



# QUALI-PRO COMPASS FUNGICIDE

Unique Protectant Fungicide, offering  
Superior residual performance.



## More Information

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## Compass Fungicide in Brief

- COMPASS is a premium, unique protectant fungicide containing 500 g/L of the active ingredient fluazinam
- COMPASS provides powerful contact activity of a range of turf diseases including; Dollar Spot, Helminthosporium, Anthracnose and Grey Leaf Spot.

## Key Features and Benefits of Compass Fungicide

- Unique mode of action for the turf market – Group 29
- Greater residual activity (up to 21 days) when compared to other available protectant fungicides (mancozeb/chlorothalonil)
- Excellent control of dollar spot that other chemistries fail to have activity on
- Useful rotational partner that can be combined with systemic products for inside/out protection
- Excellent tank mix flexibility
- Multi-site activity that has very low risk of developing resistance
- Possesses excellent rain fast properties to provide consistent performance in any weather condition
- Registered for Grey Leaf Spot – currently limited options are available for this disease.



## How Compass Fungicide Works

COMPASS fungicide is a new multi-site contact fungicide, from a new chemical class, for turf. It contains the new active ingredient, fluazinam, and is the only registered fungicide for turf in FRAC group 29. It has no known resistance and as a multi-site contact, it has very low risk of developing resistance.

Falling under the pyridinamine family, COMPASS disrupts the energy production in the fungus by restricting ATP production, a key molecule used for production of physiological processes in fungal cells.

COMPASS has little systemic activity. It has stronger protectant/preventative properties than curative activity, however data indicates that with multiple applications curative control can be achieved.

### Compass Mode of Action in Review

Active Ingredient	Fluazinam
Concentration (g/L)	500
FRAC Group	29
Group Common Name	Multi-Site Inhibitor – Pyridinamine
Mode of Action	Disruption of energy production
Effect on Fungi	Disrupts ATP production – important to fuel physiological processes within fungi cells.
Use Pattern	Contact Protectant
Residual activity	Up to 21 days





## Compass – Delivers Superior Residual Performance

Fungicide	Active Ingredients	Re-application Interval (days)
COMPASS	Fluazinam	14 - 21 days
Daconil* Ultrex	Chlorothalonil	7 - 14 days
Fore*	Mancozeb	7 - 14 days

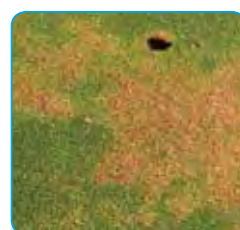
Source: University of Kentucky – Chemical Control of Turfgrass Diseases

## Compass – Excellent Rainfast Properties

The COMPASS formulation holds fungicide to the surface of leaf blades even after irrigation and heavy rains. In the below rain fastness study, plants treated with 2 fungicides (COMPASS and Daconil\* Weatherstik) were subjected to an artificially simulated rainfall events (20 mm/hr) at 2 hours and 24 hours following fungicide application. In the study, the plant leaves were then inoculated with disease spores, incubated then placed in ideal growing conditions for 3 days. Following this period the plant leaves were assessed for disease presence and control achieved by the fungicides. The results below indicate that disease control was achieved with both PPM rates of both products, indicating that COMPASS was equivalent to Daconil\* Weatherstik when it comes to rainfast properties.

PPM (Concentration of Fungicide in spray solution)	% Disease Control following simulated rainfall at 2 and 24 hours after fungicide treatment.	
	COMPASS	Daconil* Weatherstik
125	88	88
31	56	50

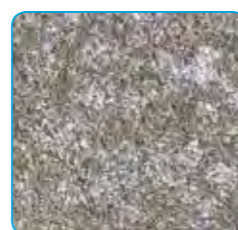
Ref: Komyoji et al "Biological Properties of a New Fungicide, Fluazinam" J.Pesticide Science 20:129-135 (1995).



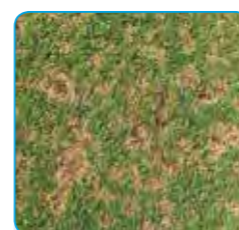
Anthracnose



Black Helminthosporium



White Helminthosporium



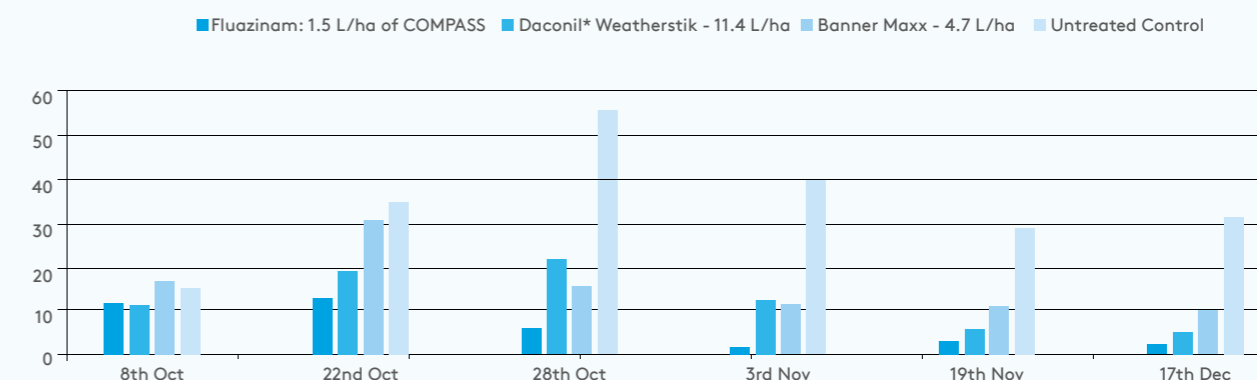
Dollar Spot



Grey Leaf Spot

## Compass – Delivers control of Dollar Spot that other chemistries struggle to have activity on

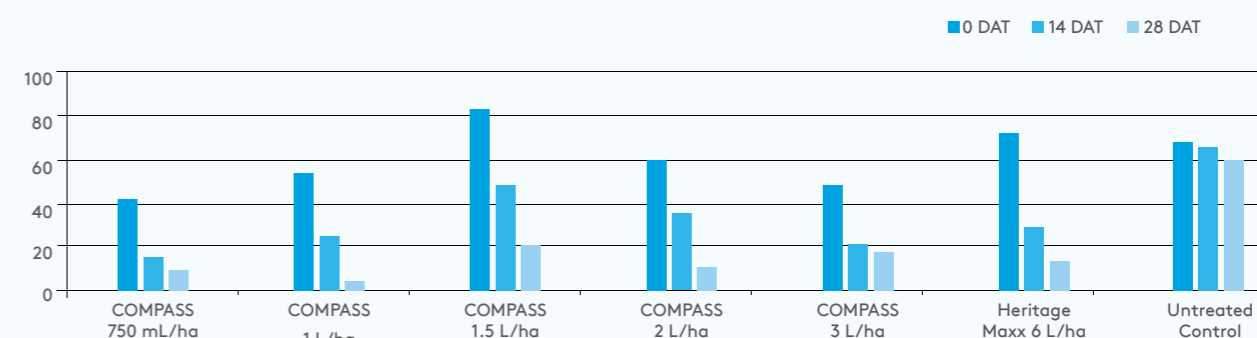
### Impact of fluazinam on the control of DMI and Dicarboximide resistant dollar spot - Steve McDonald - Turfgrass Disease Solutions, 2010



Fungicides were applied on October 8th, October 22nd and November 3rd. Results have indicated that fluazinam at the 1.5 L/ha rate equivalent to COMPASS, provided improved control over other commercially available fungicides.

## Compass – A useful rotational option for Anthracnose.

### Compass % Control of Anthracnose in bentgrass turf - Royal Canberra Golf Club, October 2015



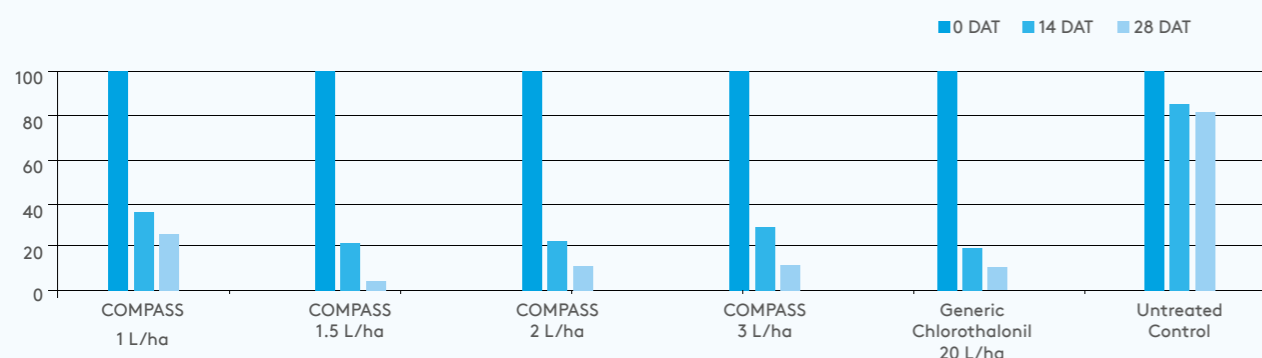
Ref: Amgrow: Dr Brett Morris, 2015 (Full report can be provided upon request)

Results of the field trial indicated that COMPASS Fungicide provided excellent curative control of the Anthracnose population (up to 92%) when applied with 2 applications at 14 day intervals.



# Compass – A useful fungicide for Grey Leaf Spot control

Compass Control of Grey Leaf Spot in Buffalo turf - Jimboomba Turf, Allenview - 2015



Ref: Amgrow: Dr Brett Morris & Ramiro Martinez, 2014 (Full report can be provided upon request)

Results of the field trial indicated that COMPASS Fungicide provided excellent curative control of the Grey Leaf Spot population (up to 96%) when applied with 2 applications at 14 day intervals.

# Compass – Use Rates and Key Application Information

Situation	Diseases Controlled	Rate / Ha	Critical Comments
Turf including but not limited to bowling greens, fairways, golf greens, racetracks, sports fields and tees	Dollar Spot ( <i>Sclerotinia homeocarpa</i> )  Helminthosporium Disease ( <i>Bipolaris</i> spp., <i>Drechslera</i> spp. and <i>Exserohilum</i> spp.)  Gray Leaf Spot ( <i>Pyricularia grisea</i> )  Anthracnose ( <i>Colletotrichum graminicola</i> )	1 – 1.5 L/ha in 400 - 800 L of water	COMPASS should be applied as a preventative treatment. Spray when conditions are favourable for disease development and/or as soon as possible after first symptoms are detected. Make a second application 7 to 14 days later if conditions continue to favour disease development. Use rates towards the higher end of the range and shorten intervals. DO NOT mow or water treated area until turf or lawn is thoroughly dry, ideally allow 24 hours.

Application volume for leaf and crown diseases (Dollar Spot, *Helminthosporium* Disease, Grey Leaf Spot and Anthracnose) should be adequate to ensure thorough and even coverage of the turf leaves and penetration into the crowns. Ideal application volumes should be between 400 – 800 L/ha. For best results use coarse [Turbo Teejet\* or AIXR Teejet\* (11004 or 11005)] nozzles, at 5 km/h and 3 bar pressure. In higher cut turf (>15 mm) a significant spray shielding effect can occur, impacting negatively on spray penetration and even coverage at low application volumes. Good control requires good coverage. Application should be made in sufficient water to ensure thorough coverage. Do not apply more than 3 application of COMPASS per season.

# Compass – Protectant Fungicide Comparison

## Premium Protectant Fungicide Market in Turf (Australia)

Product	COMPASS	Daconil* Weatherstik	Fore* Rainshield	Medallion*
Active Ingredient	Fluazinam	Chlorothalonil	Mancozeb	Fludioxonil
Formulation	500 g/L	720 g/L	480 g/L	125 g/L
Poison Scheduling	S6	S6	S5	S5
Mode of Action Group (FRAC)	29	M5	M3	12
Description of Mode of Action	Inhibits respiration	Toxic to cell membrane	Enzyme inactivation	Cell membrane toxicity, amino acid uptake inhibition.
Multi-site Activity	YES	YES	YES	YES
Label Rate	1 - 1.5 L/ha	13 - 24 L/ha	33.5 - 41.5 L/ha	3 L/ha
Active Ingredient Output based on label rate	500 - 750 g/ha	9,360 - 17,280 g/ha	16,080 - 19,920 g/ha	375 g/ha
Residual Performance	14 - 21 days	7 - 14 days	7 days	14 - 21 days
KEY PATHOGEN ACTIVITY				
Anthracnose	YES	NO	NO	YES
Brown Patch	NO	YES	YES	YES
Dollar Spot	YES	YES	NO	YES
Helminthosporium Disease	YES	YES	YES	YES
Grey Leaf Spot	YES	YES	NO	NO
Winter Fusarium	NO	YES	YES	YES
Algae	NO	NO	NO	NO