

Mode of Action Groupings for Turf Registered Products

Turf Fungicides

Activity Group Code	Activity Group	Chemical Family	Active Constituent	Trade Name	Previous Activity Group
1	Methyl Benzimidazole Carbamates	Benzimidazole	carbendazim	Spin Flo	A
			thiabendazole	Vorlon	A
2	Dicarboximide	Dicarboximide	iprodione	Rovral GT	B
3	DMI	Imidazole	prochloraz	Protak 450EC	C
		Triazole	propiconazole	Banner Maxx	
			tebuconazole	Dedicate	
			triadimenol	Bayfidan	
4	Phenylamide	Acylalanine	metalaxyl-m	Subdue Maxx	D
7	Carboxamides	Phenyl benzamides	flutalonil	Moncut [^]	
11	Quinone outside Inhibitors (Qols)	Methoxy acrylate	azoxystrobin	Heritage Maxx	K
		Oximino acetates	trifloxystrobin	Dedicate	K
14	(Aromatic Hydrocarbons) (chlorophenyls nitroanilines)	Aromatic Hydrocarbons	quintozene	Terrachlor	Y
	Heteroaromatics	1,2,4-thiadiazole	etridiazole	Terrazole	X
28	Carbamate	Carbamate	propamicarb	Banol	Y
33	Phosphonates	Ethyl phosphonate	Fosetyl-aluminium	Signature	Y
M3	Multi-Site Activity	Dithiocarbamate	mancozeb	Fore Rainshield	Y
			thiram	TMTD 600	Y
M4		Phthalimide	captan	Captan 900	Y
M5		Chloronitriles	chlorothalonil	Daconil Weatherstik	Y

(Ref – CroLife Australia Fungicide Resistance Management Review Group Activity Group Table as at 10 September, 2008.) NB. [^] = Currently under Permit for use in turf with APVMA.

Turf Insecticides

Group	Primary Target Site	Chemical Subgroups	Active Constituents	Trade Name
1A	Acetyl choline esterase inhibitors - * all members of this class may not be cross resistant	carbamates*	bendiocarb	Ficam W
1B		organophosphates	cadusafos	Rugby^
			chlorpyrifos	Chlorpyrifos 500EC
			fenamiphos	Country Fenamiphos
			maldison	Hy-Mal
			methidathion	Supracide
		trichlorfon	Lepidex	
2C	GABA-gated chlorine channel antagonists	fipronil (or phenylpyrazoles)	fipronil	Impede
3A	Sodium channel modulators	pyrethroids, pyrethrins	bifenthrin	Country Bifenthrin 100
			beta-cyfluthrin	Tempo
4A	Nicotinic Acetylcholine receptor agonists / antagonists	neonicotinoids	imidacloprid	Senator
			thiamethoxam	Meridian
28	Ryanodine receptor modulators		chlorantraniliprole	Acelepryn

^ Currently Under Permit for use in turf with APVMA.

(Ref – CropLife Australia Insecticide Resistance Management Review Group Mode of Action Classification for Insecticides as registered with the APVMA as at 29 August 2008 – Current as at 10 September 2008.)

Selective Turf Herbicides

Activity Group	Method of Inhibition	Chemical Family	Active Constituent	Trade Name
A (High Risk)	Inhibitors of acetyl coA carboxylase (Inhibitors of fat synthesis/ACC'ase inhibitors)	Aryloxypropionates	diclofop	Nugrass
B (High Risk)	Inhibitors of acetolactate synthase (ALS inhibitors)	Sulfonylureas (SU's)	halosulfuron iodosulfuron rimsulfuron trifloxysulfuron	Sempra Destiny Colliseum Monument
C (Moderate Risk)	Inhibitors of photosynthesis at photosystem II (PS II inhibitors)	Ureas	Siduron	Tupersan
		Nitriles	bromoxynil	Bromicide 200
		Benzothiadiazinones	bentazone	Broadleaf Weeder
D (Moderate Risk)	Inhibitors of microtubule assembly	Dinitroanilines	pendimethalin	Pre-M plus Fertiliser 22-0-5
		Benzoic Acids	chlorthal	Dacthal
		Benzamides	propyzamide	Burst
		Pyridines	dithiopyr	Dimension EW
F (Moderate Risk)	Bleachers: Inhibitors of carotenoid biosynthesis at the phytoene desaturase step (PDS inhibitors)	Nicotinanilides	diflufenican	Spearhead
G (Moderate Risk)	Inhibitors of protoporphyrinogen oxidase (PPO's)	Oxadiazoles	oxadiazon	Ronstar plus Fertiliser 18-10-9
		Triazolinones	carfentrazone	Hammer
I (Moderate Risk)	Disruptors of plant cell growth	Phenoxy-carboxylic acids	2,4-D	Millennium
			MCPA	Agritone
		Benzoic Acids	dicamba	Kamba M
		Pyridine carboxylic acids	clopyralid	Millennium
Z (Moderate Risk)	Herbicides with unknown and probably diverse sites of action	Dicarboxylic acids	endothal	Poachek
		Organoarsenicals	DSMA MSMA	Passtox Daconate

Non Selective Herbicides

Activity Group	Method of Inhibition	Chemical Family	Active Constituent	Trade Name
A (High Risk)	Inhibitors of acetyl coA carboxylase (Inhibitors of fat synthesis/ACC'ase inhibitors)	Aryloxypropionates	fluazifop	Fusilade*
		Cyclohexanediones (Dims)	clethodim sethoxydim	Select* Sertin*
B (High Risk)	Inhibitors of acetolactate synthase (ALS inhibitors)	Sulfonylureas (SU's)	metsulfuron sulfometuron	Associate + Mako +
		Imidazolinones	imazapyr	Arsenal Xpress #
C (Moderate Risk)	Inhibitors of photosynthesis at photosystem II (PS II inhibitors)	Triazines	atrazine simazine	Nutrazine # Simazine Liquid*
		Triazinones	hexazinone	Grunt 750 +
D (Moderate Risk)	Inhibitors of microtubule assembly	Dinitroanilines	oryzalin	Prolan*
I (Moderate Risk)	Disruptors of plant cell growth	Pyridine carboxylic acids (Pyridines)	aminopyralid fluroxypyr picloram triclopyr	Hotshot #+ Starane #+ Grazon #+ Grazon #+
J (Moderate Risk)	Inhibitors of fat synthesis (Not ACCase inhibitors)	Chlorocarbonic acids	flupropanate	Frenock #
L (Moderate Risk)	Inhibitors of photosynthesis at photosystem I (PSI inhibitors)	Bipyridyls	diqaut paraquat	Reglone^ Nuquat+
M (Moderate Risk)	Inhibitors of EPSP synthase	Glycines	glyphosate	Razor #
N (Moderate Risk)	Inhibitors of glutamine synthetase	Phosphinic acids	glufosinate	Basta #
O (Moderate Risk)	Inhibitors of cell wall (cellulose) synthesis	Nitriles	dichlobenil	Casoron^*
Q (Moderate Risk)	Bleachers: Inhibitors of carotenoid biosynthesis unknown target	Triazoles	amitrole	Amitrole^



(Ref – CropLife Australia Herbicide Resistance Management Review Group Herbicide Mode of Action Groups as at 10 September 2008.)

***- Registered in use in ornamentals**

^- Registered for use in aquatic situations

- Registered for use in non crop situations

+ - Registered for use in commercial and industrial areas, rights of way.