

Turf disease protection that stays cut, after cut, after cut...



 **HeritageMaxx[®]**

syngenta[®]



Contents

Take Turf Disease Control to the Maxx	3
The Maxx Formulation Advantage	4
Faster Activity	6
Heritage Maxx Application Timing	8
Heritage Maxx Enhances Plant Health	9
How to use Heritage Maxx	10
Heritage Maxx Application Advice	11
Summary	12



Take Turf Disease Control to the Maxx

For peak performance turf disease control you need Heritage Maxx

Now featuring the unrivalled Syngenta Maxx formulation technology, Heritage Maxx has taken the world's top selling fungicide active ingredient, azoxystrobin, to a new level to consistently deliver exceptional turf quality.

Get the Maxx for faster, more direct and longer lasting turf disease control.

Heritage Maxx

- Active recycling gives long lasting effects
- Exceptional easy-to-use Maxx formulation
- Faster and more complete uptake by leaf and root
- Systemic protection against foliar and soil diseases
- Magnificent SEVEN turf diseases on the label



Disease protection that stays cut, after cut, after cut...

Heritage Maxx has the broadest spectrum of turf diseases on the label and with no LERAP is the easiest to use

Label Approved Diseases	Heritage Maxx	Pyraclostrobin	Trifloxystrobin	Iprodione
Fusarium Patch	✓	✓	✓	✓
Anthrachnose	✓	✓	✓	✓
Brown Patch	✓	✗	✗	✗
Leaf Spot/Melting out	✓	✓	✓	✓
Rusts	✓	✗	✗	✗
Take All Patch	✓	✗	✗	✗
Type 2 Fairy Ring	✓	✗	✗	✗
LERAP	No LERAP	Category B restriction	Category B restriction	Category B restriction



The Maxx Formulation Advantage

The unique Syngenta Maxx formulation has been specifically designed for turf applications

The advantages of the Maxx formulation include:

- Outstanding turf safety
- Increased and enhanced product uptake
- Very stable in the sprayer tank
- An easy to use liquid formulation
- Compatible and easily mixable with other products

Manufactured exclusively by Syngenta, the precision manufactured sub-micron particles of active ingredient in the Maxx formulation ensure fast uptake and quick effects. Typically over 1,000 Heritage Maxx micelles would fit across the leaf opening of a single turf stomata.

The fine particle formulation is very turf-safe and causes minimal stress to the plant as the active gets into the leaf and starts to work.

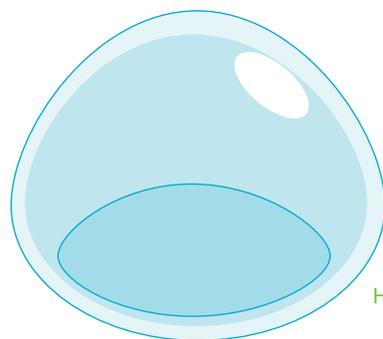
The Maxx brand is only available in Syngenta turf products. Other products in the Maxx family include the fast acting fungicide, Banner Maxx, and the UK's leading turf growth regulator, Primo Maxx.



Fig 1. Conventional turf fungicide AI particles can be too big to pass into turf leaf stomata. With Heritage Maxx over 1400 AI particles can fit across each stomata.

Maxx formulation - Moves faster for quicker activity

If this represents a droplet of standard formulation...



Note: Drawn to scale



...this is a micelle of Heritage Maxx upon dilution

Maxx formulation for faster uptake

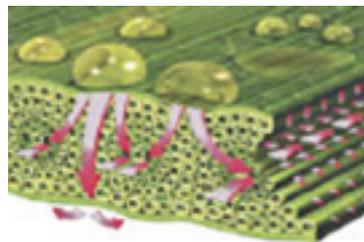


Fig 2. Schematic presentation of the mobility of Heritage Maxx with plant tissue, including Xylem systematics (red arrows)



Easy-to-use Maxx liquid formulation of new Heritage Maxx – with the exclusive Maxx sub-micron particle size – is more readily absorbed by the leaf.

Faster uptake and movement = quicker activity against disease pathogens infecting turf.

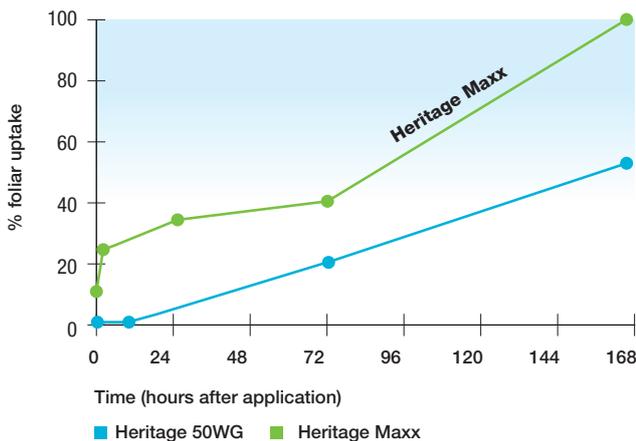
The Maxx formulation safely bonds the active molecules onto the leaf surface – quickly making Heritage Maxx safe from wash-off by rain or irrigation. The reservoir of active on the leaf surface is then taken up by the plant and quickly gets to work to tackle disease.

In trials, 30% of the active from the liquid Heritage Maxx formulation had already been absorbed into the plant the day after application, compared to less than 5% with the granular formulation. After 72 hours over 40% of the Heritage Maxx was in the plant and working, compared to less than 20% with the granular formulation.

For the maximum possible efficacy 100% of the active applied on the leaf was taken up to by the plant a week after application with the liquid Heritage Maxx formulation, compared to 60% with the granular formulation.

Faster foliar uptake

Uptake of Heritage Maxx is faster and more complete than granular Heritage

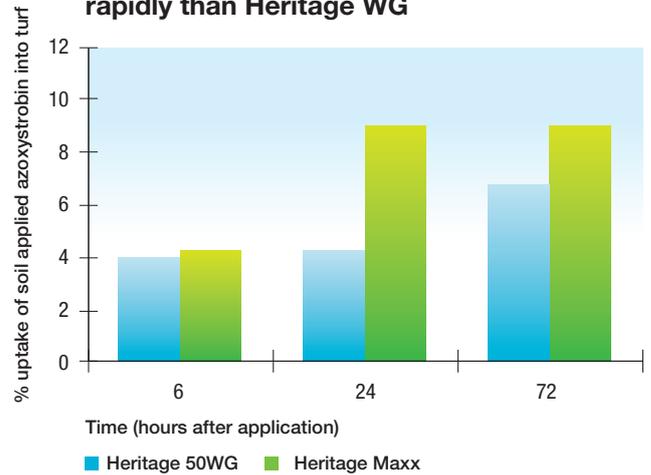


Source: Syngenta Jealotts Hill

Trials have also shown faster root uptake of the new Heritage Maxx formulation, with up to twice as much active absorbed and getting to work in the plant 24 hours after soil application, compared to granular Heritage.

Root uptake – Systemic movement to foliage

Heritage Maxx is absorbed by roots and translocated to the leaves more rapidly than Heritage WG



Source: Syngenta Jealotts Hill

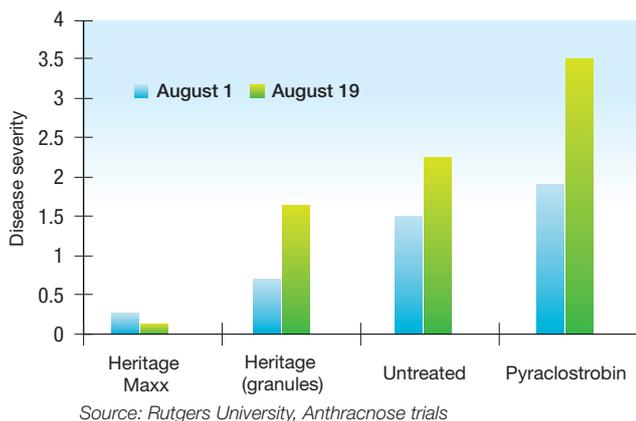
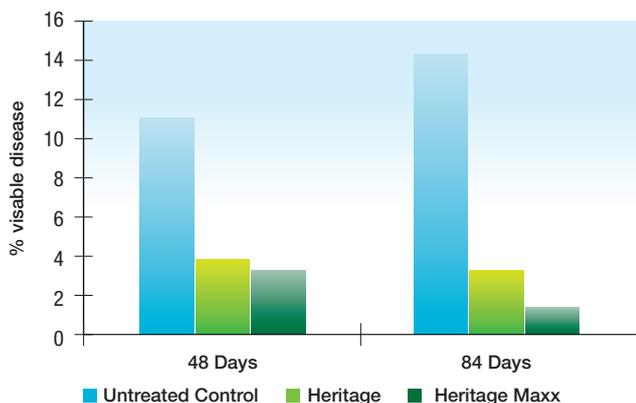


Faster Activity

Maxx gives more

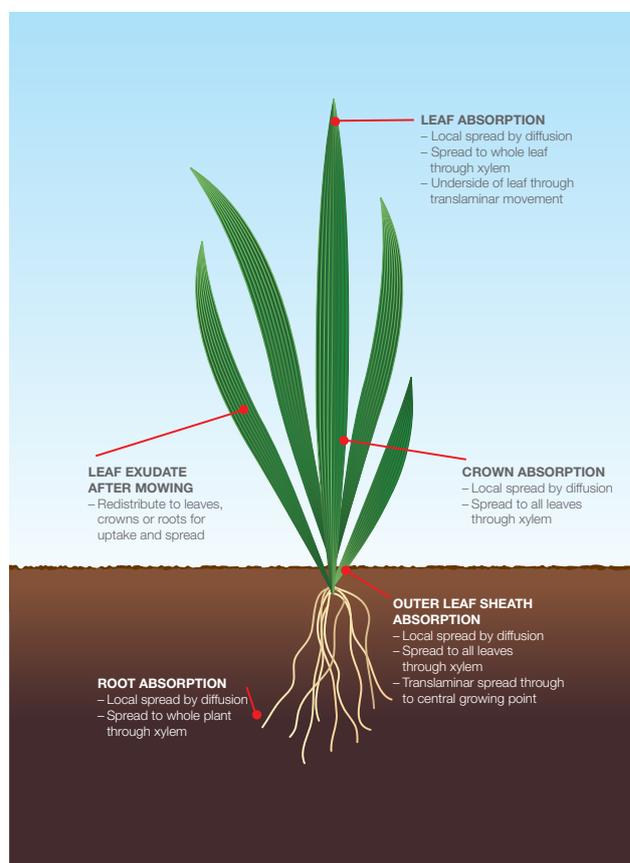
Now the renowned turf disease control of Heritage has got even better. Faster uptake and rapid movement through the plant means Heritage Maxx quickly gets to the site of infection and starts to tackle disease spores before damage is caused.

Improved disease control



Trial results (below left) have shown that with Fusarium Patch – the most prevalent turf disease in the UK – and even difficult to control Anthracnose, the new liquid Heritage Maxx can be more effective in preventing disease and maintaining turf quality, compared to the granular formulation.

Five-way turf disease protection



Exceptional turf plant safety

The new turf specific Heritage Maxx is highly active on turf diseases, but extremely safe on all species of turf grass.



Root uptake captures more

The unique root uptake of Heritage Maxx gives the added advantage of tackling soil and root diseases at the source, ensuring maximum uptake and use by plants. Any Heritage Maxx spray which lands on thatch within the turf sward and washed down into the root zone can be readily taken up by the roots and systemically translocated up through the plant ¹. This provides enhanced long-term disease control on new leaf growth.

Other fungicides which end up in the thatch or soil on application are prone to being washed down through the soil profile and wasted.

With the root uptake and movement of Heritage Maxx, more of the active is captured and fully utilised by the plant, with less risk of environmental loss into the soil.

¹ Ref: 'Biokinetics of Heritage Maxx' – Karen Meade, Biokinetics Research Scientist, Syngenta

Stable active

The new formulation of Heritage Maxx remains very stable once absorbed into the leaf and is slow to breakdown within the turf plant. This ensures that the inherently high level of activity against turf disease is still present weeks after application. In trials 90% of absorbed Heritage Maxx remained as the parent molecule in the leaf three weeks after application ².

² Ref: 'Heritage unique uptake and redistribution' – David Bartlett, Biokinetics Group Leader, Syngenta

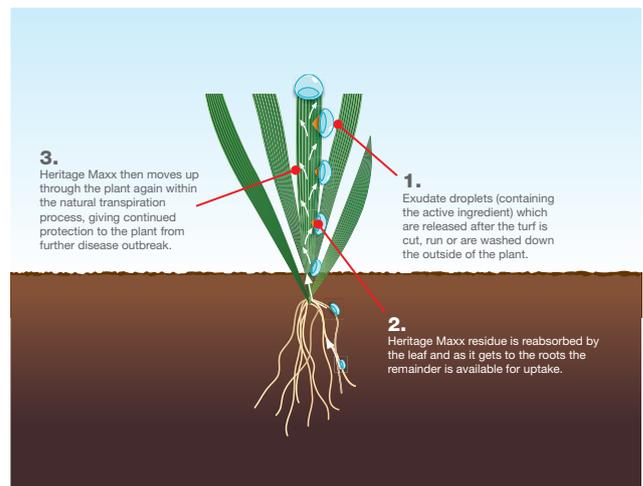
Outstanding systemic properties

The optimised systemicity of Heritage Maxx has key benefits for turf health and disease protection by:

- Rapid local distribution through diffusion
- Translaminar movement through leaves
- Smooth and even redistribution in the xylem
- Universal distribution with no accumulation at leaf tips or margins
- Xylem movement to new growth

- Persistent delivery of fungicide activity after cutting
- Potential for recycling of active exudated from xylem after cutting

Active recycling cut after cut



After cutting, any xylem exudate containing Heritage Maxx may be reabsorbed by the leaf and recycled within the plant to further protect from disease for longer. Furthermore, any active washed down into the root zone by rain or irrigation may be root absorbed, tackling soil-borne pathogens and reworking its way back through the plant to combat foliar disease.

The movement of Heritage Maxx within the xylem will ensure optimum protection at the cut end of the leaf, which is the point most susceptible to disease ingress.

Heritage Maxx Application Timing

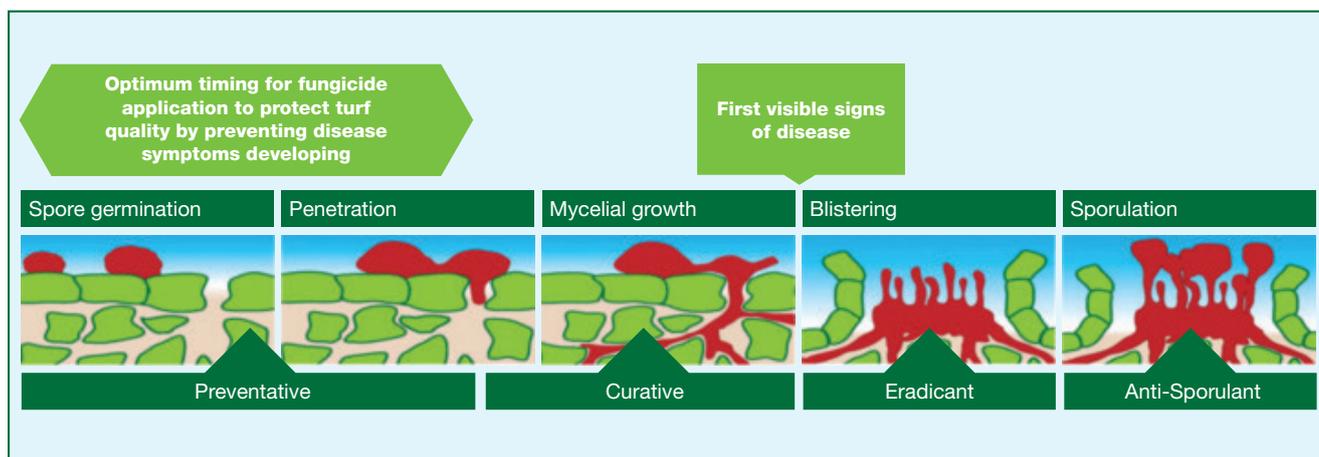
Clean leaf finish

The exceptional Heritage Maxx formulation with its sub-micron particle size fully disperses within the spray tank, to create a clear liquid spray and no residue on the leaf after spraying.

There is no need for any interruption in use of turf playing surfaces and no visual evidence of treatment. The Heritage Maxx formulation contains no volatile adjuvants and is virtually odourless, leading to fewer comments during or after use.

Proactive disease control

Heritage Maxx is a potent spore inhibitor fungicide that stops disease spores germinating – before they upset plant health or cause any damage to the playing surface. Heritage Maxx is ideally suited to a proactive disease management programme, applying at times of disease risk when spores are likely to attack, but before they have germinated.



To maintain the greatest possible turf quality Heritage Maxx is best applied preventatively, at times of high risk when disease is active, but before symptoms break out on the leaf surface

Heritage Maxx applied once disease is visible will protect surrounding clean leaves. Anti-sporulant activity will help prevent spore production and stop spread, but some damage to plants and turf quality will have already occurred

To optimise timing of Heritage Maxx applications and maintain the best possible turf quality, use the Syngenta website www.greencast.co.uk to identify periods of high risk for all major UK turf diseases.

STRI trials have shown that proactive timing of Heritage Maxx using the GreenCast turf disease forecasting system can maintain better turf quality from fewer applications and at lower cost over the course of the season, compared to routine applications or treatment at the first signs of infection.

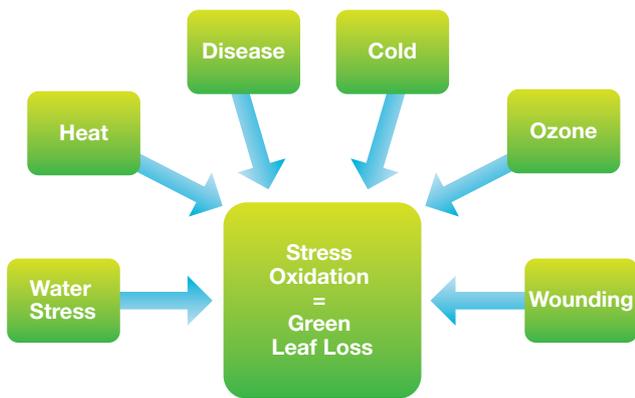
Where disease has already broken out on the leaf surface, Heritage Maxx has proven to be effective in preventing further spore production from the lesions; thus helping to limit further infection. Heritage Maxx also quickly targets infection in neighbouring turf plants, to help stop disease spots getting larger and coalescing into patches of turf loss that can seriously affect playing surface quality.



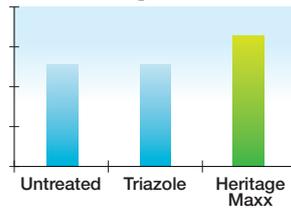
Heritage Maxx enhances plant health

The highly effective disease control and physiological effects of Heritage Maxx help turf plants remain photosynthetically active during periods of stress and retain green leaf area for longer.

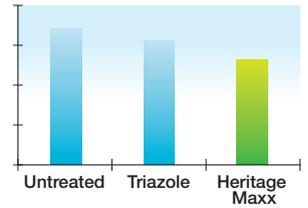
UK trials at the Syngenta International Research Centre have shown that increased CO₂ assimilation and decreased transpiration, as a result of physiological changes within treated plants, leads to greater water use efficiency.



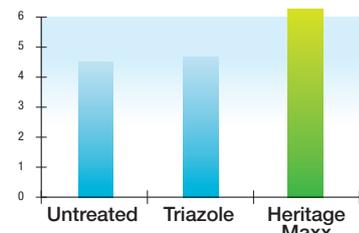
Increased CO₂ assimilation



Decreased transpiration



Water use efficiency (nominal units)



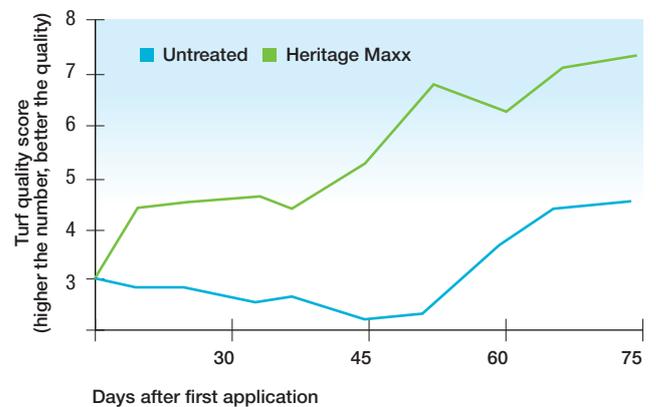
Trial carried out at Jealotts Hill - 2005

Increased CO₂ Assimilation + Decreased Transpiration = Increased Water Use Efficiency (WUE)

The benefit for turf managers is consistently higher turf quality that stays looking good and playing well through periods of stress.

Heritage Maxx for better turf quality

STRI trials have repeatedly shown that appropriately timed Heritage Maxx applications deliver consistently better turf quality.





Art of Application

CALIBRATE | SPRAY | REPORT | DELIVER

How to use Heritage Maxx

Syngenta Turf Foliar Nozzle

Fusarium Patch, Anthracnose, Brown Patch, Leaf Spot, Rusts, Take-all patch and Type 2 Fairy Ring



Recommended Option

- Droplet spectrum designed to maximise spray retention on the leaf
- Optimum droplet size for leaf coverage
- Excellent drift reduction
- Designed to work at lower water volume, compared to conventional flat fan nozzles
- Typical water volume giving optimum results – 200–400 l/ha
- Retains spray pattern characteristics at faster operating speeds

Alternatively apply in water volume of 300–500 l/ha using a flat fan nozzle.

Application rate: 2.5 l/ha

For spot treatment with knapsack or pedestrian sprayers use 25 ml Heritage Maxx in 8–10 litres of water to treat an area of 100 sq m.

Treat for foliar diseases when turf is actively growing and conditions are favourable for disease infection, or at the very earliest stages of disease symptom expression.

Repeat applications through the growing season according to risk and disease pressure.

Heritage Maxx Application Advice

Heritage Maxx Programmes

To fully utilise the fast uptake and movement of Heritage Maxx for foliar disease apply during periods of active turf growth, typically from early May through to the end of October.

Trials have shown for the best results on soil-borne diseases make two applications of Heritage Maxx on areas susceptible to disease attacks in late spring, followed by two applications in early autumn. Aerate and a good quality wetting agent prior to application.

The root uptake and systemic movement of Heritage Maxx means that applications for soil diseases will also provide simultaneous protection from foliar disease attacks.

During periods of slow turf growth – in winter or prolonged dry weather - use a contact fungicide, or combined contact and systemic, such as in Instrata.

To maintain the long-term efficacy of Heritage Maxx turf managers should adopt a robust resistance management programme. Heritage Maxx is a strobilurin from the QOI group of fungicides. Aim to alternate Heritage Maxx applications using a fungicide with a different mode of action, such as Banner Maxx or Instrata. Do not apply more than two sequential Heritage Maxx applications.

Restrict use to no more than four applications of Heritage Maxx per season and not to exceed one third of the total number of fungicide applications.

Refer to the GreenCast website – www.greencast.co.uk – for full information on fungicide programmes, resistance management and the use of Heritage Maxx as part of an Integrated Turf Management programme.

Heritage Maxx Environmental Profile

The active ingredient in Heritage Maxx – azoxystrobin – is derived from the naturally occurring fungicidal activity of forest mushrooms. A modern fungicide that has undertaken the most rigorous assessments during its development and registration, Heritage Maxx has a very favourable environmental fate profile.

Azoxystrobin is moderately persistent in soil and has a moderate mobility in soil. Use of Heritage Maxx according to the label recommendations presents a low risk to groundwater.

In the new registration process Heritage Maxx has:

- ✓ **PASSED risk assessments on birds or mammals**
- ✓ **PASSED risk assessments on beneficial insects**
- ✓ **PASSED risk assessments on soil organisms**
- ✓ **PASSED risk assessments on aquatic species**

The environmental profile means Heritage Maxx is suitable for use within Integrated Turf Management Programmes. Always apply in accordance with the Amenity Best Practice for Pesticide Application.

Three-litre S-pac gives you more

Heritage Maxx is supplied in the innovative Syngenta S-pac. The simple, safer and more secure new S-pac is:

- Faster to open and use
- Robust and safer to handle
- Quick and simple to rinse clean
- Fully recyclable

The Syngenta S-pac has eliminated the need for awkward foil heat seals, making the containers easier to open and eliminating the hazardous waste foils.

Furthermore, the three litre pack covers 1.2 hectares at the application rate of 2.5 l/ha.



Take Turf Disease Control to the Maxx

- Exceptional easy-to-use Maxx formulation
- Faster and more complete uptake by leaf and root
- Active recycling gives long lasting effects
- Systemic protection against foliar and soil diseases
- Magnificent SEVEN turf diseases on the label



Disease protection
that stays cut, after
cut, after cut...

www.greencast.co.uk / www.greencast.ie

Syngenta Crop Protection UK Ltd. Registered in England, No 849037. CPC4, Capital Park, Fulbourn, Cambridge, CB21 5XE.
Email: customer.services@syngenta.com **Web:** www.greencast.co.uk / www.greencast.ie

Banner Maxx®, Heritage Maxx®, Instrata® and Primo Maxx® are Registered Trademarks of a Syngenta Group Company. Banner Maxx (MAPP 13167) contains propiconazole. Heritage Maxx (MAPP 14787, PCS 03978) contains azoxystrobin. Instrata (MAPP 14154) contains chlorothalonil, propiconazole and fludioxonil. Primo Maxx (MAPP 14780, PCS 02273) contains trinexapac-ethyl. All other brand names used are trademarks of other manufacturers in which proprietary rights may exist. **Use plant protection products safely. Always read the label and product information before use.** © Syngenta AG July 2020. GQ 11011.

ICL Distributed in the UK and Ireland by ICL Ltd.
Tel: 01473 201100 **Email:** prof.sales@icl-group.com **Web:** www.icl-sf.co.uk / www.icl-sf.ie