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EC94-1558-A Pesticide Selection Guide for Nebraska Professional Turfgrass Managers

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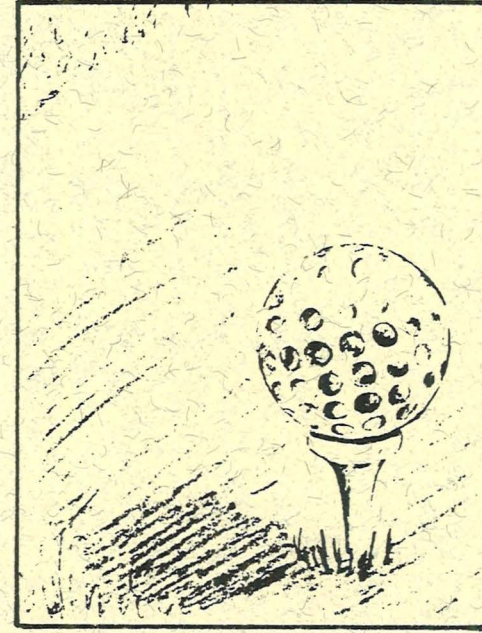
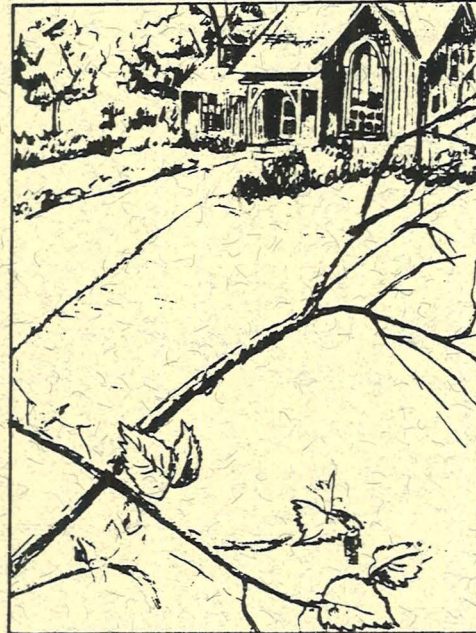
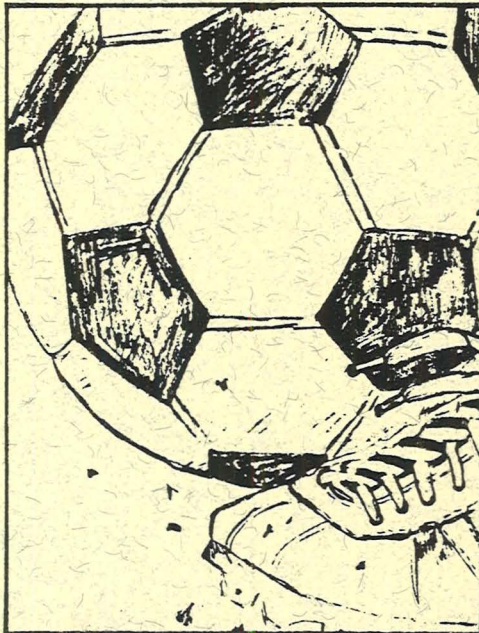
PESTICIDE SELECTION GUIDE

FOR

NEBRASKA PROFESSIONAL

TURFGRASS MANAGERS

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This publication is for professional turfgrass managers and licensed applicators. It does not include many products formulated and packaged for the public retail market. Products listed in this publication are restricted use, labeled for professional use only or packaged in commercial quantities.

The information should serve only as a guide to determine which products are labeled for a particular turfgrass pest. Product labels must be used for application instructions, rates for specific uses, safety instructions, precautions, environmental hazards, storage and disposal. The University of Nebraska cannot recommend or provide information for unlabeled use of any product.

Pesticide information presented in this guide was taken from the most recent labels at the time of publication. However, the only legal use of a product is in accordance with the label on the container unless a change in registration affecting previous labeling is issued. It is the responsibility of the applicator to obtain the most current label for rate recommendations, and safety and disposal guidelines. **It is a violation of Federal law to use any product in a manner inconsistent with its labeling.**

Reference to trade or brand names is only for the convenience of users. Mention of a product does not constitute an endorsement, guarantee or warranty by The University of Nebraska.

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TABLE OF CONTENTS

Helpful Weights, Measures and Conversions	2
Pre-emergence Herbicides	
Pre-emergence Herbicides Labeled for Turfgrass Species	3
Annual Weeds Controlled with Pre-emergence Herbicides	4
Waiting Period Between Last Application and Time of Seeding/Reseeding	5
Pre-emergence Chemical Name Directory	6
Post-emergence Broadleaf Herbicides	
Post-emergence Broadleaf Herbicides Labeled for Turfgrass Species	8
Broadleaf Weeds Controlled with Post-emergence Herbicides	10
Post-emergence Broadleaf Herbicides: Active Ingredients	12
Post-emergence Broadleaf Herbicide Name Directory	14
Round-up Mix Table	14
Post-emergence Grassy Herbicides	
Post-emergence Grassy Herbicides Labeled for Turfgrass Species	15
Annual Grassy Weeds Controlled with Post-emergence Herbicides	15
Post-emergence Grassy Weed Herbicide Name Directory	16
Non-selective Herbicide Name Directory	16
Insecticides	
Insects and Mites Controlled with Turfgrass Insecticides	17
Fungicides	
Fungicides - Diseases Controlled	18
Vertebrate Control	
Vertebrate Control Chemicals	22

Helpful Weights, Measures and Conversions

Liquid Measures	Linear Measure
3 teaspoons = 1 tablespoon	1 foot = 12 inches
2 tablespoons = 1 ounce	1 square foot = 144 square inches
1 cup = 16 tablespoons = 8 ounces	1 yard = 3 feet = 36 inches
1 pint = 2 cups = 16 ounces	1 square yard = 9 square feet
1 quart = 4 cups = 2 pints = 32 ounces	1 acre = 43,560 square feet
1 gallon = 16 cups = 8 pints = 128 ounces	

Solid Measure to Liquid Measure <i>Density of powdered chemicals may vary, and may affect measure</i>	Dry Weights
1 pound powdered chemical = 1 quart	1 ounce = 28.35 grams
1/2 pound powdered chemical = 1 pint	1 pound = 16 ounces = 453.6 grams
1/4 pound powdered chemical = 1 cup	
1 ounce powdered chemical = 2 ounces liquid measure	

Converting to Small Quantities			
Liquid		Dry	
Amount per 100 gal.	Amount per gallon	Amount per 100 gal.	Amount per gallon
1 pint	1 teaspoon	1 pound	1 teaspoon
1 quart	2 teaspoons	4 pounds	1 1/3 tablespoons
1 gallon	2 1/2 tablespoons	6 pounds	2 tablespoons

Pre-emergence Herbicides Labeled for Turfgrass Species

	Kentucky Bluegrass	Tall Fescue	Perennial Ryegrass	Bentgrass Putting Greens	Zoysia- grass	Buffalo- grass
Aatrex					✓	
Balan	✓	✓	✓		✓	
Barricade	✓	✓	✓		✓	
Betasan	✓	✓	✓	✓	✓	
Betasan/Ronstar	✓	✓	✓	✓	✓	
Dacthal	✓	✓	✓		✓	✓
Devrinol		✓				
Dimension	✓	✓	✓	✓	✓	✓
Gallery	✓	✓	✓		✓	
Kerb						
Pendimethalin	✓	✓	✓		✓	
Pennant						
Princep					✓	
Prograss	✓		✓			
Ronstar	✓	✓	✓		✓	✓*
Surflan		✓			✓	✓
Team	✓	✓	✓		✓	
Tupersan	✓	✓	✓		✓	
XL		✓			✓	

* Ronstar 2-G labeled for buffalograss but Ronstar 50-WP is not.

Annual Weeds Controlled with Pre-emergence Chemicals

Weeds	Balan	Betasan	Dacthal	Devrinol	Dimension	Gallery	Pendimethalin	Pennant	Princep	Prograss	Ronstar	Surflan	Team	Tupersan	XL
Barley, little				✓											
Barnyard grass	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓		✓
Bluegrass, annual	✓	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓		✓
Carpetweed			✓	✓				✓	✓		✓	✓			✓
Chickweed			✓	✓	✓	✓	✓		✓	✓		✓		✓	✓
Crabgrass	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
Foxtail	✓	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓		✓
Goosegrass	✓	✓	✓	✓	✓		✓	✓	✓		✓	✓	✓		✓
Henbit		✓			✓	✓	✓		✓			✓			✓
Knotweed				✓		✓						✓			✓
Lambsquarters		✓	✓	✓		✓					✓				
Nutsedge, yellow								✓							
Oxalis					✓	✓	✓								
Panicum, fall		✓		✓			✓	✓	✓						
Pigweed		✓	✓	✓		✓		✓	✓	✓	✓				
Puncturevine															
Purslane			✓	✓	✓	✓	✓		✓	✓	✓	✓			✓
Sandbur, grass			✓	✓							✓	✓			✓
Shepherd's-purse		✓			✓	✓			✓						
Speedwell						✓			✓		✓				
Spurge			✓		✓	✓	✓				✓				✓
Witchgrass			✓	✓				✓	✓						

Waiting Period Between Last Application and Time of Seeding/Reseeding

Chemical	Waiting Period
Balan	6-16 weeks*
Betasan	4 months
Betasan/Ronstar	5 months
Dacthal	60 days
Devrinol	6 months
Dimension	3 months
Gallery	Fall after spring application
Pendimethalin	4 months
Prograss	6 weeks
Surflan	90 - 120 days
Team	8 - 16 weeks
Tupersan	Can be used at time of seeding.
XL	6 - 16 weeks

* When a range is given, the time before reseeding is dependent on the rate of chemical applied. Use of a higher rate will result in a longer delay.

Pre-emergence Chemical Name Directory

Common Name	Chemical Name	Trade Name	Company
Benefin	<i>N</i> -butyl- <i>N</i> -ethyl- α,α,α -trifluoro-2,6-dinitro- <i>p</i> -toluidine	Balan Benefin	DowElanco, Clean Crop Lesco
Benefin + Oryzalin	Benefin (see above) Oryzalin (see below)	XL	DowElanco
Benefin + Trifluralin	Benefin (see above) Trifluralin: α,α,α -trifluoro-2,6-dinitro- <i>N,N</i> -dipropyl- <i>p</i> -toluidine	Team	DowElanco
Bensulide	<i>S</i> -(<i>O,O</i> -Diisopropyl phosphorodithioate) ester of <i>N</i> -(2-mercaptoethyl) benzenesulfonamide	Bensumec Betasan Scotts Weedgrass Preventer Lescosan Pre-san	PBI Gordon ICI, Lebanon & Clean Crop Scotts Lesco Grace-Sierra
Bensulide + Oxadiazon	Bensulide (see above) Oxadiazon (see below)	Scotts Goosegrass/Crabgrass Control	Scotts
DCPA	Dimethyl Tetrachloroterephthalate	Dacthal Lesco Ornamental Herbicide	ISK-Biotech, Clean Crop, Lesco, Lebanon Lesco
Dithiopyr	3,5-pyridinedicarbothioic acid, 2-(difluoromethyl)-4-(2-methylpropyl)-6-(trifluoromethyl)- <i>S,S</i> -dimethyl ester	Dimension	Monsanto
Ethofumesate	2-ethoxy-2,3-dihydro-3,3-dimethyl-5-benzofuranyl methanesulfonate	Prograss	Nor-Am
Isoxaben	<i>N</i> -[3-(1-Ethyl-1-methylpropyl)-5-isoxazolyl]-2,6-dimethoxybenzamide	Gallery	DowElanco
Metolachlor	2-chloro- <i>N</i> -(2-ethyl-6-methylphenyl)- <i>N</i> -(2-methoxy-1-methylethyl) acetamide	Pennant	Ciba-Geigy

Pre-emergence Chemical Name Directory (continued)

Common Name	Chemical Name	Trade Name	Company
Napropamide	<i>N,N</i> -Diethyl-2-(1-naphthalenyloxy)-propionamide	Devrinol	ICI, Lesco
Oxadiazon	2-tert-butyl-4-(2,4 dichloro-5-isopropoxyphenyl)- Δ^2 1,3,4-oxadiazolin-5-one	Ronstar	Chipco
Oryzalin	3,5-dinitro- <i>N,N</i> -dipropylsulfanilamide	Surflan	DowElanco
Pendimethalin	<i>N</i> -(1-Ethylpropyl)-3,4-dimethyl-2,6-dinitrobenzenamine	Pre-M Scotts Turf Weedgrass Control Scotts Weedgrass Control	Lesco Scotts Scotts
Prodiamine	<i>N,N</i> -Di- <i>n</i> -propyl-2,4-dinitro-6-(trifluoromethyl)- <i>m</i> -phenylenediamine	Barricade	Sandoz
Pronamide	3,5-dichloro- <i>N</i> -(1,1-dimethyl-2-propynyl)-benzamide	Kerb	Rohm and Haas
Siduron	1-(2-methylcyclohexyl)-3-phenylurea	Tupersan	DuPont & Lebanon
Simazine	2-chloro-4,6-bis (ethylamino)-s-triazine	Princep	Ciba-Geigy

Post-emergence Broadleaf Herbicides Labeled for Turfgrass Species

	Kentucky Bluegrass	Tall Fescue	Perennial Ryegrass	Bentgrass Putting Greens	Zoysia	Buffalograss
2 Plus 2	✓	✓	✓		✓	
AMA Plus 2,4-D	✓		✓		✓	✓
A-4D	✓	✓	✓		✓	✓
Buctril	✓	✓		✓	✓	✓
Confront	✓	✓	✓			✓
Dacamine 4D	✓	✓	✓		✓	✓
Leb. Dandelion Killer	✓	✓	✓		✓	✓
DMC Weed Control	✓					
DPC Amine	✓	✓	✓		✓	✓
DPC Ester	✓	✓	✓		✓	✓
Fluid Broadleaf Weed Control	✓	✓	✓		✓	✓
Four Power Plus	✓	✓	✓		✓	✓
K-O-G Weed Control	✓	✓	✓		✓	✓
Lesco Granular Herbicide	✓	✓	✓			
Lescopar	✓	✓				
Lescopex	✓	✓		✓		
MCPP	✓	✓	✓	✓	✓	✓
MCPP-2,4-D	✓	✓		✓		

Post-emergence Broadleaf Herbicides Labeled for Turfgrass Species (continued)

	Kentucky Bluegrass	Tall Fescue	Perennial Ryegrass	Bentgrass Putting Greens	Zoysia	Buffalograss
Mec Amine-D	✓	✓	✓	✓	✓	✓
Mec-Amine Plus	✓	✓	✓	✓	✓	✓
Mecomec	✓	✓	✓	✓	✓	✓
Sencor						
Three-Way	✓	✓	✓		✓	✓
Trexsan	✓	✓	✓	✓	✓	✓
Trexsan Bentgrass Formula	✓	✓	✓	✓	✓	✓
Super Trimec	✓	✓	✓			
Trimec 922	✓	✓	✓	✓	✓	
Trimec Bentgrass	✓	✓	✓	✓	✓	✓
Trimec Classic	✓	✓	✓	✓	✓	
Trimec Encore	✓	✓	✓	✓	✓	
Trimec Plus	✓		✓		✓	
Trimec Southern	✓	✓	✓	✓	✓	
Turflon II Amine	✓	✓	✓			
Turflon D	✓	✓	✓			
Turflon Ester	✓	✓	✓			
Weedone DPC Ester	✓	✓	✓		✓	✓
Weedone DPC Amine	✓	✓	✓		✓	✓

Broadleaf Weeds Controlled with Post-emergence Herbicides

Weed	2,4-D	Dicamba	Bromoxynil	MCPP	Triclo- pyr	2,4-D + 2,4-DP	2,4-D + MCPP	2,4-D + MCPP + Dicamba	2,4-D + 2,4-DP + Dicamba	MCPA + MCPP + Dicamba	2,4-D + Triclo- pyr	Triclo- pyr + Clopyr- alid
Aster	✓					✓	✓	✓				
Bedstraw								✓	✓	✓		
Bindweed	✓				✓	✓	✓	✓	✓		✓	
Black medic		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Carpetweed	✓		✓					✓			✓	
Chickweed	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	
Chicory	✓				✓	✓	✓	✓	✓	✓	✓	
Clover		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Dandelion	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Deadnettle								✓				
Dock	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓
Fleabane						✓	✓	✓				
Ground ivy	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hawkweed						✓	✓	✓				
Healall	✓					✓	✓	✓	✓	✓		
Henbit	✓		✓			✓	✓	✓	✓	✓	✓	✓
Knotweed	✓	✓	✓	✓		✓	✓	✓	✓	✓		
Kochia	✓		✓			✓	✓	✓	✓			
Lambsquarter	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Lespedeza					✓			✓	✓	✓	✓	✓
Mallow	✓					✓	✓	✓	✓	✓	✓	
Morningglory	✓		✓	✓		✓	✓	✓	✓	✓		
Mustard	✓	✓		✓	✓	✓	✓	✓	✓		✓	
Oxalis		✓	✓		✓	✓	✓	✓	✓		✓	✓
Peppergrass	✓		✓			✓	✓	✓	✓	✓		
Pigweed	✓	✓	✓	✓		✓	✓	✓	✓	✓		

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Weed	2,4-D	Dicamba	Bromoxynil	MCPP	Triclo- pyr	2,4-D + 2,4-DP	2,4-D + MCPP	2,4-D + MCPP + Dicamba	2,4-D + 2,4-DP + Dicamba	MCPA + MCPP + Dicamba	2,4-D + Triclo- pyr	Triclo- pyr + Clopyr- alid
Plantain	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Poison Ivy	✓					✓		✓	✓	✓	✓	✓
Puncturevine	✓		✓				✓	✓				
Purslane	✓	✓				✓	✓	✓	✓	✓	✓	
Ragweed	✓		✓	✓	✓	✓	✓	✓	✓	✓		✓
Red sorrel		✓				✓	✓	✓		✓		
Shepherd's purse	✓		✓	✓		✓	✓	✓	✓	✓		✓
Smartweed	✓	✓	✓		✓	✓	✓	✓	✓		✓	✓
Speedwell				✓		✓	✓	✓	✓	✓		✓
Spurge	✓					✓	✓	✓	✓	✓	✓	
Thistle	✓	✓	✓		✓	✓	✓	✓	✓			✓
Wild carrot	✓				✓	✓		✓	✓	✓	✓	
Wild garlic	✓	✓				✓	✓	✓	✓	✓		
Wild geranium						✓	✓	✓				
Wild lettuce	✓				✓	✓	✓	✓	✓			
Wild onion	✓	✓				✓	✓	✓	✓	✓		
Wild Violet					✓	✓					✓	✓
Yarrow	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	
Yellow rocket	✓											

Post-emergence Broadleaf Herbicides: Active Ingredients

Product	Company	2,4-D Amine	2,4-D Ester	2,4-DP Amine	2,4-DP Ester	AMA	Bromoxynil	Clopyralid	Dicamba	MCPA	MCPP Amine	MCPP Ester	MSMA	Triclopyr Amine	Triclopyr Ester
2 Plus 2	ISK-Biotech	✓									✓				
AMA Plus 2,4-D	Cleary's	✓				✓									
A-4D	Lesco	✓													
Buctril	Chipco						✓								
Confront	DowElanco							✓						✓	
Dacamine 4D	ISK-Biotech	✓													
Leb. Dandelion Killer	Lebanon		✓									✓			
DPC Amine	Clean Crop	✓		✓											
DPC Ester	Clean Crop		✓		✓										
Fluid Broadleaf Weed Control	Scotts Proturf	✓		✓											
Four Power Plus	Clean Crop	✓							✓						
K-O-G Weed Control	Scotts Proturf								✓						
Lesco Granular Herbicide	Lesco		✓		✓										
Lescopar	Lesco	✓									✓				
Lescopex	Lesco										✓				
MCPP	Clean Crop & Cleary's										✓				
MCPP + 2,4-D	Cleary's	✓									✓				

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Product	Company	2,4-D Amine	2,4-D Ester	2,4-DP Amine	2,4-DP Ester	AMA	Bromoxynil	Clpyralid	Dicamba	MCPA	MCPP Amine	MCPP Ester	MSMA	Triclopyr Amine	Triclopyr Ester
Mec Amine-D	Clean Crop	✓							✓		✓				
Mec-Amine Plus	Clean Crop	✓							✓		✓				
Mecomec	Gordon's										✓				
Three-Way	Lesco	✓							✓		✓				
Trexsan	Grace-Sierra	✓							✓		✓				
Trexsan Bentgrass Formula	Grace-Sierra	✓							✓		✓				
Super Trimec	Gordon's		✓		✓				✓						
Trimec 922	Gordon's	✓							✓		✓				
Trimec Bentgrass	Gordon's	✓							✓		✓				
Trimec Classic	Gordon's	✓							✓		✓				
Trimec Encore	Gordon's								✓	✓	✓				
Trimec Plus	Gordon's	✓							✓		✓		✓		
Trimec Southern	Gordon's	✓							✓		✓				
Turflon II Amine	DowElanco	✓												✓	
Turflon D	DowElanco		✓												✓
Turflon Ester	DowElanco														✓
Weedone DPC Ester	Chipco, Lesco & Cleary's		✓		✓										
Weedone DPC Amine	Chipco	✓		✓											

Post-emergence Broadleaf Herbicide Name Directory

Common Name	Chemical Name	Trade Name
2,4-D	2,4-Dichlorophenoxyacetic acid	Numerous trade names
2,4-DP	2-(2,4-Dichlorophenoxy)propionic acid	Numerous trade names
Bromoxynil	3,5-dibromo-4-hydroxybenzonitrile	Buctril
Clopyralid	3,6-dichloro-2-pyridinecarboxylic acid	Confront
Dicamba	3,6-dichloro-o-anisic acid	Numerous trade names
MCPA	2-methyl-4-chlorophenoxyacetic acid	Found in Trimec Encore
MCPP	2-(2-methyl-4-chlorophenoxy) propionic acid	Numerous trade names
MSMA	Monosodium acid methanearsonate	Numerous trade names
Triclopyr	3,5,6-trichloro-2-pyridinyloxyacetic acid	Turflon products

Round-up* Mix Table

Desired Volume	1/2%	1%	1 1/2%	2%	5%
1 gallon	2/3 oz	1 1/3 oz	2 oz	2 2/3 oz	6 1/2 oz
25 gallons	1 pint	1 quart	1 1/2 quart	2 quart	5 quart
100 gallons	2 quart	1 gallon	1 1/2 gallon	2 gallon	5 gallon

*Glyphosate, the active ingredient in Round-up, is also found in Avail (Lesco) but at a lesser concentration.

Post-emergence Grassy Weed Herbicides Labeled for Turfgrass Species

Chemical	Kentucky Bluegrass	Tall Fescue	Perennial Ryegrass	Zoysiagrass
Acclaim	✓	✓	✓	
AMA	✓	✓		✓
DSMA	✓			✓
MSMA	✓			✓
Trimec Plus	✓		✓	

Annual Grassy Weeds Controlled with Post-emergence Herbicides

Weed	Acclaim	AMA	Basagran	DSMA	MSMA	Trimec Plus
Barnyardgrass	✓			✓	✓	
Chickweed				✓	✓	✓
Crabgrass	✓	✓		✓	✓	✓
Dallisgrass		✓		✓	✓	✓
Fall Panicum	✓					
Foxtail	✓					
Goosegrass	✓					✓
Johnsongrass	✓					
Nutsedge			✓	✓	✓	✓
Sandbur				✓	✓	✓

Post-emergence Grassy Weed Herbicide Name Directory

Common Name	Chemical Name	Trade Name	Company
AMA	Amine Methane Arsonate	Super Methar	Cleary's
DSMA	Disodium Methanearsonate	DSMA Liquid Methar 30	ISK-Biotech Cleary's
Fenoxaprop	(\pm)ethyl 2-[4-[(6-chloro-2-benzoxazolyl)oxy]phenoxy]propanoate	Acclaim	Hoechst-Roussel
MSMA	Monosodium Acid Methanearsonate	Ansar 6.6 Arsonate Liquid Bueno 6 Daconate 6 MSMA 6 MSMA 6.6	ISK-Biotech ISK-Biotech ISK-Biotech ISK-Biotech Clean Crop Lesco
MSMA + 2,4-D + MCPP + Dicamba	MSMA (See above) 2,4-D, MCPP, Dicamba (See entries under Broadleaf Herbicides)	Trimec Plus	Gordon's

Non-selective Herbicide Name Directory

Common Name	Chemical Name	Trade Name	Company
Glutosinate	Ammonium-DL-homoalanin-4yl-(methyl) phosphinate	Finale	AgroEvo
Glyphosate	N-(phosphonomethyl) glycine	Round-up Avail	Monsanto Lesco

Insects and Mites Controlled With Turfgrass Insecticides

Trade Names	Common Name	Some Manufacturers/Distributors	Ants	Armyworms	Billbugs	Chiggers	Chinch Bugs	Clover Mites	Cutworms	Fleas	Grasshoppers
Astro, Torpedo	Permethrin	FMC, Zeneca	✓	✓			✓		✓	✓	
Award	Fenoxycarb	Ciba	✓								
Crusade, Mainstay	Fonofos ¹	Zeneca, Lesco			✓		✓		✓		
Cynoff	Cypermethrin	FMC	✓							✓	✓
Diazinon	Diazinon	Numerous manufacturers/distributors	✓	✓	✓	✓	✓	✓	✓	✓	
Dipel, MVP, Steward	<i>Bacillus thuringiensis</i> Kurstaki	Abbott Labs, Mycogen, Sandoz		✓					✓		
Dursban, numerous other trade names	Chlorpyrifos	DowElanco, and many others	✓	✓	✓	✓	✓	✓	✓	✓	✓
Dylox, Proxol	Trichlorfon	Miles, Hoechst-Roussel, and many others		✓	✓				✓		
Ethion	Ethion	FMC					✓				✓
Exhibit, BioVector	<i>Steinernema carpocapsae</i>	Ciba, Biosys			✓ ³				✓		
Kelthane	Dicofol	Rohm & Haas						✓			
Mavrik Aquaflow	Fluvalinate	Sandoz	✓	✓		✓	✓	✓	✓		
Merit	Imidacloprid	Miles			✓						

(Continued next page)

¹Restricted use pesticide

²All products may not be labeled for all white grub species.

³Larvae only

Insects and Mites Controlled With Turfgrass Insecticides

Trade Names	Common Name	Some Manufacturers/Distributors	Ants	Armyworms	Billbugs	Chiggers	Chinch Bugs	Clover Mites	Cutworms	Fleas	Grasshoppers
Mocap	Ethoprop ¹	Chipco/Rhone-Poulenc			✓		✓				
M-Pede	Potassium salts of fatty acids (Insecticidal Soap)	Mycogen					✓				
Oftanol	Isofenphos	Miles and many others		✓	✓		✓		✓		
Orthene	Acephate	Ortho, Valent		✓			✓		✓	✓	✓
Scimitar, Battle	Lambda-Cyhalothrin	Zeneca, Lesco	✓	✓	✓	✓	✓		✓		
Sevin (numerous other trade names)	Carbaryl	Chipco/Rhone-Poulenc, and many others	✓	✓	✓ ³	✓	✓		✓	✓	✓
Talstar	Bifenthrin ¹	FMC		✓			✓		✓		✓
Tempo	Cyfluthrin	Miles	✓	✓	✓	✓	✓		✓		✓
Triumph	Isazofos ¹	Ciba	✓	✓	✓		✓	✓	✓		
Turcam	Bendiocarb ¹	Hoechst-Roussel	✓	✓	✓ ³		✓			✓	
Turplex	Azadirachtin	Proturf/O.M. Scott		✓					✓		✓

(Continued next page)

¹Restricted use pesticide

²All products may not be labeled for all white grub species.

³Larvae only

Insects and Mites Controlled With Turfgrass Insecticides

Trade Names	Common Name	Some Manufacturers/Distributors	Greenbugs	Leafhoppers	Two-spotted Spider Mites	Mosquitoes	Sod Webworms	Ticks	White Grubs ²	Winter Grain Mites
Astro, Torpedo	Permethrin	FMC, Zeneca					✓	✓	✓	
Award	Fenoxycarb	Ciba								
Crusade, Mainstay	Fonofos ¹	Zeneca, Lesco					✓		✓	
Cynoff	Cypermethrin	FMC				✓		✓		
Diazinon	Diazinon	Numerous manufacturers/distributors		✓	✓	✓	✓	✓	✓	
Dipel, MVP, Steward	<i>Bacillus thuringiensis</i> Kurstaki	Abbott Labs, Mycogen, Sandoz					✓			
Dursban, numerous other trade names	Chlorpyrifos	DowElanco, and many others	✓	✓	✓	✓	✓	✓	✓	✓
Dylox, Proxol	Trichlorfon	Miles, Hoechst-Roussel, and many others					✓		✓	
Ethion	Ethion	FMC					✓			
Exhibit, BioVector	<i>Steinernema carpocapsae</i>	Ciba, Biosys					✓			
Kelthane	Dicofol	Rohm & Haas			✓					✓
Mavrik Aquaflo	Fluvalinate	Sandoz		✓			✓	✓		
Merit	Imidacloprid	Miles							✓	
Continued next page										

¹Restricted use pesticide

²All products may not be labeled for all white grub species.

³Larvae only

Insects and Mites Controlled With Turfgrass Insecticides

Trade Names	Common Name	Some Manufacturers/Distributors	Greenbugs	Leafhoppers	Two-spotted Spider Mites	Mosquitoes	Sod Webworms	Ticks	White Grubs ²	Winter Grain Mites
Mocap	Ethoprop ¹	Chipco/Rhone-Poulenc					✓		✓	
M-Pede	Potassium salts of fatty acids (Insecticidal Soap)	Mycogen		✓						
Oftanol	Isofenphos	Miles and many others					✓		✓	
Orthene	Acephate	Ortho, Valent	✓	✓			✓			
Scimitar, Battle	Lambda-Cyhalothrin	Zeneca, Lesco					✓	✓		
Sevin (numerous other trade names)	Carbaryl	Chipco/Rhone-Poulenc, and many others		✓		✓	✓	✓	✓	
Talstar	Bifenthrin ¹	FMC		✓			✓			
Tempo	Cyfluthrin	Miles					✓	✓		
Triumph	Isazofos ¹	Ciba		✓			✓		✓	
Turcam	Bendiocarb ¹	Hoechst-Roussel		✓			✓	✓	✓	
Turplex	Azadirachtin	Proturf/O.M. Scott					✓			

¹Restricted use pesticide

²All products may not be labeled for all white grub species.

³Larvae only

Fungicides

Diseases Controlled

Product and Formulation*	Common Name	Company**	Anthraco- nose	Brown Patch	Copper Spot	Dollar Spot	Fairy Ring	Gray Leaf Spot	Gray Snow Mold (Typhula Blight)	Helminthosporium Type Leaf Spot and Melting-Out (Bipolaris & Drechslera)	Necrotic Ring Spot	Pink Patch
Aliette	Fosetyl	Rhone-Poulenc										
Banner 14.3%-EC	Propiconazole	Ciba-Geigy	✓	✓		✓		✓	✓			
Bayleton 25-WP	Triadimefon	Miles	✓	✓	✓	✓			✓			
Broad Spectrum Fungicide	PMA + Thiram	Scotts							✓			
Broadway 4.42-F	Chlorothalonil + Fenarimol	DowElanco	✓	✓	✓	✓			✓	✓		
Bromosan 4.23-F, 66.7-WP	Thiophanate-ethyl + Thiram	Cleary's		✓	✓	✓				✓		
Caddy 1.24-L	Cadmium chloride	Cleary's		✓	✓	✓				✓		
Calo-Clor 90-WP****	Mercury chlorides	Grace-Sierra							✓			
Calo-Gran 2.7-G****	Mercury chlorides	Grace-Sierra							✓			
Captan 50-WP	Captan	ICI		✓						✓		
Chipco 26019 Flo 2-F, 50-WP	Iprodione	Rhone-Poulenc		✓		✓			✓	✓	✓	
Cleary's 3336 4.5-F, 50-WP	Thiophanate-methyl	Cleary's	✓	✓		✓						
Consan 20%-S	Quat Amines	Parkway		✓						✓		
ConSyst WDG	Chlorothalonil + Thiophanate-methyl	Regal	✓		✓	✓		✓		✓		
Curulan 4.17-F	Vinclozolin	BASF				✓			✓	✓		
Daconil 2787 4.17-F, 90-WDG, 75-WP	Chlorothalonil	ISK-Biotech	✓	✓	✓	✓		✓	✓	✓		

Continued next page

Fungicides

Diseases Controlled

Product and Formulation*	Common Name	Company**	Pink Snow Mold (Microdochium Patch)	Powdery Mildew	Pythium Blight	Red Thread	Rusts	Smuts	Spring Dead Spot	Summer Patch	Take-All Patch	Yellow Patch
Aliette	Fosetyl	Rhone-Poulenc			✓							
Banner 14.3%-EC	Propiconazole	Ciba-Geigy	✓	✓		✓	✓	✓	✓	✓		
Bayleton 25-WP	Triadimefon	Miles	✓	✓		✓	✓	✓		✓		
Broad Spectrum Fungicide	PMA + Thiram	Scotts	✓									
Broadway 4.42-F	Chlorothalonil + Fenarimol	DowElanco	✓	✓		✓	✓		✓	✓	✓	
Bromosan 4.23-F, 66.7-WP	Thiophanate-ethyl + Thiram	Cleary's	✓									
Caddy 1.24-L	Cadmium chloride	Cleary's	✓		✓	✓						
Calo-Clor 90-WP****	Mercury chlorides	Grace-Sierra	✓									
Calo-Gran 2.7-G****	Mercury chlorides	Grace-Sierra	✓									
Captan 50-WP	Captan	ICI										
Chipco 26019 Flo 2-F, 50-WP	Iprodione	Rhone-Poulenc	✓			✓						
Cleary's 3336 4.5-F, 50-WP	Thiophanate-methyl	Cleary's						✓				
Consan 20%-S	Quat Amines	Parkway			✓							
ConSyst WDG	Chlorothalonil + Thiophanate-methyl	Regal		✓		✓	✓					
Curulan 4.17-F	Vinclozolin	BASF	✓			✓						
Daconil 2787 4.17-F, 90-WDG, 75-WP	Chlorothalonil	ISK-Biotech	✓			✓	✓					
Continued next page												

Fungicides

Diseases Controlled

Product and Formulation*	Common Name	Company**	Anthraxnose	Brown Patch	Copper Spot	Dollar Spot	Fairy Ring	Gray Leaf Spot	Gray Snow Mold (Typhula Blight)	Helminthosporium Type Leaf Spot and Melting-Out (Bipolaris & Drechslera)	Necrotic Ring Spot	Pink Patch
Duosan 75-WP	Thiophanate-methyl + Mancozeb	Grace-Sierra	✓	✓	✓	✓		✓		✓		
Dyrene 4F	Anilazine	Miles		✓	✓	✓			✓	✓		
Formec 80-WP	Mancozeb	Gordon's		✓	✓	✓				✓		
Fore 80-WP	Mancozeb	Rohm & Haas		✓	✓	✓				✓		
Fungo 85 85-DF, Flo 4.5-F, 50 50-WP	Thiophanate-methyl	Grace-Sierra	✓	✓		✓						
Koban 1.3-G, 30-WP	Ethazole	Grace-Sierra										
Lebanon Turf Fungicide 1-G	Triadimefon	Lebanon	✓	✓	✓	✓			✓			
Lebanon Turf Fungicide 5-G	Chlorothalonil	Lebanon	✓	✓	✓	✓		✓	✓	✓		
Lesco 4 Flowable Mancozeb 4-F	Mancozeb	Lesco		✓	✓	✓				✓		
Mancozeb 75-DG	Mancozeb	Lesco		✓	✓	✓				✓		
Mancozeb 4-L	Mancozeb	Clean Crop		✓	✓	✓				✓		
Pace 77-WP	Metalaxyl + Mancozeb	Ciba-Geigy										
ProStar 50 WP	Flutolanil	Nor-Am		✓			✓		✓			✓
PCNB 10-G	PVNB	Lesco		✓					✓	✓		
PMAS 0.91-L	Phenylmercuric acetate	Cleary's							✓			
Rubigan 1-AS	Fernarimol	DowElanco	✓	✓	✓	✓			✓		✓	
Scotts Fluid Fungicide 39.3 %-F	Thiophanate-methyl + Iprodione	Scotts		✓		✓			✓	✓		
Continued next page												

Fungicides

Diseases Controlled

Product and Formulation*	Common Name	Company**	Pink Snow Mold (Microdochium Patch)	Powdery Mildew	Pythium Blight	Red Thread	Rusts	Smuts	Spring Dead Spot	Summer Patch	Take-All Patch	Yellow Patch
Duosan 75-WP	Thiophanate-methyl + Mancozeb	Grace-Sierra	✓			✓	✓					
Dyrene 4-F	Anilazine	Miles					✓					
Formec 80-WP	Mancozeb	Gordon's	✓		✓	✓	✓					
Fore 80-WP	Mancozeb	Rohm & Haas	✓		✓	✓	✓					
Fungo 85 85-DF, Flo 4.5-F, 50 50-WP	Thiophanate-methyl	Grace-Sierra						✓				
Koban 1.3-G, 30-WP	Ethazole	Grace-Sierra			✓							
Lebanon Turf Fungicide 1-G	Triadimefon	Lebanon	✓	✓		✓	✓	✓		✓		
Lebanon Turf Fungicide 5-G	Chlorothalonil	Lebanon	✓			✓	✓					
Lesco 4 Flowable Mancozeb 4-F	Mancozeb	Lesco	✓		✓	✓	✓					
Mancozeb 75-DG	Mancozeb	Lesco	✓		✓	✓	✓					
Mancozeb 4-L	Mancozeb	Clean Crop	✓		✓	✓	✓					
Pace 77-WP	Metalaxyl + Mancozeb	Ciba-Geigy		✓	✓							
ProStar 50 WP	Flutolanil	Nor-Am				✓						✓
PCNB 10-G	PVNB	Lesco	✓									
PMAS 0.91-L	Phenylmercuric acetate	Cleary's	✓									
Rubigan 1-AS	Fenarimol	DowElanco	✓	✓		✓		✓	✓	✓	✓	
Scotts Fluid Fungicide 39.3%-F	Thiophante-methyl + Iprodione	Scotts										
Continued next page												

Fungicides

Diseases Controlled

Product and Formulation*	Common Name	Company**	Anthraco- nose	Brown Patch	Copper Spot	Dollar Spot	Fairy Ring	Gray Leaf Spot	Gray Snow Mold (Typhula Blight)	Helminthosporium Type Leaf Spot and Melting-Out (Bipolaris & Drechslera)	Necrotic Ring Spot	Pink Patch
Scotts Fluid Fungicide II 5.3-EC	Triadimefon + Metalaxyl	Scotts		✓		✓						
Scotts Fluid Fungicide III 42.3 %-E	Triadimefon + Thiram	Scotts		✓		✓				✓		
Scotts Fungicide V 6.25-G	Chloroneb	Scotts		✓					✓			
Scotts Fungicide VI 1.3-G	Iprodione	Scotts		✓		✓				✓		
Scotts Fungicide VII 0.59-G	Triadimefon	Scotts	✓	✓	✓	✓						
Scotts Fungicide X 1.3-G	Iprodione	Scotts		✓		✓			✓	✓		
Scotts Pythium Control 1.21-G	Metalaxyl	Scotts										
Scotts Systemic Fungicide 2.3-G	Thiophanate-methyl	Scotts	✓	✓		✓						
Sentinel	Cyproconazole	Sandoz	✓	✓	✓	✓		✓	✓		✓	
Spotrete 4-F. 75-WDG	Thiram	Cleary's		✓		✓						
Subdue 2-E, 2-G	Metalaxyl	Ciba-Geigy										
SysTec 1998	Thiophanate-methyl	Regal	✓	✓	✓	✓					✓	
Teremec 65-SP	Chloroneb	Gordon's		✓					✓			
Terraclor 75-WP	PCNB	Uniroyal		✓					✓	✓		
Terrazole 35-WP	Ethazole	Uniroyal										
Thiram 75-WP	Thiram	Lesco		✓		✓			✓			
Thiramad 75-WP	Thiram	Grace-Sierra		✓		✓			✓			
Touche 4.17-F	Vinclozolin	Lesco				✓			✓	✓		

Continued next page

Fungicides

Diseases Controlled

Product and Formulation*	Common Name	Company**	Pink Snow Mold (Microdochium Patch)	Powdery Mildew	Pythium Blight	Red Thread	Rusts	Smuts	Spring Dead Spot	Summer Patch	Take-All Patch	Yellow Patch
Scotts Fluid Fungicide II 5.3-EC	Triadimefon + Metalaxyl	Scotts			✓							
Scotts Fluid Fungicide III 42.3%-E	Triadimefon + Thiram	Scotts					✓					
Scotts Fungicide V 6.35-G	Chloroneb	Scotts			✓							
Scotts Fungicide VI 1.3-G	Iprodione	Scotts	✓			✓						
Scotts Fungicide VII 0.59-G	Triadimefon	Scotts	✓	✓		✓	✓	✓		✓		
Scotts Fungicide X 1.3-G	Iprodione	Scotts	✓			✓						
Scotts Pythium control 1.21-G	Metalaxyl	Scotts	✓									
Scotts Systemic Fungicide 2.3-G	Thiophanate-methyl	Scotts						✓				
Sentinel	Cyproconazole	Sandoz	✓	✓		✓	✓	✓				
Spotrete 4-F. 75-WDG	Thiram	Cleary's										
Subdue 2-E, 2-G	Metalaxyl	Ciba-Geigy	✓									
SysTec 1998	Thiophanate-methyl	Regal				✓		✓		✓		
Teremec 65-SP	Chloroneb	Gordon's			✓							
Terraclor 75-WP	PCNB	Uniroyal	✓									
Terrazole 35-WP	Ethazole	Uniroyal			✓							
Thiram 75-WP	Thiram	Lesco										
Thiramad 75-WP	Thiram	Grace-Sierra										
Touche 4.17-F	Vinclozolin	Lesco	✓			✓						

Continued next page

Fungicides

Diseases Controlled

Product and Formulation*	Common Name	Company**	Anthraxnose	Brown Patch	Copper Spot	Dollar Spot	Fairy Ring	Gray Leaf Spot	Gray Snow Mold (Typhula Blight)	Helminthosporium Type Leaf Spot and Melting-Out (Bipolaris & Drechslera)	Necrotic Ring Spot	Pink Patch
Turfside 2-E, 10-G	PCNB	Uniroyal		✓				✓	✓	✓		
TwoSome 4.17-F	Chlorothalonil + Fenarimol	Lesco	✓	✓	✓	✓			✓	✓	✓	
Vorlan 50-DF, Flo 4.17-F, 50-WP	Vinclozolin	Grace-Sierra				✓				✓		

Product and Formulation*	Common Name	Company**	Pink Snow Mold (Microdochium Patch)	Powdery Mildew	Pythium Blight	Red Thread	Rusts	Smuts	Spring Dead Spot	Summer Patch	Take-All Patch	Yellow Patch
Turfside 2-E, 10-G	PCNB	Uniroyal										
TwoSome 4.17-F	Chlorothalonil + Fenarimol	Lesco	✓	✓		✓	✓		✓	✓	✓	
Vorlan 50-DF, Flo 4.17-F, 50-WP	Vinclozolin	Grace-Sierra	✓			✓						

* Formulation			
AS = Aqueous Solution	DF = Dry Flowable	DG = Dispersible Granule	E or EC = Emulsifiable Concentrate
F = Flowable	G = Granule	W = Wettable Powder	WP = Wettable Powder

** Product labels for a specific fungicide may differ; thus, always check the label before use.

*** The repeated and exclusive use of benomyl has resulted in resistant strains of certain diseases. Benomyl should only be used in combination with other fungicides.

**** Calo-Clor and Calo Gran can only be used on greens, tees and approaches for the control of snow mold.

Vertebrate Control Chemicals

Product	Common Name	Company	Moles	Pocket gophers	13-lined ground squirrels	Voles
Rozol	Chlorophacinone 0.005 %	LiphaTech		✓		
Eaton's Answer	Diphacinone 0.005 %	J.T. Eaton		✓		
Strychnine	Strychnine alkaloid 0.3 %-0.5 %	USDA-APHIS-ADC		✓		
Gas Cartridges	Various combustible ingredients	USDA-APHIS-ADC		✓	✓	✓
Gopher Gasser	Various combustible ingredients	Dextrol	✓	✓	✓	✓
Zinc phosphide	Zinc phosphide 2 %	USDA-APHIS-ADC		✓	✓	✓
ZP Rodent Bait AG	Zinc phosphide 2 %	Bell Labs Inc.		✓	✓	✓
Gopha-rid	Zinc phosphide 2 %	Bell Labs Inc.		✓	✓	✓
Fumitoxin	Aluminum phosphide tablets 55 %	Pestcon Systems		✓	✓	✓
PhosTek	Aluminum phosphide tablets 55 %	Douglas Chemical		✓	✓	✓
Phostoxin	Aluminum phosphide tablets 55 %	Dagesch America		✓	✓	✓
Rotox	Aluminum phosphide tablets 55 %	Detia Research		✓	✓	✓



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