



**Disease MANAGEMENT Step 2**  
Maximising Plant Health

In order to counter this increase in Fusarium activity, without relying solely on repeated fungicide applications, Headland Amenity have pioneered an agronomic approach to disease management.



This approach is based on increased plant health and utilises preventative applications of plant elicitors and plant hardeners, applied prior to the main disease period. In addition to positive field feedback from end-users, the efficacy of this strategy is backed up by data from independent trials, conducted at the Sports Turf Research Institute (STRI).

**Plant Protectants**

Formulated to increase cell wall thickness and thereby make it more difficult for pathogenic fungi to enter the plant. Headland products in this category include Seamac Proturf, Liquid Turf Hardener and the high potassium liquid and water soluble fertilisers, Vertex K, Solufeed NK and Solufeed Hi-K.



**Plant Elicitors**

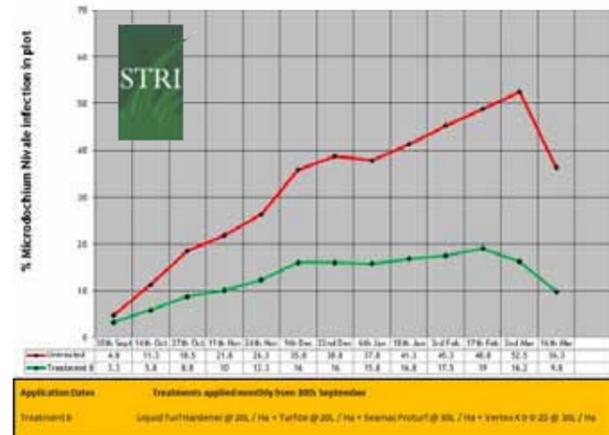
Formulated to trigger the natural defence mechanism of the plant, (SAR – Systemic Acquired Resistance) and thereby encourage the plant to grow better in the presence of a pathogen. Headland products in this category include Turfite and TeMag HPE.



**S.T.R.I. Trial Data**

Building on trial data from 2009 and 2010 using the successful '20-20-30 mix' combination of Turfite, Liquid Turf Hardener and Seamac Proturf respectively, trials conducted over the winter of 2011 / 2012 sought to improve further still. The graph below shows the efficacy of the above tankmix in green vs. untreated in red, remember no fungicides were used in this treatment to suppress disease.

In the latest trials, the addition of Vertex K 0-0-25 was seen to further enhance the 20-20-30 mix in terms of reduced disease activity and this is likely due to reduced leaf moisture levels and increased leaf hardness. Full details of the tankmix combination are shown below.



Plant Hardener tankmix			
Product	Application Rate	Water Volume	Mix Sequence
Seamac Proturf	30L / Ha	400L / Ha	1
Turfite	20L / Ha	400L / Ha	2
Liquid Turf Hardener	20L / Ha	400L / Ha	3
Vertex K 0-0-25	30L / Ha	400L / Ha	4

If active Fusarium is present, 10L / Ha of Surpass Pro can be added to above mix

Step 2

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# Autumn/Winter Disease MANAGEMENT



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Combating Fusarium over the Autumn and Winter period

# Disease MANAGEMENT

Combating Fusarium over the Autumn and Winter period

A strategy to manage Fusarium should not be based on fungicide alone as the severity and impact of this disease is also affected by the health of the grass plant, its level of nutrition, cultural practices and the presence of plant leaf moisture (Dew and Guttation Fluid).

Headland Amenity has pioneered a multi-layered, straight-forward and above all, cost-effective approach to Fusarium management using targeted applications of preventative fungicide in combination with plant elicitors and hardeners. This approach is based on successful end-user feedback, backed up by independent data from trials conducted at the Sports Turf Research Institute since 2007.

Fusarium Patch

## Disease Development Pattern and Fungicide Timing

To prevent Fusarium establishing in the autumn and become a recurring issue thereafter, it is critical to control the initial establishment phase of the disease which typically takes place in the U.K during early October and extends to mid-November.

In Ireland, this process typically starts 3-4 weeks earlier. It is during this period that the disease has the potential to establish a high population and if allowed to do so, achieving control thereafter through fungicide use is both difficult and expensive. You are effectively trying to close the stable door after the horse has already bolted.



## Changing weather patterns and their effect on disease

Over the last 40 years, changing weather patterns have affected the autumn season the most, with climate data indicating that this period is consistently warmer than in the past. This change brings both positives and negatives to turf management with a longer playing season but more aggressive autumn disease activity, in particular, with Fusarium Patch.

Of late, blocking patterns in the flow of the Jetstream allow extreme weather conditions to develop and persist, sometimes over months at a time. Last autumn was a good example of this, as a high pressure blocking event fixed the U.K and Ireland under a warm peak from September 2011 through to the end of March 2012 (see image left). Temperatures in the twenties extended right into November 2011 and New Year's Day was the mildest on record for many.

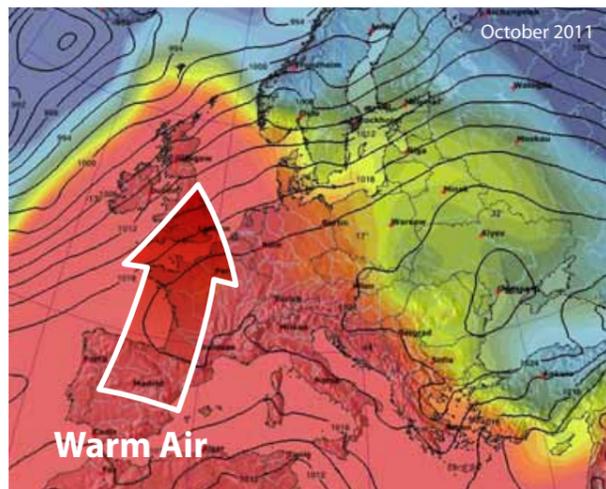


Image courtesy of Meteoblue.com

## Disease MANAGEMENT Step 1 An Effective Preventative Fungicide Program

An effective fungicide program needs to contain a full rate systemic fungicide to provide longevity of control, combined with a contact-penetrant fungicide that is effective at controlling disease even when it is inside the leaf. This latter point is very important because by the time you can visually identify disease it is already active inside the leaf itself.

In Throttle and Surpass Pro, Headland Amenity has two excellent products within their portfolio to provide both long-term and quick, curative control of Fusarium.

### Throttle Fungicide

MAPP No. 13900. Throttle contains 267g/l Prochloraz and 133g/l Tebuconazole.

Throttle combines two highly active fungicides in one formulation - Prochloraz and Tebuconazole. Recent experience has shown that the translaminar action of Prochloraz is extremely efficient when soil temperatures are above 10°C, avoiding the need to include an expensive supplementary fungicide in the mix. Longevity of control is provided by root uptake of the Tebuconazole portion of the formulation. Once soil temperatures begin to drop below 10°C (typically early November), Throttle should be supplemented in a tankmix with Surpass Pro to provide a systemic / contact combination.



### Surpass Pro

MAPP 15368. SurpassPRO contains 250g/l (23.0% w/w) Iprodione.

Surpass Pro provides both curative and preventative control of Fusarium by virtue of the long-standing and reliable active ingredient - Iprodione. Unlike contact protectant chemistries available on the market, the Iprodione in Surpass Pro works as a local penetrant and is able to control Fusarium even when it is inside the leaf epidermis. This is particularly important during the colder months of the winter when trying to control active disease.



### Maximising Fungicide Efficacy using TeMag HPE

TeMag HPE is a three-in-one product, containing 10% chelated iron, a full range of chelated micronutrients and the unique plant elicitor - Harpin. Harpin works by stimulating the plant to grow better under the general effects of stress and one of those stresses is fungal attack. Harpin itself does not directly affect the pathogen, nor does it enter the plant, rather it binds to receptors on the plant leaf and thereby triggers physiological processes within the plant itself. Harpin was primarily developed for the agricultural market where it has shown itself to promote yields and, most importantly, maximise the efficacy of fungicide treatments by encouraging stronger, healthier growth.



Use fungicides safely. Always read the label and product information before use. Please refer to the product label or our website for further technical information.

## Putting it all together in an effective program

1st Application - End of September			
Product	Application Rate	Water Volume	Mix Sequence
TeMag HPE	6kg / Ha	500L / Ha	1
Throttle	1.7L / Ha	500L / Ha	2

If soil temperatures are below 10°C, add 10L / Ha of Surpass Pro to above mix.

2nd Application – Typically 1st week November (4-5 weeks after 1st application)			
Product	Application Rate	Water Volume	Mix Sequence
TeMag HPE	6kg / Ha	500L / Ha	1
Surpass Pro	10 - 20L / Ha	500L / Ha	2
Throttle	1.7L / Ha	500L / Ha	3

