

**ISK** BIOSCIENCES

# **SEGWAY**<sup>®</sup>

## **400 SC FUNGICIDE**



**A REVOLUTIONARY NEW FUNGICIDE  
IN THE FIGHT AGAINST PYTHIUM**

 **NUTURF**<sup>®</sup>  
SPECIALISTS PROVIDING SOLUTIONS



# SEGWAY<sup>®</sup>

## 400 SC FUNGICIDE



**Segway<sup>®</sup> 400SC Fungicide** from ISK Biosciences is a revolutionary new fungicide, providing Australian turf managers with a reliable new tool in the fight against diseases caused by *Pythium* spp., including *Pythium* Leaf Blight and *Pythium* Root Dysfunction. Containing 400g/L of the new active ingredient cyazofamid, **Segway<sup>®</sup> 400SC Fungicide** offers a novel mode of action and unparalleled performance against *pythium* related diseases.

### Segway<sup>®</sup> 400SC Fungicide at a glance

<b>Active Ingredient</b>	400g/L cyazofamid
<b>Mode of Action</b>	Group 21
<b>Poison Schedule</b>	5 (Caution)
<b>Formulation</b>	Suspension Concentrate (SC)
<b>Activity Mechanism</b>	Contact / Locally Systemic
<b>Application Rate</b>	1L / Ha
<b>Pack Size</b>	1L

### Key Benefits of Segway<sup>®</sup> 400SC Fungicide

- ✓ New active ingredient for turf management in Australia
- ✓ Novel mode of action – resistance management tool
- ✓ No reported cross resistance with other fungicides
- ✓ Low poison scheduling (5, Caution)
- ✓ Low use rate of 1L per hectare
- ✓ Exceptional rain-fastness and leaf deposition
- ✓ Leading residual preventative control
- ✓ Reliable curative control

### A New Active Ingredient for Turf

Cyazofamid, the active ingredient in **Segway<sup>®</sup> 400SC Fungicide** is a new active ingredient for the Australian turf market. It is a member of the cyano-imidazole chemical class and is generally classified into the azole group. While its primary strength is as a preventative control method, **Segway<sup>®</sup> 400SC Fungicide** also possesses reliable curative activity.

While new to Australia, cyazofamid has already established itself as a leading fungicide in the US and Europe. Since its introduction into turf management, cyazofamid has cemented its reputation as a reliable and efficient control option for *Pythium* Leaf Blight and *Pythium* Root Dysfunction. With its game-changing performance, low toxicology profile and novel mode of action, **Segway<sup>®</sup> 400SC Fungicide** has become the logical base of fungicide programs around the world.

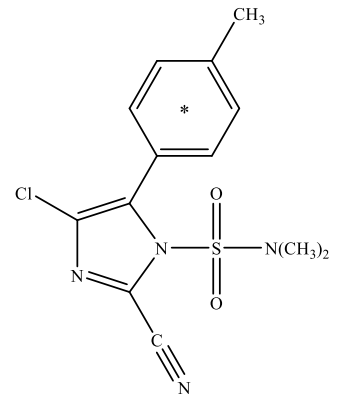
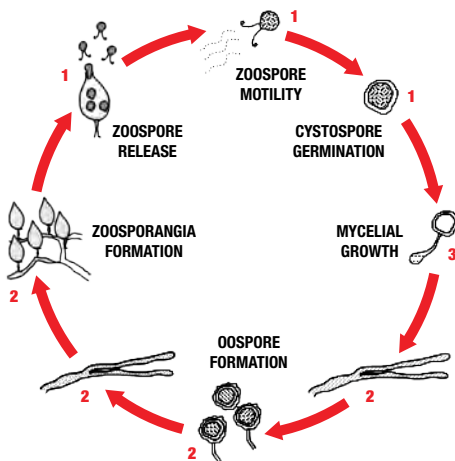


Figure 1. Molecular structure of cyazofamid

### A New Mode of Action for Turf



Cyazofamid, the active ingredient in **Segway<sup>®</sup> 400SC Fungicide** has a FRAC grouping of 21. Following application, cyazofamid's mode of action is to inhibit all stages of fungal development, in particular, respiratory inhibition at Complex III in the mitochondria of Oomycete fungi. This inhibition occurs at all stages of fungal development resulting in the inability for the fungal infection to develop spores or mycelium, preventing the pathogen from spreading or intensifying, and ultimately destroying any established *Pythium* spp. infections.

With limited locally systemic activity occurring within the plant, cyazofamid works largely on contact, meaning it works best as a protectant fungicide. The exceptional rain-fastness characteristics of cyazofamid due to its affinity with the waxy cuticle of the plant, makes its protectant activity highly reliable for a 21-28-day period.

◀ Figure 2. Typical lifecycle of *Pythium* spp. showing efficacy of cyazofamid on various stages of fungal development on a scale of 1-3 (1 high, 3 low)

## Improved Rotation Pythium Management

The FRAC grouping for **Segway® 400SC Fungicide** is group 21, which provides a new rotational tool for turf managers in resistance management. With pythium related diseases presenting a major management issue for Australian turf managers for a protracted period throughout the growing season, ensuring the rotation of modes of action is critical.

Product	Active Ingredient	Mode of Action Grouping
Segway® 400SC Fungicide	400g/L Cyazofamid	21
Banol Turf & Ornamental Fungicide <sup>1</sup>	600g/L Propamocarb	28
Signature Stressgard Fungicide <sup>1</sup>	800g/kg Fosetyl-Al	33
Subdue MAXX Turf Fungicide <sup>2</sup>	240g/L Metalaxyl-M	4
Terrazole 350 WP <sup>3</sup>	350g/kg Etridiazole	14

<sup>1</sup> Registered trademark of Bayer S.A.S <sup>2</sup> Registered trademark of Syngenta Participations Ag <sup>3</sup> Registered trademark of MacDermid Agricultural Solutions, Inc

## Unparalleled Control of Pythium Diseases

In field studies undertaken locally, **Segway® 400SC Fungicide** consistently proved itself superior and at least equal to industry standard pythium control options currently available to Australian turf managers.

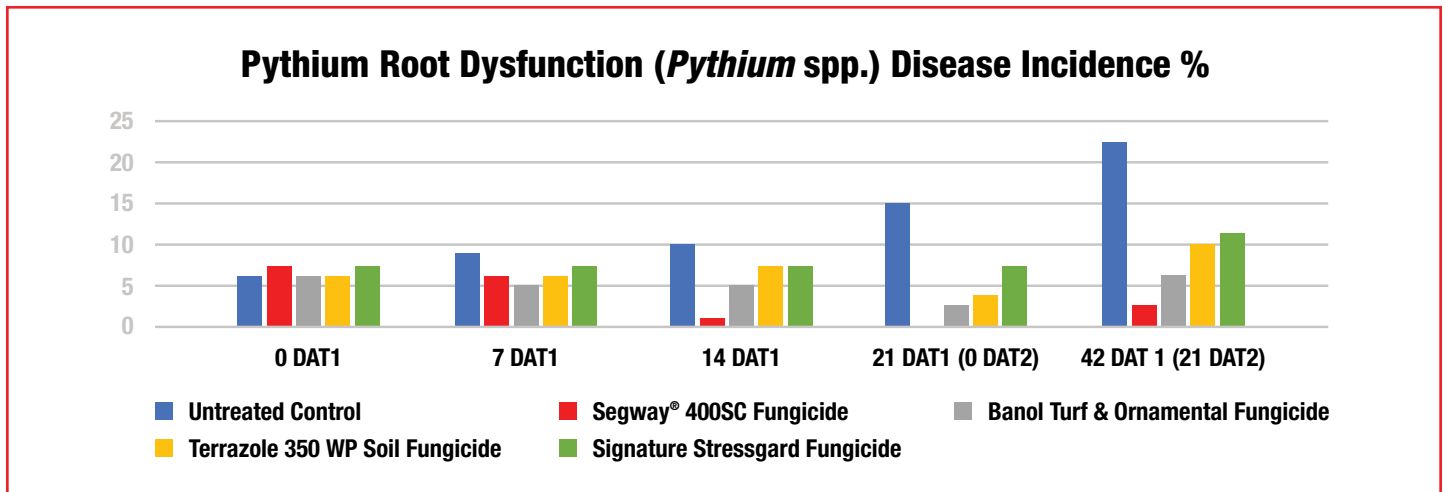


Figure 3. Pythium Root Dysfunction in a bentgrass golf green caused by *Pythium* spp.



Figure 4. Pythium Leaf Blight in a bentgrass and *Poa annua* golf green caused by *Pythium* spp.

## Segway® 400SC Fungicide and Rain-fastness

Due to its affinity with the waxy cuticle of the plant and low solubility in water (University of Hertfordshire PPDB), **Segway® 400SC Fungicide** possesses excellent rain-fastness characteristics. This means that following application the active ingredient sticks to and remains in the treatment zone for an extended period, optimising its performance as a protectant fungicide. Studies undertaken by manufacturer ISK using a simulated rainfall machine demonstrated no measurable impact on the control performance following 20mm of simulated rain over a 2-hour period.



## Safety and Environmental Profile of Cyazofamid

The APVMA classifies the active ingredient in **Segway® 400SC Fungicide**, cyazofamid as of low acute oral, acute dermal and acute inhalational mammalian toxicity. There is no re-entry period for **Segway® 400SC Fungicide** following application.

In the table below, the toxicity of **Segway® 400SC Fungicide** is compared with other commonly used fungicides using LD<sub>50</sub> values (lethal dose 50%) across mammals, birds and honeybees to demonstrate toxicity, the higher the number the less toxic the compound is.

Product	Mammals (Acute Oral LD <sub>50</sub> , mg kg, rat)	Birds (Acute Oral LD <sub>50</sub> , mg kg, <i>Colinus virginianus</i> )	Honeybees (Oral Acute 48 Hour LD <sub>50</sub> , µg bee)
<b>Segway® 400SC Fungicide</b>	>5000 <sup>a</sup>	>2000 <sup>a</sup>	>150 <sup>a</sup>
<b>Banol Turf &amp; Ornamental Fungicide<sup>1</sup></b>	>2900 <sup>b</sup>	1842 <sup>c</sup>	>84 <sup>a</sup>
<b>Signature Stressgard Fungicide<sup>1</sup></b>	>2000 <sup>a</sup>	>8000 <sup>a</sup>	462 <sup>a</sup>
<b>Subdue MAXX Turf Fungicide<sup>2</sup></b>	375 <sup>a</sup>	981 <sup>a</sup>	97.3 <sup>a</sup>
<b>Terrazole 350 WP<sup>3</sup></b>	945 <sup>a</sup>	560 <sup>a</sup>	No Data

1 Registered trademark of Bayer S.A.S

2 Registered trademark of Syngenta Participations Ag

3 Registered trademark of MacDermid Agricultural Solutions, Inc

### References

**a** University of Hertfordshire PPDB

**b** Cornell University PMP

**c** Safety Data Sheet for Banol Turf & Ornamental Systemic Fungicide, Revision Date: 19/09/2016

## Safety and Environmental Profile of Cyazofamid

For best results apply **Segway® 400SC Fungicide** early in the Pythium season to ensure plant protection prior to the onset of high pressure conditions. **Segway® 400SC Fungicide** should be positioned in a program alongside other fungicides, repeating applications every 21-28 days, alternating with other active ingredients such as fosetyl-Al, metalaxyl-M and propamocarb.

When applied as a curative control measure, **Segway® 400SC Fungicide** should be applied twice within the 21-day application window. Applications should be positioned at the site of disease infection, either watered into the root system in the case of Pythium Root Dysfunction or allowed to remain on the foliage in the case of Pythium Leaf Blight.

**Segway® 400SC Fungicide** is highly tank mix flexible and is suitable for partnering with many other commonly used fungicides. However, it is recommended that a jar test be undertaken when attempting tank mixes for the first time as water quality unique to each site can impact compatibility.

## Directions for Use\*

Crop	Disease	Rate	WHP	Critical Comments
<b>Turf</b> (golf and bowling greens, other intensively managed turf)	Pythium leaf blight Pythium root dysfunction ( <i>Pythium</i> spp.)	10mL / 100m <sup>2</sup> (1.0L/ha)	-	When conditions favour disease development, apply consecutive sprays of this product at approximately 21-day intervals. Apply as a foliar spray. <b>DO NOT wait for disease to appear.</b> Apply <b>Segway® 400SC Fungicide</b> in 400 L to 500 L water per hectare.

\* Subject to change following APVMA registration

## About ISK Biosciences

**Ishihara Sangyo Kaisha, Ltd. (ISK)** is a Japanese biotechnology company who have pioneered Japan's agrochemical business for over 60-years. As a true research and development company, ISK create new technology through the development of new active ingredients, with Global partnerships that allow their technology to be commercialised and delivered into the hands of growers around the world. ISK's philosophies are to contribute to social development, the protection of life, and environmental preservation through the creation of new active ingredients that add value, provide solutions and create efficiencies.

**For more information about Segway® 400SC Fungicide, contact your local Nuturf Territory Manager, call 1800 631 008 or visit [www.nuturf.com.au](http://www.nuturf.com.au)**