

Pesticides

Herbicides Broadleaf Weed Control in Turf

	<i>Axall, Image</i>	<i>Banvine</i>	<i>Duplosan Super</i>	<i>Grazon, Scrubcutter</i>	<i>MCPA</i>	<i>Trimec</i>	<i>Victory Gold</i>	<i>Tordon BK</i>	<i>Totril Super</i>	<i>Archer/ Versatill</i>
Amaranth – red root	S	S			S		S	S		
Buttercup – Annual		S		S	S		MS	MS	S	
Buttercup – Perennial		S			S		MS	MS		
Cape Daisy	S	S		MS			S	S		S
Catsear	S	S	MS		S		S	S		S
Chamomiles	S	S	MS					S		S
Chickweed	S	S	S	S		S	MS	MS	S	
Chickweed–Mouse Ear	S	MS	MS			S	MS	MS	S	
Cleaves	S	S	S	S					S	
Clovers	MS	S	S	S		S	S	S		S
Convolvulus		S		S			S	S		
Combind	S	S	S	S		S			S	
Cress – Twin		S	S		S	S	S	S	S	
Cudweed	S	S					S	S	S	
Cut Leaved Geranium		S		S			S	S		
Daisy	S	S	S	S	S		S	S		
Dandelion	S	S	MS	S	MS		S	S	S	S
Docks	MS	MS	MS	S		S	S	S	S	S
Hawkbit	S	S	S	S	S		S	S		S
Hawksbeard	S	S	S	S	S	S	S	S		S
Henbit	S	S					S	S		
Hydrocotyle	MS			S			S	S		
Mallow		S	MS	S	S		MS	MS		
Mayweed	S			S			S	S		S
Onehunga Weed	S	S	S	S	S		S	S	S	S
Oxallis – creeping				S			MS	MS	S	
Parsley Piert	S	S		S			S	S		
Pansy	S		S	S		S				
Pearlwort	S	S	MS	S			S	S	S	
Penny Royal		S			S	S				
Periwinkle							S	S		
Plantain	S	S	MS	S	MS		S	S		S
Scarlet Pimpernel	S	S	S	S	S		S	S	S	
Selfheal		S					MS	MS		
Shepherd’s Purse	S	S	S	S	S		S	S	S	
Speedwell	S	S	S			S	S	S	S	
Storksbill	MS	S	S		MS	S	S	S	S	
Thistles	MS	S	MS	S	S		S	S	S	S
Twin Cress	S	S	S	S			S	S	S	
Wireweed	S	S	S	S		S	S	S	S	

S = Susceptible

MS = Mildly Susceptible

Note: This chart is a guide only, always read the label information before use.

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Herbicides

Active Ingredient, Product Name & Use	Rate/Ha	Size
Amitrole 400 g/litre A non selective herbicide to control grasses and broadleaf weeds. AMITROLE 4 litres	Refer to agchem manual	1 litre, 5 litres, 20 litres
Bromoxynil 75 g/litre, loxynil 75 g/litre, Mecoprop 345 g/litre Selective herbicide with broad spectrum for broadleaf weed control in fine turf. (refer to weed chart) AXALL®	3 litres/ha	5 litres, 20 litres
Bromoxynil 120 g/litre, loxynil 120 g/litre, Mecoprop 360 g/litre IMAGE®	1.5 litres/ha	5 litres, 20 litres
Clopyralid 300 g/litre For the control of certain broadleaf weeds in newly established fine turf. (refer to weed chart) ARCHER®	1 litre/ha	1 litre, 5 litres, 20 litres
Dicamba 500 g/litre A herbicide to control difficult to kill weeds. Spectrum is improved on fine turf with the addition of MCPA at 3 litres per hectare. KAMBA® 500	0.8 litres/ha	1 litre, 10 litres
Ethofumesate 500 g/litre A pre-emergent herbicide providing good control of wintergrass, Poa Annua and summergrass in bent, rye and tall fescue (do not use in fine fescues) NORTRON® – EXPO 500®	4 litres/ha	5 litres
Fenoxaprop –P –Ethyl 69 g/litre Selective grass weed control, safe around browntop, fescue & perennial ryegrass PUMA® S	Rate depends on use	10 litres
Fluazifop –P –Butyl 150 g/kg For Selective grass weed control FUSILADE® FORTE	0.5-1.5 litres/ha	5 litres
Methylarsinic 600 g/litre – AGPRO MSMA Selective control of Paspalum and summer grass in fine turf AGPRO MSMA 600	9-11 litres/ha	5 litres, 20 litres
Glufosinate-ammonium 200 g/litre Buster is a fast acting, non-selective herbicide that is not translocated throughout the plant. BUSTER®	3-10 litres/ha	5 litres, 20 litres
Glyphosate 360 g/litre Broad spectrum weed control Note: All glyphosates from original formulation to cheaper generics available ROUNDUP® RENEW, GLYPHOSATE GOLD, GROWER GOLD	Refer to chemical manual	1 litre, 5 litres, 20 litres, 200 litres
Haloxyfop – P-Methyl 100 g/litre Selective grass weeds control. Can be used to take grasses out of fine fescue. IGNITE®	600 ml-1 litre/ha	1 litre, 5 litres, 20 litres
MCPA 375 g/litre For the control of certain weeds in fairways. DOW AGROSCIENCES MCPA	2-6 litres/ha	200 litres

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Herbicides

Active Ingredient, Product Name & Use	Rate/Ha	Size
Mecoprop 600 g/litre MCPA 150gms/ltr Dicamba 18.7 g/litre Broad spectrum broadleaf weed control in turf. TRIMEC®	3-4 litres/ha	5 litres, 20 litres
Metsulfuron 600 g/kg – as a methyl ester form Non volatile herbicide for the control of hard to kill woody weeds in pasture. ESCORT® ASSOCIATE® 600 WDG	Refer to Technical Representative	40 g, 200 g
Quizalofop-P-Ethyl 100 g/litre (plus Hydrocarbon Liquids) Post emergent grass weed herbicide – excellent for selectively removing grass weeds from garden areas. LEOPARD®	Refer to Technical Representative	1 litre, 5 litres
Pendimethalin 455 g/litre A low cost pre-emergence treatment which offers outstanding season-long control of Summergrass, Crowsfoot and Wintergrass in established turf. STOMP® XTRA	2.2 litres/ha	10 litres
Picloram 100 g/litre, Triclopyr 300 g/litre Selective broad spectrum herbicide for the control of broadleaf weeds in fine turf. Also to control blackberry, gorse, barberry and other brushweed (<i>Poa annua</i> -caution). CONQUEST® BRUSHKILLER	1-2 litres/ha	1 litre, 5 litres, 20 litres
Picloram 50 g/litre, Triclopyr 100 g/litre, Oxirane 75 g/litre Selective broadleaf weed control in fine turf (<i>Poa annua</i> -caution). VICTORY® GOLD	2-4 litres/ha	1 litre, 5 litres, 20 litres
Terbuthlazine 375 g/litre, Amitrole 60 g/litre - Glyphosate 100 g/litre A knockdown and residual herbicide for total vegetation control of nearly all annual and most perennial weeds. TAG®	Annual weeds 6 litres/ha Perennial weeds 20-25 litres/ha	1 litre, 5 litres, 20 litres
Triclopyr 600 g/litre For the control of broadleaf weeds in turf such as Hydrocotyle, creeping oxalis and others (<i>Poa annua</i> -caution). GRAZON® SCRUBCUTTER® VICTORY®	1-2 litres/ha	1 litre, 5 litres, 20 litres
AMINOPYRALID 30 g/litre For broadleaf weed control. TORDON® MAX	1-2 litres/ha	1-20 litres

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Fungicides Year planner for diseases in turf

Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec
					Fusarium Patch						
					Dollar Spot						
					Brown Patch						
					Take All Patch						
					Red Thread						
					Pythium						
					Fairy Ring						
					Anthracnose						
					Leaf Rust						
					Crown/Stem Rust						

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Fungicides Golf & Amenity Turf

Overseas research recommendations for Fungicides

Chem Grp	Active Ingredient	Product	Action	Brown Patch	Dollar Spot	Fusarium Patch	Pythium Damping Off	Leaf Spot Melting Out	Red Thread Pink Patch	Takeall Patch	Anthracoese	Crown & Stem Rust
B	Azoxystrobin 500gms/kg	Amistar	SCPT	0.6 - 1.2		0.6 - 1.2	1.2	0.6 - 1.2	0.6 - 1.2	1.2	0.6 - 1.2	0.6 - 1.2
DMI	Captan 800gms/kg	Captan/Orthocide	P	6				6				
S	Carbendazim 500gms/ltr	Chief/MBC Flo	SCPT	3	3	6			3		3	
DMI	Chlorothalonil 250gms/ltr + Thiophanate 250gms/ltr	Taratek 5F	SCP	15 - 20	15 - 20	15 - 20		15 - 20	15 - 20		15 - 20	
DMI	Chlorothalonil 720gms/ltr + 500gms/ltr	Bravo WS/Chlorotek	P	5 - 20	5 - 20	10 - 20		5 - 20	5 - 20	5 - 20	10 - 20	10 - 20
DMI	Chlorothalonil 720gsm/ltr	Barrack/Cavalry	SCP	10-20	10-20	10-20		10-20	10-20		10-20	
DMI	Chlorothalonil 250gms/ltr + Carbendazim 250gms/ltr	Chlorocarb	SCPT	10-20	10-20	10-20		10-20	10-20		10-20	
DMI	Cyproconazol 100gms/ltr	Alto	SCP	3 - 4	2			3 - 4	3 - 4		3 - 4	3 - 4
DMI	Fosetyl-Aluminium 800gms/ltr	Aliette	SCP				10 - 20					
	Iprodione 250gms/ltr	Rovral Flo	CP	10 - 20	10 - 20	10 - 20		10 - 20	10 - 20			
	Mancozeb 750gms/kg	Dithane Rainshield	P	6 - 20	6 - 20	6 - 20		6 - 20	6 - 20		6 - 20	
B	Metaxyl 40gms/kg + Mancozeb 640gms/kg	Ridomil Gold/MZWG	SCP				10 - 20					
D	Phosphorus acid 400gms/ltr	Folli-R-Fos/Foshek	SP				10 - 20					
DMI	Prochloraz 450gms/ltr	Sportak/Mirage	SCP		6	2 - 6		2.6			7	
D	Procyimidone 500gms/ltr	Sumisclax	SCP		10 - 20			10 - 20				
DMI	Propiconazole 250gms/ltr	Tilt	SCP	10	3				5		5	5
B	Quintozene 750K/kg	Terraclor 75WP	P	10		25		25				
	Tebuconazole 250gms/kg	Folicur	SCP	2 - 4	2 - 4	6			2 - 4			2 - 4
	Thiophanate Methyl 400gms/ltr	Topsin M-4A	SCP	10	5	10			5		5	
DMI	Thiram 800gms/kg	Thiram	P	15	20	20		15				15
B	Triadimefon 50gms/kg	Bayleton	SCP	10 - 20	10 - 20	10 - 20			10 - 20			10 - 20
T	Triadimenol 250gms/ltr	Cereus/Ciadel	SCPT	3-6	3-6	3-6						3-6
S	Trifloxystrobin 500gms/ltr	Twist	SCPT		1.3-3.6							

Figures quoted are: Litres/kg's per Hectare

Action P - Protectant
C - Curative
S - Systemic
T - Translaminar

Chem Grp B - Benzimidazones
D - Dicarboximides
P - Phenylamides
S - Strobilurins
T - Triazole
DMI - Demethylation inhibitors

Note: This fungicide chart is a guide only. Many products are not registered for use in turf in New Zealand, but are registered overseas and are therefore used off label in New Zealand. PGG Wrightson Turf will not be responsible for the use of products in this chart. Users should refer to labels and obtain professional assistance when using fungicides on turf. For more information on New Zealand registrations refer to the label on the container or the Novachem or Agrochem manuals.

Rate: Contact PGG Wrightson Turf, Fruited Supplies or NZSTI.

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Fungicides

Active Ingredient, Product Name & Use	Rate/Ha	Size
Azoxystrobin 500 g/kg A Strobilurin fungicide which controls damping-off, brown patch, fusarium patch, red throat, leaf spot, anthracnose and rust. AMISTAR® WG	0.6-1.2 kg/ha	3 kg
Carbendazim 500 g/litre A benzimidazole fungicide with systemic activity in a convenient liquid formulation. It provides excellent dollar spot control and is an ideal alternative in a resistance prevention strategy. CHIEF MBC 500 FLO	3-6 litres/ha	5 litres, 10 litres
Chlorothalonil 250 g/litre Thiophanate Methyl 250 g/litre An economical contact fungicide with broad spectrum activity of fusarium patch, dollar spot, leaf spot, red thread, brown patch and others. TARATEK® 5F	15-20 litres/ha	1 litre, 5 litres, 20 litres
Cyproconazol 100 g/litre A systemic triazole which has contact and systemic with both protectant and eradicant activity. ALTO® 100 SL	2-4 litres/ha NOT COTULA GREENS	1 litre
Fosetyl-Aluminium 800 g/kg A unique systemic fungicide for control of pythium that is fast acting and has the ability to move upwards and downwards within the plant. ALLETTE® WG	10-20 kg/ha	1 kg
Iprodione 250 g/litre Predominantly a preventative spray with some eradicant activity to control fusarium patch, red thread, dollar spot, brown patch and others. ROVRAL® FLO	10-20 litres/ha	5 litres, 20 litres
Mancozeb 750 g/kg A convenient dry flowable formulation of Mancozeb which is easy to handle and measure, and offers proven control of brown patch, fusarium, helminthosporium and algae. DITHANE RAINSHIELD	6-20 kg/ha	10 kg, 20 kg
Metalaxyl Mefenoxam 40 g/kg, Mancozeb 640 g/kg For the control of pythium blight in newly sown or young turf. Has systemic, eradicant and protective properties. RIDOMIL® GOLD MZWG	10-20 kg/ha	5 kg
Prochloraz 450 g/litre A broad spectrum fungicide with eradicant and protectant activity for the control of anthracnose, dollar spot and fusarium. MIRAGE® 450	2-6 litres/ha	5 litres
Procymidone 500 g/litre Predominantly protectant but also limited systemic control of dollar spot, leaf spot and melting out SUMISCLEX® 500 SC	10-20 litres/ha	10 litres
Propiconazole 250 g/litre A breakthrough product for the control of dollar spot in bentgrass. It is a systemic fungicide in an emulsifiable concentrate formulation. TILT® EC, AURORA™	2-10 litres/ha	5 litres

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Fungicides

Active Ingredient, Product Name & Use	Rate/Ha	Size
Chlorothalonil 250 g/litre, Carbendazim 250 g/litre Benzimidazole plus contact. CHLOROCARB®	10-20 litres/ha	5 litres, 20 litres
Chlorothalonil 720 g/litre Contact action for durable disease control, can be used frequently. BARRACK® 720 CAVALRY® 720 SC	10-20 litres/ha	10 litres
Prochloraz 450 g/litre A broad spectrum DMI fungicide MIRAGE® 450 SPORTAK® EW	2-6 litres/ha	5 litres
QUINTOZENE 750 g/litre Controls brown patch and fusarium TERRACLOR 75WP	10-30 kg/ha	2.5 kg, 25 kg
Tebuconazole 500 g/litre Has contact and systemic action which is absorbed by leaves and stems translocating in an upward manner. AXIS® GOLD	1-2 litres/ha	5 litres
Thiophanate Methyl 400 g/litre Systemic control of brown spot, dollar spot, fusarium, red thread and anthracnose in turf. TOPSIN® M-4A	5-12 litres/ha	5 litres, 20 litres
Thiram 800 g/litre (Thiram DF), 400 g/litre (Thiram 40F) An outstanding dry flowable formulation which significantly reduces the hazard to users in handling. Thiram, while maintaining powerful contact disease control on brown patch, helminthosporium and damping off THIRAM DF THIRAM 40F	DF 7.5 kg/ha 40F 15 litres/ha	3 kg, 20 kg 10 litres
Triadimenol 250 g/litre A broad spectrum DMI fungicide. CEREOUS® CITADEL®	3-6 litres/ha	5 litres
Trifloxystrobin 500 g/litre A Strobilurin fungicide TWIST®	1.3-3.6 litres/ha	1 litre

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Insecticides Year planner for insects in turf

Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec
					Porina						
					Grass Grub						
					Sod Webworm						
					Argentine Stem Weevil						
					Black Beetle						
					Tasmanian Grass Grub						
					Greasy Cutworm						
					Cotula Weevil						

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Insecticides

Active Ingredient, Product Name & Use	Rate/Ha	Size
Alpha-Cypermethrin 100 g/litre Synthetic pyrethroid for the control of grass grub and weevils DOMINEX® PL100	200-300 ml/ha	1 litre
Chlorpyrifos 500 g/litre Chlorpyrifos 480g/l For the control of argentine stem weevil, porina caterpillar and black beetle in fine turf. LORSBAN® 50EC	560 ml-1.6 litres/ha	1 litre, 20 litres
Chlorpyrifos 100 g/kg A controlled release granular formulation of Chlorpyrifos which is active against grass grub for up to 3 years. This product has to be soil incorporated at establishment or renovation. SUSCON GREEN	15 kg/ha	15 kg
Diazinon 800 g/litre An emulsifiable concentration formulation for the control of grass grub, porina caterpillar and sod web worm. DIAZINON 800 EC	1.5-3 litres/ha	5 litres, 20 litres, 200 litres
Diazinon 200 g/kg – GESAPON® 20G, DIAZINON 20G A granular insecticide for the control of grass grub and porina caterpillar in turf. GESAPON® 20G DIAZINON 20G	5.5-11 kg/ha	15 kg, 22 kg
Diflubenzuron 250 g/kg An insect growth regulator for the control of porina caterpillar. DIMILIN® 25W	50 g in 200 litres water	500 g
Imidacloprid 350 g/litre A systemic insecticide for the control of black beetle, argentine stem weevil and grass grub. NUPRID® 350 SC	800 ml-1.2 litres/ha	5 litres
Alpha-Cypermethrin 15 g/litre A non-systemic residual insecticide for the control of a range of household pests. Apply just prior to run off. RIPCORDER® PLUS	40-70 ml/litres	200 ml
Metaldehyde 18 g/kg – Snail bait For the control of slugs and snails. SLUG OUT®	10-15 kg/ha	5-10 kg
Alpha-Cypethrin 200 g/litre A pyrethroid insecticide for the control of caterpillar pests on a wide range of crops, grass grub beetle and industrial pests in buildings. RIPCORDER®	50-250 ml/ha	500 ml

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Slug Out® is a registered trademark of Nufarms Technologies USA Pty Ltd

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Moddus (250 g/litre Trinexapac Ethyl)

Leaf and stem absorbed growth regulator which is quickly translocated around the plant and reduces growth by up to 50% for 4-6 weeks.

Rate: Use 300 ml – 1 litre/ha

Pack Size: 5 litres

Although widely used in the New Zealand turf industry, Moddus is not registered for turf in New Zealand but is registered for ryegrass seed crops. Apply to actively growing turf which is not suffering from drought, disease stress or insect damage. Seek advice from a turf industry professional for application of this product.

Payback (250 g/litre Paclobutrazol)

Mainly root absorbed systemic plant growth regulator which acts by reducing gibberellin production.

Uses: To reduce vertical growth, enhance colour and evenness, and improve playing surface speed.

Rate: 0.75-1.5 litres/ha at 4-8 week intervals when turf species are actively growing. Irrigate after application with 4-6 mm irrigation (read instructions on the label thoroughly). To suppress *Poa Annua*, and allow a gradual transition to desirable cool season turf, including bent grass, perennial ryegrass, and Kentucky bluegrass. Rate; 1.5-2.25 litres/ha. Make no more than two applications in spring and one in autumn. Irrigate with 4-6 mm irrigation after application. (Read instructions on the label thoroughly).

Pack Size: 1 litre

Ethrel (480 g/litre Chlorethephon)

A foliar absorbed growth regulator which regulates the plants development following the release of ethylene into the plant.

Rate: Apply between 7.5-12 litres/ha (typically 7.5-8 litres) often tank mixed with Moddus (at about 300 ml/ha).

Pack Size: 1-20 litres

Although widely used in the New Zealand turf industry, Ethrel is not registered for turf in New Zealand but is registered for ryegrass seed crops. Apply to actively growing turf which is not suffering from drought, disease stress or insect damage. Seek advice from a turf industry professional for application of this product.

Mostox (432 g/litre Dichlorophen)

Contact selective biocide effective on all types of moss, liverworts and algae slime. Use on paths, hard surfaces, cotula greens, fine and amenity turf.

Rate: Varying rates – please read the label. For lawns use 500 ml-1 litre in 5-10 litres per 100 m².

Best applied on its own.

Pack Size: 5 litres

Surrender (500 g/litre Benzalkonium Chloride)

Cost effective algaecide for control of moss, algae, lichen and liverwort in most turf grass surfaces.

Rate: 250 ml in 10 litres of water applied to 100 m² (read label carefully).

Pack Size: 10 and 20 litres

FilmStar® Pinene spray extender

- Pinene based sticker and extender
- Prevents wash off from rain, dew and irrigation
- Longer life of crop protection products through encapsulation
- Easy to pour and use

Rate*: 50-100 ml per 100 litres

Pack Size: 1, 5, and 20 litres

Note: Always premix FilmStar® separately with water and add to the spray tank last.



Actiwett® Spreader

- General purpose spreader to improve spray coverage and deposition on difficult to wet plant surfaces
- Cost effective with low use rates

Rate*: 25-75 ml per 100 litres

Pack Size: 1, 5, and 20 litres



X-Change

X-Change is an 'Ion Scavenger' for use in 'hard water' situations i.e. water high in cation content such as calcium, magnesium etc. Prevents 'hard water' from deactivating many crop protection products. X-Change also has some pH reduction properties.

Rate*: 100-750 ml per 100 litres of water dependent on test strip indications.

Pack Size: 5 litres



* Refer to label directions for use.

Filmstar® is a registered trademark of Elliott Chemicals Limited.

Actiwett® is a registered trademark of Loveland Industries Inc.

Validate

Penetrant, spreader, drift retardant

- Superior uptake of all systemic and translaminar insecticides, fungicides, foliar fertilisers
- Increases herbicide uptake
- Reduces drift
- Validate does not acidify water

Rate*: 125-250 ml per 100 litres

Pack Size: 5 litres

Note: SAFE TO USE with Sulphonyl Urea Herbicides e.g. Katana® or Metsulfuron and Copper fungicides.



All Clear

Tank cleaner and decontaminant

- Highly effective new generation tank cleaner
- 3-way mode of action
- Unique – only tank cleaner to remove carfentrazone (Hammer) residues
- Provides thorough cleaning and decontamination of spray tanks, lines and booms

Rate*: 250-500 ml per 100 litres

Pack Size: 1 and 5 litres



Fighter-F Antifoam

- Stops foam or 'kills' it forming in spray tanks
- Reduces chemical waste from excess foaming
- Economical

Rate*: 7-45 ml per 100 litres

Pack Size: 450 ml and 3.78 litres



Trakka Long life marker foam

A premium agricultural foam blob marker for easy identification of boom spraying widths.

Rate: 1-2 litres per 100 litres of water

Pack Size: 5 and 20 litres



* Refer to label directions for use.

Blazon® Spray pattern indicator

A washable, non staining spray pattern indicator.

- Blazon® indicators are distinctive in the market because they are truly washable. Made as a polymeric colourant, they are not a dye or pigment and are non ionic. They will not permanently stain
- Spray pattern indicators eliminate the worry of overlaps, or misses when spraying, and then dissipate rapidly with sunshine
- Spray in the early morning – gone in a day
- Colours: blue and green

Rates: Broad-acre; – use 200/300 ml per 100 litres of spray-mix solution. More or less can be added depending on the 'brightness' of colour desired. Knapsack: use 8 ml/litre of spray-mix solution

Pack Size: 9.47 litres and 200 litres

Envirodye Aqua

An attractive blue lake colourant and algae suppressant. Non toxic to fish and plants when used at label rates.

Rates: 10 litres/ha of water.

Pack Size: 10 litres

Microzyme Pond Treat

A safe easy formulation to naturally remove unsightly pond sludge, algae and some weeds in ponds, lakes, irrigation ponds etc. It is harmless to fish and desirable plant life, ecologically friendly and biodegradable.

Rates: 250 g/100 m² pond. Read label directions carefully before use.

Pack Size: 500 g, 1.25 kg and 11.25 kg

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