-117 and IV-123.

Legraverend, C., Hannah, R.R., Eisen, H.J., Owens, I.S., Nebert, D.W., and Hankinson, O. 1982. Regulatory gene product of the Ah locus. J. Biol. Chem. 257:6402-6407

MEC IVT DIO CEL

See Pages IV-106 and IV-124.

Leng, M.L. 1982. Jumping chickens: Relevance to hazard in humans. Science 215:1421-1422 (Commentary)

ACU NEU INJ 25T BRD COM

This is a letter to the editor criticizing the paper published by Sanderson and Rodgers (1981) in Science (see JRB 1981).

Leng, M.L., Ramsey, J.C., Braun, W.H., and Lavy, T.L. 1982. Review of studies with 2,4,5-trichlorophenoxyacetic acid in humans including applicators under field conditions. In Plimmer, J.R., ed. Pesticides Residues and Exposure. ACS Symp. Ser. 182:133-156

MET DEM ORL OCC 25T HUM REV

This is a review of studies of the absorption, distribution and excretion of 2,4,5-T (29 references).

Lesca, P. 1981. Influence of the rate of 7,12-dimethylbenz(a)-anthracene metabolic activation, in vivo, on its binding to epidermal DNA and skin carcinogenesis. Carcinogenesis 2:199-204

ENZ MEC SKN DEM DIO MUS

See Pages IV-84, IV-115, and IV-125.

Lindgren, A., Vahter, M., and Dencker, L. 1982. Autoradiographic studies on the distribution of arsenic in mice and hamsters administered As-arsenite or-arsenate. Acta Pharmacol. Toxicol. 51:253-265

MET INJ CAC HAM MUS

See Page VII-11.

Linnainmaa, K. 1983a. Genotoxicity of phenoxy acid herbicides 2,4-D and MCPA. Helsinki. Dissertation (65 pages)

GEN MEC IVT ORL ENV 24D HAM HUM RAT REV

This is a doctoral dissertation that contains the data published in Linnainmaa (1983b, c, d) and in Vainio et al. (1982, 1983).

Linnainmaa, K. 1983b. Nonmutagenicity of phenoxy acid herbicides 2,4-D and MCPA. In Choudhary, G., Keith, L.H., and Rappe, C., eds. Chlorinated Dioxins and Dibenzofurans in the Total Environment. Butterworth Publishers, Boston. Pp. 385-395

GEN 24D REV

Linnainmaa, K. 1983c. Sister chromatid exchanges among workers occupationally exposed to phenoxy acid herbicides 2,4-D and MCPA. Teratog. Carcinog. Mutagen. 3:269-280

GEN OCC 24D ORN HUM

See Pages IV-48, IV-49 and IV-50.

Linnainmaa, K. 1983d. Induction of sister chromatid exchanges by the peroxisome proliferators 2,4-D, MCPA, and clofibrate in vivo and in vitro. Carcinogenesis (Accepted for publication)

GEN IVT ORL 24D CEL HAM RAT

See Pages IV-52, IV-53, and IV-60.

Linnainmaa, K., and Vainio, H. 1982. SCES among herbicide sprayers exposed to 2,4-D, and MCPA (meeting abstract). Twelfth Annual Meeting of the European Environmental Mutagen Society, June 20-24, 1982, Dipoli, Espoo, Finland. European Environment Mutagen Society

Unable to locate.

Long, J.R., and Hanson, D.J. 1983. Dioxin issue focuses on three major controversies in the United States. Chem. Eng. News 61:23-36

MIS ENV DIO HUM REV

This is a historical review of PCDD issues focusing on sources of human exposure and environmental levels (no references).

Longstreth, J.D., and Hushon, J.M. 1983. Risk assessment for 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD). In Tucker, R.E., Young, A.L., and Gray, A.P., eds. Human and Environmental Risks of Chlorinated Dioxins and Related Compounds. Plenum Press, New York. Pp. 639-664

CAR DIO HUM REV

This is a detailed quantitative cancer risk assessment which contains a review of health effects information (34 references).

Loprieno, N., Sbrana, I., Rusciano, D., Lascialfari, D., and Lari, T. 1982. In vivo cytogenetic studies on mice and rats exposed to 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD). In Hutzinger, O., Frei, R.W., Merian, E., and Pocchiari, F., eds. Chlorinated Dioxins and Related Compounds, Impact on the Environment. Pergamon Press, New York. Pp. 419-428

GEN INJ IVT ORL DIO CEL HUM MUS RAT

See Pages IV-54, IV-55, and IV-65.

Lund, J., Kurl, R.N., Poellinger, L., and Gustafsson, J.A. 1982. Cytosolic and nuclear binding proteins for 2,3,7,8-tetrachlorodibenzo-p-dioxin in the rat thymus. Biochim. Biophys. Acta 716:16-23

MEC INJ IVT DIO RAT

See Pages IV-105, IV-110, and IV-124.

Luster, M.I., Dean, J.H., and Boorman, G.A. 1982. Altered immune functions in rodents treated with 2,3,7,8-tetrachlorodibenzo-p-dioxin, phorbol-12-myristate-13-acetate, and benzo(a)pyrene. Banbury Report: Environmental Factors in Human Growth and Development 11:199-215

IMM ORL DIO MUS RAT

See Pages IV-193, IV-198, and IV-201.

MacLennan, R., Ford, J., and Coates, M. 1982. Cancer in the Blue Mountains of New South Wales. Med. J. Aust. 2:319-323

CAR EPI HUM

See Page IV-24.

Madhukar, B.V., and Matsumura, F. 1981. Differences in the nature of induction of mixed-function oxidase systems of the rat liver among phenobarbital, DDT, 3-methylcholanthrene, and TCDD. Toxicol. Appl. Pharmacol. 61:110-118

ENZ INJ DIO RAT

See Page IV-87.

Manara, L., Coccia, P., and Croci, T. 1982. Persistent tissue levels of TCDD in the mouse and their reduction as related to prevention of toxicity. Drug Metab. Rev. 13:423-446

ACU LET MET INJ ORL DIO MUS

See Pages V-15, V-36, and IV-245.

Marks, G.S., Zelt, D.T., and Cole, S.P.C. 1982. Alterations in the heme biosynthetic pathway as an index of exposure to toxins. Can. J. Physiol. Pharmacol. 60:1017-1026

PCT DIO REV

This is a review of chemically induced porphyria in humans. It does not contain specific information on TCDD, but it does discuss possible mechanisms at length.

Marni, E., Bisanti, L., Abate, L., Borgna-Pignatti, C., Maggiore, G., Bruzzi, P., and Montesarcho, E. 1982. Birth defects in Seveso: A TCDD-polluted and Epidemiologic Follow-up After Area-wide Chemical Contamination. March 17-19, 1980. National Academy Press, Washington, D.C. Pp. 174-194

EPI TER ENV DIO HUM

This report summarizes studies on birth defects in Seveso and then describes plans for a birth-defects registry to provide long-term follow-up.

Marvinovich, M., Sirtori, C.R., Galli, C.L., and Paoletti, R. 1983. The binding of 2,3,7,8-tetrachlorodibenzodioxin to plasma lipoproteins may delay toxicity in experimental hyperlipidemia. Chem.-Biol. Interact. 45:393-399

ACU MEC INJ IVT DIO HUM RAT

This report describes in vitro and in vivo studies in rats that indicate that blood lipid levels may influence the acute toxicity of TCDD.

Mason, M.E., and Okey, A.B. 1982. Cytosolic and nuclear binding of 2,3,7,8-tetrachlorodibenzo-p-dioxin to the Ah receptor in extra-hepatic tissues of rats and mice. Eur. J. Biochem. 123:209-215

MEC INJ IVT DIO MUS RAT

See Pages IV-107, IV-124, and IV-125.

Matheson, D.P., Smith, A.H., and Fisher, D.O. 1981. Methods used for a study of reproductive outcomes among New Zealand agricultural chemical applicators. Occup. Health 3:17-20

GEN REP TER OCC DIO 25T HUM

See Pages IV-143 and IV-144.

Matthews, H.B., and Birnbaum, L.S. 1983. Factors affecting the disposition and persistence of halogenated furans and dioxins. In Tucker, R.E., Young, A.L., and Gray, A.P., eds. Human and Environmental Risks of Chlorinated Dioxins and Related Compounds. Plenum Press, New York. Pp. 463-475

MET DIO IMP REV

This is a review of tissue distribution, metabolism, and execretion of TCDD and TCDF as shown by animal experiments (36 references).

May, G. 1982. Tetrachlorodibenzodioxin: A survey of subjects ten years after exposure. Br. J. Ind. Med. 39:128-135

CAR CVT ENZ EPI HEP IMM REP OCC DIO HUM

See Pages IV-44, IV-80, IV-118, IV-138, IV-139, and IV-192.

May, G. 1983a. Tetrachlorodibenzodioxin (Reply). Brit. J. Ind. Med. 40:116

This is a brief letter replying by May to criticisms of his 1982 paper.

May, G. 1983b. TCDD: A study of subjects 10 and 14 years after exposure. Chemosphere 12:771-778

ACN CAR CVT EPI OCC DIO HUM

See Pages IV-16 and IV-211.

Mazarean H., Heiner, L.J., Kiss, Z., and Heiner, L. 1981. Studies on metabolism of rats treated with 2,4-dichlorophenoxyacetate. II. Dehydrogenase activities in brain, spinal cord and sciatic nerve. Proc. 21st Hung. Ann. Meet. Biochem., Veszprem. Pp. 55-56

NEU SCR INJ 24D RAT

See Page IV-232.

McCollister, D.D., Copeland, J.R., and Oyen, F. 1967. Results of fertility and reproduction studies in rats maintained on diets containing tordon herbicide. Prepared for EPA by the Biochemical Research Laboratory of the Dow Chemical Company, January 24, 1967 (Unpublished data)

REP ORL PIC RAT

See Page VI-1.

McKinney, J., and McConnell, E. 1982. Structural specificity and the dioxin receptor. In Hutzinger, O., Frei, R.W., Merian, E., and Pocchiari, F., eds. Chlorinated Dioxins and Related Compounds, Impact on the Environment. Pergamon Press, New York. Pp. 367-381

MEC DIO REV

This review describes the evidence regarding the structural specificity of the TCDD receptor (29 references).

McNulty, W.P. 1982. Rhesus macaques: Pertinence for studies on the toxicity of chlorinated hydrocarbon environmental

pollutants. In Chiarelli, A.B., and Corruccini, R.S., eds. Advanced Views in Primate Biology. Springer-Verlage, Berlin. Pp. 111-123

GEN REP TER ORL DIO MKY REV

See Page IV-171.

McNulty, W., and Silano, V. 1982. Animal toxicology. In Hutzinger, O., Frei, R.W., Merian, E., and Pocchiari, F. Chlorinated Dioxins and Related Compounds. Impact on the Environment. Pergamon Press, New York. Pp. 605-606

ACN CAR GEN HEP IMM PCT REP DIO COM REV

This is a short summary of animal toxicology information and research needs prepared by the animal toxicology panel at the International Workshop on Chlorinated Dioxins and Related Compounds held in Rome, Italy in October, 1980.

McNulty, W.P., Pomerantz, I., and Farrell, T. 1981. Chronic toxicity of 2,3,7,8-tetrachlorodibenzofuran for rhesus macaques. Food Cosmet. Toxicol. 19:57-65

SCR ORL IMP MKY

See Page IV-257.

McNulty, W.P., Pomerantz, I.H., and Farrell, T.J. 1982a. Chronic toxicity of 2,3,7,8-tetrachlorodibenzofuran for rhesus macaques. In Hutzinger, O., Frei, R.W., Merian, E., and Pocchiari, F., eds. Chlorinated Dioxins and Related Compounds, Impact on the Environment. Pergamon Press, New York. Pp. 411-418

SCR ORL IMP MKY

See Page IV-257.

This is essentially the same paper as McNulty et al. (1981) in Food Cosmet. Toxicol.

McNulty, W. P., Nielsen-Smith, K. A., Lay, J. O., Jr., Lippstreu, D.L., Kangas, N. L., Lyon, P. A., and Gross, M. L. 1982b. Persistence of TCDD in monkey adipose tissue (letter). Food Chem. Toxicol. 20:985-987

ENZ MET ORL DIO MKY COM

See Pages V-18, V-37, IV-84, and IV-87.

Michigan Department of Public Health (MDPH). 1983. Evaluation of soft and connective tissue cancer mortality rates for Midland and other selected Michigan counties compared nationally and statewide. May 4, 1983 Report. (22 pages)

CAR EPI ENV DIO HUM

See Page IV-23.

Milham, S., Jr. 1982. Herbicides, occupation, and cancer (letter). Lancet (1):1464-1465

CAR EPI ORN HUM

See Page IV-10.

Mohammad, F.K., and St. Omer, V.E.V. 1983. Subtle neurotoxicity of prenatal exposure of rats to a 1:1 mixture of 2,4-dichlorophenoxyacetate (2,4-D) and 2,4,5-trichlorophenolxyacetate (2,4,5-T) on postnatal behavioral and neurochemical development. 13th Annual Meeting, Society for Neuroscience, November 6-11, 1983, Boston, Massachusetts. (Abstract)

NEU TER ORL ORN RAT ABS

See Page IV-151.

Moriya, M., Ohta, T., Watanabe, K., Miyazama, T., Kato, K., and Shirasu, Y. 1983. Further mutagenicity studies on pesticides in bacterial reversion assay systems. Mutat. Res. 116:185-216

GEN IVT 24D MIC

See Page IV-58.

Mortelmans, K.E., Riccio, E.S., and Shepherd, G.F. 1980. In vitro detection of mitotic crossing-over, mitotic gene conversion, and reverse mutation with S. cerevisiae D7 for seven pesticides. Prepared for EPA by SRI International, Menlo, California. SRI Project LSU-7558-20, Contract No. 68-02-2947 (25 pages)

GEN IVT CAC PLA

See Pages VII-2 and VII-4.

Moses, M. 1982. Observations in man. In Hutzinger, O. Frei, R.W., Merian, E., and Pocchiari, F., eds. Chlorinated Dioxins and Related Compounds, Impact on the Environment. Pergamon Press, New York. Pp. 606-608

ACN EPI DIO HUM COM REV

This is a summary of human toxicology and research needs prepared by the human toxicology panel at the International Workshop on Chlorinated Dioxins and Related Compounds held in Rome, Italy in October, 1980.

Moses, M., and Selikoff, I.J. 1981. Soft tissue sarcomas, phenoxy herbicides, and chlorinated phenols (letter). Lancet (1):1370

CAR OCC DIO ORN HUM

See Pages IV-20 and IV-21.

Mottura, A., Zei, G., Nuzzo, F., Crimaudo, C., Giorgi, R., Veneroni, P., Paggini, L., Mocarelli, P., Fraccaro, M., Nicoletti, B., De Carli, L. 1981. Evaluation of results of chromosome analyses on lymphocytes of TCDD exposed subjects after the Seveso accident. Mutat. Res. 85:238-239 (Abstract)

GEN ENV DIO HUM ABS

See Pages IV-42 and IV-43.

Mullison, W.R. 1981. Public concerns about 2,4-D. Proc. West. Soc. Weed Sci. 34:154-193

ACU CAR CHR GEN NEU REP 24D REV

This is an in-depth review of the toxicology of 2,4-D and PCDD including sections on toxicity to livestock, birds, and environmental organisms (133 references).

Murakami, M., and Fukami, J. 1982. Carbaryl binds to proteins of human cells in culture but chlorinated organic chemicals do not. Bull. Environ. Contam. Toxicol. 28:500-503

MEC OTH IVT 24D HUM

In this study, the authors measured the binding of various organic chemicals, including 2,4-D to cultured human embryonic lung cells. 2,4-D did not exhibit specific protein binding. The significance of this finding is unknown.

Nagayama, J., and Kurayak, K. 1981. [Effects of 2,3,7,8-tetrachlorodibenzo-p-dioxin on benzopyrene metabolism in rat prostate glands.] Nippon Eiseigaku Zasshi (Jpn. J. Hyg.) 36:441 (Japanese) (Abstract)

ENZ DIO RAT ABS

See Page IV-90.

Nagayama, J., and Lee, I.P. 1982. Comparison of benzo[a]pyrene metabolism by testicular homogenate and the isolated perfused testis of rat following 2,3,7,8-tetrachlorodibenzo-p-dioxin treatment. Arch. Toxicol. 51:121-130

ENZ MET ORL DIO RAT

See Pages IV-84 and IV-91.

Nagayama, J., Kiyohara, C., Kuratsune, M., and Masuda, Y. 1983a. Inductive effect on aryl hydrocarbon hydroxylase of chlorinated dibenzofurans and 2,3,7,8-TCDD in mice and human lymphoblastoid cells. Am. Chem. Soc., Div. Environ. Chem. 23:167-170. (Preprint extended abstract)

ENZ INJ IVT DIO CEL HUM MUS ABS

See Pages IV-84, IV-85, IV-99 and IV-123.

Nagayama, J., Kuroki, H., Masuda, Y., and Kuratsune, M. 1983b. A comparative study of polychlorinated biphenyls and 2,3,7,8-tetrachlorodibenzo-p-dioxin on aryl hydrocarbon hydroxylase inducing potency in rats. Arch. Toxicol. 53:177-184

ENZ INJ DIO RAT

See Page IV-86.

Nash, R.G., Kearney, P.C., Maitlen, J.C., Sell, C.R., and Fertig, S.N. 1982. Agricultural applicators exposure to 2,4-dichlorophenoxyacetic acid. In Plimmer, J.R., ed. Pesticide Residues and Exposure. ACS Symp. Ser. No. 182:119-132

MET 24D HUM

See Pages V-7 and V-35.

National Cancer Institute (NCI). 1978. Bioassay of picloram for possible carcinogenicity (CAS No. 1918-02-1). NCI Carcinogenesis Technical Report Series No. 23. DHEW Publication No. (NIH) 78-823

CAR ORL PIC MUS RAT

See Pages VI-2 and VI-3.

National Institute for Occupational Safety and Health (NIOSH). 1982. Health Hazard Evaluation Report--Long Island Railroad, New York. HETA 80-039-1179 (12 pages)

GEN REP TER OCC ORN HUM

See Page IV-145.

National Research Council Canada (NRCC). 1982. Polychlorinated dibenzo-p-dioxins: Criteria for their effects on man and his environment. Associate Committee on Scientific Criteria for Environmental Quality. Publication No. NRCC 18574

CAR GEN IMM MEC MET REP DIO HUM REV

This is a very thorough review of sources, persistence, toxicology, and exposure of PCDD for the purpose of establishing environmental criteria in Canada. This review emphasizes carcinogenicity, reproductive effects, and teratogenicity (371 references).

National Toxicology Program (NTP). 1982a. Carcinogenesis bioassay of 2,3,7,8-tetrachlorodibenzo-p-dioxin (CAS No. 1746-01-6) in Swiss-Webster mice (dermal study). NTP Technical Report Series No. 201. Washington, D.C. DHEW Publication No. (NIH) 82-1757

ACU CAR CHR SCR DEM DIO MUS RAT

See Pages IV-29, IV-249, and IV-251.

National Toxicology Program (NTP). 1982b. Carcinogenesis bioassay of 2,3,7,8-tetrachlorodibenzo-p-dioxin (CAS No. 1746-01-6) in Osborne-Mendel rats and B6C3F$_1$ mice (gavage study). NTP Technical Report Series No. 209. Washington, D.C. DHEW Publication No. (NIH) 82-1765

ACU CAR CHR HEP SCR ORL DIO MUS RAT

See Pages IV-31, IV-32, IV-33, IV-245, IV-250, IV-251, IV-252, and IV-256.

Nau, H., and Bass, R. 1981. Transfer of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) to the mouse embryo and fetus. Toxicology 20:299-308

MET REP TER INJ ORL DIO MUS

See Pages V-19, V-36, V-37, and IV-164.

Nau, H., Bass, R., and Neubert, D. 1982. Transfer of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) to the mouse embryo, fetus and neonate. In Hutzinger, O., Frei, R.W., Merian, E., and Pocchiari, F., eds. Chlorinated Dioxins and Related Compounds, Impact on the Environment. Pergamon Press, New York. Pp. 325-336

MET REP TER INJ ORL DIO MUS

See Pages V-21, V-22, V-37 IV-164, and IV-165.

Neal, R.A. 1982a. Cytochrome P-450 induction by 2,3,7,8-tetrachlorodibenzo-p-dioxin, polychlorinated biphenyls, and polybrominated biphenyls. In Proceedings of an International Workshop on Plans for Clinical and Epidemiologic Follow-up After Area-wide Chemical Contamination, March 17-19, 1980. National Academy Press, Washington, D.C. Pp. 320-334

ENZ MET DIO REV

This review article summarizes information on enzyme induction by PCBs and PBBs and briefly discusses the metabolism of TCDD.

Neal, R.A. 1982b. Introductory remarks to the panel on 2,4,5-T/dioxin. Am. Statistician 36:284

DIO 25T HUM REV

A very brief review of issues and an introduction to papers presented in a symposium on 2,4,5-T and PCDD.

Neal, R.A., Olson, J.R., Gasiewicz, T.A., and Gudzinowicz, M. 1981. The in vivo and in vitro metabolism of 2,3,7,8-tetrachlorodibenzo-p-dioxin in the Golden Syrian hamster. In Khan, M.A.Q., and Stanton, R.H., eds. Toxicology of Halogenated Hydrocarbons, Health and Ecological Effects. Pergamon Press, New York. Pp. 259-270
MET INJ IVT DIO CEL HAM

See Pages V-26, V-33, V-34, V-37, and V-38.

Neal, R.A., Olson, J.R., Gasiewicz, T.A., and Geiger, L.E. 1982. The toxicokinetics of 2,3,7,8-tetrachlorodibenzo-p-dioxin in mammalian systems. Drug Metab. Rev. 13:355-385

MET DIO REV

This is an in-depth review of the pharmacokinetics and metabolism of TCDD in animals (57 references).

Nebert, D.W., Negishi, M., and Eisen, H.J. 1983. Genetic differences in enzymes which metabolize drugs, chemical carcinogens, and other environmental pollutants. In Tucker, R.E., Young, A.L., and Gray, A.P., eds. Human and Environmental Risks of Chlorinated Dioxins and Related Compounds. Plenum Press, New York. Pp. 441-462

ENZ MET DIO REV

This is a review of genetic factors in determining susceptibility to toxic effects which contains an extensive discussion of TCDD (29 references).

Newton, M., and Norris, L.A. 1981. Potential exposure of humans to 2,4,5-T and TCDD in the Oregon Coast Ranges. Fundam. Appl. Toxicol. 1:339-346

MET DEM 25T HUM

See Pages V-2, V-3, and V-35.

Nicolau, G.Y. 1982. Pesticide effects upon the circadian time structure in the thyroid, adrenal and testis in rats. Rev. Roum. Med.-Endocrinol. 20:73-90

MEC OOG ORL 24D RAT

See Page IV-242.

Nisbet, I.C.T., and Paxton, M.B. 1982. Statistical aspects of three-generation studies of the reproductive toxicity of TCDD and 2,4,5-T. Am. Statistician 36:290-298

REP TER ORL DIO 25T RAT REV

This is a review of reproductive toxicity data with emphasis on the problems involved in establishing a no-observed-effect level for quantitative risk assessment (36 references).

Norman, C. 1983. Vietnam's herbicide legacy. Sci. 219:1196-1197

EPI REP ENV ORN HUM REV

This is a news report describing the results of a study of birth defects and stillbirth in 40,000 families in North Vietnam. Comparison of families where the husbands fought in South Vietnam with families where the husband stayed in the North revealed a 3.5 relative risk for abnormalities or stillbirth. No methods or results are given.

Norman, R.L., Muller-Eberhard, U., and Johnson, E.F. 1982. Effect of microsomal cytochrome P-450 isozyme induction on the mutagenic activation of 2-aminoanthracene. Cancer Res. 42:1722-1726

ENZ GEN MET UNS RAB

See Pages IV-117 and IV-125.

Okey, A.B. 1983. The Ah receptor: A specific site for action of Chlorinated Dioxins? In Tucker, R.E., Young, A.L., and Gray, A.P., eds. Human and Environmental Risks of Chlorinated Dioxins and Related Compounds. Plenum Press, New York. Pp. 423-440

MEC DIO REV

This is a review and discussion of the relationship between the TCDD receptor and the expression of toxic manifestations which concludes that information is still incomplete.

Olson, J.R., Gasiewicz, T.A., Geiger, L.E., and Neal, R.A. 1983. The metabolism of 2,3,7,8-tetrachlorodibenzo-p-dioxin in mammalian systems. In Coulston, F., and Pocchiari, F., eds. Accidental Exposure to Dixoins, Human Health Aspects. Academic Press, New York. Pp. 81-103

MET DIO REV

This is a review of in vivo and in vitro studies of TCDD metabolism indicating that rate of metabolism is not necessarily related to toxic potency (47 references).

Olsson, H., and Brandt, L. 1981. Non-Hodgkin's lymphoma of the skin and occupational exposure to herbicides (letter). Lancet (2):579

CAR EPI OCC ORN HUM

See Page IV-9.

Park, C.N. 1982. Risk assessment for 2,4,5-T. Am. Statistician 36:299-300

DIO 25T HUM REV

A brief discussion of the derivation of no-observed-effect levels (NOELs) for 2,4,5-T and TCDD and the use of these NOELs and safety factors to arrive at "safe" levels for human exposure (2 references).

Passi, S., Nazzaro-Porro, M., Boniforti, L., and Gianotti, F. 1981. Analysis of lipids and dioxin in chloracne due to tetrachloro-2,3,7,8-p-dibenzodioxin. Br. J. Dermatol. 105:137-143

ACN MEC ENV DIO HUM

See Page IV-210.

Pazderova-Vejlupkova, J., Nemcova, M., Pickova, J., Jirasek, L., and Lukas, E. 1981. The development and prognosis of chronic intoxication by tetrachlorodibenzo-p-dioxin in men. Arch. Environ. Health 36:5-11

ACN EPI HEP NEU PCT REP OCC DIO 25T HUM

See Pages IV-14, IV-210, IV-215, and IV-230.

Peachey, R.D.G. 1981. Skin hazards in farming. Br. J. Dermatol. 105 (Suppl. 21):45-50

SKN OCC DIO 25T HUM REV

A very general review of potential sources of dermatitis and other skin problems among farmers in England containing one sentence on the relationship between 2,4,5-T, PCDD, and chloracne (1 reference).

Peoples, S.A. 1983. The metabolism of arsenic in man and animals. In Lederer, W.H., and Fensterheim, R.J., eds. Arsenic: Industrial, Biomedical, Environmental Perspectives. Van Nostrand Reinhold Company, New York. Pp. 125-130

MET CAC REV

This is a review of arsenic metabolism in cows, dogs, and humans (11 references).

Peterson, R.E. 1981. Retrodifferentiation: A mechanism for the depression of ouabain biliary excretion in male rats treated with 2,3,7,8-tetrachlorodibenzo-p-dioxin. In Khan, M.A.Q., and Stanton, R.H., eds. Toxicology of Halogenated Hydrocarbons, Health and Ecological Aspects. Pergamon Press, New York. Pp. 133-145

HEP MEC ORL DIO RAT REV

See Page IV-249.

Petroni, A., Socini, A., and Galli, C. 1982. TCDD (2,3,7,8-tetrachlorodibenzo-p-dioxin) decreases the in vitro incorporation of labelled leucine into rat myelin proteins. In Hutzinger, O., Frei, R.W., Merian, E., and Pocchiari, F., eds. Chlorinated Dioxins and Related Compounds, Impact on the Environment. Pergamon Press, New York. Pp. 449-453

NEU IVT DIO RAT

See Page IV-235.

Petryka, Z.J., Pierach, C.A., and Codario, R.A. 1982. High pressure liquid chromatography urinary porphyrin profiles after exposure to 2,4-D and 2,4,5-T. Fed. Proc. 41:1210 (Abstract)

PCT ENV ORN HUM ABS

See Page IV-215.

Podolak, M. 1981a. [Dose dependence of the effects caused by acute intoxication with 2,4-D. I. Biogenic amines.] Bromat. Chem. Toksykol. 14:17-22 (Polish) (Summary in English)

ACU NEU INJ 24D RAT

See Page IV-231.

Podolak, M. 1981b. [Dose-dependence of the effects caused by acute intoxication with 2,4-D. II. Oxidative phosphorylation.] Bromat. Chem. Toksykol. 14:169-175 (Polish) (Summary in English)

ACU NEU INJ 24D RAT

See Page IV-231.

Poellinger, L., Kurl, R.N., Lund, J., Gillner, M., Carlstedt-Duke, J., Hogberg, B., and Gustafsson, J.A. 1982. High-affinity binding of 2,3,7,8-tetrachlorodibenzo-p-dioxin in cell nuclei from rat liver. Biochim. Biophys. Acta 714:516-523

MEC INJ IVT: DIO RAT

See Page IV-104.

Poiger, H., and Schlatter, Ch. 1983. Animal toxicology of chlorinated dibenzo-p-dioxins. Chemosphere 12:453-462

ACU CAR MET REP SCR DIO REV

This is a review of the animal toxicology of PCDD concentrating on differences among the various isomers and this mode of action (77 references).

Poiger, H., and Buser, H.R. 1983. Structure elucidation of mammalian TCDD-metabolites. In Tucker, R.E., Young, A.L., and Gray, A.P., eds. Human and Environmental Risks of Chlorinated Dioxins and Related Compounds. Plenum Press, New York. Pp. 483-492

MET ORL DIO DOG RAT

See Pages V-30, V-35, and V-38.

Poiger, H., Weber, H., and Schlatter, C. 1982a. Special aspects of metabolism and kinetics of TCDD in dogs and rats. Assessment of toxicity of TCDD-metabolite(s) in guinea pigs. In Hutzinger, O., Frei, R.W., Merian, E., and Pocchiari, F., eds. Chlorinated Dioxins and Related Compounds, Impact on the Environment. Pergamon Press, New York. Pp. 317-324

ACU MET ORL DIO DOG RAT

See Pages V-27, V-35, V-37, and V-38.

Poiger, H., Buser, H.R., Weber, H., Zweifel, U., and Schlatter, Ch. 1982b. Structure elucidation of mammalian TCDD-metabolites. Experientia 38:484-486

MET ORL DIO DOG

See Pages V-30, V-35, and V-38.

Poland, A., and Knutson, J.C. 1982. 2,3,7,8-tetrachlorodibenzo-p-dioxin and related halogenated aromatic hydrocarbons: Examination of the mechanism of toxicity. Ann. Rev. Pharmacol. Toxicol. 22:517-554

MEC DIO REV

See Page IV-219.

This is an extensive review of the toxicology of PCDD and PCDF with emphasis on data from experimental animals and containing lengthy discussions of structure-activity relationships and the mechanism of action (221 references).

Poland, A., Palen, D., and Glover, E. 1982. Tumour promotion by TCDD in skin of HRS/J hairless mice. Nature 300:271-273

CAR MEC DEM DIO MUS

See Pages IV-113 and IV-125.

Poland, A., Knutson, J., and Glover, E. 1983. A consideration of the mechanism of action of 2,3,7,8-tetrachlorodibenzo-p-dioxin and related halogenated aromatic hydrocarbons. In Tucker, R.E., Young, A.L., and Gray, A.P., eds. Human and Environmental Risks of Chlorinated Dioxins and Related Compounds. Plenum Press, New York. Pp. 539-559

MEC DIO REV

An updated version of the review by Poland and Knutson (1982) (69 references).

Pollak, J.K., and Harsas, W. 1982. Effects of organochlorine compounds on lipid catabolism of fetal rat liver mitochondria and microsomes. Bull. Environ. Contam. Toxicol. 28: 313-318

HEP MEC INJ 25T RAT

The authors investigated the effect of daily subcutaneous injections of 2,4,5-T on days 17-21 of gestation on phospholipid catabolism in mitochondria and microsomes of fetal rat liver. 2,4,5-T increased the rate of catabolism. The human health significance of this finding is not clear.

Potter, C.L., Sipes, I.G., and Russell, D.H. 1982. Inhibition of ornithine decarboxylase activity by 2,3,7,8-tetrachlorodibenzo-p-dioxin. Biochem. Pharmacol. 31:3367-3371

ACU MIS INJ DIO RAT

The authors studied the effect of single intraperitoneal doses of TCDD on the activity of ornithine dicarboxylase in rat livers. TCDD (5µg/kg) pretreatment inhibited the induction of ornithine decarboxylase activity caused by partial hepatectomy. The significance of this finding for human health is not clear.

Potter, C.L., Sipes, I.G., and Russell, D.H. 1983. Hypothyroxinemia and hypothermia in rats in response to 2,3,7,8-tetrachlorodibenzo-p-dioxin administration. Toxicol. Appl. Pharmacol. 69:89-95

ACU MEC MIS INJ DIO RAT

See Page IV-252.

Pritchard, J.B., Krall, A.R., and Silverthorn, S.U. 1982. Effects of anionic xenobiotics on rat kidney: 1. Tissue and mitochondrial respiration. Biochem. Pharmacol. 31: 149-155

ENZ MEC IVT 24D 25T RAT

See Page IV-239.

Probst, G.S., McMahon, R.E., Hill, L.E., Thompson, C.Z., Epp, J.K., and Neal, S.B. 1981. Chemically-induced unscheduled DNA synthesis in primary rat hepatocyte cultures: A comparison with bacterial mutagenicity using 218 compounds. Environ. Mutag. 3:11-32

GEN IVT 24D CEL MIC RAT

See Pages IV-58 and IV-59.

Puccinelli, V., Monti, M., Berti, E., Drago, G., Gasparini, G., Sala, G., and Stucchi, D. 1979. The ultramicroscopic structure of the comedone in chloracne. Paper presented at the first Derosyphilopathic Clinic of the University of Milan, Italy, July 1979 (6 pages)

ACN ENV DIO HUM

This is a paper of academic interest only, documenting ultrastructural differences between the skin lesions of chloracne and those of other forms of acne.

Puhvel, S.M., Sakamoto, M., Ertl, D.C., and Reisner, R.M. 1982. Hairless mice as models for chloracne: A study of cutaneous change induced by topical application of established chloracnegens. Toxicol. Appl. Pharmacol. 64: 492-503

ACN ACU ENZ DEM DIO MUS

See Pages IV-84 and IV-212.

Ramsey, J.C., Hefner, J.G., Karbowski, R.J., Braun, W.H., and Gehring, P.J. 1982. The in vivo biotransformation of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) in the rat. Toxicol. Appl. Pharmacol. 65:180-184

MET ORL DIO RAT

See Pages V-23, V-37, and V-38.

Rappe, C., and Buser, H.R. 1981. Occupational exposure to polychlorinated dioxins and dibenzofurans. ACS Symp. Ser. 149:319-342

EPI MET DIO IMP HUM REV

See Page V-11.

This is an extensive discussion of various compounds that are contaminated with PCDD and PCDF and the extent of contamination. It also reviews occupational epidemiology (61 references).

Rappe, C., and Nygren, M. 1982. Chemical analysis of human samples: Identification and quantification of polychlorinated dioxins and dibenzofurans. In Proceedings in the U.S. Swedish Workshop at the National Institute of Environmental Health Sciences, May 1982. (19 pages) (In press)

MET OCC ENV DIO IMP HUM

See Page V-11.

Rappe, C., Nygren, M., and Gustafsson, G. 1983a. Human exposure to polychlorinated dibenzo-p-dioxins and dibenzofurans. In Choudhary, G., Keith, L.H., and Rappe, C., eds. Chlorinated Dioxins and Dibenzofurans in the Total Environment. Butterworth Publishers, Boston. Pp. 355-365

MET OCC ENV DIO IMP HUM REV

See Page V-11.

This is a summary of information on tissue levels of PCDD and PCDF in humans with occupational and environmental exposure (11 references).

Rappe, C., Nygren, M., Buser, H.R., and Kauppinen, T. 1982. Occupational exposure to polychlorinated dioxins and dibenzofurans. In Hutzinger, O., Frei, R.W., Merian, E., and Pocchiari, F., eds. Chlorinated Dioxins and Related Compounds, Impact on the Environment. Pergamon Press, New York. Pp. 495-513

EPI MET DIO IMP HUM REV

This review is very similar to that of Rappe and Buser (1981) (33 references).

Rappe, C., Nygren, M., Buser, H.R., Masuda, Y., Kuroki, H., and Chen, P.H. 1983b. Identification of polychlorinated dioxins (PCDDs) and dibenzofurans (PCDFs) in human samples, occupational exposure and Yusho patients. In Tucker, R.E., Young, A.L., and Gray, A.P., eds. Human and Environmental Risks of Chlorinated Dioxins and Related Compounds. Plenum Press, New York. Pp. 241-254

MET OCC ENV DIO IMP HUM REV

See Page V-11.

This is a review similar to Rappe and Nygren (1982) (9 references).

Rawls, R.L. 1983. Dioxin's human toxicity is most difficult problem. Chem. Eng. News 61:37-48

ACN ACU CAR EPI MEC OCC ENV DIO HUM REV

This is a news report reviewing toxicology information on PCDD and emphasizing the difficulty in extrapolating from species to species (no references).

Reggiani, G. 1981. Toxicology of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD): Short review of its formation, occurrence, toxicology, and kinetics, discussing human health effects, safety measures, and disposal. Regulatory Toxicol. Pharmacol. 1:211-243

ACN CAR HEP IMM MET OCC ENV DIO HUM COM REV

Despite its title, this is a thorough review of the toxicology of TCDD with emphasis on occupational exposure, and containing sections on environmental occurrence, clean-up and disposal (288 references).

Reggiani, G. 1982. Toxicology of TCDD and related compounds: Observations in man. In Hutzinger, O., Frei, R.W., Merian, E., and Pocchiari, F., eds. Chlorinated Dioxins and Related Compounds, Impact on the Environment. Pergamon Press, New York. Pp. 463-493

ACN CAR DIO HUM REV

This is an extensive review of the toxicology of compounds that cause chloracne with emphasis on the occupational health aspects of PCDD. This review contains many summary tables (88 references).

Reggiani, G. 1983a. An overview on the health effects of halogenated dioxins and related compounds: The Yusho and Taiwan episodes. In Coulston, F., and Pocchiari, F., eds. Accidental Exposures to Dioxins, Human Health Aspects. Academic Press, New York. Pp. 39-65

ACN EPI MET REP ENV DIO IMP HUM REV

This review concentrates on the human health effects of exposure to PCDD, PCDF, and other halogenated hydrocarbons as determined by studies of humans accidentally exposed via contamination of the food supply (24 references).

Reggiani, G. 1983b. Toxicology of TCDD and related compounds: Observations in man. Chemosphere 12:463-475

ENV DIO HUM REV

This relatively brief review concentrates on the difficulty of assessing human exposure to PCDD and relating that exposure to health effects (20 references).

Reuber, M.D. 1981. Carcinogenicity of picloram. J. Toxicol. Environ. Health 7:207-222

CAR ORL PIC MUS RAT

See Pages VI-2 and VI-3.

Riccio, E., Shepherd, G., Pomeroy, A., Mortelmans, K., and Waters, M.D. 1981. Comparative studies between the S. cerevisiae D3 and D7 assays of eleven pesticides. Environ. Mut. 3:327 (Abstract)

GEN IVT CAC PLA ABS

See Page VII-2.

Riihimaki, V., Asp, S., and Hernberg, S. 1982. Mortality of 2,4-D and 2,4,5-T herbicide applicators in Finland: 1st record of an ongoing prospective cohort study. Scand. J. Work Environ. Health 8:37-42

CAR EPI OCC ORN HUM

See Page IV-11.

Riihimaki, V., Asp, S., Pukkala, E., and Hernberg, S. 1983. Mortality and cancer morbidity among chlorinated phenoxyacid applicators in Finland. Chemosphere 12:779-784

CAR EPI OCC ORN HUM

See Page IV-12.

Riviere, J.L., and Bach, J. 1981. [Effect of pesticides and pollutants on metabolism: Effect of herbicides, 2,4-D and paraquat, on the cytochrome P 450 system of mice and Japanese quail.] Phytiatr. Phytopharm. 30:183-190 (French)

ENZ IVT ORL 24D BRD MUS

See Pages IV-82 and IV-117.

Rodgers, L. 1983. Herbicides and the development of brain and behaviour: A study in behavioural toxicology. Proceedings of a Life Sciences Conference held in Australia, 1983 (In press) (15 pages)

NEU REP 24D 25T RAT REV

This is an extensive review of animal experiments that, according to the author, establishes the neurotoxicity and behavioral teratology of 2,4-D and 2,4,5-T.

Rodricks, J.V. 1983. Some general observations on the safety of PCDDs. In Tucker, R.E., Young, A.L., and Gray, A.P., eds. Human and Environmental Risks of Chlorinated Dioxins and Related Compounds. Plenum Press, New York. Pp. 629-633

CAR REP DIO IMP REV

This is a quantitative risk assessment using the no-observed-effect level for adverse reproductive effects in rats and monkeys, and applying a safety factor. The author discusses carcinogenicity evidence and why it was not used to estimate risk.

Rogers, A.M., Andersen, M.E., and Back, K.C. 1982. Mutagenicity of 2,3,7,8-tetrachlorodibenzo-p-dioxin and perfluoro-n-decanoic acid in L5178Y mouse-lymphoma cells. Mutat. Res. 105:445-449

GEN CYT IVT DIO CEL MUS

See Pages IV-64 and IV-65.

Rogers, E.H., Chernoff, N., and Kavlock, R.J. 1981. The teratogenic potential of cacodylic acid in the rat and mouse. Drug Chem. Toxicol. 4:49-61

TER ORL CAC MUS RAT

See Page VII-6.

Rogers, L.J., and Sanderson, C.A. 1982. Jumping chickens: Relevance to hazard in humans. Science 215:1422 (Reply to comments)

ACU NEU TER COM

This is a reply by the authors to criticisms received from Leng (1982), of their earlier publication.

Rogers, P. 1983a. Veterans and pesticides. Health and Environment 1:17-22

CAR NEU REP ENV ORN HUM COM REV

This is a news report describing the findings of the Australian Senate Standing Committee on Science and the Environment's review of the health of Australian Vietnam veterans. This committee concluded that there was no evidence of adverse health impacts (9 references).

Rogers, P. 1983b. 2,4,5-T and cancer: The evidence. Health Environ. 1:14-16

CAR EPI OCC ORN HUM REV

This is a brief but critical review of the evidence linking exposure to 2,4,5-T with cancer (19 references).

Ryan, J.J., and Williams, D.T. 1983. Analysis of human fat tissue from the Great Lakes area for 2,3,7,8-tetrachlorodibenzo-p-dioxin and -furans residues. American Chemical Society, Division of Environmental Chemistry 23:157-158 (Preprint extended abstract)

MET DIO HUM ABS

See Pages V-10, V-36, and V-37.

Safe, S. 1983a. 2,3,7,8-TCDD-biochemical effects. Chemosphere 12:447-451

ENZ MEC DIO REV

This is a brief review of TCDD toxicity concentrating on enzyme induction, the evidence for a cytosolic TCDD receptor, and possible mechanisms of action (63 references).

Safe, S. 1983b. Biochemistry and metabolism. In Tucker, R.E., Young, A.L., and Gray, A.P., eds. Human and Environmental Risks of Chlorinated Dioxins and Related Compounds. Plenum Press, New York. Pp. 787-790

MEC MET DIO REV

This is a brief summary of the conclusions and recommendations of the Panel on Biochemistry and Metabolism at the International Symposium on Chlorinated Dioxins and Related Compounds held in Arlington, Virginia, in October, 1981.

Safe, S., Robertson, L., Sawyer, T., Parkinson, A., Bandiera, S., Safe, L., and Campbell, M. 1983. PCDDs and related compounds: Metabolism and biochemistry. In Tucker, R.E., Young, A.L., and Gray, A.P., eds. Human and Environmental Risks of Chlorinated Dioxins and Related Compounds. Plenum Press, New York. Pp. 393-404

MEC MET DIO REV

This is a brief review of information on the metabolism of PCDD and related chlorinated aromatic compounds with emphasis on structure-activity relationships (50 references).

Sandhu, S.S. 1983. Experimental protocols and tables of data pertaining to 2,4-D acid toxicity assays (letter). USEPA, Health Effects Research Laboratory, Research Triangle Park, North Carolina 27711 (10 pages) (Personal communication)

GEN IVT 24D MIC

See Pages IV-56 and IV-57.

Sankaranarayanan, K. 1982. Determination and evaluation of genetic risks to humans from exposure to chemicals. Prog. Mutat. Res. 3:289-321

EPI GEN OCC ENV DIO ORN 25T HUM REV

A method is proposed for assessing genetic risks to humans. The data available for 2,4,5-T and TCDD were reviewed and judged to be inadequate for assessing the potential for heritable genetic damage. The review does not appear to be exhaustive.

Santi, L. 1982. Epidemiologic monitoring in an episode of environmental chemical pollution: Problems and programs. In Proceedings of an International Workshop on Plans for Clinical and Epidemiological Follow-up After Area-wide Chemical Contamination, March 17-19, 1980. National Academy Press, Washington, D.C. Pp. 409-412

CAR EPI REP ENV DIO HUM

This brief report describes the rationale and plans for future epidemiologic studies of populations exposed to PCDD at Seveso.

Sarma, P.R., and Jacobs, J. 1982. Thoracic soft tissue sarcoma in Vietnam veterans exposed to agent orange (letter). N. Engl. J. Med. 306:1109

CAR ENV ORN HUM

See Page IV-28.

Sawahata, T., Olson, J.R., and Neal, R.A. 1982. Identification of metabolites of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) formed on incubation with isolated rat hepatocytes. Biochem. Biophys. Res. Commun. 105:341-346

MET IVT DIO CEL RAT

See Page V-34 and V-38.

Sbrana, I., Rusciano, D., Lascialfari, D., Lari, T., and Loprieno, N. 1981. Cytogenetic and genotoxic studies on rabbits, cattle, mice, rats, and human cells accidentally or experimentally exposed to the dioxin TCDD. Mutat. Res. 85:278 (Abstract)

GEN REP IVT ENV DIO MUS RAT RAB ABS

This brief abstract describes studies designed to detect cytogenetic damage in animals at Seveso and experiments to determine the ability of TCDD to induce chromosome

abnormalities in bone marrow cells in rats and mice. No results or conclusions are included.

Schmid, E., Bauchinger, M., and Dresp, J. 1982. Chromosome analyses of workers from a pentachlorophenol plant. In Sorsa, M., and Vainio, H., eds. Mutagens in Our Environment. Alan R. Liss, Inc., New York. Pp. 471-477

GEN OCC DIO HUM

See Pages IV-46 and IV-47.

Seefeld, M.D., and Peterson, R.E. 1983. 2,3,7,8-Tetrachlorodibenzo-p-dioxin-induced weight loss: A proposed mechanism. In Tucker, R.E., Young, A.L., and Gray, A.P., eds. Human and Environmental Risks of Chlorinated Dioxins and Related Compounds. Plenum Press, New York. Pp. 405-413

MIS ORL DIO RAT

See Page IV-246.

Senate Standing Committee on Science and the Environment. 1982. Pesticides and the Health of Australian Vietnam Veterans: First Report. Australian Government Publishing Service, Canberra, November. ISB No. 644 01747 3. (240 pages)

CAR NEU REP ENV ORN HUM COM REV

This is a voluminous summary and analysis of testimony taken at 10 public hearings held in 1981 and 1982 on the potential health effects of herbicide exposure in Australian Vietnam veterans. The committee concluded that no adverse effects could be attributed to herbicide exposure.

Senczuk, W., and Pogorzelska, H. 1981. [Chemical structure and toxicodynamic properties of phenoxycarboxylic acid derivatives. III. The course of absorption into the blood and the measurement of the urinary excretion of phenoxyacetic and phenoxypropionic acid derivatives.] Rocz Panstw Zakl Hig. 32:419-426 (Polish)

Unable to locate.

Shepard, B.M. 1983a. Dioxins as contaminants of herbicides: The U.S. perspective. In Tucker, R.E., Young, A.L., and Gray, A.P., eds. Human and Environmental Risks of Chlorinated Dioxins and Related Compounds. Plenum Press, New York. Pp. 221-240

EPI MET REP INV DIO ORN HUM REV

This is a fairly standard description of the history of the Veterans Administration's involvement in ascertaining the health effects of Agent Orange and its PCDD contaminants. It includes a description of ongoing studies.

Shepard, B.M. 1983b. Health-related problems to TCDD. In Coulston, R., Pocciari, F., eds. Accidental Exposure to Dioxins, Human Health Aspects. Academic Press, New York. Pp. 229-230 (Abstract)

EPI ENV ORN HUM ABS

This is a very brief description of the design and purpose of the Air Force epidemiology study of Operation Ranch Hand personnel.

Shepard, B.M., and Young, A.L. 1983. Dioxins as contaminants of herbicides: The U.S. perspective. In Tucker, R.E., Young, A.L., and Gray, A.P., eds. Human and Environmental Risks of Chlorinated Dioxins and Related Compounds. Plenum Press, New York. Pp. 3-11

EPI ENV ORN HUM REV

This is a similar presentation to that given in Shepard (1983a).

Shiverick, K.T., and Muther, T.F. 1982. Effects of 2,3,7,8-tetrachlorodibenzo-p-dioxin on serum concentrations and the uterotrophic action of exogenous estrone in rats. Toxicol. Appl. Pharmacol. 65:170-176

ENZ MEC REP ORL DIO RAT

See Page IV-84.

Siewicki, T.C. 1981. Tissue retention of arsenic in rats fed witch flounder or cacodylic acid. J. Nutr. 111:602-609

MET SCR ORL CAC RAT

This is essentially the same study as that described in Siewicki and Sydlowski 1981.

Siewicki, T.C., and Sydlowski, J.S. 1981. Excretion of arsenic by rats fed witch flounder or cacodylic acid. Nutr. Rep. Int. 24:121-127

MET ORL CAC RAT

This paper compares the relative retention in rats of arsenic from witch flounder and from cacodylic acid.

Its purpose is to show that arsenic in seafood is poorly absorbed and rapidly excreted.

Silano, V. 1981. Case study: Accidental release of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) at Seveso, Italy. In Planning Emergency Response Systems for Chemical Accidents. World Health Organization, Regional Office for Europe, Copenhagen. Pp. 167-203

ENV DIO HUM REV

See Pages III-6 and III-7.

This is a detailed review of the Seveso accident concentrating on the use of TCDD levels in soil and animal tissues as a means of assessing human exposure (24 references).

Silkworth, J., McMartin, D., DeCaprio, A., Rej, R., O'Keefe, P., and Kaminsky, L. 1982. Acute toxicity in guinea pigs and rabbits of soot from a polychlorinated biphenyl-containing transformer fire. Toxicol. Appl. Pharmacol. 65: 425-439

ACU ORL DIO GPG

See Page IV-243.

Simmon, V.F. 1983. Is arsenic a mutagen? In Lederer, W.H., and Fernsterheim, R.J., eds. Arsenic: Industrial, Biomedical, Environmental Perspectives. Van Nostrand Reinhold Company, New York. Pp. 166-171

GEN CAC REV

The author critically reviews the experimental evidence that arsenic compounds are mutagenic and concludes that the evidence for mutagenicity is weak and flawed (25 references).

Simmon, V.F., Poole, D.C., and Newell, G.W. 1976. In vitro mutagenic studies of twenty pesticides. Toxicol. Appl. Pharmacol. 37:109 (Abstract)

GEN IVT CAC MIC ABS

See Pages VII-1 and VII-2.

Simmon, V.F., Riccio, E.S., and Peirce, M.V. 1979. In vitro microbiological genotoxicity assays of pentachlorophenol and 2,4,5-T acid. Prepared for EPA by SRI International, Menlo Park, California. SRI Project LSU-7558, Contract No. 68-02-2947 (25 pages)

GEN INT 25T MIC

See Pages IV-56 and IV-57.

Singer, R., Moses, M., Valciukas, J., Lilis, R., and Selikoff, I.J. 1982. Nerve conduction velocity studies of workers employed in the manufacture of phenoxy herbicides. Environ. Res. 29:297-311

EPI NEU OCC ORN HUM

See Page IV-224.

Sirchia, G.G., and the Group for Immunologic Monitoring. 1982. Exposure to TCDD: Immunologic effects. In Proceedings of an International Workshop on Plans for Clinical and Epidemiologic Follow-up After Area-wide Chemical Contamination, March 17-19, 1980. National Academy Press, Washington, D.C. Pp. 234-266

EPI IMM ENV DIO HUM

See Page IV-194.

Slaga, T.J., ed. 1982. Selected abstracts on dioxins and dibenzofurans in carcinogenesis: Oncology overview. International Cancer Research Data Bank Program, US DHHS (NCI) Rep. No. ICRDB/OK-82/05, PB82-922905 (36 pages)

CAR MEC DIO IMP REV

This is an annotated bibliography of scientific literature from 1975-1981 relevant to the carcinogenic activity of PCDD and PCDF including epidemiology, animal studies, and mechanistic studies (111 references).

Smith, A.G., Francis, J.E., Kay, S.J.E., and Greig, J.B. 1981. Hepatic toxicity and uroporphyrinogen decarboxylase activity following a single dose of 2,3,7,8-tetrachlorodibenzo-p-dioxin to mice. Biochem. Pharmacol. 30:2825-2830

ACU PCT ORL DIO MUS

See Pages IV-219 and IV-246.

Smith, A.H. 1983. Problems in dose response interpretation in occupational epidemiology. J. Univ. Occup. Environ. Health (Kitakyushu, Japan) 5 (Suppl.):189-195

CAR EPI OCC ORN HUM REV

See Page IV-8.

This is a general discussion of the difficulty in determining dose-response curves from epidemiology studies. The author compares his own studies on phenoxy herbicides with those of Hardell et al. (11 references).

Smith, A.H., Matheson, D.P., Fisher, D.O., and Chapman, C.J. 1981. Preliminary report of reproductive outcomes among pesticide applicators using 2,4,5-T. N. Z. Med. J. 93:177-179

GEN REP TER OCC DIO 25T HUM

See Pages IV-143 and IV-144.

Smith, A.H., Fisher, D.O., Pearce, N., and Teague, C.A. 1982a. Do agricultural chemicals cause soft-tissue sarcoma? Initial findings of a case-control study in New Zealand. Community Health Studies 6:114-119

CAR EPI OCC ORN HUM

See Page IV-7.

Smith, A.H., Fisher, D.O., Pearce, N., and Chapman, C.J. 1982b. Congenital defects and miscarriages among New Zealand 2,4,5-T sprayers. Arch. Environ. Health 37:197-200

GEN REP TER OCC DIO 25T HUM

See Pages IV-143 and IV-144.

Smith, A.H., Fisher, D.O., Giles, H.J., and Pearce, N. 1983. The New Zealand soft-tissue sarcoma case-control study: Interview findings concerning phenoxyacetic acid exposure. Chemosphere 12:565-571

CAR EPI ORN; HUM

See Page IV-7.

Smith, F.A., Murray, F.J., John, J.A., Nitschke, K.D., Kociba, R.J., and Schwetz, B.A. 1981. Three-generation reproduction study of rats ingesting 2,4,5-trichlorophenoxyacetic acid in the diet. Food Cosmet. Toxicol. 19:41-45

REP TER ORL 25T RAT

See Pages IV-159 and IV-176.

Smith, F.A., Schwetz, B.A., Murray, F.J., Crawford, A.A., John, J.A., Kociba, R.J., and Humiston, C.G. 1978. Three-generation reproduction study of rats ingesting 2,4,5-trichlorophenoxyacetic acid in the diet. Dow Chemical Company Laboratory Report

REP TER ORL 25T RAT

See Pages IV-159 and IV-176.

Smuckler, E. 1983. Animal toxicology. In Tucker, R.E., Young, A.L., and Gray, A.P., eds. Human and Environmental Risks of Chlorinated Dioxins and Related Compounds. Plenum Press, New York. Pp. 791-793

DIO REV

This is a summary of the conclusions and recommendations of the Panel on Animal Toxicology at the International Symposium on Chlorinated Dioxins and Related Compounds held in Arlington, Virginia, in October, 1981.

Sohar, I., Altorjay, A., Heiner, L., Jr., and Mazarean, H.H. 1981. Studies on metabolism of rats treated with 2,4-dichlorophenoxyacetate. I. Changes in proteinase activities of skeletal muscle. Proc. 21st. Hung. Ann. Meet. Biochem., Veszprem. Pp. 53-54

NEU SCR INJ 24D RAT

See Page IV-232.

Spreafico, F., Vecchi, A., Mantovani, A., Tagliabue, A., Sironi, M., Luini, W., and Garattini, S. 1981. The assessment of the immunotoxicity of xenobiotics experience with tetrachlorodibenzodioxin and saccharin. In Hadden, J., Chedid, L., Mullen, P., and Spreafico, F., eds. Advances in Immunopharmacology. Pergamon Press, New York. Pp. 295-310

IMM INJ ORL DIO MUS

This is an earlier version of the results described by Vecchi et al. (1983a, b) which are discussed in Section IV.E. of the report.

Squibb, R.E., Tilson, H.A., and Mitchell, C.L. 1983. Neurobehavioral assessment of 2,4-dichlorophenoxyacetic acid (2,4-D) in rats. Neurobeh. Toxicol. Teratol. 5:331-335

NEU SCR ORL 24D RAT

See Page IV-234.

Stanley, T. 1982. Vietnam veterans [letter]. Aust. N.Z. J. Psychiatry 16:196-197

EPI NEU ENV ORN HUM COM

See Page IV-225.

Stevens, K.M. 1981. Agent orange toxicity: A quantitative perspective. Human Toxicol. 1:31-39

DIO IMP ORN HUM REV

This is a review in which the author goes through a set of calculations based on assumptions to show that it was not possible for Vietnam veterans to have been exposed to levels of TCDD that would cause symptoms of toxicity (35 references).

Steward, A.R., and Byard, J.L. 1981. Induction of benzo[a]pyrene metabolism by 2,3,7,8-tetrachlorodibenzo-p-dioxin in primary cultures of adult rats hepatocytes. Toxicol. Appl. Pharmacol. 59:603-616

ENZ HEP MEC IVT DIO CEL RAT

See Pages IV-100 and IV-123.

Strik, J.J.T.W.A. 1982. TCDD and chronic hepatic porphyria. In Hutzinger, O., Frei, R.W., Merian, E., and Pocchiari, F., eds. Chlorinated Dioxins and Related Compounds, Impact on the Environment. Pergamon Press, New York. Pp. 515-518

EPI HEP PCT ENV DIO ADD HUM RAB

See Page IV-216.

Sun, M. 1983. Dioxin's uncertain legacy. Science 219:468-469

ACN CAR ENV DIO HUM REV

This is a news report about PCDD contamination in Times Beach, Missouri, with a brief summary of possible human health effects (no references).

Suskind, R.R. 1983. Long-term health effects of exposure to 2,4,5-T and/or its contaminants. Chemosphere 12:769

ACN CAR EPI HEP NEU REP OCC IMP 25T HUM

See Pages IV-19 and IV-231.

Sweeney, G.D., and Jones, K.G. 1983. Studies of the mechanism of action of hepatotoxicity of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) and related compounds. In Tucker, R.E., Young, A.L., and Gray, A.P., eds. Human and Environmental Risks of Chlorinated Dioxins and Related Compounds. Plenum Press, New York. Pp. 415-422

ACN HEP MEC PCT DIO MUS RAT REV

The authors review their own work and that of other authors concentrating on the role of iron in the mechanism of toxicity of TCDD.

Swift, L.L., Gasiewicz, T.A., Dunn, G.D., Soule, P.D., and Neal, R.A. 1981. Characterization of the hyperlipidemia in guinea pigs induced by 2,3,7,8-tetrachlorodibenzo-p-dioxin. Toxicol. Appl. Pharmacol. 59:489-499

ACU MIS INJ DIO GPG

See Page IV-256.

Taskar, P.K., Das, Y.T., Trout, J.R., Chattopadhyay, S.K., and Brown, H.D. 1982. Measurement of 2,4-dichlorophenoxy-acetic acid (2,4-D) after occupational exposure. Bull. Environ. Contam. Toxicol. 29:586-591

MET OTH REN DEM ORL 24D HUM

See Page V-4.

Tenchini, M.L., Crimaudo, C., Pacchetti, G., Mottura, A., Agosti, S., and DeCarli, L. 1983. A comparative cytogenetic study on cases of induced abortions in TCDD-exposed and nonexposed women. Environ. Mutag. 5:73-85

GEN ENV DIO HUM

See Pages IV-41 and IV-42.

Thalken, C.E., and Young, A.L. 1983. Long-term field studies of a rodent population continuously exposed to TCDD. In Tucker, R.E., Young, A.L., and Gray, A.P., eds. Human and Environmental Risks of Chlorinated Dioxins and Related Compounds. Plenum Press, New York. Pp. 357-372

HEP ENV DIO MUS

See Page IV-254.

Theobald, H.M., Moore, R.W., Katz, L.B., Pieper, R.O., and Peterson, R.E. 1983. Enhancement of carrageenan and dextran-induced edemas by 2,3,7,8-tetrachlorodibenzo-p-dioxin and related compounds. J. Pharmacol. Exp. Ther. 225:576-583

ACU MIS ORL DIO RAT

This study indicates that single oral doses of TCDD enhance the swelling that results from injection of carrageenan or dextran into the footpad of rats. The significance of this finding for human health is unclear.

Thiess, A.M., Frentzel-Beyme, R., and Link, R. 1982. Mortality study of persons exposed to dioxins in a trichlorophenol process accident that occurred in the BASF AG on November 17, 1953. Am. J. Ind. Med. 3:179-189

ACN CAR EPI NEU OCC DIO HUM

See Pages IV-16 and IV-36.

Thomas, H.F. 1980. 2,4,5-T use and congenital malformation rates in Hungary (letter). Lancet (2):214-215

GEN REP TER ENV 25T HUM

See Page IV-143.

Thomas, H.F., and Czeizel, A. 1982. Safe as 2,4,5-T? (letter). Nature 295:276

EPI REP ENV ORN HUM REV

This letter to the editor describes the history of 2,4,5-T production and use in Hungary and states that the incidence of congenital anomalies, stillbirths, and spontaneous abortions decreased during the time when production and use of this herbicide increased.

Thompson, D.J., Emerson, J.L., Strebing, R.J., Gerbig, C.G., and Robinson, V.B. 1972. Teratology and postnatal studies on 4-amino-3,5,6-trichloro-picolinic acid (picloram) in the rat. Food Cosmet. Toxicol. 10:797-803

TER ORL PIC RAT

See Page VI-1.

Thunberg, T. 1983a. The effects of TCDD on vitamin A in normal and in vitamin A-deficient rats. Chemosphere 12:577-580

MEC REN ORL DIO RAT

See Page IV-247.

Thunberg, T. 1983b. Studies on the effect of 2,3,7,8-tetrachlorodibenzo-p-dioxin on vitamin A: A new aspect concerning the mechanism of toxicity. Ph.D. Dissertation, Dept. of Toxicology, Karolinska Institute, Stockholm, Sweden. (54 pages)

MEC DIO REV

This is the introductory chapter to Dr. Thunberg's doctoral dissertation and consists of a review of the literature supporting the hypothesis that TCDD exerts its toxic effect by depleting Vitamin A.

Thunberg, T., and Hakansson, H. 1983a. Correlation between the vitamin A status and the toxicity of 2,3,7,8-tetrachlorodibenzo-p-dioxin I: Studies in guinea pig. Toxicol. Appl. Pharmacol. (Submitted)

ENZ HEP MEC REN ORL DIO DOG GPG

See Page IV-96.

Thunberg, T., and Hakansson, H. 1983b. Vitamin A (retinol) status in the Gunn rat: The effect of 2,3,7,8-tetrachlorodibenzo-p-dioxin. Arch. Toxicol. 53:225-234

ENZ HEP MEC ORL DIO RAT

See Page IV-95.

Thunberg, T., Ahlborg, U.G., and Wahlstrom, B. 1983a. Comparison between the effects of 2,3,7,8-tetrachlorodibenzo-p-dioxin and six other compounds on the vitamin A storage, the UDP-glucuronosyltransferase and the aryl hydrocarbon hydroxylase activity in the rat liver. Arch. Toxicol. (In press)

ENZ HEP MEC ORL DIO RAT

See Page IV-95.

Thunberg, T., Hakansson, H., Meijer, J., and Randahl, H. 1983b. Effects of dietary vitamin A deficiency compared to the effects of 2,3,7,8-tetrachlorodibenzo-p-dioxin in the rat. Toxicol. Appl. Pharmacol. (Submitted)

ENZ HEP MEC REN ORL DIO RAT

See Page IV-94.

Thurlow, W.H., IV. 1981. A review of the newly recognized potential health hazards of phenoxy herbicides. Nova Scotia Med. Bull. April 1981. Pp. 57-60

CAR REP TER 24D DIO 25T HUM REV

This is a brief review of the toxicity and regulatory status of the phenoxy herbicides and their PCDD contaminants (27 references).

Tofilon, P.J., and Piper, W.N. 1982. 2,3,7,8-Tetrachlorodibenzo-p-dioxin-mediated depression of rat testicular heme synthesis and microsomal cytochrome P-450. Biochem. Pharmacol. 31:3663-3666

ENZ MEC REP ORL DIO RAT

See Page IV-248.

Tognoni, G., and Bonaccorsi, A. 1982. Epidemiological problems with TCDD (A critical view). Drug. Metab. Rev. 13:447-469

CAR EPI GEN HEP IMM NEU REP ENV, DIO HUM

See Pages III-7 and IV-195.

This is an excellent and thorough review of all studies of the Seveso accident through 1981 including a general discussion of the overall limitations of epidemiologic studies of the exposed population (35 references).

Townsend, J.C., Bodner, K.M., Van Peenen, P.F., Olsen, R.D., and Cook, R.R. 1982. Survey of reproductive events of wives of employees exposed to chlorinated dioxins. Am. J. Epidemiol. 115:695-713

EPI GEN REP OCC DIO 25T HUM

See Page IV-140.

Tuchmann-Duplessis, H. 1982. Lessons learned from an industrial accident. Medicine et Hygiene. Pp. 2541-2554

EPI REP TER ENV DIO HUM REV

This is a discussion of the Seveso accident that includes a review of epidemiologic and animal studies of the reproductive effects of TCDD.

Tuchmann-Duplessis, H. 1983. Teratological considerations on dioxins. In Coulston, F., and Pocchiari, F., eds. Accidental Exposure to Dioxins, Human Health Aspects. Academic Press, New York. Pp. 201-214

REP TER DIO 25T MKY MUS RAT REV

See Pages IV-132, IV-134, and IV-136.

Tukey, R.H., Hannah, R.R., Negishi, M., Nebert, D.W., and Eisen, H.J. 1982. The Ah locus: Correlation of intranuclear appearance of inducer-receptor complex with induction of cytochrome P_1-450 mRNA. Cell 31:275-284

MEC INJ IVT DIO MUS

See Pages IV-108, IV-110, IV-124, and IV-125.

Turner, J.N., and Collins, D.N. 1983. Liver morphology in guinea pigs administered either pyrolysis products of a polychlorinated biphenyl transformer fluid or 2,3,7,8-tetrachlorodibenzo-p-dioxin. Toxicol. Appl. Pharmacol. 67:417-429

ACU ORL DIO GPG

See Page IV-245.

Unger, T.M., Kliethermes, J., Van Goethem, D., and Short, R.D. 1981. Teratology and postnatal studies in rats of the propylene glycol butyl ether and isooctyl esters of 2,4-dichlorophenoxyacetic acid. US NTIS PB Rep. PB81-191140, EPA-600/1-81-035. (20 pages)

TER ORL 24D RAT

See Page IV-152, IV-153, IV-154, and IV-176.

U.S.A.F. School of Aerospace Medicine (USAF). 1983. Project Ranch Hand II: An epidemiologic investigation of health effects of Air Force personel following exposure to herbicides. Baseline mortality study results, June 30. Epidemiology Division, Data Sci. Division, Brooks Air Force Base, Texas 78235 (61 pages)

CAR EPI OCC ORN HUM

See Page IV-25.

U.S. Environmental Protection Agency (USEPA). 1981a. Cacodylic acid: Decision document. Office of Pesticide Programs, December. (Unpublished data) (60 pages)

ACU CAR GEN TER CAC REV

See Pages VII-4 and VII-8.

U.S. Environmental Protection Agency (USEPA). 1981b. Risk assessment on (2,4,5-trichlorophenoxy) acetic acid (2,4,5-T), (2,4,5-trichlorophenoxy) propionic acid, and 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD). US NTIS PB Rep. PB81-234825, EPA-600/6-81-003 (267 pages)

CAR DIO 25T REV

This is a quantitative carcinogenic risk assessment of 2,4,5-T and TCDD performed by the Cancer Assessment Group of the USEPA in 1981.

U.S. Environmental Protection Agency (USEPA). 1982a. 2,4-D: Tolerances and exemptions from tolerances for pesticide chemicals in or on raw agricultural commodities. Fed. Reg. 47:620-621

24D

This Federal Register document lists pesticide tolerances for 2,4-D but contains no data or background on the basis for these tolerances.

U.S. Environmental Protection Agency (USEPA). 1982b. Picloram: Current issue, background, and EPA position. Letter from the Office of Pesticides and Toxic Substances (May 12, 1982) (2 pages)

CAR PIC COM

This is a three-page memo summarizing EPA's position in 1982 supporting the registration of picloram.

U.S. Environmental Protection Agency (USEPA). 1982c. Picloram: Tolerances. Fed. Reg. 47:53005

PIC COM

This is a Federal Register publication listing pesticide tolerances for picloram but containing no data or background on the basis for these tolerances.

U.S. Environmental Protection Agency (USEPA). 1983a. Summary of the IBT review program. Office of Pesticides and Toxic Substances, Washington, D.C. 20460 (July) (Unpublished data)

PIC REV

See Page VI-3.

U.S. Environmental Protection Agency (USEPA). 1983b. Tolerances for pesticide chemicals in or on raw agricultural commodities: 2,4-D. Fed. Reg. 48:2322-2323

24D

This is a new Federal Register notice listing additional pesticide tolerances for 2,4-D. It contains no data or background information.

U.S. General Accounting Office (USGAO). 1982. VA's Agent Orange Examination Program: Actions needed to more effectively address veterans health concerns. GAO/HRD-83-6, October 25 (78 pages)

ENV ORN HUM COM REV

This report critically reviews the Veterans Administration's Agent Orange Registry program.

Vahter, M. 1981. Biotransformation of trivalent and pentavalent inorganic arsenic in mice and rats. Environ. Res. 25:286-293

MET ORL CAC MUS RAT

See Pages VII-10 and VII-11.

Vainio, H., Nickels, J., and Linnainmaa, K. 1982. Phenoxy acid herbicides cause peroxisome proliferation in Chinese hamsters. Scand. J. Work. Environ. Health 8:70-73

CAR GEN HEP MEC ORL 24D HAM

See Page IV-53.

Vainio, H., Linnainmaa, K., Kahonen, M., Nickels, J., Hietanen, E., Marnieni, J., and Peltonen, P. 1983. Hypolipidemia and peroxisome proliferation induced by phenoxyacetic acid herbicides in rats. Biochem. Pharmacol. (In press)

CAR GEN HEP MEC ORL 24D RAT

See Page IV-53.

Valencia, R. 1981. Mutagenesis screening of pesticides using Drosophila. US NTIS PB Rep. PB81-160848, EPA 600/1-81-017. (71 pages)

GEN ORL CAC ADD

See Pages VII-3 and VII-4.

Van Den Berg, M., Olie, K., and Hutzinger, O. 1983. Uptake and selective retention in rats of orally administered chlorinated dioxins and dibenzofurans from fly-ash and fly ash extract. Chemosphere 12:537-544

MET ORL DIO RAT

See Page V-31 and V-37.

Van Houdt, J.J., Fransman, L.G., and Strik, J.J.T.W.A. 1983. Epidemiological case control study in personnel exposed to 2,4,5-T. Chemosphere 12:575

ACN EPI HEP PCT OCC 25T HUM

See Pages IV-211 and IV-216.

Van Logten, M.J., Gupta, B.N., McConnell, E.E., and Moore, J.A. 1981. The influence of malnutrition on the toxicity of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) in rats. Toxicology 21:77-88

ACU HEP OTH ORL DIO RAT

This is a study of the effect of diet on the toxicity of a single oral dose of TCDD. The authors found that malnutrition caused either by a low protein diet or a restricted diet enhanced the hepatotoxic effects of TCDD but did not have much effect on thymic involution caused by TCDD. This indicates that thymic involution is not secondary to TCDD induced malnutrition.

Vecchi, A., Sironi, M., Canegrati, M.A., and Garattini, S. 1983a. Comparison of the immunosuppressive effects in mice of 2,3,7,8-tetrachlorodibenzo-p-dioxin and 2,3,7,8-tetrachlorodibenzofuran. In Choudhary, G., Keith, L.H., and Rappe, C., eds. Chlorinated Dioxins and Dibenzofurans in the Total Environment. Butterworth Publishers, Boston. Pp. 397-405

ACU IMM INJ ORL DIO IMP MUS

See Page IV-200.

Vecchi, A., Sironi, M., Canegrati, M.A., Recchia, M., and Garattini, S. 1983b. Immunosuppressive effects of 2,3,7,8-tetrachlorodibenzo-p-dioxin in strains of mice with different susceptibility to induction of aryl hydrocarbon hydroxylase. Toxicol. Appl. Pharmacol. 68:434-441

IMM MEC ORL DIO MUS

See Page IV-201.

Veterans Administration. 1981. Advisory Committee on Health-Related Effects of Herbicides: Transcript of Proceedings (Eighth Meeting, May 5, 1981) Washington, D.C. (139 pages)

This transcript and those that follow are the transcripts of discussions and presentations at meetings of the Veterans Administration Advisory Committee on Health-Related Effects

of Herbicides. At this meeting a wide variety of topics and studies of the health effects of phenoxy herbicides were discussed.

Veterans Administration. 1982a. Advisory Committee on Health-Related Effects of Herbicides: Transcript of Proceedings (Ninth Meeting, August 19, 1981) Washington, D.C. (138 pages)

Veterans Administration. 1982b. Advisory Committee on Health-Related Effects of Herbicides: Transcript of Proceedings. (Tenth Meeting November 19, 1981) Washington, D.C. (112 pages)

Veterans Administration. 1982c. Advisory Committee on Health-Related Effects of Herbicides: Transcript of Proceedings. (Eleventh Meeting February 25, 1982) Washington, D.C. (103 pages)

Veterans Administration. 1982d. Advisory Committee on Health-Related Effects of Herbicides: Transcript of Proceedings. (Twelfth Meeting) May 13, 1982, Washington, D.C. (120 pages)

Veterans Administration. 1983a. Advisory Committee on Health-Related Effects of Herbicides: Transcript of Proceedings. (Thirteenth Meeting August 31, 1982) Washington, D.C. (133 pages)

Veterans Administration. 1983b. Advisory Committee on Health-Related Effects of Herbicides: Transcript of Proceed ings. (Fourteenth Meeting November 30, 1982) Washington, D.C. (111 pages)

Veterans Administration. 1983c. Advisory Committee on Health-Related Effects of Herbicides: Transcript of Proceedings. (Fifteenth Meeting February 24, 1983) Washington, D.C. (112 pages)

Vos, J.G. 1981. Screening and function studies in immunotoxicity testing. Vet. Q. 3:190-195

IMM DIO REV

This is a review describing methodologies for assessing the effects of chemicals on the immune system including a brief (one paragraph) discussion of TCDD.

Vos, J.G., Van Leeuwen, F.X.R., and De Jong, P. 1982. Acnegenic activity of 3-methylcholanthrene and benzo[a]pyrene, and a comparative study with 2,3,7,8-tetrachlorodibenzo-p-dioxin in the rabbit and hairless mouse. Toxicology 23:187-196

ACN ENZ MEC DEM DIO ADD MUS

See Pages IV-84 and IV-211.

Wagner, A., and Zett, L. 1981. [The influence of several membrane stabilizing drugs on the induced and hereditary myotonia: A methodic way to test the effectiveness of drugs on myotonia.] Z.EEG-EMG 12:174-182 (German) (Author's translation)

NEU IVT 24D ADD RAT

This study was designed to develop a model in which to test membrane stabilizing drugs. 2,4-D was used as a device to induce myotonia.

Waters, M.D., Sandhu, S.S., Simmon, V.F., Mortelmans, K.E., Mitchell, A.D., Jorgenson, T.A., Jones, D.C.L., Valencia, R., and Garrett, N.E. 1982. Study of pesticide genototoxicity. In Fleck, R.A., and Hollaender, A., eds. Genetic Toxicology, An Agricultural Perspective. Plenum Press, New York. Pp. 275-326

GEN CAC 24D 25T REV

See Pages IV-55, IV-56, and IV-57.

Weber, H., Poiger, H., and Schlatter, C. 1982a. Acute oral toxicity of TCDD-metabolites in male guinea pigs. Toxicol. Lett. 14:117-122

ACU MET ORL DIO GPG

This report describes a study of the acute oral toxicity of TCDD metabolites in guinea pigs. The metabolites were less acutely otxic than TCDD. This report is of little significance to human health.

Weber, H., Poiger, H., and Schlatter, C. 1982b. Fate of 2,3,7,8-tetrachlorodibenzo-p-dioxin metabolites from dogs in rats. Xenobiotica 12:353-357

MET ORL DIO DOG RAT

See Pages V-29 and V-37.

Weisburger, E.K. 1982. Carcinogenicity tests on pesticides. In Chambers, J.E., and Yarbrough, J.D., eds. Effects of Chronic Exposures to Pesticides on Animal Systems. Raven Press, New York. Pp. 165-176

CAR PIC MUS RAT REV

This review summarizes the NCI carcinogenesis bioassays of pesticides, including picloram.

Wells, W.D.E., Wright, N., and Yeoman, W.B. 1981. Clinical features and management of poisoning with 2,4-D and mecoprop. Clin. Toxicol. 18:273-276

ACU HEP MET NEU REN ORL 24D HUM

See Pages V-8, V-9, and V-36.

Westing, A.H. and Cau, H.D. Organizing Committee. 1983. International Symposium on Herbicides and Defoliants in War. The Long-Term Effects on Man and Nature. January 13-20, Ho Chi Minh City, Viet Nam

EPI REP ENV ORN HUM COM REV

This is a summary of the proceedings of the International Symposium with brief reviews of studies of adverse reproductive effects among Vietnamese who were exposed to chemical defoliants.

Wigle, D.T., and Mao, Y. 1981. Investigation of potential health effects due to defoliant spraying at Camp Gagetown, New Brunswick. Report prepared by the Non-Communicable Disease Division, Laboratory Centre for Diesease Control, Health Protection Branch, Health and Welfare Canada (June)

CAR EPI LET REP ENV ORN PIC HUM

See Page IV-142.

Wiklund, K. 1983. Swedish agricultural workers: A group with a decreased risk of cancer. Cancer 51:566-568

CAR EPI OCC HUM

See Page IV-12.

Willhite, C.C. 1981. Arsenic-induced axial skeletal (dysraphic) disorders. Exp. Molec. Pathol. 34:145-158

TER INJ CAC HAM

See Page VII-7 and VII-11.

Willhite, C.C., and Ferm, V.H. 1983. Prenatal and developmental toxicology of arsenicals. Adv. Exp. Med. Biol. (In press)

TER INJ ORL CAC HAM REV

This is a review of the reproductive toxicity of inorganic and organic arsenicals with emphasis on the possible mechanism of action (71 references).

Wilson, A.G., Kung, H.C., Boroujerd, M., and Anderson, M.W. 1981. Inhibition in vivo of the formation of adducts between metabolites of benzo(a)pyrene and DNA by aryl hydrocarbon hydroxylase inducers. Cancer Res. 41:3453-3460

ENZ MEC ORL DIO MUS

See Pages IV-116 and IV-125.

Wipf, H.K., and Schmid, J. 1983. Seveso: An environmental assessment. In Tucker, R.E., Young, A.L., and Gray, A.P., eds. Human and Environmental Risks of Chlorinated Dioxins and Related Compounds. Plenum Press, New York. Pp. 255-274

ACN EPI ENV DIO HUM

See Page III-6.

This is primarily an analytical chemical study in which the authors conclude that PCDDs are present in zone R at Seveso at higher levels than TCDD and that TCDD contamination at Seveso is low compared to Missouri and Eglin Air Force Base.

Worthy, W. 1983. Both incidence, control of dioxin are highly complex. Chem. Eng. News 61:51-56

ENV DIO HUM REV

This is a news report detailing difficulties in assessing human exposure to TCDD and other PCDD.

Yang, K.H., Choi, E.J., and Choe, S.Y. 1983a. Cytotoxicity of 2,3,7,8-tetrachlorodibenzo-para-dioxin on primary cultures of adult rat hepatocytes. Arch. Environ. Contam. Toxicol. 12:183-188

HEP MEC INJ ORL DIO RAT

In this study rats were given single oral doses of TCDD. At several time points thereafter, primary cultures of hepatocytes were prepared from these rats. TCDD pretreatment depressed ouabain uptake, hormonally induced uptake of α-aminoisobutyric acid, and tyrosine aminotransferase activity in these cultured hepatocytes. The human health significance of these findings is not clear.

Yang, K.H., Yoo, B.S., and Choe, S.Y. 1983b. Effects of halogenated dibenzo-p-dioxins on plasma disappearance and biliary excretion of ouabain in rats. Toxicol. Lett. 15:259-264

MEC ORL DIO RAT

See Page IV-257.

Yannacone, V.J., Jr., Kavenagh, W.K., and Searcy, M.T. 1981. Dioxin: Molecule of death. Trial (December) Pp. 31-37

ACN CAR HEP REP DIO IMP ORN HUM COM

This is an undocumented discussion of the history of Agent Orange and the toxicology of phenoxy herbicides and their PCDD contaminants (no references).

Young, A.L., and Shepard, B.M. 1983. A review of on-going epidemiological research in the U.S. on the phenoxy herbicides and chlorinated dioxin contaminants. Chemosphere 12:749-759

EPI DIO ORN HUM REV

This is a description of VA and other federally sponsored studies designed to elucidate the health effects of Agent Orange and related substances.

Young, A.L., Thalken, C.E., and Harrison, D.D. 1981a. Persistence, bioaccumulation, and toxicology of TCDD in an ecosystem treated with massive quantities of 2,4,5-T herbicide. Proc. West. Soc. Weed Sci. 34:70-77

HEP ENV DIO MUS

This is the same information as that included in Thalken and Young (1983).

Young, J.D., Ramsey, J.C., and Braun, W.H. 1981b. Pharmacokinetics of 2,4,5-T PGBE ester applied dermally to rats. J. Toxicol. Environ. Health 8:401-408

MET DEM 25T RAT

See Pages V-12 and V-35.

Young, A.L., Kang, H.K., and Shepard, B.M. 1983a. Chlorinated dioxins as herbicide contaminants. Environ. Sci. Technol. 17:530A-540A.

CAR MET REP DIO ORN HUM REV

See Page IV-27.

This is a review of phenoxy herbicide toxicology with emphasis on the relevance of studies to the possible health

effects of Agent Orange to men who served in Vietnam (44 references).

Young, A.L., Shepard, B.M., and Kang, H.K. 1983b. Rationale and description of the federally-sponsored epidemiologic research in the United States on the phenoxy herbicides and chlorinated dioxin contaminants. American Chemical Society, Division of Environmental Chemistry 23:149-151

EPI DIO ORN HUM REV ABS

This is a brief description of epidemiologic research projects currently being sponsored by the Federal government that may reveal useful health effects information on Agent Orange and related compounds.

Zack, J.A., and Gaffey, W.R. 1983. A mortality study of workers employed at the Monsanto Company plant in Nitro, West Virginia. In Tucker, R.E., Young, A.L., and Gray, A.P., eds. Human and Environmental Risks of Chlorinated Dioxins and Related Compounds. Plenum Press, New York. Pp. 575-591

CAR EPI OCC DIO HUM

See Pages IV-18 and IV-21.

Ziem, G. 1983. Tetrachlorodibenzodioxin. Br. J. Ind. Med. 40:116

CAR ENZ REP OCC DIO HUM COM

This is a critical commentary on the publication by May (1982) indicating that the study is potentially misinterpreted due to inadequate follow-up and improper statistical analysis.

Zimmerman, D.R. 1982. Vietnam's lingering poison: Agent Orange. Pp. 68-72

CAR MET REP DIO IMP ORN HUM COM

This is a news report describing the response of veterans' groups to a study of TCDD levels in adipose tissue.