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Seed Blends & Cultivars

oasis turf

GTS GREENWAY TURF SOLUTIONS

PGG Wrightson Turf

Experts from earth to turf.

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Contents

Kimihia Research and Plant Breeding Facility **4**
Research and Development **6**
Perennial Ryegrasses **8**
- *Colosseum* *9*
- *Centanario* *10*
- *Soprano* *11*
- *Spartacus* *12*
- *Fiesta Cinco* *13*
- *Avanex Colosseum* *14*
- *Avanex Lagertha* *15*

Sportsfield Seed Blends **16**
- *Sports Oval* *17*
- *Stadia* *18*
- *Howzat* *19*

Golf Course Seed Blends **20**
- *Premium Tees* *21*
- *Out of Bounds* *22*
- *In the Rough* *23*

Racecourse Blends **24**
- *Furlong* *25*
- *Bolta* *26*

Tall Fescues **28**
- *Lagertha* *29*
- *Currawong II* *30*

Creeping Bentgrass **32**
- *A1* *33*
- *A4* *34*
- *A+* *35*
- *Pure Distinction* *36*
- *Macdonald* *37*

Kikuyu **38**
- *Regal* *39*

Bermudagrass **42**
- *TransContinental* *43*

Assurance in the science.

Confidence in the results.

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Kimihia
Oceania's Cutting-Edge Plant Breeding Facility

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PGG Wrightson Turf are market leaders in research and development of innovative products for the Australasian turf market.

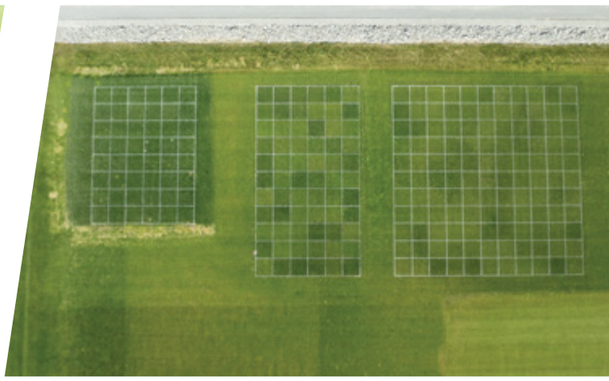
From our world class plant breeding facility at the Kimihia Research Centre based on the outskirts of Christchurch, New Zealand, we use the latest technology advances to thoroughly evaluate turfgrasses before we bring them to the market.

Our commitment to R&D is at the heart of everything we do at PGG Wrightson Turf. Our investment into the science, gives us the confidence to recommend. We priortise the breeding of climatically adapted turfgrasses specifically bred for Australasia's unique environment.

Our in-house laboratory and agronomy team is a strong point of difference in the industry as we are able to trial, test and certify all seed that we bring to the market, with confidence. Kimihia is also home to the PGG Wrightson Seeds team, who have been servicing farmers across Australia and New Zealand for over 100 years.

Therefore, every certified cultivar that carries the PGG Wrightson Turf brand, is embedded in years of experience and expertise. Next time you're in New Zealand, come and visit us at the Kimihia Research Centre.





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Research & Development

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PGG Wrightson Turf specifically select and breed turfgrasses for Australasia's unique temperate environment.

Our plant breeding process:

The plant breeding process starts with correctly selecting plants, from both locally sourced and international germplasm. Through a natural process, they are genetically crossed and then further selected for the desired environment.

Following the selection process, suitable plants are rigorously tested in multiple turf trials throughout Australasia where only the elite cultivars are finally selected for commercial production.

Innovation is always at the forefront of our research programmes. An example of this being our innovative avian deterrent grass range AVANEX™, developed with AgResearch and Grasslanz Technology with assistance from the Foundation for Arable Research (FAR) and Christchurch International Airport Ltd (CIAL).

Through our extensive research and development programmes we constantly aim to find solutions to common turf related problems and bring these new technologies to the market to make them accessible to all customers.





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Perennial Ryegrasses

Colosseum
turf ryegrass



Colosseum turf perennial ryegrass

Key features:

- Fast germination
- Winter active Mediterranean genetics
- Wear resistance and recovery
- Attractive glossy mid-green colour
- Contains endophyte

Colosseum is a medium-fine, mid-green, perennial ryegrass that is a cross between Mediterranean and American genetics. The Mediterranean genetics gives the turf active winter growth in cooler weather and rapid germination, especially in cold temperatures down to 5°C. It also provides naturally vigorous growth year round and delayed onset of browning in summer. Colosseum is ideally suited to winter sports grounds, golf tees, golf fairways and lawns receiving heavy wear, especially in the winter. Its attractive glossy mid-green colour coupled with active year round growth makes it visually appealing (its mid-green colour helps to mask the invasion of *Poa annua* and other grassy weeds).

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Breeding history

Colosseum was bred from the few surviving plants out of a test cricket pitch. The surviving plants were crossed and resulted in a cultivar capable of withstanding extreme adverse conditions. Colosseum has a high endophyte level which helps it to resist insect attack.
The inclusion of American genetics also gives the cultivar excellent summer performance.

Sowing rate and maintenance

Colosseum turf ryegrass can be sown at 30 - 50 g/m^2 (300 - 500 kg/ha). Use the higher seeding rate for faster establishment. In sports fields for winter oversowing couch grass, it should be sown at 25 - 30 g/m^2 (250 - 300 kg/ha).

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CENTENARIO
TURF PERENNIAL RYEGRASS



Centenario turf perennial ryegrass

Key features:

- Fast germination.
- Winter active Mediterranean genetics.
- Wear resistance and recovery.
- Attractive glossy medium green colour.
- Contains endophyte.

Centenario is a medium-fine, medium green, perennial ryegrass. Centenario originates from a complex series of crossing New Zealand cultivars and Mediterranean and American germplasm. It has undergone 4 cycles for turf performance, salt tolerance, disease resistance, dark colour and seed yield. The Mediterranean and New Zealand genetics gives the turf active winter growth in cooler weather and rapid germination, especially in cold temperatures down to 5°C. It also provides naturally vigorous growth year round providing excellent recovery from wear and delayed onset of browning in summer.

Centenario is ideally suited to sports grounds, golf tees, golf fairways and lawns receiving heavy wear, especially in the winter. Its attractive glossy medium green colour coupled with active year round growth makes it visually appealing.

Breeding history

Centenario was bred from the few surviving plants out of a test cricket pitch. The surviving plants were crossed and resulted in a cultivar capable of withstanding extreme adverse conditions. Centenario has a high endophyte level which helps it to resist insect attack. The inclusion of American genetics gives the cultivar excellent summer performance.

Sowing rate and maintenance

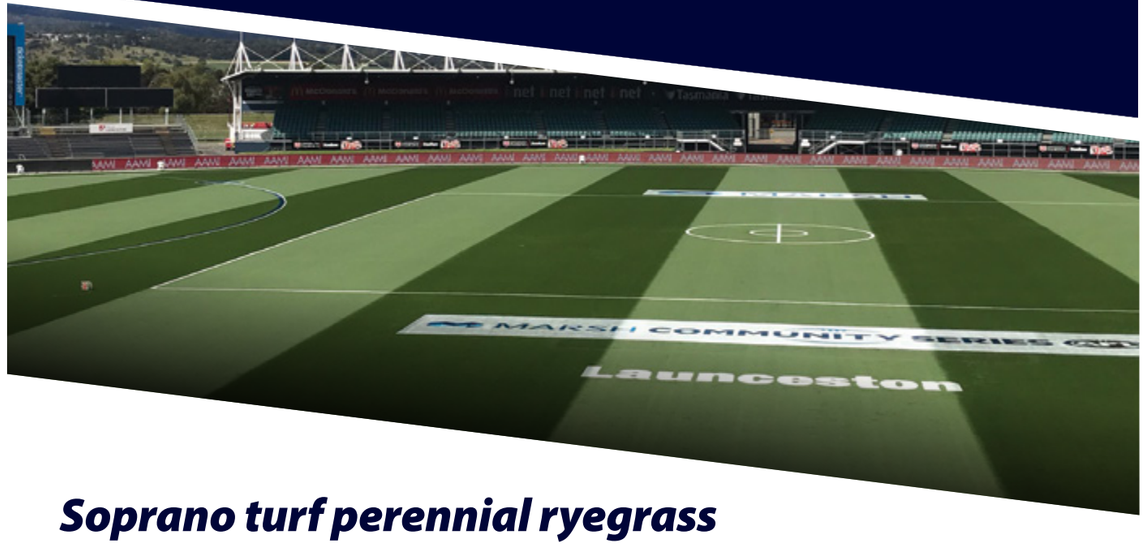
Centenario turf ryegrass can be sown at 30 - 50 g/m^2 (300 - 500 kg/ha). Use the higher seeding rate for faster establishment. In sports fields for winter oversowing couch grass, it should be sown at 25 - 30 g/m^2 (250 - 300 kg/ha).

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Soprano
Elite Perennial Ryegrass



Soprano turf perennial ryegrass

Key features:

- Exceptional very dark green colour
- Forms a dense, fine turf of high quality
- Retains good quality in humid summer conditions
- Rapid speed of establishment for a dark cultivar

Soprano is an attractive, very dark green, perennial ryegrass with outstanding density and fineness making it a great choice for lawns, golf courses and sports fields. Soprano has good resistance to summer diseases allowing it to maintain high quality in humid conditions over summer. Recommended use for: golf courses, sports fields, parks, home lawns and overseeding warm season grasses.

In common with most dark, fine turfgrasses, winter growth and establishment rate is modest compared to the winter active sports field types with Mediterranean genetics.

Sowing rate and maintenance

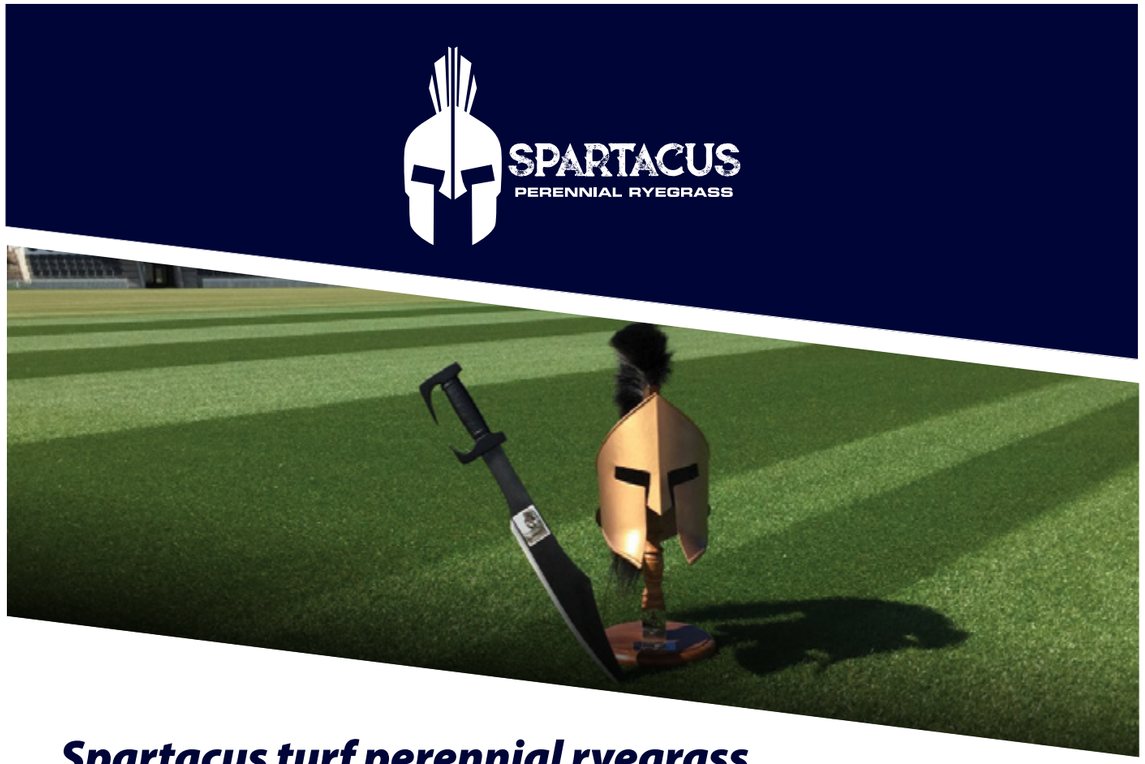
Full sowing 40 - 50 g/m^2 (400 - 500 kg/ha).

In sports fields for winter oversowing couch grass, it should be sown at 25 – 30 g/m^2 (250 – 300 kg/ha).

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Spartacus turf perennial ryegrass

Key features:

- Speed of establishment
- Medium dark green
- Contains endophyte
- Excellent year-round colour
- Absence of browning

Spartacus is a medium dark green turf perennial ryegrass with good density and fineness and an outstanding lively green colour retention with absence of browning. Excellent year-round colour and scores well in trials for both density and fineness.

Spartacus represents a new standard for melting out disease resistance.

Breeding history

Developed from crosses of winter active types from Algeria and Spain with dark fine material from America and Europe. It has undergone four cycles of selection in New Zealand and one in Queensland to survive heat and disease pressure. A very healthy turf-type perennial ryegrass bred for fineness, density and colour with levels of winter growth. Some plants in breeding cycle contained the Staygreen trait. Spartacus has high endophyte levels helping to resist insect attack.

Sowing rate and maintenance

Spartacus turf perennial ryegrass can be sown in lawns at 30 - 50 g/m^2 (300 - 500 kg/ha). Use the higher seeding rate for faster establishment.

In sports fields for winter oversowing couch grass, it should be sown at 25 - 30 g/m^2 (250 - 300 kg/ha).

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Fiesta Cinco perennial ryegrass

Key features:

- Superior Turf Quality
- Very Dark Green Colour
- Superior Disease Resistance
- Excellent Wear Tolerance

Fiesta Cinco perennial ryegrassis a continental dark green type which demonstrates the highest turf quality overall at all locations of the 2016 NTEP Perennial Ryegrass trials. Fiesta Cinco has a very dark green colour with superior winter colour retention. This variety also has superior resistance to Crown Rust and Pink Snow Mould and very high resistance to Gray Leaf Spot and Red Thread.

Fiesta Cinco is the result of multiple cycles of selection in Kentucky, Oregon and New Jersey for many characteristics important for users in addition to turf quality. Among these is excellent wear tolerance at all cutting heights making it perfect for golf courses, sports fields and home lawns.

Sowing rate and maintenance

Full Sowing 40 - 50 g/m^2 (400 - 500 kg/ha).
In sports fields for winter oversowing couch grass, it should be sown at 25 - 30 g/m^2 (250 - 300 kg/ha).

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AVANEX® Colosseum turf rygrass

Key features:

- Fast germination
- Winter active Mediterranean genetics
- Wear resistance and recovery
- Attractive glossy mid-green colour
- Contains AVANEX® AR95 Unique Endophyte Technology

AVANEX® Colosseum is a medium-fine, mid-green, perennial ryegrass that is a cross between Mediterranean and American genetics. The Mediterranean genetics gives the turf active winter growth in cooler weather and rapid germination, especially in cold temperatures down to 5°C. It also provides naturally vigorous growth year round and delayed onset of browning in summer. AVANEX® Colosseum is ideally suited to winter sports grounds, golf tees, golf fairways and lawns receiving heavy wear, especially in the winter. Its attractive glossy mid-green colour coupled with active year round growth makes it visually appealing (its mid-green colour helps to mask the invasion of Poa annua and other grassy weeds).

Breeding history

AVANEX® Colosseum was bred from the few surviving plants out of a test cricket pitch. The surviving plants were crossed and resulted in a cultivar capable of withstanding extreme adverse conditions. AVANEX® Colosseum contains Unique Endophyte Technology which helps it to resist insect attack and grazing by herbivorous birds and animals. American genetics also gives the cultivar excellent summer performance.

Sowing rate and maintenance

AVANEX® Colosseum can be sown at 30 - 50 g/m^2 (300 - 500 kg/ha). Use the higher seeding rate for faster establishment. In sports fields for winter oversowing grass, it should be sown at 25 - 30 g/m^2 (250 - 300 kg/ha).

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AVANEX™ UNIQUE ENDOPHYTE TECHNOLOGY

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AVANEX® Lagertha tall fescue

Key features:

- Moderately fine, dense turf type tall fescue
- Dark green with excellent colour retention
- Excellent persistence without irrigation
- Contains AR601 Unique Endophyte Technology
- Reduced mowing frequency
- Mowing height between 50 - 150 mm

AVANEX® Lagertha is a high quality, dark and fine turf tall fescue. Lagertha retains a green colour and an attractive appearance for longer in summer due to its strong deep root system. Lagertha has excellent persistence without irrigation in most drier regions on silt or clay soils when mowed a height range of 50 - 150 mm. Lagertha helps to deter birds and unwanted herbivore feeding through the action of the AR601 Unique Endophyte Technology.

This is especially useful in situations where birds and geese are a problem. Fewer insects are found in turf with AVANEX® Unique Endophyte Technology resulting in reduced bird feeding. Geese and other herbivourous animals are deterred from feeding on the foliage. This technology is a tool currently being used at several airports throughout New Zealand as part of their strategy to help minimise the risk of bird strike.

Breeding history

Lagertha, with AVANEX® Unique Endophyte Technology, was bred from advanced American material developed over many years by Rutgers University. In New Zealand a selection was undertaken for turf performance, disease resistance, and adaptation by turf breeder Louise Carpenter.

Sowing rate and maintenance

Lagertha tall fescue should be sown at 30 - 40 g/m^2 (300 - 400 kg/ha). Seed can be broadcast and raked or harrowed in to a well prepared seedbed, hydroseeded or direct drilled. Although tall fescue is tolerant of a wide range of soil pH, it does require sufficient seedbed fertility. Nitrogen and phosphorous are important and usually have to be supplied. A soil test before planting is recommended. Lagertha requires warm weather to establish, with daytime temperatures above 15 °C, provided there is enough moisture. It is best sown alone and not mixed with other grasses. A mowing height range of 50-150 mm or higher is recommended.

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Sportsfield Seed Blends

SPORTS OVAL



DuraTurf® Sports Oval

Key features:

- Dense uniform sward
- Rapid establishment
- Winter activity from Mediterranean Germplasm (ability to germinate and establish at low temperatures)
- Rapid recovery from wear
- Tolerant to low mowing
- Drought tolerance

DuraTurf® Sports Oval seed blend contains three elite winter-active, hard wearing, turf-type perennial ryegrasses. DuraTurf® Sports Oval establishes rapidly from sowing, enabling this blend to be brought into play sooner without compromising turfgrass performance. Its true winter activity and speed of establishment makes this an ideal blend for winter overseeding in warm season grasses.

Cultivar	Species
Arena 1	Perennial ryegrass
Colosseum	Perennial ryegrass
Spartacus	Perennial ryegrass

Application rates

Sowing rate: 30 - 50 g/m^2 (300 - 500 kg/ha)
Oversowing: 25 - 35 g/m^2 (250 - 350 kg/ha)

Mowing height

Down to 15 mm

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DuraTurf® Stadia

Key features:

- Vigorous establishment
- Produces a dense uniform sward
- Very dark green appearance
- Genetic diversity
- Tolerant to low mowing

DuraTurf® Stadia seed blend consists of two elite perennial ryegrass cultivars, ideal for use in a wide variety of elite sports turf situations.

DuraTurf® Stadia can be used in golf courses, sportsfields, cricket blocks and outfields or any fine turf ryegrass situation where an elite appearance is required.

Cultivar	Species
Spartacus	Perennial ryegrass
Soprano	Perennial ryegrass

Application rates

Sowing rate: 30 - 50 g/m^2 (300 - 500 kg/ha)
Oversowing: 25 - 30 g/m^2 (250 - 350 km/ha)

Mowing height

Down to 12 mm

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DuraTurf® Howzat®

Key features:

- Dark green appearance
- Rapid recovery from wear
- Exceptionally tolerant to low mowing
- Fine leaved producing a friction free slick surface

DuraTurf® Howzat® seed blend consists of two elite fine leaved dark green cultivars ideally suited to the rigours associated with pitch preparation such as constant rolling and low mowing. DuraTurf® Howzat® has the unique ability to recover well after play.

Cultivar	Species
Spartacus	Perennial ryegrass
Soprano	Perennial ryegrass

Application rates

Sowing rate: 35 - 70 g/m^2 (350 - 700 kg/ha)
Oversowing: 25 - 35 g/m^2 (200 - 350 kg/ha)

Mowing height

Down to 3 mm for match play

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Golf Blends

PREMIUM TEES



DuraTurf® Premium Tees

Key features:

- Dense uniform sward
- Dark green appearance
- Rapid recovery from wear
- Exceptionally tolerant to low mowing

DuraTurf® Premium Tees seed blend (a blend of turf ryegrasses, fine fescues and browntop) is ideal for use in golf course tees and fairways. It is also a great option for elite landscaping situations and any amenity turf areas where a dark green premium turf cover is required.

Cultivar	Species
Spartacus	Perennial ryegrass
Soprano	Perennial ryegrass
Maxima 1	Creeping red fescue
Siskin	Chewings fescue
Manor	Browntop

Application rates

Sowing rate: 30 - 50 g/m^2 (300 - 500 kg/ha)
Oversowing: 25 - 35 g/m^2 (250 - 350 kg/ha)

Mowing height

Down to 7 mm

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DuraTurf® Out of Bounds®

Key features:

- Exceptional drought tolerance
- Low maintenance
- Low fertility requirement
- Aesthetic flowering seed head

DuraTurf® Out of Bounds® seed blend is ideal for use in golf course roughs and contains chewings, creeping red and hard fescue.

DuraTurf® Out of Bounds® is an ideal turf seed blend bred to ensure a pure fescue stand suited to all soil conditions.

Cultivar	Species
Siskin	Chewings fescue
Governors	Creeping red fescue
Dumas 1	Hard fescue

Application rates

Sowing rate: 20 - 30 g/m^2 (200 - 300 kg/ha)
Oversowing: 10 - 20 g/m^2 (100 - 200 kg/ha)

Mowing height

Down to 15 mm

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DuraTurf® In The Rough®

Key features:

- Exceptional drought tolerance
- Low maintenance
- Low fertility requirement
- Aesthetic flowering seed head
- Provides the ability to chemically remove other grass species

DuraTurf® In the Rough® seed blend is ideal for use in golf course roughs and contains creeping red fescue and chewings fescue.

This blend is ideally suited for loamy to heavy soils where a pure fescue stand is required.

Cultivar	Species
Maxima 1	Creeping red fescue
Siskin	Chewings fescue

Application rates

Sowing rate: 25 - 40 g/m^2 (250 - 400 kg/ha)
Oversowing: 10 - 25 g/m^2 (100 - 250 kg/ha)

Mowing height

Down to 15 mm

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Racecourse Blends

FURLONG



DuraTurf® Furlong

Key features:

- Very rapid establishment
- Excellent persistence
- Attractive dark green foliage
- Winter growth
- Highly suited to southern Australia
- Economically suited to broadacre use

DuraTurf® Furlong is a blend of high quality Mediterranean perennial ryegrasses especially suited to racetrack surfaces in southern Australia. 34% of the blend consists of a very vigorous tetraploid cultivar with high productivity, especially over the winter months, attractive dark green foliage and excellent persistence. The other 66% of the blend is made up of two diploid cultivars: 33% Expo AR1 diploid perennial ryegrass and 33% Excess AR1 diploid perennial ryegrass. Both diploid cultivars have finer leaf texture and higher density, but also with excellent winter growth. The combination of these three cultivars creates a blend with rapid germination and establishment, even in colder weather, high year-round vigour and an attractive, dense surface when mown at racetrack heights.

Percentage	Species
34%	Base AR1 tetraploid perennial ryegrass
33%	Expo AR1 diploid perennial ryegrass
33%	Excess AR1 diploid perennial ryegrass

Application rates

Sowing rate: 200 - 250 kg/ha
Oversowing: 150 kg/ha

Mowing

Typically mown at heights of 75 - 150 mm be mown as low as 50 mm.

Fertiliser

Strategic applications of fertiliser (especially slow release fertiliser) throughout the growing season will greatly enhance the persistence, wear and aesthetic look of the racecourse sward.

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BOLTA



DuraTurf® Bolta

Key features:

- A blend of two elite, tetraploid annual ryegrasses
- Rapid establishment when oversown
- Very high winter growth rate
- Late heading date, allowing excellent growth and density through spring

DuraTurf® Bolta blend is designed for oversowing kikuyu or couch racetracks to provide winter colour and growth and to protect the dormant C4 grass underneath. It combines two elite tetraploid annual ryegrasses with Mediterranean genetics to provide rapid establishment from oversowing in autumn and into winter and vigorous productivity through the cooler months. Their productivity and density through springtime into early summer is also excellent, due to their late heading date.

Percentage	Species
50%	Astro tetraploid annual ryegrass
50%	Ascend tetraploid annual ryegrass

Application rates

Oversowing: 100 - 125 kg/ha

Maintenance

Mowing height should be higher than 80 mm. DuraTurf® Bolta responds rapidly to nitrogen applications through the winter if extra growth and recovery is required. We recommend DuraTurf® Bolta be removed by herbicide in springtime or early summer, to fit in with the racing programme. Refer to our Racetrack Solutions brochure for more details.

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The DuraTurf® range of seed blends are designed to give you the right result every time. Cultivars used in the DuraTurf® seed blends undergo rigorous testing procedures with only certified cultivars selected for use. With breeding, evaluation and screening sites located throughout Australasia, we are able to source the most suitable genetic material to include in our DuraTurf® seed blend range.

Sportsfield Seed Blends

Our sportsfield blends provide true winter activity, exceptionally fast establishment, superior wear tolerance and excellent recovery from sports play and drought, along with year-round growth for Australia's temperate climate.

Golf Course Seed Blends

We offer a strong range of golf course seed blends, trialled, tested and proven for the Australian environment. We have seed blends designed for golfing tees, fairways and the roughs.

Racecourse Seed Blends

Our racecourse ryegrass seed blends provide fast establishment to repair divots, even turf cover at higher racecourse mowing height, drought and insect tolerance and an attractive, even, aesthetic surface.

Landscape Amenity Seed Blends

We offer a strong range of amenity turf seed blend options, used through Australia and New Zealand. Visit our website for more information and techsheets: www.pggwrightsonturf.com. au

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Tall Fescues

LAGERTHA TURF TALL FESCUE



Lagertha tall fescue

Key features:

- Moderately fine, dense turf-type tall fescue
- Dark green with excellent colour retention
- Excellent persistence without irrigation
- Contains endophyte
- Reduced mowing frequency
- Mowing height between 50 - 150 mm

Lagertha was bred from advanced American material developed over many years by Rutgers University. In New Zealand a selection was undertaken for turf performance, disease resistance and adaption by turf breeder Louise Carpenter. Lagertha is a high quality, dark and fine turf tall fescue. Lagertha retains a green colour and an attractive appearance for longer in summer due to its strong deep root system. Lagertha has excellent persistence without irrigation in most drier regions on silt or clay soils when mowed at a height range of 50 - 150 mm.

Sowing rate and maintenance

A recommended sowing rate for Lagertha tall fescue is between 30 - 50 g/m^2 (300 -500 kg/ha) into a cultivated seedbed.

Kimihia - Tall Fescue Breeders Trial
Mown at 100 mm

Cultivar	Colour	Density	Fineness	Quality
Lagertha	7.88	.2	6.98	.2
Rebel 4	7.57	.6	6.47	.2
Competitor A	7.77	.6	6.86	.6
Competitor B	7.16	.9	6.06	.4
Competitor C	6.57	.4	6.36	.4
Rebel Extreme	6.86	.6	5.85	.9
Currawong II	5.96	.4	5.95	.8
Rebel Advance	7.46	.4	5.85	.2
Jackal	4.85	.4	4.44	.5
Kentucky 31	3.84	.2	3.33	.4

Kimihia - Dryland Tall Fescue Breeders Trial
Mown at 100 mm

Cultivar	Colour	Density	Fineness	Quality
Lagertha	6.88	.7	8.08	.1
Rebel 4	5.36	.7	6.76	.6
Rebel Xtreme5	.6	6.35	.3	5.6
Currawong II	6.15	.8	5.05	.3
Jackal	5.23	.0	3.34	.7
Kentucky 31	4.23	.0	3.04	.5

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Currawong II
TURF TALL FESCUE



Currawong II tall fescue

Key features:

- Bred for Australasian conditions
- Year-round performance
- Attractive glossy, medium dark green colour
- Dwarf growth habit
- Contains endophyte

Currawong II produces a low growing dense sward and can be used in any situation where a premium turf-type tall fescue is required. These situations include sports fields, parks, home lawns, sod farms and golf course roughs. Currawong II displays an attractive glossy, medium dark green colour with good density. It is a relatively drought resistant variety that has been bred for Australasian conditions. It can retain an attractive green appearance with less irrigation than most cool season grasses. In a non-irrigated situation it will maintain colour for longer periods than standard tall fescues.

Breeding history

Currawong II is a cross between elite turf-type tall fescues from the U.S.A and turf-type tall fescues which have been selected from and adapted to Australasian conditions. The original germplasm was selected from surviving plants in Victoria that showed greater drought tolerance and winter activity. Further screening and crossing with other elite material has given Currawong II a medium dark green colour and uniform appearance as well as disease resistance. Currawong II has high endophyte levels helping to resist insect attack.

Sowing rate and maintenance

A recommended sowing rate for Currawong II is between 30 - 50 g/m^2 (300 -500 kg/ha) into a cultivated seedbed.

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PGG Wrightson Turf cultivars and DuraTurf® seed blends are sold all across Australia through Greenway Turf Solutions (GTS) and Oasis Turf.

Below are the office locations of both distributors across Australia. PGG Wrightson Turf seed can be acquired through the contact details shown.



GTS Office Locations

Queensland
Unit 3/2 Ant Rd,
Yatala,
Australia

New South Wales
27 Bentley St,
Wetherill Park,
Australia

Victoria
40 Hinkler Rd,
Mordialloc
Australia

South Australia
Unit 3/154 Frederick St,
Hindmarsh,
Australia

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oasis turf

GTS GREENWAY TURF SOLUTIONS

DURA Turf™
Trialled, tested, proven

Creeping Bentgrass

PENN Certified
PENN A-1



Penn A-1 creeping bentgrass

Key features:

- Very dark colour
- Good winter colour
- Outstanding heat and cold tolerance
- Superior wear tolerance
- Quick spring recovery and green-up

Penn A-1 creeping bentgrass displays a very dark green colour along with a fine leaf texture. It has outstanding heat and cold tolerances, very good winter colour and quick spring green up. Penn A-1 has good disease resistance and forms a dense sward. It is suited to golf course putting surfaces but can also be used on tees and fairways. Penn A-1 is able to compete against weeds and *Poa annua* with great success. Penn A-1 performs best when maintained under a lean fertiliser regime which in turn reduces maintenance requirements.

Breeding history

Penn State University in North America developed and released the first Penn bentgrass, Penncross, back in the 1950's. Over the years, their continued efforts have produced many successful new bentgrass varieties through careful breeding and seed production.

Sowing rate and maintenance

A sowing rate of 6 g/m^2 (60 kg/ha) is recommended into a cultivated seedbed. For overseeding of existing turf 2.5 - 5 g/m^2 (25 - 50 kg/ha) is recommended.

Fertiliser formulations and rates need to be calculated from soil analysis results taken from the site being sown. Fertiliser applications should be kept light and infrequent. This can be achieved either through a fertigation system or use of soluble products. First mowing should take place when the surface has uniform coverage and the sward height is at no more than 12 mm. Solid/smooth rollers should be used to minimise surface damage in the establishment phase.

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PENN A-4



Penn A-4 creeping bentgrass

Key features:

- Dark green colour
- Aggressive growth habit
- Exceptional heat and cold tolerance
- Fine leaf texture

Penn A-4 creeping bentgrass displays a dark green colour along with a fine leaf texture and outstanding heat and cold tolerance. Penn A-4 has high disease resistance and forms a very dense sward due to its aggressive growth habit. It is suited to golf course putting greens as it forms a smooth grainless surface. Penn A-4 is able to compete against weeds and *Poa annua* with great success. Penn A-4 performs best when maintained under a lean fertiliser regime which in turn reduces maintenance requirements.

Breeding history

Penn State University in North America developed and released the first Penn bentgrass, Penncross, back in the 1950's. Over the years, their continued efforts have produced many successful new bentgrass varieties through careful breeding and seed production.

Sowing rate and maintenance

A sowing rate of 6 g/m^2 (60 kg/ha) is recommended into a cultivated seedbed. For overseeding of existing turf 2.5 - 5 g/m^2 (25 - 50 kg/ha) is recommended.

Fertiliser formulations and rates need to be calculated from soil analysis results taken from the site being sown. Fertiliser applications should be kept light and infrequent. This can be achieved either through a fertigation system or use of soluble products. First mowing should take place when the surface has uniform coverage and the sward height is at no more than 12 mm. Solid/smooth rollers should be used to minimise surface damage in the establishment phase.

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A+ CREEPING BENTGRASS PENN A + PURE ECLIPS E



A+ creeping bentgrass

Key Features:

- Great resistance to red leaf spot
- Good disease resistance
- Great Spring green-up
- Dark green colour
- High Density

Produced by Oregon's top growers, Tee-2-Green bentgrasses far exceed the standards of general certified seed. Our seed is free of *Poa annua, Poa trivialis,* and all other noxious and unacceptable weed seeds.

A+ a mixture of a Penn A bentgrass and Pure Eclipse combines the strengths of two of Tee-2-Green's most proven bentgrass varieties creating a blend with broad genetic diversity that will produce the highest quality putting surface. Striking dark green color and fine leaf texture that produces a beautiful playing surface. With a dense, upright and aggressive growth habit, it also features an exceptional ability to compete against *Poa annua.*

Sowing rate and maintenance

Recommended establishing sowing rate is 7 - 8 g/m^2 (70 - 80 kg/ha). Recommended oversowing rate is 5 g/m^2 (50 kg/ha). Tee-2-Green creeping bentgrass varieties are tough and hearty requiring less water and fertiliser than other creeping bentgrass varieties, typically resulting in an easier management regimen for the superintendent. Properly maintained, they provide a very high-quality playing surface that thrives on low mowing and results in excellent playability.

In general, the amount of fertiliser applied should be:

0.1 lbs. of nitrogen per 1,000 sq. ft. every 14 days +/-, depending on approximate growth, clippings, and performance. The yearly amount of nitrogen will be from 2 to 4 lbs., phosphorous 2 to 3 lbs., and potassium 6 to 10 lbs. As far as micronutrient amounts, this should be checked via tissue tests during the growing season and again with a soil test in early spring.

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PURE DISTINCTION
CREEPING BENTGRASS



Pure Distinction creeping bentgrass

Key features:

- Excellent resistance to bacterial wilt, brown patch, *fusarium* patch, anthracnose and leaf spot
- Great resistance to dollar spot
- Excellent heat, cold and wear tolerance
- Recovers quickly

Pure Distinction has a rich heritage that includes. legendary Penncross and the groundbreaking Penn A's and G's. Uniquely bright green coloured, Pure Distinction takes the attributes of these bents – dense, upright, and aggressive growth, less thatch and easy maintenance – to the next level. It's the ultimate bentgrass for smooth and true putting greens and ideal for tees and fairways. Pure Distinction also has strong resistance to diseases and outstanding resistance to heat, cold and wear.

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Maintenance

These grasses are different and should not be managed as per other bents, but they are tough useful grasses. Summarising this, it means less fertiliser and less water than the old bents that many superintendents are accustomed to and overall the management is easier. The end result is a very high quality playing surface that thrives on low mowing and culminates in a top quality surface, with no extraordinary practices.

Fertiliser formulations and rates may need to be adjusted according to soil test results and turfgrass performance. After the turfgrass has grown in, fertiliser applications should be kept light and infrequent. The first mowing should be done when there is uniform turf coverage with a height from 6 mm and definitely not more than a 12 mm.

Sowing rates

Recommended seeding rate is 5 - 7.5 g/m^2 (50 - 75 kg/ha) for new plantings, and 0.5 - 1 g/m^2 (5 - 10 kg/ha) for overseeding.

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MACDONALD
CREEPING BENTGRASS



Macdonald creeping bentgrass

Key features:

- Superior creeping bentgrass for putting surfaces
- Rapid establishment for interseeding
- Excellent Dollar Spot and Brown Patch resistance
- Resistant to *Poa annua* invasion

Macdonald creeping bentgrass (DLFPS-AP/3018 or AP-18) is a versatile creeping bentgrass for putting surfaces. Named for Charles B. Macdonald who is considered the father of golf course architecture, a cultivar named for him should demonstrate superior performance, and this one does.

Developed by DLF Pickseed and Rutgers University, Macdonald enables golf courses to be maintained with lower inputs and yet produce a superior product. Macdonald was developed for high resistance to many diseases including Dollar Spot, Anthracnose, Brown Patch and Pink Snow mould.

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Sowing rate and maintenance

Recommended seeding rate is 8 g/m^2 (80 kg/ha) for new plantings, and 5 g/m^2 (50 kg/ha) for oversowing.

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Kikuyu

REGAL® STAYGREEN
TURF TYPE KIKUYU GRASS



Regal® StayGreen kikuyu

Key features:

- Dark green colour
- Finer leaf texture
- Heat and drought tolerant
- More suited to turf than forage types
- Good wear tolerance

Regal® StayGreen is a turf-type kikuyu that has a darker green colour and finer leaf texture than vegetative kikuyu. Regal® StayGreen is more cold tolerant than other warm season grasses and retains its green colour better. It also withstands heat and drought well and is not susceptible to many of the common turf pests or diseases. It has good tolerance of wear and quickly recovers from injury. Its fine dense habit means it provides an excellent lie for golf course fairways and a tight, dense turf for sportsfields.

Adaption

Regal® StayGreen is adapted to areas that are frost free or experience occasional frosts. Regal® StayGreen is a subtropical (warm season) grass that grows best over summer when temperatures are in the range of 16 - 21°C.

Regal® StayGreen has better winter colour retention than most tropical grasses and does not readily discolour with a single frost. It will yellow with multiple frosts but will not tolerate sustained frosting. The minimum temperature for growth is about 8°C, well below that of most tropical grasses, such as bermuda grass or couch grass *Cynodon dactylon*.

Regal® StayGreen does best with regular rainfall throughout the year but has excellent tolerance for sustained periods of drought, even on sandy soils. It tolerates moderate soil salinity and salt spray. It has good tolerance to waterlogging.

Regal® StayGreen can be established on a wide range of soils. While it does best on well structured soils of high fertility, it can thrive on silty soils and sandy soils with moderate fertility. It can establish on very acidic soils (to pH 4.5) and soils with low phosphorous and potassium. Regal® StayGreen responds to phosphorous and nitrogen at establishment.

Regal® StayGreen requires minimal nitrogen to maintain a turf cover. In fact, too much nitrogen fertiliser produces too much growth, resulting in a puffy surface.

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Regal® StayGreen kikuyu

Establishment

Sowing can be carried out from late spring, to late summer. The optimum temperatures for germination are 18 - 29°C. It can however be sown at lower temperatures in spring, provided kikuyu is still growing and the seed will germinate.

The preferred sowing rate for Regal® StayGreen is 5 - 8 g/m^2 (50 -80 kg/ha).

Regal® StayGreen seed is relatively large (2 mm long) dark brown and oval in shape. It should not be planted too deeply. A maximum depth of 5 mm is recommended. Regal® StayGreen is best sown in a well prepared seedbed. Rolling after sowing helps retain moisture around the seed. Regal® StayGreen seed should always be sown alone as a companion species will slow establishment.

It is critical to maintain plenty of moisture around the seed until it germinates and new shoots emerge. Once germinated it rapidly forms a full cover within 8 weeks in optimum conditions. After that Regal® StayGreen shouldn't require any more irrigation.

Regal® StayGreen can frequently be established without any basal fertiliser or liming on soils with moderate fertility. On infertile sites a balanced NPK application or a starter fertiliser with low nitrogen content can speed up establishment. Its natural vigour is enough for it to establish after germination without excessive nitrogen fertiliser.

Emergence of the seedlings is easy to identify after about 10 - 20 days because Regal® StayGreen leaves have fine hairs on both sides of the leaf surface. This is unique to Regal® StayGreen.

Early care

Set the mower at 25 mm and begin mowing 3 - 4 weeks after germination as soon as there is grass to cut.

Mow frequently, preferably twice per week to begin with, when actively growing.

Reel mowing using heavy cutting units gives the best appearance, but rotary mowing can be successful.

Once full cover has been reached the mowing height can be lowered to 12 mm on a golf course fairway.

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Bermudagrass

TransContinental
SEEDED BERMUDAGRASS



TransContinental bermudagrass

Key features:

- Excellent drought tolerance
- Very good traffic tolerance and recovery
- Improved winter survival over most seeded bermudagrass varieties
- Quick spring green-up

TransContinental seeded bermudagrass can be used in a wide variety of situations from sportsfields, parks, schools, home, commercial turf, roadsides and erosion control. It has a highly aggressive, prostrate, spreading growth habit which forms a dense but uniform quality sward. TransContinental displays a dark green colour with a fine leaf-blade texture and is an excellent performer in hot and humid conditions. It is a deep rooted variety with aggressive rhizome activity and is moderately salt tolerant.

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Breeding history

Developed by Pure-Seed Testing, Inc. in North Carolina.

Sowing rate and maintenance

Sowing rates for TransContinental are 10 - 15 g/m^2 (100 - 150 kg/ha) for new sowings. Autumn sowings are not recommended; therefore spring through mid-summer plantings will achieve best results. A cultivated seed bed should be kept moist throughout the germination and establishment phase.

Germination should be expected within 10 - 14 days of sowing given optimal temperatures of between 18°C and 27°C. Sowings below 15°C are not recommended. TransContinental's first mowing should take place when the turf reaches a height of 2.5 mm and care must be taken not to remove more than one third of the total leaf blade. Full cover should be achieved in approximately 8 weeks given optimal growing conditions.

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