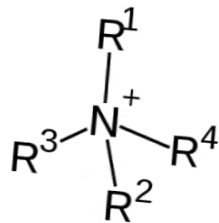




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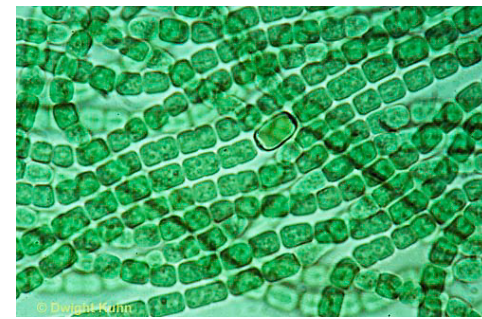
Algaecide

Selective turf algaecide, that is Chloride free.



Algae (Cyanobacteria)

The problem in turf greens



- Interestingly, the “algae” that cause algae crust problems in turf are not the typical aquatic algal species found in streams and lakes. They are ***cyanobacteria*** (blue green)— terrestrial organisms that can survive in aquatic and also in “near aquatic” habitats on land.
- Cyanobacteria synthesize and secrete large quantities of *polysaccharides* from their cells. This protective coating enables them to withstand stress brought about by lack of water and high temperatures.
- Cyanobacteria species commonly observed in turf are *Oscillatoria*, *Phormidium* and *Lynbya*.

Algae (Cyanobacteria) Key Growth Requirements

- Wet soil environments
- Compacted, poorly drained soils.
- Warm summer temperatures.
- Ample supplies of **Phosphorus & Nitrogen**.
 - Phosphorus, especially, promotes rapid growth and the formation of surface crusts by cyanobacteria.



Algae (Cyanobacteria)

Impact on plant growth



- Growth of filamentous cyanobacteria may be so rapid that the filamentous layers of slime out-compete turfgrass growth during the hot summer months.
- The first appearance of Cyanobacteria growth on greens typically occurs during the summer months as a dark slime on the surface of the green.
- Initially these spots may be difficult to observe, but as they get larger the turf begins to yellow and thin due to a lack of oxygen and drainage under the crust (which resembles a microscopically interwoven mat).

Algae (Cyanobacteria) Control Options



- **Water Management**

- Areas where dark-green to black colonies of cyanobacteria are observed, must have surface moisture to support the colony.
- Need to increase water infiltration via aeration, scarification.

- **Fertility**

- Available phosphorus appears to be a critical factor to stimulate rapid growth of cyanobacteria during the hot summer months.
- Keep Phosphorus application in key algae growth periods at a minimum.

- **Chemistry**

- Fungicides (Chlorothalonil, Mancozeb)
- QAC's.
- Copper based products >> Copper sulphates can burn greens.





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QAC's



- Quaternary ammonium compounds are a group of cationic surfactants.
- Not all QAC's are the same. Surrender (Benzalkonium chloride) is classified as a QAC.

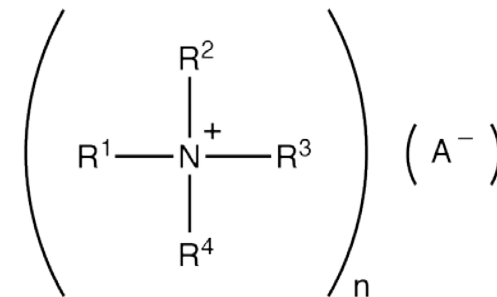
QAC Chemical Structures

Nitrogen



Alkyl groups

Anion – can be sulphate or chloride.
Algaefix is Sulphate.





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Mode of Action

- Quaternary Ammonium Compound (QAC), the active ingredient in Algaefix works primarily by membrane disruption.
- QAC does this due to its strong positive charge. Algae, mould and bacteria's possess a negative charge. QAC binds and attaches to the algae, mould or bacteria and causes the cytoplasmic membrane to leak, creating so much damage to the cells that eventually the algae, mould or bacteria die.



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Label Claims

DIRECTIONS FOR USE

SITUATION	PESTS CONTROLLED	RATE	HOW TO APPLY
Golf courses and bowling greens, bunkers and sports turf areas.	Algae and Mould	1 L per 100 L of water.	Spray onto affected area and allow to dry. Apply in a minimum of 500 L of water per hectare. Re-apply at 10 day intervals where required.
General use		30 mL per 5 L water	Do not rinse treated surfaces.
Walls and floors: tiles, concrete and fibro. Pathways.		1 - 2 L per 100 L water depending on level of soiling.	Use after pre-cleaning treatment.

NOT TO BE USED FOR ANY PURPOSE, OR IN ANY MANNER, CONTRARY TO THIS LABEL UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION



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Algaefix[®]

Algaecide

Key Benefits

- Unique Mode of Action.
- Strong Activity on Algae.
- Non chloride based formulation >> non-burn.
- Environmentally safe, biodegradable (non persistent).
- APVMA approved product >> Credible formulation





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Field Performance

Algaefix treated at 5L/ha



Pre – treatment



14 days post treatment

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Commercials

- Pack Size: 5L.
- Cartons: 4 x 5L. Minimum carton quantities.

Brand	Pack Size	QAC Concentration	Rate	Cost per Pack (Distribution)	Cost / ha (Distribution)	Cost / Pack (Customer)	Cost / ha (Customer)
Algaefix	5L	142.5g/L	5L/ha	\$280.00	\$280.00	\$500.00	\$500.00



Adama Fungicide Application Guide

 ACTIVE INGREDIENT CONCENTRATION			MODE OF ACTION		DISEASES / CONDITIONS CONTROLLED BY PRODUCT													Application Rates		Ideal Water Volume				
			Activity Group	Contact (C), Systemic (S) or Translaminar (T)	Algae /Cyanobacteria	Anthracnose	Brown Patch	Curvularia	Dollar Spot	ERI	Fairy Ring	Fusarium	Grey Leaf Spot	Helminthosporium Complex	Leptosphaerulina	Pythium	Rust	Spring Dead Spot	Take All Patch	Product Rate: per 100m ²	Rate: per Hectare (10,000m ²)	Water Volume for Foliar /Crown Diseases: Litres per 100m ²	Water Volume for Root /Soil Diseases: Litres per 100m ²	
Foliage (F), Crown (C), Root (R) or Soil (S) Pathogen					FC	FC	CR	FC	F	R	S	FRC	F	FRC	FC	FRC	F	R	R					
Ideal Temperatures for Pathogen Activity (°C)					16 - 29	16 - 35	16 - 31	29 - 35	16 - 32	>20	>10	0 - 18	21 - 32	3 - 34.	28	20 - 37	10 - 30.	10 - 25.	10 - 18.					
Fungicide / Algaecide	Active Ingredient	AI Conc	Group	C,S or T	Pathogens / Conditions controlled																			
ALGAEFIX®	Quaternary Ammonium	142.5g/L	N/A	C	▲																50 mL	5 L	>5 L	-
BUMPER® 625	Propiconazole	625g/L	3	S				▲									▲	▲			30 - 60 mL	3 - 6 L	4 - 8 L	10 - 20 L
CAVALRY® WEATHERGUARD	Chlorothalonil	720g/L	M5	C		▲		▲				▲									130 - 240 mL	13 - 24 L	4 - 8 L	20 - 60 L
CAPTAN®	Captan	800g/kg	M4	C		▲															100 - 150 g	10 - 15 kg	4 - 8 L	25 - 50L
CHIEF® 500	Iprodione	500g/L	2	T		▲	▲	▲			▲		▲								45 - 90 mL	4.5 - 9 L	4 - 8 L	10 - 150 L
CITADEL®	Triadimenol	250g/L	3	S				▲			▲		▲				▲				30 - 60 mL	3 - 6 L	4 - 8 L	>10 L
COMPASS®	Fluazinam	500g/L	29	C		▲		▲			▲	▲									10 - 15 mL	1-1.5 L	4-8 L	>10 L
EVOLUTION®	Azoxystrobin & Tebuconazole	120 & 200g/L	11/3.	ST		▲	▲	▲		▲	▲										20 - 40 mL	2- 4 L	3.5- 5 L	>10 L
IPRO 365	Iprodione	365g/L	2	T		▲		▲			▲		▲								65- 125 mL	6.5- 12.5 L	4-8 L	10- 150 L
MAGELLAN®	Fosetyl al	800g/kg	33	S											▲						125 g	12.5 kg	4-16 L	>10 L
PATRIOT®	Trifloxystrobin & Tebuconazole	100 & 200g/L	11/3.	CST		▲	▲	▲	▲		▲		▲	▲							20 - 30mL	2 - 3 L	8 - 16 L	16 L
TRIUMPH®	Metalaxyl-M	240g/L	4	S											▲						17 - 35mL	1.75 - 3.5 L	3.5 - 5 L	10 L



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Algaecide

Thank you

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More information

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