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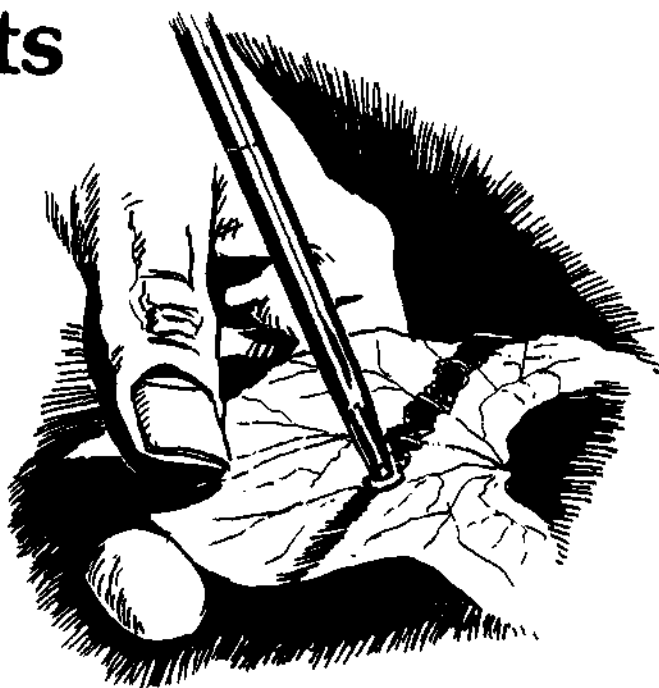
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Selected Bibliography of the Phenoxy Herbicides

VIII. Effects on Higher Plants



The Texas Agricultural Experiment Station, Neville P. Clarke, Director,
The Texas A&M University System, College Station, Texas

In cooperation with Federal Research—Science
and Education Administration, U.S. Department of Agriculture

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SELECTED BIBLIOGRAPHY OF THE
PHENOXY HERBICIDES

VIII. Effects on Higher Plants

R. W. Bovey and J. D. Diaz-Colon*

Introduction

This is the final publication in a series of bibliographies on the phenoxy herbicides. Previous publications regarding fate, dioxin, toxicology, ecology, microbiology, methods of extraction and analyses, and military uses were published during 1976, 1977, and 1978.

Physiological research of the phenoxy herbicides in higher plants is necessary to enlarge our understanding of the mode-of-action and plant responses manifested. Such information also helps explain the susceptibility or resistance of a given weed or crop species to a specific phenoxy herbicide and its practical use under field conditions. This publication provides a list of old and recent references on the effect of the phenoxy herbicides in higher plants.

References are listed in alphabetical order according to senior author's name. A subject numerical index is provided, consisting of two sections each identified by a Roman numeral. Section I comprises research papers dealing with plant responses to herbicides and herbicide activity in plants. Section II consists of reviews dealing with most of the aspects covered in Section I. A separate list of the common and chemical names of herbicides covered is also provided.

Each Arabic numeral on the subject indexes identifies a reference in its respective author's alphabetical lists. For references published in languages other than English, the abbreviated form of the particular language is enclosed in parentheses after the title. A list of the abbreviated and complete names of languages and a list of the abbreviated and complete names of periodicals, together with their countries and cities of origin, are also provided. If English abstracts for the references are available, the abstract sources are included after the listed reference.

*Respectively, research agronomist and agricultural research technician, Federal Research, Science and Education Administration, U.S. Department of Agriculture, and The Texas Agricultural Experiment Station (Department of Range Science).

List of Abbreviated Sources

Acta Agrobot.	Acta Agrobotanica (Naukowe, Warsaw, Poland)
Acta Bot. Hung.	Acta Botanica Hungarica (Szeged, Hungary)
Acta Soc. Bot. Pol.	Acta Societatis Botanicorum Poloniae (Warsaw, Poland)
Advan. Carbohyd. Chem.	Advances in Carbohydrate Chemistry (New York, N.Y.)
Agric. Biol. Chem.	Agricultural and Biological Chemistry (Tokyo, Japan)
Agrokhimiya	Agrokhimiya (Moscow, USSR)
Agron. J.	Agronomy Journal (Madison, Wis.)
Allahabad Farmer	Allahabad Farmer (Allahabad, India)
Am. Chem. Soc., Abstr. Pap., Nat. Meet., Pestic. Chem. Sec.	American Chemical Society, Abstracts of Papers of the National Meetings, Pesticides Chemistry Section (Washington, D.C.)
Am. J. Bot.	American Journal of Botany (Lawrence, Kans.)
Am. Potatoe J.	American Potatoe Journal (New Brunswick, N.J.)
Ann. Appl. Biol.	Annals of Applied Biology (London, England)
Ann. Bot. (London)	Annals of Botany (London) (London, England)
Ann. Sci. Univ. Besancon	Annales Scientifiques de l'Universite de Besancon (Besancon, France)
Ann. Univ. Mariae Curie-Sklodowska, Sect. E	Annales Universitatis Mariae Curie- Sklodowska, Sectio E (Lublin, Poland)
Annu. Rev. Plant Physiol.	Annual Review of Plant Physiology (Palo Alto, Calif.)
Arch. Biochem. Biophys.	Archives of Biochemistry and Bio- physics (New York, N.Y.)
Arch. Environ. Contam. Toxicol.	Archives of Environmental Contamina- tion and Toxicology (New York, N.Y.)
Aust. J. Agric. Res.	Australian Journal of Agricultural Research (Melbourne, Australia)
Aust. J. Biol. Sci.	Australian Journal of Biological Science (Melbourne, Australia)
Aust. J. Exp. Agric. Anim. Husb.	Australian Journal of Experimental Agriculture and Animal Husbandry (Melbourne, Australia)

Ber. Dtsch. Bot. Ges.	Berichte der Deutschen Botanischen Gesellschaft (Berlin, Germany)
Biochem. J.	Biochemical Journal, The (London, England)
Biochim. Biophys. Acta	Biochimica et Biophysica Acta (Amsterdam, Netherlands)
Biol. Abstr.	Biological Abstracts (Philadelphia, Pa.)
Biol. Plant.	Biologia Plantarum (Prague, Czechoslovakia)
Biol. Zh. Arm.	Biologicheskii Zhurnal Armenii (Yerevan, USSR)
BioScience	BioScience (Washington, D.C.)
Bitki Koruma Bul.	Bitki Koruma Bulteni (Ankara, Turkey)
Bot. Gaz.	Botanical Gazette (Chicago, Ill.)
Bot. Mag.	Botanical Magazine (Tokyo, Japan)
Bot. Zh.	Botanicheskii Zhurnal (Leningrad, USSR)
Bull. Torrey Bot. Club	Bulletin of the Torrey Botanical Club (New York, N.Y.)
Calif. Agric.	California Agriculture (Berkeley, Calif.)
Can. J. Agric. Sci.	Canadian Journal of Agricultural Science (Ottawa, Canada)
Can. J. Bot.	Canadian Journal of Botany (Ottawa, Canada)
Can. J. Genet. Cytol.	Canadian Journal of Genetics and Cytology (Ottawa, Canada)
Can. J. Plant Sci.	Canadian Journal of Plant Science (Ottawa, Canada)
Can. J. Res.	Canadian Journal of Research (Ottawa, Canada)
Can. Seed Grow. Assoc., Ann. Rep.	Canadian Seed Growers Associations, Annual Report (Ottawa, Ontario, Canada)
Caryologia	Caryologia (Florence, Italy)
Chem.-Biol. Interact.	Chemico-Biological Interactions (Amsterdam, Netherlands)
Contrib. Boyce Thompson Inst.	Contributions from Boyce Thompson Institute (Yonkers, New York, N.Y.)
Crop Sci.	Crop Science (Madison, Wis.)

Crops Soils	Crops and Soils (Madison, Wis.)
CSIRO Div. Trop. Past., Rep.	CSIRO Division of Tropical Pastures, Report (Melbourne, Australia)
Curr. Sci.	Current Science (Bangalore, India)
Cytologia	Cytologia (Tokyo, Japan)
Diss. Abstr. Int.	Dissertation Abstracts International (Ann Arbor, Mich.)
Dokl. Akad. Nauk Az. SSR	Doklady Akademii Nauk Azerbaidzhanskoi SSR (Baku, USSR)
Dokl. Bot. Sci. - En. Transl.	Doklady Botanical Sciences - English Translation (New York, N.Y.)
Dokl. TSKhA	Doklady TSKhA (Moscow, USSR)
Econ. Bot.	Economic Botany (New York, N.Y.)
Experientia	Experientia (Basel, Switzerland)
Farm Home Res.	Farm and Home Research (Wooster, Ohio)
Farm Res.	Farm Research (Ithaca, N.Y.)
Fed. Proc., Fed. Am. Soc. Exp. Biol.	Federation Proceedings, Federation of American Societies for Experi- mental Biology (Washington, D.C.)
Fiziol. Rast.	Fiziologiya Rastenii (Moscow, USSR)
Food Technol.	Food Technology (Chicago, Ill.)
For. Res. Notes	Forestry Research Notes (Madison, Wis.)
For. Sci.	Forest Science (Washington, D.C.)
Fruit Var. Hort. Dig.	Fruit Varieties and Horticultural Digest (Wathena, Kans.)
Hawaii Farm Sci.	Hawaii Farm Science (Honolulu, Hawaii)
Health Aspects Pestic.	Health Aspects of Pesticides, Ab- stract Bulletin (Chamblee, Ga.)
Hilgardia	Hilgardia (Berkeley, Calif.)

HortScience

Indian J. Biochem. Biophys.

Indian J. Exp. Biol.

Indian J. Weed Sci.

Iowa State Coll. J. Sci.

Izv. Akad. Nauk Turkm. SSR,
Ser. Biol. Nauk

Izv. Timiryazevsk. Skh. Akad.

J. Agric. Food Chem.

J. Agric. Sci.

J. Agric. Univ. P.R.

J. Am. Soc. Agron.

J. Am. Soc. Hortic. Sci.

J. Elisha Mitchell Sci. Soc.

J. Environ. Qual.

J. Exp. Bot.

J. Food Sci.

J. For.

J. Hortic. Sci.

J. Org. Chem.

J. Range Manage.

Khim. Sel'sk. Khoz.

HortScience

(St. Joseph, Mich.)

Indian Journal of Biochemistry and
Biophysics

(New Delhi, India)

Indian Journal of Experimental Biology
(New Delhi, India)Indian Journal Weed Science
(Hissar, India)Iowa State College Journal of Science
(Ames, Iowa)Izvestiya Akademiyi Nauk Turkmenskoi
SSR, Seriya Biologicheskikh Nauk
(Ashkhabad, Turkmen SSR)Izvestiya Timiryazevskoi Sel'skokhozy-
aistvennoi Akademii
(Moscow, USSR)Journal of Agriculture and Food
Chemistry

(Washington, D.C.)

Journal of Agricultural Science
(Cambridge, England)Journal of Agriculture of the Univer-
sity of Puerto Rico
(Rio Piedras, Puerto Rico)Journal of the American Society of
Agronomy
(Geneva, N.Y.)Journal of the American Society for
Horticultural Science
(St. Joseph, Mich.)Journal of the Elisha Mitchell Sci-
entific Society
(Chapel Hill, N.C.)Journal of Environmental Quality
(Madison, Wis.)Journal of Experimental Botany
(London, England)Journal of Food Science
(Chicago, Ill.)Journal of Forestry
(Washington, D.C.)Journal of Horticultural Science
(London, England)Journal of Organic Chemistry
(Washington, D.C.)Journal of Range Management
(Denver, Colo.)Khimiya v Selskom Khoziastve
(Moscow, USSR)

Long Ashton Res. Stn., Univ.
Bristol, Rep.

Madras Agric. J.

Meded. Fac. Landbouwwet.,
Rijksuniv. Gent

Mich. Agric. Exp. Stn., Q.
Bull.

Minn. Agric. Exp. Stn., Tech.
Bull.

Miss. Farm Res.

Mitt. Biol. Bundesanst. Land
Forstwirtsch., Berlin-Dahlem

Mol. Gen. Genet.

Mont. State Coll., Mont. Agric.
Ext. Serv., Leaflet

Mutat. Res.

Mysore J. Agric. Sci.

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Inst., Sofia, Agron. Fak.,
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Res. Rep.

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versity of Bristol, Report
(Bristol, England)

Madras Agricultural Journal
(Coimbatore, India)

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bouwwetenschappen, Rijksuniversiteit
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(Ghent, Belgium)

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tion, Quarterly Bulletin
(East Lansing, Mich.)

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(St. Paul, Minn.)

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(State College, Miss.)

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wirtschaft; Berlin-Dahlem
(Berlin, Germany)

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(Berlin, Germany)

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cultural Extension Service, Leaf-
let
(Bozeman, Mont.)

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(Amsterdam, Netherlands)

Mysore Journal of Agricultural Sci-
ences
(Hebbal, Bangalore, India)

Nature-London

(London, England)
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(Berlin, Germany)

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Institut "Georgi Dimitrov," Sofia,
Agronomicheski Fakultet, Seriya
Obshto Zemedelie
(Sofia, Bulgaria)

New Phytologist
(London, England)

North Central Weed Control Confer-
ence, Research Report
(Omaha, Nebr.)

Novenytermeles
(Budapest, Hungary)

Novenyvedelem
(Budapest, Hungary)

Ohio Agric. Exp. Stn., Res. Bull.	Ohio Agricultural Experiment Station, Research Bulletin (Wooster, Ohio)
Oreg. Agric. Exp. Stn., Tech. Bull.	Oregon Agricultural Experiment Sta- tion, Technical Bulletin (Corvallis, Oreg.)
Pa. Agric. Exp. Stn., Bull.	Pennsylvania Agricultural Experiment Station, Bulletin (University Park, Pa.)
Pestic. Abstr.	Pesticides Abstracts (Washington, D.C.)
Pestic. Biochem. Physiol.	Pesticide Biochemistry and Physiology (New York, N.Y.)
Pestic. Sci.	Pesticide Science (London, England)
Physiol. Plant.	Physiologia Plantarum (Copenhagen, Denmark)
Phytochemistry	Phytochemistry (New York, N.Y.)
Phytomorphology	Phytomorphology (Delhi, India)
Phyton-ØYTON	Phyton-ØYTON (Buenos Aires, Argentina)
Planta	Planta (Berlin, Germany)
Plant Cell Physiol.	Plant and Cell Physiology (Tokyo, Japan)
Plant Physiol.	Plant Physiology (Kutztown, Pa.)
Plant Physiol., Suppl.	Plant Physiology, Supplements (Kutztown, Pa.)
Plant Sci. Lett.	Plant Science Letters (Amsterdam, Netherlands)
Proc. Am. Soc. Hortic. Sci.	Proceedings of the American Society for Horticultural Science (St. Joseph, Mich.)
Proc. Crop Sci. Soc. Jpn.	Proceedings of the Crop Science So- ciety of Japan (Tokyo, Japan)
Proc. Indian Acad. Sci.	Proceedings of the Indian Academy of Sciences (Bangalore, India)
Proc. Int. Bot. Congr.	Proceedings of the International Botanical Congress (Waltham, Mass.)
Proc. North Cent. Weed Control Conf.	Proceedings of the North Central Weed Control Conference (Omaha, Nebr.)
Proc. Northeast. Weed Control Conf.	Proceedings of the Northeastern Weed Control Conference (Farmingdale, N.Y.)

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- U.S. Dep. Agric., Tech. Bull.
- U.S. Dep. Agric., Yearb. Agric.
- U.S. For. Serv., Pac. Northwest For. Range Exp. Stn., Res. Paper
- Vestn. Skh. Nauki Kaz.
- Vestsī Akad. Navuk B. SSR, Ser. Biyal. Navuk
- Weed Abstr.
- Weed Res.
- Weeds
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- Weed Sci. Soc. Am., Abstr., Meet.
- West. Soc. Weed Sci., Res. Prog. Rep.
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- Z. Pflanzenkr. Pflanzenschutz
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- Zeitschrift fuer Pflanzenphysiologie (Stuttgart, Germany)

Language Abbreviation

Bg - Bulgarian

It - Italian

De - German

Ja - Japanese

Es - Spanish

Pl - Polish

Fr - French

Ru - Russian

Hu - Hungarian

Tr - Turkish

List of Herbicides Mentioned

<u>Common Name</u>	<u>Chemical Name</u>
2,4-D	(2,4-dichlorophenoxy)acetic acid
2,4-DB	4-(2,4-dichlorophenoxy)butyric acid
2,4-DP (dichlorprop)	2-(2,4-dichlorophenoxy)propionic acid
MCPA	[(4-chloro-o-tolyl)oxy]acetic acid, (2-methyl-4-chlorophenoxyacetic acid)
MCPB	4-[(4-chloro-o-tolyl)oxy]butyric acid, (4-(2-methyl-4-chlorophenoxy)butyric acid)
MCPP (mecoprop)	2-[(4-chloro-o-tolyl)oxy]propionic acid, (2-(2-methyl-4-chlorophenoxy) propionic acid)
2,4,5-T	(2,4,5-trichlorophenoxy)acetic acid
2,4,5-TB	[4-(2,4,5-trichlorophenoxy)butyric acid]
Silvex (2,4,5-TP)	[2-(2,4,5-trichlorophenoxy)propionic acid]
Phenoxyacetic acid	Phenoxyacetic acid
2-CPA	(2-chlorophenoxy)acetic acid
4-CPA	(4-chlorophenoxy)acetic acid

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2. 2,4-DB 525

3. 2,4-DP 525

4. 2,4,5-T 525

5. 2,4,5-TB 525

6. Silvex 525

7. 4-CPA 525

F. Absorption, Penetration, Uptake, Accumulation, and Distribution in the Plant

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2. 2,4,5-T 166
3. Silvex 166

G. Structure of Herbicide as Related to Its Activity in Plants

1. 2,4-D 365, 461, 490
2. 2,4-DB 365, 461
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4. MCPA 365, 461
5. MCPB 365
6. MCPP 365
7. 2,4,5-T 365
8. Silvex 365, 461
9. 4-CPA 365

H. Interactions Between Herbicides and Other Chemicals

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I. Effects of Environmental Factors on Herbicidal Activity in Plants

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2. 2,4,5-T 166
3. Silvex 166

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