

*Pest Control—the Natural Way*

# Biological Control



## ***Theory and Application in Pest Management***

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Biological control is an environmentally sound and effective means of reducing or mitigating pests and pest effects through the use of natural enemies. The aim of the journal is to promote the science and technology of biological control through publication of original research articles and reviews of research and theory. The journal devotes a section to reporting on biotechnologies dealing with the elucidation and use of genes or gene products for the enhancement of biological control agents.

The journal encompasses biological control of viral, microbial, nematode, insect, mite, weed, and vertebrate pests in agriculture, aquatic, forest, natural resource, stored product, and urban environments. Biological control of arthropod pests of human and domestic animals is also included. Ecological, molecular, and biotechnological approaches to the understanding of biological control are welcome.

### ***This multidisciplinary journal covers:***

**Entomology**—parasitoids, predators, and pathogens and their use through importation, augmentation, and/or habitat management strategies

**Plant Pathology**—antagonism, competition, cross-protection, hyperparasitism, hypovirulence, and soil suppressiveness through naturally occurring and introduced agents

**Nematology**—predators, parasites, and pathogens in biological control through augmentation and/or habitat management strategies and suppressive soils through naturally occurring and introduced agents

**Weed Science**—vertebrates, invertebrates, and pathogens and their use through classical, augmentative, or bioherbicidal tactics

### ***The following sections are included:***

**Molecular Technology**—advances in the understanding of biological control agents and their mechanisms

**Forum**—theoretical and special topics

**Letters to the Editor**—serving as an avenue for debate

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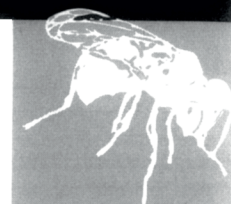


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## Common and Trade Names and Manufacturers of Herbicides

Trade names and manufacturers listed are the original and/or most common source(s) of the herbicide listed. The list is provided as an aid to readers who are more familiar with trade names than common names. No attempt is made to include all trade names or manufacturers of a herbicide nor is any discrimination implied against similar products available from other sources. A complete listing of common names, pronunciation, chemistry, trade names, and manufacturers is available on the back cover of *Weed Science* and/or in the *Herbicide Handbook* from the WSSA, 309 W. Clark St., Champaign, IL 61820.

Common Name	Trade Name	Manufacturer	Common Name	Trade Name	Manufacturer
acetochlor	Harness	Monsanto	dletharyl	Antor	Nor-Am
acifluorfen	Blazer	BASF	difenzoquat	Avenge	American Cyanamid
acrolein	Magnacide H	Magna	dinoseb	several	several
alachlor	Lasso	Monsanto	dipropetryn	Sancap	CIBA-Geigy
	Crop Star	Monsanto	diquat	Diquat	Valent
ametryn	Evik	CIBA-Geigy		Weedtrine-D	Applied Biochemists
amitrole	Amitrol T	Rhone-Poulenc		Reglone*	Chipman
	Amizol	Rhone-Poulenc	dithiopyr	Dimension	Monsanto
	AT-90	Custom Chemicides	diuron	several	several
	AT-Liquid	Custom Chemicides	DPX-V9360	Accent	DuPont
arsenic acid	several	several	(proposed: nicosulfuron)		
asulam	Asulox	Rhone-Poulenc			
atrazine	several	several			
			endothall	several	Atochem
barban	Carbyne	United Agri-Products	EPTC	Eptam	ICI Americas
BAS 514...H (proposed:quinclorac)	Facet	BASF		Eradicane	ICI Americas
benefin	Balan	DowElanco	ethalfuralin	Sonalan	DowElanco
bensulfuron	Londax	DuPont		Curbit	Platte
bensulide	Prefar	ICI Americas		Edge*	DowElanco
	Betasan	ICI Americas	ethofumesate	Nortron	Nor-Am
	Bensumec	PBI Gordon		Prograss	Nor-Am
bentazon	Basagran	BASF	fenoxaprop	Whip	Hoechst-Roussel
	Pledge	Setre		Acclaim	Hoechst-Roussel
bromacil	Hyvar	DuPont		Horizon	Hoechst-Roussel
bromoxynil	Buctril	Rhone-Poulenc		Excel*	Hoechst-Roussel
	Bromax	Loveland Hopkins	flamprop	Mataven*	DuPont
	Pardner*	Rhone-Poulenc	fluazifop	Fusillade	ICI Americas
	Torch DS*	Rhone-Poulenc	fluazifop-P	Ornamec	PPI Gordon
butachlor	Machete	Monsanto	fluchoralin	Fusillade 2000	ICI Americas
buthidazole	Ravage	Sandoz	fluometuron	Basalin	BASF
butylate	Sutan	ICI Americas		Cotoran	CIBA-Geigy
				Meturon	Griffin
cacodylic acid	several	several	fluroglycofen		Rohm and Haas
CDA	Randox	Monsanto	fluridone	Sonar	DowElanco
CGA-136872 (proposed: primisulfuron)	Beacon	CIBA-Geigy	flurtamone	Benchmark	Chevron
chlorimuron	Classic	DuPont	fomesafen	Reflex	ICI Americas
chlorsulfuron	Glean	DuPont	fosamine	Krenite	DuPont
	Telar	DuPont			
clethodim	Select	Valent	glyphosate	Roundup and several others	Monsanto
clomazone	Command	FMC		Rattler	Setre
clopyralid	Reclaim	DowElanco	haloxyfop	Verdict	DowElanco
	Stinger	DowElanco	hexazinone	Velpar	DuPont
	Lontrel*	DowElanco		Pronone	Pro-Serve
	several	several			
copper sulfate and copper complexes			imazamethabenz	Assert	American Cyanamid
cyanazine	Bladex	DuPont	imazapyr	Arsenal	American Cyanamid
cycloate	Ro-Neet	ICI Americas		Chopper	American Cyanamid
			imazaquin	Scepter	American Cyanamid
dazomet	several	several		Image	American Cyanamid
DCPA	Dacthal	Fermenta	imazethapyr	Pursuit	American Cyanamid
desmedipham	Betanex	Nor-Am	isopropalin	Paarian	DowElanco
diallate	Avadex	Monsanto	isoxaben	Gallery	DuPont
dicamba	Banvel	Sandoz			
	Trooper	Monsanto	lactofen	Cobra	Valent
	Dycleer*	Sandoz	linuron	Lorox	DuPont
	Casoran	Uniroyal		Linex	Griffin
dichlobenil	Dyclomec	PBI Gordon		Drexel Linuron	Drexel
	Norosac	PPI Gordon		Afolan*	Hoechst Canada
	several	several			
dichlorprop (2,4-DP)	Hoelon	Hoechst-Roussel	MAA	several	several
diclofop	Hoe Grass*	Hoechst Canada	MCPA	several	several
	Illoxan	Hoechst-Roussel	MCPB	Thistrol	Rhone-Poulenc

mecoprop	several	several	propanil	Stam	Rohm and Haas
mefluidide	Embark	3M		Strel	Rohm and Haas
metham	Vapam	ICI Americas		Prostar	Rohm and Haas
methazole	Probe	Sandoz		Cedar Propanil	Cedar
metolachlor	Dual	CIBA-Geigy		Wham DF	Cedar
	Pennant	CIBA-Geigy		Riverside Propanil	Terra Int.
metribuzin	Lexone	DuPont	propazine	Milogard	CIBA-Geigy
	Sencor	Mobay	pyrazon	Pyramin	BASF
metsulfuron	Ally	DuPont	pyridate	Tough	Agrolinz
	Escort	DuPont		Lentagran	Agrolinz
MH	several	several			
molinat	Ordram	ICI Americas	quizalofop	Assure	DuPont
monocarbamide	Enquik	Unocal			
dihydrogensulfate			sethoxydim	Poast	BASF
MSMA	several	several	siduron	Tupersan	DuPont
			slmazine	several	several
napropamide	Devrinol	ICI Americas	sodium chlorate	several	several
	Hurdle	Olympic	sulfometuron	Oust	DuPont
naptalam	Alanap	Uniroyal			
norflurazon	Zortol	Sandoz	tebuthiuron	Spike	DowElanco
	Evital	Sandoz		Herbec*	DowElanco
	Solicam	Sandoz	terbacil	Sinbar	DuPont
			terbutryn	Igran	CIBA-Geigy
oryzalin	Surflan	DowElanco	thifensulfuron	Pinnacle	DuPont
oxadiazon	Chipco Ronstar	Rhone-Poulenc	thiobencarb	Bolero	Valent
oxyfluorfen	Goal	Rohm and Haas	triallate	Far-go	Monsanto
				Showdown	Monsanto
paraquat	Gramoxone	ICI Americas		Avadex BW*	Monsanto
	Cyclone	ICI Americas	tribenuron	Express	DuPont
	Sweep*	Chipman	triclopyr	Garlon	DowElanco
	Starfire	ICI Americas		Rely	Hoechst-Roussel
pebulate	Tillam	ICI Americas	tridiphane	Tandem	DowElanco
pendimethalin	Prowl	American Cyanamid	trifluralin	Treflan	DowElanco
	Stomp	American Cyanamid		Tri-4	American Cyanamid
phenmedipham	Spin-Aid	Nor-Am		Trilin	Griffin
pictoram	Tordon and others	DowElanco		Trific	Terra
procliamine	Barricade	Sandoz		Gowan Trifluralin	Gowan
prometon	Pramitol	CIBA-Geigy		Rival*	Hoechst Canada
prometryn	Caparol	CIBA-Geigy		Heritage*	DowElanco
	Gowan Prometryne	Gowan		Triflurex*	Makhteshim
	Colton-Pro	Griffin	2,4-D	several	several
	Gesagard*	CIBA-Geigy	2,4-DB	Butyrac	Rhone-Poulenc
pronamide,	Kerb	Rohm and Haas		Butoxone	Cedar
propyzamide*				Cobutox*	IPCO
propachlor	Ramrod	Monsanto			
			vermolate	Vernam	Drexel

\*Names used in Canada but not in the United States.

## Herbicide Package Mixtures

Trade Name	Active Ingredients	Manufacturer	Trade Name	Active Ingredients	Manufacturer
Access	pictoram + triclopyr	DowElanco	Buckle	triallate + trifluralin	Monsanto
Arrosolo	molinat + propanil	ICI Americas	Buctril + Atrazine	bromoxynil + atrazine	Rhone-Poulenc
Atrabute	EPTC + atrazine	Griffin	Buctril M*	bromoxynil + MCPA	Rhone-Poulenc
Atratol 8P	atrazine + sodium chlorate + sodium metaborate	CIBA-Geigy	Bullet	alachlor + atrazine	Monsanto
			Calmix Pellets*	bromacil + 2,4-D	Rhone-Poulenc
Banvel 720	dicamba + 2,4-D	Sandoz	Cannon	alachlor + trifluralin	Monsanto
Bareground BD	bromacil + diuron + sodium chlorate + sodium metaborate	Pro-Serve, Inc.	Canopy	metribuzin + chlorimuron	DuPont
			Clearup MCPP 2,4-D	mecoprop + 2,4-D	Cleary
Betamix	desmedipham + phenmedipham	Nor-Am	Commence	clomazone + trifluralin	FMC
			Compitox Plus*	mecoprop + 2,4-D	Rhone-Poulenc
Bicep	atrazine + metolachlor	CIBA-Geigy	Confront	triclopyr + clopyralid	DowElanco
Blagal*	cyazifluthrin + MCPA	DuPont	Croak	fluometuron + MSMA	Drexel
Bolls-Eye	sodium cacodylate + cacodylic acid	Inter Ag	Crossbow	triclopyr + 2,4-D	DowElanco
			Curtail	clopyralid + 2,4-D	DowElanco
Broadside	MSMA + sodium cacodylate + cacodylic acid	Inter Ag	Curtail M	clopyralid + MCPA	DowElanco
			Cycle	metolachlor + cyanazine	CIBA-Geigy
Bromox 720M	bromoxynil + MCPA	Rhone-Poulenc	Dyclear 24*	dicamba + 2,4-D	Sandoz
Bronate	bromoxynil + MCPA	Rhone-Poulenc	Dyvel*	dicamba + MCPA	Sandoz
Bronco	alachlor + glyphosate	Monsanto			

Envert 171 Estaprop* Expedite Broadleaf Herbicide Extrazine II	2,4-D + dichlorprop dichlorprop + 2,4-D 2,4-D + mecoprop cyanazine + atrazine	Rhone-Poulenc Rhone-Poulenc Monsanto DuPont	Rescue Rout Rustler	naptalam + 2,4-DB oxyfluorfen + oryzalin glyphosate + 2,4-D	Uniroyal Sierra Monsanto
Fallow Master Finesse	glyphosate + dicamba chlorsulfuron + metsulfuron	Monsanto DuPont	Sabre* Salute Scepter O.T. Simazat Spike Treflan Squadron	bromoxymil + MCPA trifluralin + metribuzin imazaquin + acifluorfen simazine + atrazine tebuthiuron + trifluralin imazaquin + pendimethalin	Rhone-Poulenc Mobay American Cyanamid Drexel DowElanco American Cyanamid
Fortress* Freedom	triallate + trifluralin alachlor + trifluralin	Monsanto Monsanto	Stampede CM Storm Super Trimec	propanil + MCPA bentazon + acifluorfen 2,4-D + dichlorprop + dicamba	Rohm and Haas BASF PBI Gordon
Galaxy Gemini	bentazon + acifluorfen linuron + chlorimuron	BASF DuPont	Sutazine	atrazine + butylate	ICI Americas
Harmony Extra	thifensulfuron + tribenuron	DuPont	Target*	dicamba + mecoprop + MCPA	CIBA-Geigy
Helclean I	sodium metaborate + sodium chlorate + bromacil	Helena	Team Tiller	benefin + trifluralin fenoxaprop + 2,4-D + MCPA	DowElanco Hoechst-Roussel
Helena Weed Blast Hoe Grass II*	bromacil + diuron diclofop + bromoxynil	Helena Hoechst Canada	Tordon 101 Mixture Tordon 101R Tordon RTU Tornado Trimec Classic	picloram + 2,4-D picloram + 2,4-D picloram + 2,4-D fluzafop + fomesafen 2,4-D + mecoprop + dicamba	DowElanco DowElanco DowElanco ICI Americas PBI Gordon
Kil-Mor*	dicamba + mecoprop + 2,4-D	CIBA-Geigy	Trimec Encore	MCPA + mecoprop + dicamba	PPI Gordon
Krovar	bromacil + diuron	DuPont	Trimec Plus	MSMA + 2,4-D + mecoprop + dicamba	PPI Gordon
Laddok Landmaster II Landmaster BW Lariat Liquid Amizine Lorox Plus	bentazon + atrazine glyphosate + 2,4-D glyphosate + 2,4-D alachlor + atrazine amitrole + simazine linuron + chlorimuron	BASF Monsanto Monsanto Monsanto Rhone-Poulenc DuPont	Tri-Scept Turbo	imazaquin + trifluralin metolachlor + metribuzin	American Cyanamid Mobay
Marksman	dicamba + atrazine	Sandoz	Turf Kleen Turflon D Turflon II 2 Plus 2	mecoprop + 2,4-D triclopyr + 2,4-D triclopyr + 2,4-D MCPP + 2,4-D	Rhone-Poulenc DowElanco DowElanco Fermenta
Passport Phenomic 2+1 Phytar 560	imazethapyr + trifluralin mecoprop + 2,4-D sodium cacodylate + cacodylic acid	American Cyanamid PBI Gordon Inter Ag	Vegemec	prometon + 2,4-D + aromatic oil	PPI Gordon
Pramitol 5PS	prometon + simazine + sodium chlorate + sodium metaborate	CIBA-Geigy	Weedmaster Weedone CB Weedone 170 Weedone DPC	dicamba + 2,4-D dichlorprop + 2,4-D dichlorprop + 2,4-D dichlorprop + 2,4-D	Sandoz Rhone-Poulenc Rhone-Poulenc Rhone-Poulenc
Preview	metribuzin + chlorimuron	DuPont	XL 2G	benefin + oryzalin	DowElanco
Primextra* Pursuit Plus	metolachlor + atrazine pendimethalin + imazethapyr	CIBA-Geigy American Cyanamid			
Ramrod/Atrazine	propachlor + atrazine	Monsanto			

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