

Lexicon® Intrinsic® Brand Fungicide Technical Manual

Perfect turf, powered from within

contents

Innovation that solves your toughest challenges

BASF is dedicated to investing in research that produces quality solutions. For over 150 years, we have developed innovations that help to solve your most pressing challenges, supported by research and an experienced sales and technical team. BASF together with Globe Growing Solutions are focused on investigating and delivering best in class innovations and solutions to the Australian Turf Industry.

***Lexicon® Intrinsic®** Brand Fungicide is the first in a range of groundbreaking fungicides to be introduced in Australia. We are excited to introduce this revolutionary technology and look forward to bringing new technologies to you in the near future.*

Dr. David Elmouttlie

Business Manager

BASF Professional and Specialty Solutions

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Lexicon Intrinsic brand fungicide, the future of disease control today

Lexicon Intrinsic brand fungicide delivers peak disease performance under pressure. This groundbreaking fungicide optimises disease control and provides advanced plant health benefits for longer, stronger roots, increased growth efficiency, and greater stress tolerance. The result is championship conditions on your greens, all year long.

Lexicon Intrinsic brand fungicide controls a wide variety of key turf diseases, including fairy ring, dollar spot, brown patch, *Pythium* and *ERI*'s.

Key Features and Benefits:

- Broad-spectrum control of 9* diseases
- Long residual of up to 28 days
- Advanced plant health benefits
- Foundational product for greens



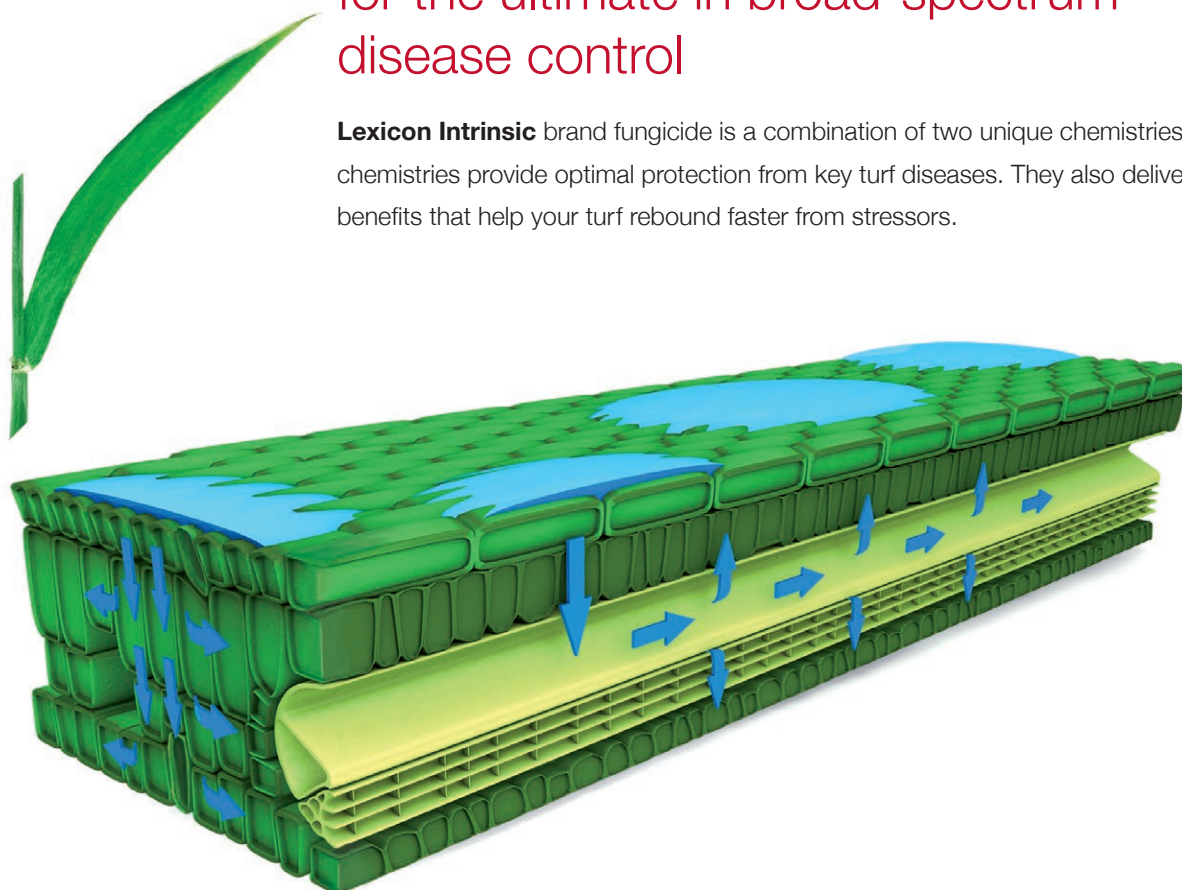
For Use on All Major Turfgrass Sites:

- Golf courses
- Sports and athletic fields
- Parks and recreational areas
- Residential lawns
- Commercial and municipal lawns
- Institutional lawns
- Cemeteries
- Turf farms
- Other maintained turfgrass areas

* Further label extensions in development.

Two powerful chemistries for the ultimate in broad-spectrum disease control

Lexicon Intrinsic brand fungicide is a combination of two unique chemistries. These two chemistries provide optimal protection from key turf diseases. They also deliver plant health benefits that help your turf rebound faster from stressors.



Lexicon Intrinsic brand fungicide, for quick knockdown and long residual

above:

***Lexicon Intrinsic** brand fungicide travels systemically within turfgrass leaves, distributing powerful, long-lasting disease control.*

Most fungicides on the market provide either quick knockdown or long residual.

Lexicon Intrinsic brand fungicide provides both benefits.

In addition to being tightly bound to the waxy leaf surface, making it rainfast within 2 hrs, this innovative fungicide is redistributed to areas of the leaf that are not directly sprayed. Its unique molecular design lets it enter the transpiration stream and travel systemically within the leaf. This redistribution, along with its high level of activity, ensures long-lasting preventive and curative effects from **Lexicon Intrinsic** brand fungicide, resulting in reliable, more consistent disease control.

Greater disease control for greater peace of mind

Healthy turf is strong, disease-resistant and resilient, which is the kind of quality turf you can expect from **Lexicon Intrinsic** brand fungicide. Research has shown that this fungicide provides excellent control of 9* key diseases on turfgrass. Whatever the season, your turf has protection from the toughest challenges, and you have peace of mind.

Powerful residual — **Lexicon Intrinsic** brand fungicide controls 9* diseases for up to 28 days, providing the confidence that comes with long-lasting control.

Broad-spectrum foundation — With its broad-spectrum control, this fungicide is the perfect foundation for enhancing the overall performance of your spray program.

More resilient greens — **Lexicon Intrinsic** brand fungicide provides championship conditions and faster recovery from stressors like heat, humidity, drought, heavy play and aeration.



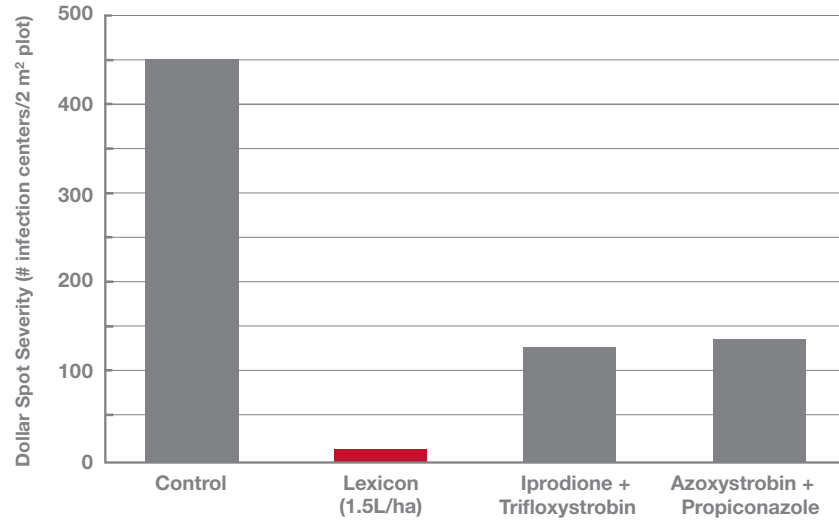
* Further label extensions in development.



above:
Dollar spot
(*Sclerotinia*
homoeocarpa)

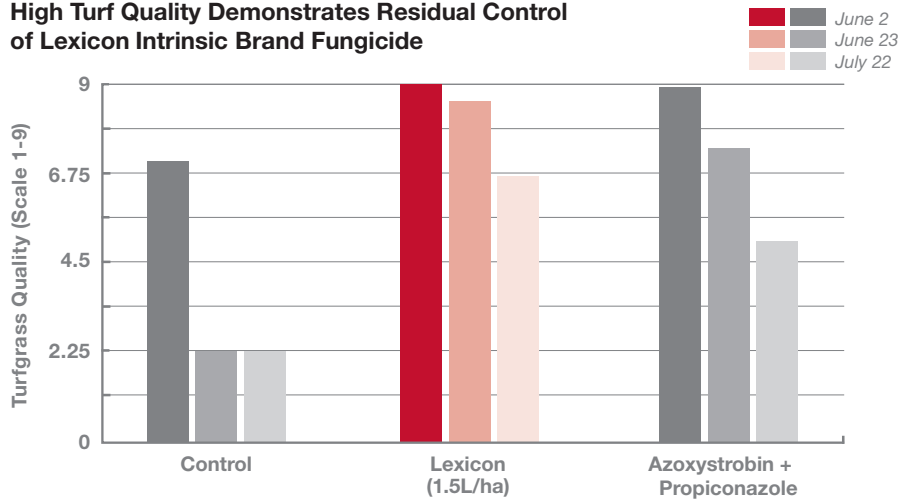
Lexicon Intrinsic brand fungicide

Lexicon Intrinsic Brand Fungicide Delivers Superior Dollar Spot Control versus other fungicides



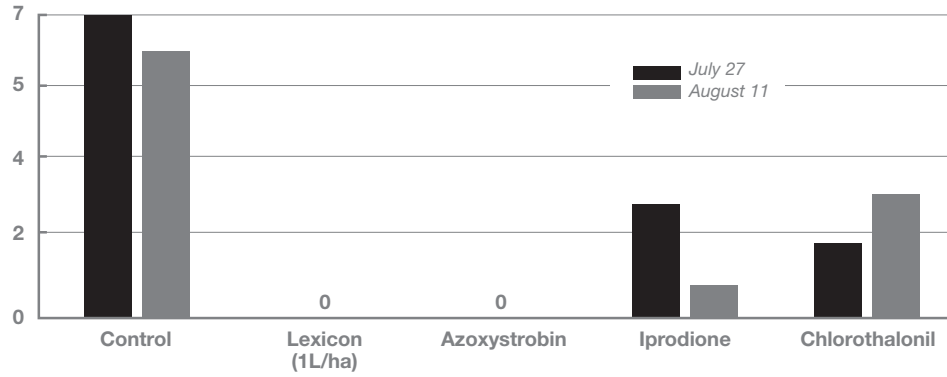
Source: Dr. Rick Latin, Purdue University, 2014.

High Turf Quality Demonstrates Residual Control of Lexicon Intrinsic Brand Fungicide



Source: Dr. Bruce Martin, Clemson University, 2014.

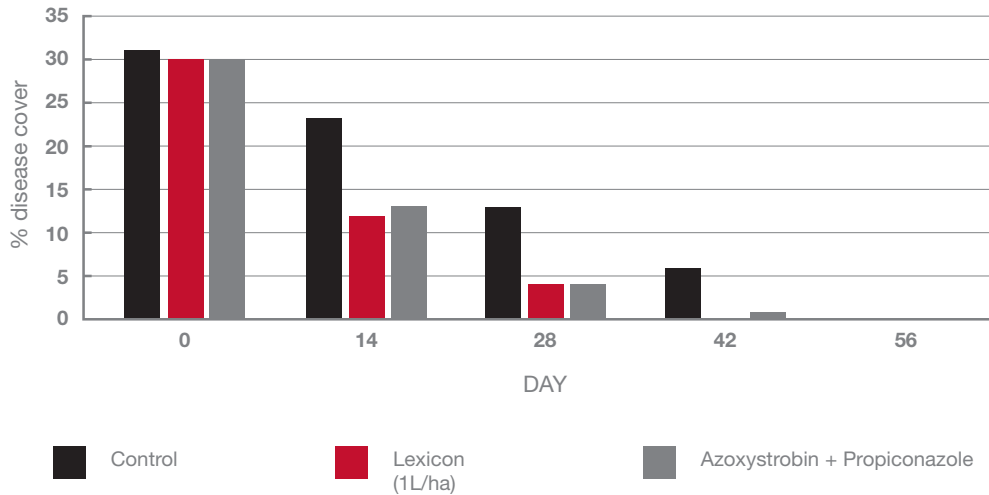
Lexicon Intrinsic Brand Fungicide Provides Outstanding Brown Patch Control on Bentgrass



above:
Brown patch
Photo: Dr. Henry Wetzel, Consultant

Initial application on July 13, 2012.
Ratings = brown patch severity index 0-10. 10 = >90% brown patch.
Source: Penn State University, 2012.

Lexicon Intrinsic Brand Fungicide Outperforms On Control Of Dollar Spot (*Sclerotinia homeocarpa*).

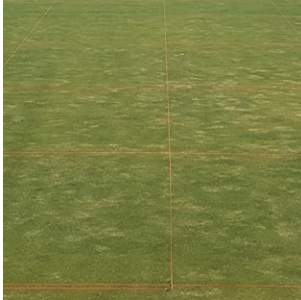


above:
Dollar spot
(*Sclerotinia homoeocarpa*)

Initial Application: Day 0
Second Application: Day 28 - Lexicon
Day 21 - Azoxystrobin + Propiconazole

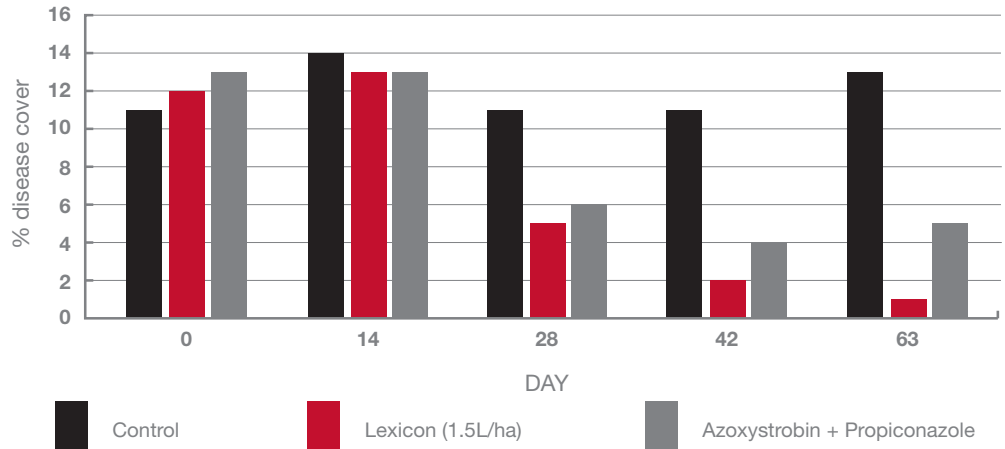
Source: STRI Australia 2017-2018

Lexicon Intrinsic brand fungicide



above:
ERI
Photo: STRI Australia

Lexicon Intrinsic Brand Fungicide Outperforms On Control Of ERI - Spring Dead Spot (*Ophiosphaerella narmari*) & Take-all Patch (*Gaeumannomyces graminis var avenae*).



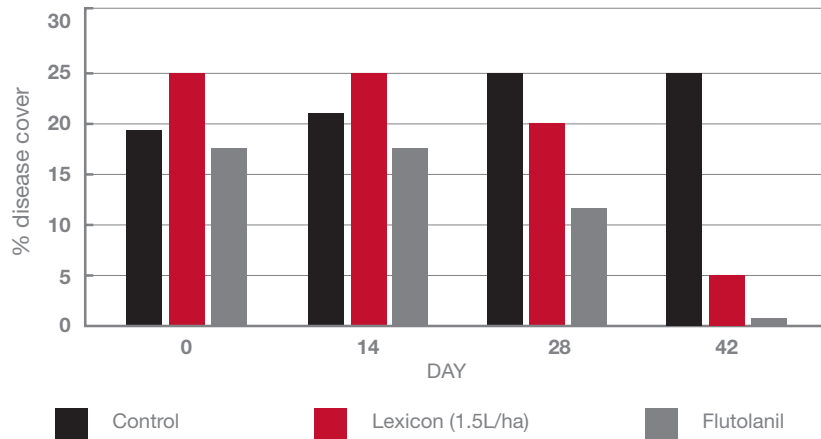
Initial Application: Day 0
Second Application: Day 28 - Lexicon
Day 21 - Azoxystrobin + Propiconazole

Source: STRI Australia 2017-2018



above:
Fairy Ring
Photo: STRI Australia

Lexicon Intrinsic Brand Fungicide Outperforms On Control Of Fairy Ring (*various Basidiomycete fungi*)

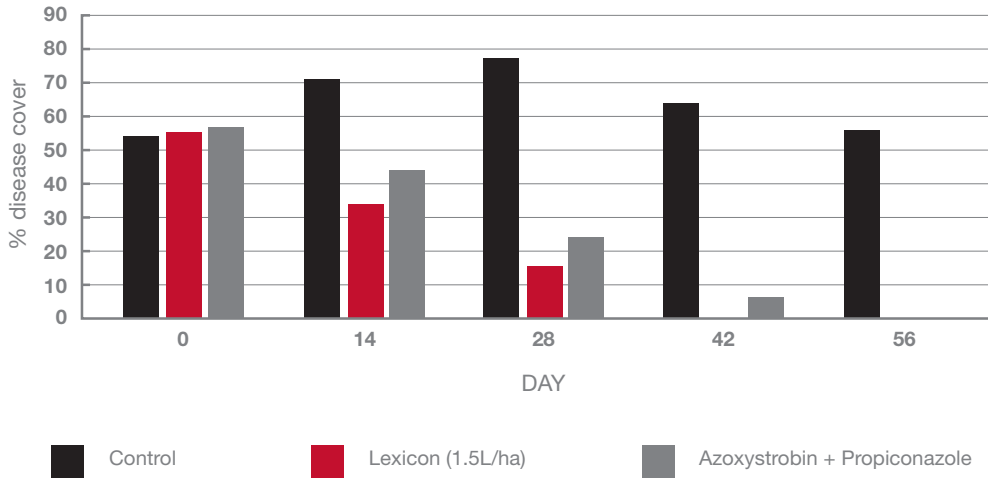


Initial Application: Day 0
Second Application: Day 28 - Lexicon
Day 21 - Flutolanil

Trial cut short due to renovations.
Lexicon applied at 1600L/ha water rate
Flutolanil applied at 4000L/ha water +soil wetter

Source: STRI Australia 2017-2018

**Lexicon Intrinsic Brand Fungicide
Outperforms On Control Of Pythium (*Pythium sp.*)**



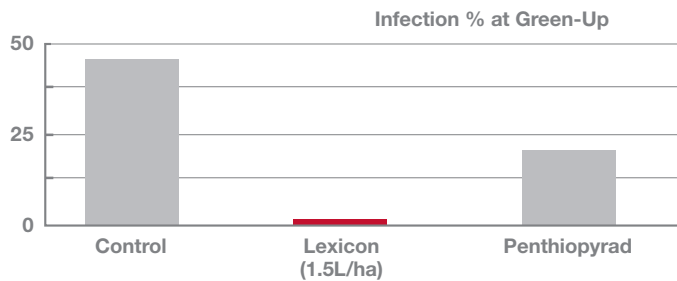
Initial Application: Day 0
 Second Application: Day 28 - Lexicon
 Day 21 - Azoxystrobin + Propiconazole

Source: STRI Australia 2017-2018

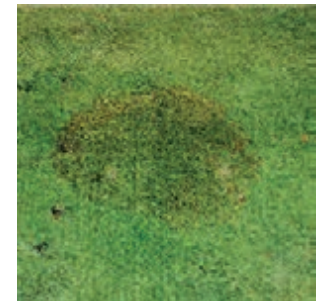


above:
 Pythium
 Photo: Globe Turf Solutions

**Lexicon Intrinsic Brand Fungicide
Outperforms On Control Of Brown Patch**



Source: NC State University, Dr. J. Kerns and Lee Butler, 2015 - 2016



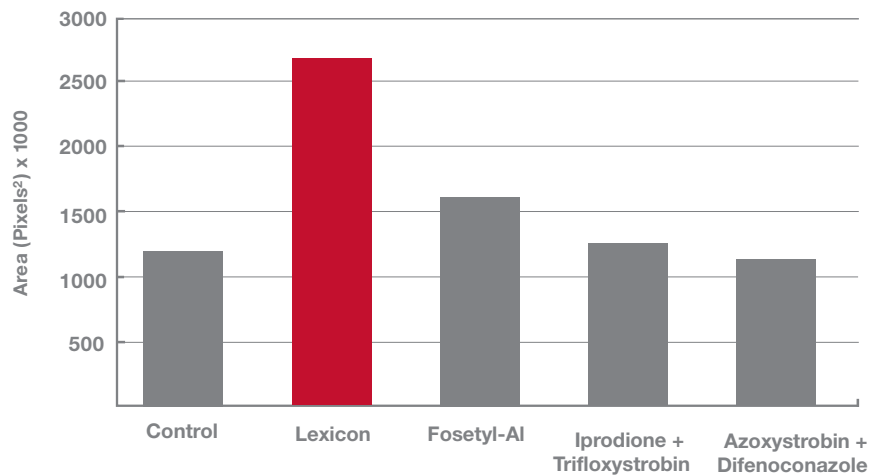
above:
 Brown patch
 Photo: Dr. Henry Wetzel,
 Consultant

Intrinsic brand fungicides, for turf that's healthy and fit

Intrinsic brand fungicides deliver optimal disease control and plant health benefits that improve turf fitness. These innovative fungicides maximise the photosynthesis process in turfgrass, leading to stronger, longer roots, greater growth efficiency and turf that recovers more quickly from stress. Your turf will have the resilience to bounce back from tough environmental conditions like heat, humidity and heavy play, as well as mechanical stresses like aeration.

Lexicon Intrinsic brand fungicide provides broad-spectrum control of 9* diseases, with up to 28 days of residual control. Wherever your region and whatever your challenges, **Lexicon Intrinsic** brand fungicide delivers quality that keeps disease in check and turf healthy.

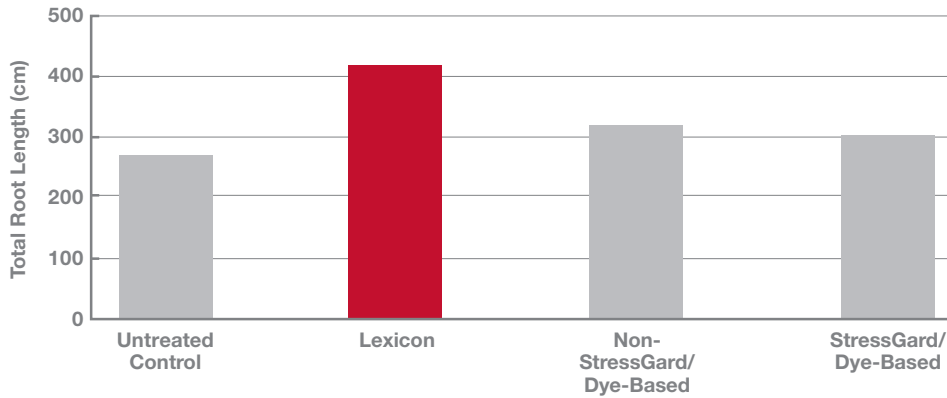
**Lexicon Intrinsic Brand Fungicide
Provides Enhanced Coverage at Grow-In**



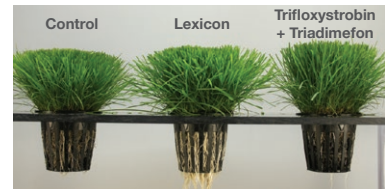
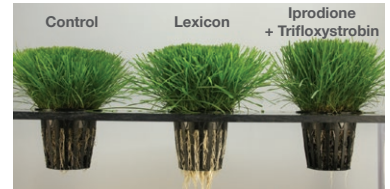
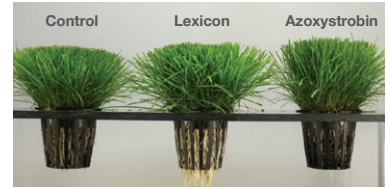
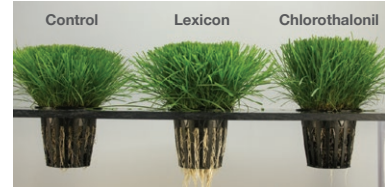
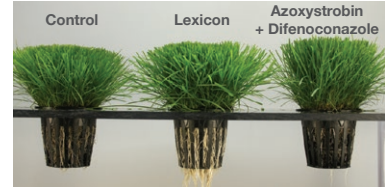
Pixels are a measure of vegetative growth. A higher percentage indicates growth in sprigs versus bareground area. Source: BASF study. Dr. R. Keese, Dr. S. Anas, BASF Biology, RTP, NC.

Consult label for full list of diseases controlled.

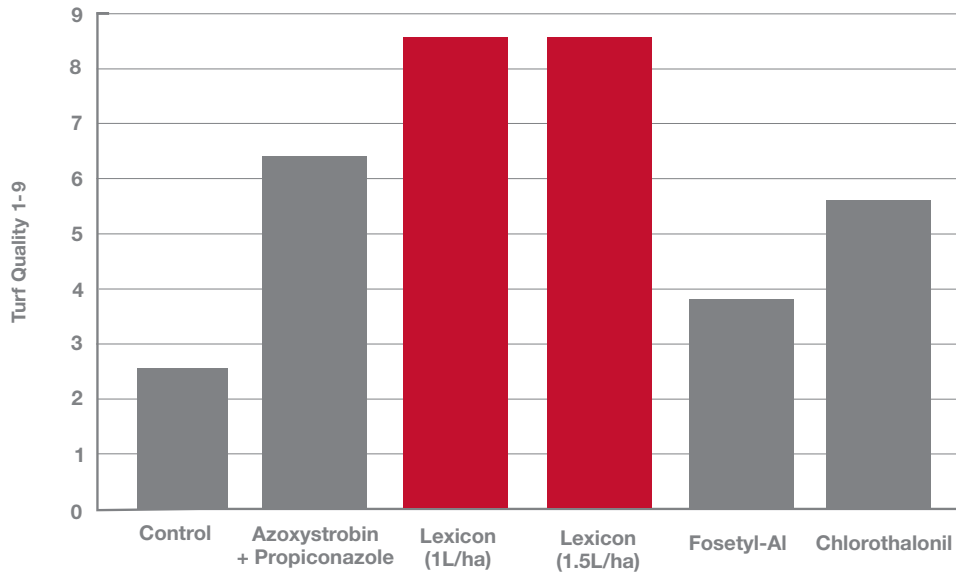
Lexicon Intrinsic Brand Fungicide Promotes Substantially Superior Root Length



Root cores were analyzed with WinRhizo software in July 2013, two months following green-up and five months after the last application. Source: Clemson University, Dr. B. Martin, 2013.



Lexicon Intrinsic Brand Fungicide Turf Quality




top to bottom:
 Root systems of turf treated with **Lexicon Intrinsic** brand fungicide (center), compared to those of untreated turf (at left) and turf treated with competitive fungicides at right.

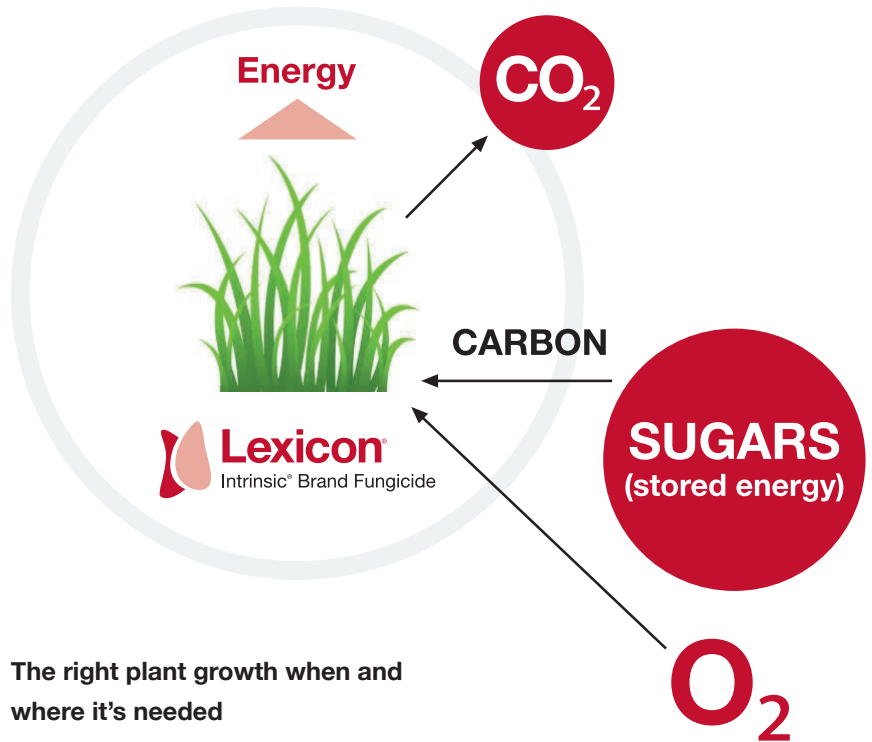
Demonstrations conducted in a greenhouse under greenhouse conditions. All treatments were made at the manufacturer's recommended labeled rates.

Applications made on a 14-day interval. Source: University of Missouri, 2014.

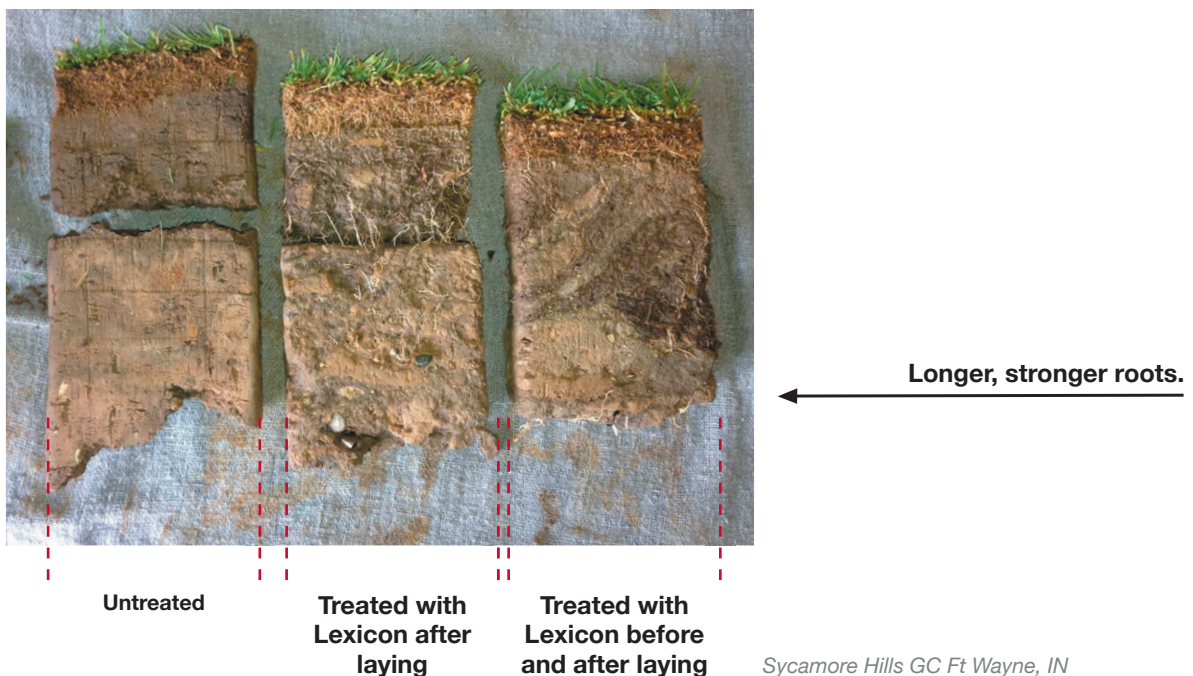
The Science Behind **Intrinsic** Brand Fungicides and Plant Health



Night Respiration
Treated with Intrinsic brand fungicides, lower levels of CO² are produced, energy and growth are redirected to the root system – resulting in an efficient and healthier plant

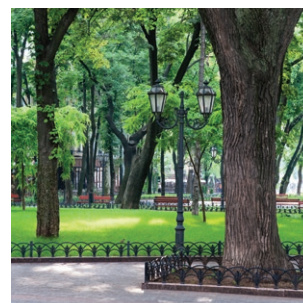


Improved root growth



Technical facts about **Lexicon Intrinsic** brand fungicide

- **Lexicon Intrinsic brand fungicide active ingredients:** fluxapyroxad 167g/L + pyraclostrobin 333g/L
- **Fungicide class:** Group 7 (SDHI) and Group 11 (Strobilurin)
- **Formulation:** Suspension concentrate (SC)
- **Packaging:** 500ml
- **Rate:** 1 - 1.5L/ha on 14-to 28-day intervals
- **Re-entry Period**
DO NOT allow entry into treated areas until the spray has dried.
- **PPE:** wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and elbow length chemical resistant gloves



above: Common use sites for **Lexicon Intrinsic** brand fungicide

Lexicon Intrinsic brand fungicides.

Directions for use

RESTRAINTS

DO NOT apply by aircraft.

DO NOT apply by a vertical sprayer.

DO NOT apply if heavy rains or storms are forecast within 3 days.

DO NOT irrigate to the point of runoff for at least 3 days after application.

DO NOT apply where the slope exceeds 12%.

DO NOT apply to water-logged soil.

DO NOT apply more than a total of 6 L of Lexicon/ha/year.

DO NOT use this product through any type of irrigation system.

SPRAY DRIFT RESTRAINTS

Specific definitions for terms used in this section of the label can be found at apvma.gov.au/spraydrift.

DO NOT allow bystanders to come into contact with the spray cloud.

DO NOT apply in a manner that may cause an unacceptable impact to native vegetation, agricultural crops, landscaped gardens and aquaculture production, or cause contamination of plant or livestock commodities, outside the application site from spray drift. The buffer zones in the buffer zone table below provide guidance but may not be sufficient in all situations. Wherever possible, correctly use application equipment designed to reduce spray drift and apply when the wind direction is away from these sensitive areas.

DO NOT apply unless the wind speed is between 3 and 20 kilometres per hour at the application site during the time of application.

DO NOT apply if there are surface temperature inversion conditions present at the application site during the time of application. These conditions exist most evenings one to two hours before sunset and persist until one to two hours after sunrise.

DO NOT apply by a boom sprayer unless the following requirements are met:

- Spray droplets are not smaller than a COARSE spray droplet size category.
- Minimum distances between the application site and downwind sensitive areas are observed (see following table titled “Buffer Zones for Boom Sprayer”).

Buffer Zones for Boom Sprayers

Application Rate	Boom Height Above the Target Canopy	Natural Aquatic Areas
Up to maximum label rate	0.5 m or lower	170 metres
1 L/ha or lower	0.5 m or lower	100 metres
	1.0 m or lower	375 metres

SITUATION	DISEASE	RATE	WATER VOLUME	MAXIMUM NUMBER OF SEQUENTIAL APPLICATIONS	CRITICAL COMMENTS
Turf	Brown Patch or Large Patch (<i>Rhizoctonia solani</i>)	1-1.5 L/ha	Preventative Treatments: 400-1600 L/ha	3	<i>Preventative Treatments:</i> Begin application when conditions are favourable for fungal infection, prior to disease symptom development. Apply at application intervals of between 14-28 days. <i>Curative Treatments:</i> Apply at application intervals of between 14-28 days.
	Dollar spot (<i>Sclerotinia homeocarpa</i>)	1-1.5 L/ha	Curative Treatments: 600-2000 L/ha	2	Apply prior to fungal infection or in early stages of disease development. Apply at application intervals of between 14-28 days.
	Fairy ring (<i>Basidiomycete fungi</i>)	1.5 L/ha		3	<i>Preventative Treatments:</i> Begin application when conditions are favourable for fungal infection, prior to disease symptom development. Apply at application intervals of between 14-28 days. <i>Curative Treatments:</i> Apply at application intervals of between 14-28 days.
	Fusarium patch (<i>Microdochium nivale</i> or <i>Fusarium</i> spp.)	1-1.5 L/ha		3	Apply LEXICON in a preventative fungicide program. Begin application when conditions are favourable for fungal infection, prior to disease symptom development. Apply at application intervals of between 14-28 days.
	<i>Lepista</i> spp.	1.5 L/ha		3	<i>Preventative Treatments:</i> Begin application when conditions are favourable for fungal infection, prior to disease symptom development. Apply at application intervals of between 14-28 days. <i>Curative Treatments:</i> Apply at application intervals of between 14-28 days.
	Pythium blight, (<i>Pythium</i> spp.)	1.5 L/ha		2	Apply LEXICON in a preventative fungicide program. Begin application when conditions are favourable for fungal infection, prior to disease symptom development. Apply at application intervals of 14 days. For maximum control during severe disease pressure tank mix with another non-strobilurin fungicide labelled for Pythium blight control.
	Pythium root dysfunction, (<i>Pythium</i> spp.)	1.5 L/ha		2	Apply LEXICON in a preventative or early curative program. Begin application when conditions are favourable for fungal infection, prior to disease symptom development. Apply at application intervals of between 14-28 days. Following sequential applications rotate another effective fungicide prior to follow-up LEXICON applications. Make 2 applications in the Autumn followed by 2 applications in the Spring. Irrigate immediately following applications.
	Ectotrophic Root Infecting Fungi (ERI) including: Spring Dead Spot (<i>Ophiosphaerella narmari</i>), Take-all patch (<i>Gaeumannomyces graminis</i> f. sp. <i>avenae</i>)	1.5 L/ha		3	Apply LEXICON in a preventative fungicide program. Begin application when conditions are favourable for fungal infection, prior to disease symptom development. Apply 2 applications in the Autumn and 2 applications in the Spring at application intervals of 28 days.

NOT TO BE USED FOR ANY PURPOSE, OR IN ANY MANNER, CONTRARY TO THE LABEL UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION



**For more information on Lexicon
Intrinsic Brand Fungicide,
visit crop-solutions.basf.com.au
or call 1800 558 399**