

TWO NEW COMBINATION-FUNGICIDE PRODUCTS OFFER SHOTGUN APPROACH TO DISEASE SUPPRESSION ON HIGH-CUT TURF

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Turf fungicides are regularly used on golf courses and high visibility sports-turf venues (i.e., low-cut turf). Residential and commercial lawns as well as scholastic and recreational athletic fields (i.e., high-cut turf) have rarely been treated. Generally speaking, the functional or aesthetic value of high-cut turf does not warrant the cost of a fungicide application. However, there are other possible reasons. Golf-course superintendents and sports-turf managers at high-visibility venues monitor their turf on an almost daily basis. Therefore, they are generally more experienced and comfortable at correctly identifying a disease and applying a proper fungicide. Moreover, low-cut turf is under greater stress and therefore more disease prone than high-cut turf.

When confronted with a damaging turf disease, managers of high-cut turf may simply not have the resources necessary for fungicide use to be an option. If they do, they may feel unsure of their diagnoses and therefore uncomfortable with being able to select an effective product. Lawn-care operators may be particularly reluctant to sell an application only to find that it didn't work. Since site visits by such personnel are typically at least a month apart (barring callbacks), another situation could occur where an effective fungicide had been applied and later a different pathogen became active that was not suppressed by the earlier application. In either case, a client could be rather upset, especially if he or she had already paid the bill!

One effective strategy is to apply more than one fungicide so that their efficacies complement each other resulting in a broad spectrum of disease suppression. To make this shotgun approach more convenient, manufacturers have recently launched new fungicide-combination products that are labeled to control a broad spectrum of diseases. Each of these products merge two systemic fungicides having different modes-of-action: a demethylation inhibitor (DMI) and a quinone-outside inhibitor (QoI), aka a strobilurin. Last year, Bayer Environmental Science introduced Armada, a combination of triadimefon (Bayleton) and trifloxystrobin (Compass), and it was the first professional-use turf fungicide product that prohibited its use on golf courses. For that market, they concurrently introduced Tartan, which has the same fungicides combined with StressGard, a proprietary green dye designed to positively affect a turfgrass plant's physiology. This year, Syngenta Professional Products launched Headway, a combination of propiconazole (Banner) and azoxystrobin (Heritage), which is labeled for use on all turf.

Headway and Armada both have activity on all or nearly all of the known fungal pathogens of turf. The reason Headway lists more diseases than Armada is because Headway is labeled for all turf sites, including golf courses. Therefore the diseases known to attack exclusively bentgrass and annual bluegrass are also listed. Since Armada is not labeled for golf courses, its list does not include those diseases and is therefore shorter. However, fungicidal activity on the golf-turf diseases listed on the Tartan label would be also be expected. One major difference between Headway and both Armada and Tartan is that Headway is labeled for Pythium blight.

The last two years have seen widespread incidences of dollar spot across Michigan on high-cut turf. This year, the disease has also been reported as being "rampant" on sports fields in Ohio. The causal organism, *Rutstroemia floccosum* (syn. *Sclerotinia homoeocarpa*), prefers warm days and cool nights with prolonged periods of leaf wetness. On high-cut turf, it appears to thrive at higher ambient temperatures, probably due to the cooling and humidifying effects of a lush canopy. The pathogen produces no sexual spores and exists solely as mycelium that can sometimes be seen during early morning when dew persists.

An early symptom of dollar spot is a lesion that forms a band across an infected leaf. Most of the lesion is lightly colored, but its edges are much darker. The lesions enlarge until leaves become blighted and then senesce. Unlike dollar spot on fairways and putting greens (i.e., low-cut turf), the diseased patches are not well defined at higher mowing heights. Their sizes reach self-regulated limits (typically 2-6 inches) and adjacent patches can coalesce. A widely infected area of high-cut turf often has an overall mottled appearance.

The pathogen is seldom lethal to turfgrass crowns so the plants will recover with cooler temperatures and lower humidity. An application of nitrogen coupled with adequate soil moisture hastens this process. However, the disease can again become bothersome if warm weather returns in the fall.

Far fewer fungicides are labeled for dollar spot on residential lawns than on golf courses, sports fields, and commercial lawns. The most notable omissions are chlorothalonil, a contact fungicide, iprodione, and vinclozolin, which are both dicarboximides labeled only for golf courses. Suspected dollar-spot resistance to fungicides on any turf sites other than golf courses has not been reported (Note: Please report any such suspicions to one of us).

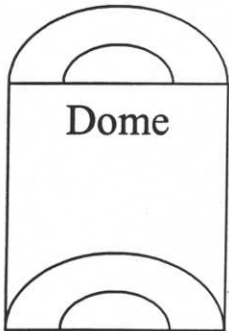
This study compares three rates of Headway, each at different timing intervals, as well as Heritage, and Armada (highest dollar-spot rate). It was funded by Syngenta Professional Products. The plot area is maintained as an irrigated home lawn at a 3-in height-of-cut. It receives ½-lb N/M monthly with the next application due shortly after Field Day. The plots are 6 ft by 9 ft and arranged in a randomized-complete block design with four blocks. The treatments are detailed in the following table:

Tmt.	Product	Product / 1,000 ft ²	AI / 1,000 ft ²	Interval (days)	Application Dates
1	Headway 1.3 MEC	0.75 fl oz	2.3 g propiconazole 1.4 g azoxystrobin	14	6/30, 7/14, 7/28, 8/11
2	Headway 1.3 MEC	1.5 fl oz	4.6 g propiconazole 2.8 g azoxystrobin	21	6/30, 7/21, 8/11
3	Headway 1.3 MEC	3 fl oz	9.2 g propiconazole 5.5 g azoxystrobin	28	6/30, 7/28
4	Heritage TL	2 fl oz	5.7 g azoxystrobin	28	6/30, 7/28
5	Armada 50WP	1.2 oz	14.2 g triadimefon 2.8 g trifloxystrobin	28	6/30, 7/28
6	Daconil Ultrex	3.2 oz	28.1 g chlorothalonil	14	6/30, 7/14, 7/28, 8/11
7	Control				

For comparison purposes, the following products and typical rates are shown:

Product	Product / 1,000 ft ²	AI / 1,000 ft ²
Banner Maxx 1.3 MEC	2 fl oz	9.2 g propiconazole
Bayleton 50 WP	1 oz	14.2 g triadimefon
Compass 50 WSP	0.2 oz	2.8 g trifloxystrobin

The plots have been rated for percent dollar spot on August 1 and August 10. Dollar-spot pressure activity in the control plots have been light to moderate. Excellent control is occurring with all the combination-product treatments. The Heritage plots have exhibited more dollar spot than the combination-product treatments but less than the control.



North ↑

Column →

→

Row ↓

A

B

C

D

1

1

2

4

3

2

4

3

6

5

3

5

6

1

4

7

2

7

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6

4

6

3

6

2

1

4

7

7

7

5

1

5

8

3

2

1. Headway ¾ fl oz every 14 days
2. Headway 1½ fl oz every 21 days
3. Headway 3 fl oz every 28 days
4. Heritage 2 fl oz every 28 days
5. Armada 1.2 oz every 28 days
6. Ultrex 3.2 oz every 14 days
7. Control