



The science behind nature

RYDER takes inspiration from nature to
deliver optimum turf quality all year round



syngenta®

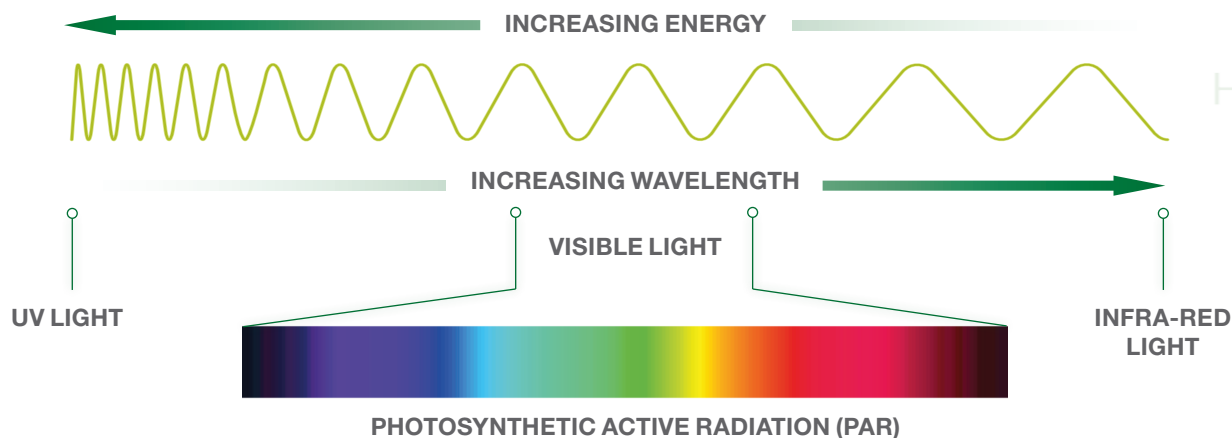
Science behind photosynthesis

All plants need the right amount of sunlight, in the specific wavelength, to thrive. In particular, only PAR light (photosynthetically active radiation, 400-700nm) will drive photosynthesis.

The challenge for golf courses in the tropics is to receive the optimum amount of sunlight. During the low light season, plants are unable to attract enough PAR light to photosynthesise efficiently.

On the other hand, during periods of excessive light, plants are exposed to harmful UV radiation. This causes free radicals to attack and damage the plant's proteins, which inhibits photosynthesis.

Plants are even more susceptible to this type of damage when they are in a stressful environment.



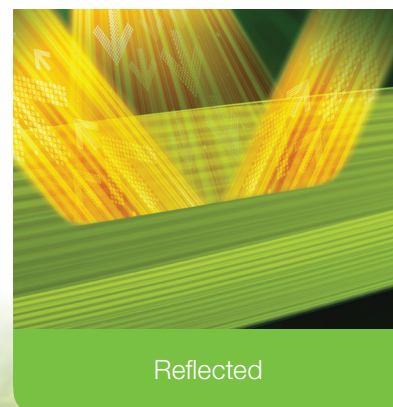
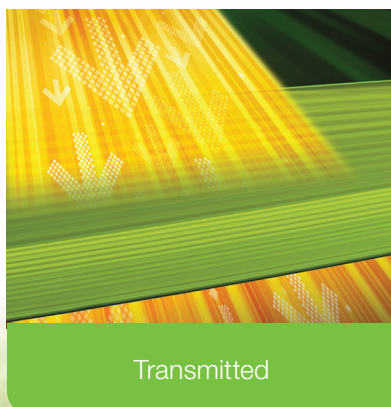
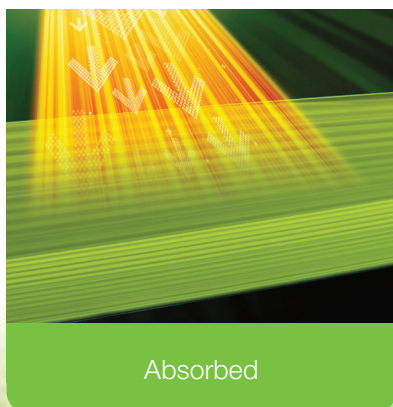
Introducing RYDER® Turf Pigment

Imitating nature for better plant health

RYDER helps solve this problem by mimicking nature.

When turf experiences light stress, it naturally creates extra pigments to absorb excessive light and ensure the plant remains healthy. RYDER imitates these naturally-occurring pigments, maximising the plant's ability to photosynthesise while delivering protection against harmful UV radiation and high light intensities. By harnessing nature's own responses, RYDER delivers healthy and natural-looking turf for optimum quality – all year round.

RYDER INFLUENCES HOW LIGHT CAN BE ABSORBED, TRANSMITTED OR REFLECTED IN THE LEAF



How RYDER works

RYDER is a UV regulator that can be used in every season on turf. By imitating naturally-occurring pigments in the plant, it guards against UV radiation and increases photosynthetic efficiency.

RYDER also enhances the plant's ability to withstand stressful environments: drought, heat, shade, salinity.

Applying RYDER helps plants photosynthesise more effectively and studies from the University of Massachusetts have found Ryder increases turf health during stressful environment.

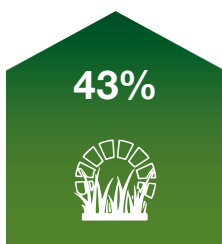


UNDER CONDITIONS OF HEAT STRESS RYDER DELIVERED:

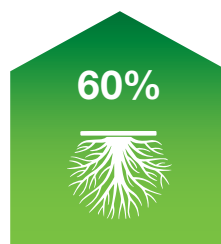
Controlled environment growth chambers, Poa annua, University of Massachusetts 2014.



Increase in chlorophyll



Increase in photosynthetic efficiency



Increase in root mass



Increase in turf quality

Protection against harmful UV radiation

Using the latest generation of technology, RYDER imitates naturally-occurring turf pigments to filter, reflect and protect against high intensity light and UV radiation. This helps protect plant membranes and proteins, including chlorophyll, which is fundamental for photosynthesis.

ULTRAVIOLET (UV) LIGHT DAMAGES PLANTS

- Can directly damage photosynthetic proteins and pigments
- Directly damages DNA and can cause deleterious mutation



Control light



UV light exposure

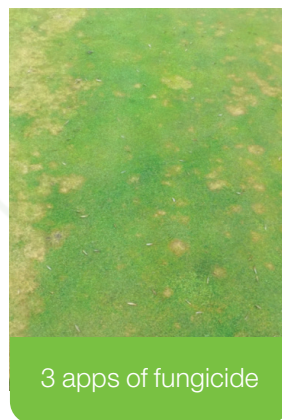
Increased photosynthetic efficiency

RYDER increases the chlorophyll content, which helps pre-condition turf for better photosynthetic efficiency during low-light periods. This optimises turf growth, even during the monsoon season when PAR light is scarce.

Increase fungicide efficacy

Research shows that applying RYDER increases the efficacy of your fungicide program with better product uptake and retention, and prolonging the re-application interval. This results in significant savings on treatment programs, leaving you with more room in your budget for other things.

*Irish sports turf institute 2018. 15th Feb 2019
- 12 weeks after last application Microdochium trial.*



Natural-looking turf

RYDER has been successfully used in preparation of major golf tournaments and events, such as the Ryder Cup 2018. It provides you with a range of colour intensity for your turf, which you can adjust by varying RYDER's application rate and treatment frequency. By integrating RYDER into your fertiliser and chemical program, your turf will not only be healthier, but also display a desirable colour for an incredible yet natural visual effect.



Application recommendation

Use higher rates for deeper green colour and higher heights of cut.
For superior coverage apply half recommended rate in each of two directions (90° opposite directions).

Situation	Application rate	Water volume
Greens and Turf maintained at under 12 mm	0.75 – 1.5 L/ha	250-500 L/ha
Turf maintained above 12 mm	1.0 – 2.0 L/ha	250-500 L/ha



For more information contact your Syngenta Agent or Syngenta Technical Support at GreenCast.SG@Syngenta.com

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