

# INSECTICIDE CLASSIFICATION

**Do not make repeat applications of insecticides with the same mode of action as this can result in the development of resistant insect and mite populations.**

**GILBA  
SOLUTIONS  
PTY LTD**

THIS CHART CLASSIFIES INSECTICIDES AND MITICIDES LABELED FOR USE IN AUSTRALIAN TURFGRASS.

## by MODE OF ACTION (MOA)

This chart groups insecticides and miticides by their modes of action to help you to rotate among effective insecticides with different modes of action to delay the development of insecticide resistance.

GROUP No	MODE OF ACTION	CHEMICAL FAMILY	ACTIVE INGREDIENT	PRODUCT EXAMPLES (Trade Name)
----------	----------------	-----------------	-------------------	-------------------------------

### NERVE AND MUSCLE ACTION

1	Acetylcholinesterase (AChE) inhibitors	carbamates	bendiocarb	Taser Pro, Ficam W
2	GABA-gated chloride channel blockers	phenylpyrazoles	fipronil	TermiForce 100SC
3	Sodium channel modulators	pyrethrins	beta-cyfluthrin bifenthrin Esfenvorelante	Tempo Xtra Compel Pro, Biforce Granular, Rumbler 100SC Sumi-alpha Flex
4	Nicotinic acetylcholine receptor antagonists	4A neonicotinoids	clothianidin imidacloprid	Scarlet Trio Merit, Recruit 200SC, Pride
6	Glutamate-gated chloride channel (GluCl) allosteric modulators	avermectin	abamectin	Malice 18, Agador, Malice Duo
22	Voltage dependent sodium channel blockers	indoxacarb	indoxacarb	Provaunt, Twister
28	Ryanodine receptor modulators	diamides	chlorantraniliprole cyantraniliprole tetraniliprole	Acelepryn Spinner Tetra

### GROWTH REGULATION

10	Mite growth inhibitors	clofentezine etoxazole	clofentezine etoxazole	Apollo, Prophesy, Malice Duo Finesse
----	------------------------	---------------------------	---------------------------	-----------------------------------------

15	Inhibitors of chitin biosynthesis	benzoylureas	novaluron	Twister
----	-----------------------------------	--------------	-----------	---------

### INSECT MIDGUT

11	Microbial disruptors of insect midgut membranes	Bacillus thuringiensis(Bt)	Bacillus thuringiensis (Bt)toxin	Delfin WG, Dipel
----	-------------------------------------------------	----------------------------	----------------------------------	------------------

### ENERGY METABOLISM

12	Inhibition of mitochondrial ATP synthase	thiourea	diafenthionur	Hygran
----	------------------------------------------	----------	---------------	--------

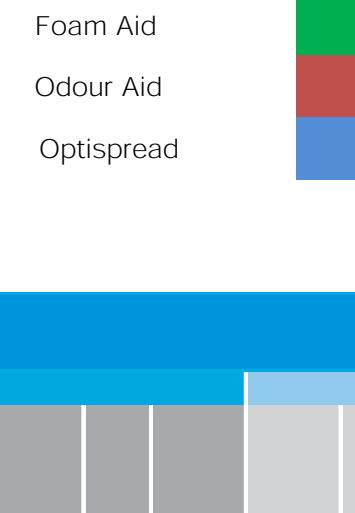
## by PREMIX

This section lists premix insecticides by their trade names so you can identify the premix's component insecticides and their respective site of action groups. Refer to the Mode of Action section on the left for more information.

PREMIX Trade Name	ACTIVE INGREDIENT	Group No
Malice Duo	abamectin	6
	clofentezine	10
Tempo Xtra	beta-cyfluthrin	3
	imidacloprid	4
	novaluron	15
Twister	Indoxacarb	22
Spinner	thiamethoxam	4
	chlorantraniliprole	28
Scarlet Trio	abamectin	6
	clothiadzin	4
	clofentezine	10

### ADJUVANTS

Product	Reason	Extension of Contact Insecticide Activity	Susceptible to alkaline hydrolysis	Tend to cause foam	Odour Issues	Spreader	Soil wetter
ProForce Echelon Duo Advanced							
Abamectin							
Abamectin + Clofentezine							
Bendiocarb							
Beta-cyfluthrin + Imidacloprid							
chlorantraniliprole							
Diadifenphuron							
Imidacloprid							
Indoxacarb							
Indoxacarb + Novaluron							
Bifenthrin							
ProForce Scarlet Trio Advanced							
Fipronil							
Tetraniliprole							
Thiamethoxam							
Thiamethoxam + chlorantraniliprole							



### INSECTICIDE OPTIONS

Product	Turf														Aphids	Caterpillars & Loopers	Cutworm
	Ants (Various nuisance ants & Funnel Ant)	African Black Beetle (Adult)	African Black Beetle (Larvae)	Argentine Stem Weevil	Argentinian Scarab	Billbug Adults	Billbug Larvae	Couch Fly	Couch Mite	Ground Pearl	Lawn Armyworm	Mole Cricket	Pruinose Scarab	Sod Webworm			
ProForce Echelon Duo Advanced			•		•		•										
Abamectin									•								
Abamectin + Clofentezine									•								
Bendiocarb			•														
Beta-cyfluthrin + Imidacloprid	•	•	•	•	•	•	•		•				•	•	•	•	•
chlorantraniliprole			•		•		•						•			•	•
Diadifenphuron									•								
Imidacloprid			•		•		•						•				
Indoxacarb					•								•			•	•
Indoxacarb + Novaluron			•	•	•		•	•					•			•	•
Bifenthrin	•	•	•	•		•							•			•	•
ProForce Scarlet Trio Advanced Insecticide			•	•	•		•	•	•	•			•				
Fipronil	•												•				
Tetraniliprole			•	•	•		•						•			•	•
Thiamethoxam			•	•	•		•						•			•	•
Thiamethoxam + chlorantraniliprole			•	•	•		•						•			•	•

