

# KINGSTON pasture systems

'Ceres'  
**KINGSTON**  
PERENNIAL  
RYEGRASS

- General purpose grazing - dryland and irrigated
- Marginal ryegrass areas
- Land development and improvement
- Acidic soils containing aluminium
- Pastures that experience occasional hard grazing

## KINGSTON pasture profile

Ryegrass type	Ploidy	Heading date	Seed count @1kg/ha	Sowing rate kg/ha	Season of sowing	Endophyte	Acid tolerance
Perennial	Diploid	3 days earlier than Nui	500,000	18-20	Autumn Spring	High Low	High

### Recommended pasture mixes:

- 1. General purpose dryland** - KINGSTON, PRESTIGE white clover, TONIC plantain, sub clover
- 2. High rainfall and irrigated general purpose** - KINGSTON, PRESTIGE white clover, NU SIRAL or TRIBUTE white clover, TONIC plantain, GROUSE chicory

*I recommend KINGSTON to clients who require a specialist mid-term pasture. Those farmers that need a reliable feed source for lamb finishing and beef backgrounding operations.*

*Amazingly KINGSTON held on through a very tough Summer/Autumn period\* - with only 105mm of rainfall from Dec-June. Other perennial Rye grass cultivars that have been recommended for their persistence in this climate haven't stood up as well. Its exceptional survivability may be related to the improved root depth KINGSTON achieves on acid soils. Farmers with KINGSTON pastures had something to get started on when the rains finally came.*

*KINGSTON has fantastic establishment vigour. Its tolerance to sub-soil aluminium seems to allow greater root development. This area has acid sub-soils with the associated aluminium problems. KINGSTON also stands up to pugging from cattle well — we can get wet winters here. It also demonstrates good recovery from grazing.*

*Typically I recommend KINGSTON to be sown in a mix with CRUSADER Italian ryegrass. The CRUSADER provides high quality bulk for the first 1-2 years. The KINGSTON will then extend the life of our pasture for another 2-3 years. It may even last longer.*

Jim Colquhoun, Senior Agronomist,  
Landmark Copeland Medway - Yass



**For further information contact your local seed retailer or regional PGG Seeds distributor**

Auswest Seeds, Forbes, NSW,	02-6852 1500
Stephen Pasture Seeds, Ballarat, VIC,	03-5335 8055
Smyth Seeds, Benalla, VIC	03-5762 5288
Roberts Ltd, TAS,	03-6393 6060
Irwin Hunter & Co, Perth, WA,	08-9383 4708

[www.pggseeds.com](http://www.pggseeds.com) [pasture.info@pggseeds.com](mailto:pasture.info@pggseeds.com)

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'Ceres'  
**KINGSTON**  
PERENNIAL  
RYEGRASS

# KINGSTON perennial ryegrass

- Versatile
- Persistent
- Productive
- Reliable

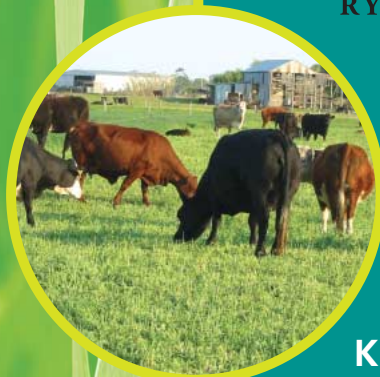


**PGG seeds**  
Pyne Gould Guinness Limited

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# <sup>'Ceres'</sup> KINGSTON PERENNIAL RYEGRASS

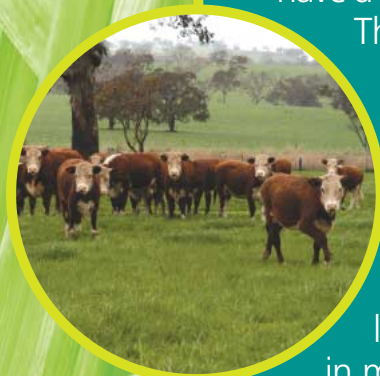


**KINGSTON** is the most versatile ryegrass in the PGG Seeds range.

**KINGSTON** was bred by Dr Alan Stewart at PGG Seeds Ceres Research Centre, Christchurch. It was developed from a combination of dryland ecotype material and aluminium tolerant material.



This tolerance has had a positive influence on **KINGSTON's** ability to produce well in soils that have a lower than ideal pH. This makes it suitable for use in soils being developed.



**KINGSTON** has the genetic traits to produce high levels of dry matter in more ideal growing conditions.

**KINGSTON** is available in both standard (high) endophyte and low endophyte options.

## The versatile perennial

### Key features;

- **Strong establisher**
- **Good winter vigour**
- **Grazing flexibility**
- **Excellent tolerance to dry conditions**

**KINGSTON** is a productive, persistent, rapid establishing, general purpose perennial ryegrass. It performs exceptionally well in a range of soil types, fertility levels and environmental conditions.

**KINGSTON** shows strong cool season growth and an ability to persist and perform in acidic and medium fertility soils.

**KINGSTON** can withstand occasional hard grazing and winter damage because of its densely tillered, diploid nature. This allows rapid recovery after grazing.

## Supports strong clover growth

Trial results and farmer observations show **KINGSTON** has the ability to support a valuable clover content, whilst still performing well as a dry matter producer.



In most case sub clover and a small-medium leaved white clover should be sown with **KINGSTON**. Other companion species that mix well with **KINGSTON** are TONIC plantain and chicory. TONIC will provide both useful dry matter production and be a source of key minerals for animal health benefits.

### Results

**KINGSTON** shows consistent annual performance across three year trials. It ranks well against current commercial varieties.



**KINGSTON** establishing well in a hard, dry site.

### Performance in challenging conditions

In acid soils aluminium can be present. Aluminium can inhibit root development which in combination with summer dry and often hot conditions may lead to poor survival of perennial ryegrass.

Trial work has shown that **KINGSTON** has improved tolerance to aluminium in hydroponic solution and in acidic soils containing aluminium.

### Aluminium tolerance & plant survival in acidic dryland environments

Cultivar	Plants with long roots in Al solution (%)	Field survival in acidic soil with Al (%)
Grasslands Nui	0.4	0
<b>KINGSTON</b>	<b>5.1</b>	<b>87</b>

Adapted from: Bennet, 1995. South African Journal of Plant and Soil 12.

Cultivar/Line	Total Year 1	Total Year 2	Total Year 3	3 Year total 2001-2003
<b>Kingston</b>	<b>6780</b>	<b>4510</b>	<b>5890</b>	<b>17180 105</b>
Vedette	6910	4710	5110	16730 103
Cannon	6430	4730	5450	16610 102
Yatsyn 1	6230	4510	5710	16450 101
C612	6660	4290	5230	16180 99
Ellett	6800	4040	5260	16110 99
Impact	6840	4150	5100	16090 99
C611	5970	3980	4920	14880 91
Trial mean (=100)	6590	4412	5302	16307 100
LSD (P=0.05)	555	1050	651	1333 8
CV%	7.2	20.4	10.5	7.0

Total dry matter performance of perennial ryegrass over 3 years, (kgDM/ha) APPEC Terang, 1998-2001.

Cultivar/Line	Total Year 1	Total Year 2	Total Year 3	3 Year total 2001-2003
Impact	6740	7570	6890	21200 108
<b>Kingston</b>	<b>6340</b>	<b>6620</b>	<b>6710</b>	<b>19670 100</b>
Bronsyn	6150	7070	6370	19580 100
Cannon	6640	6220	6610	19480 99
Vedette	6500	6190	5680	18370 94
C773	5640	6130	6310	18070 92
C775	5850	5710	6940	18490 94
C776	5780	6580	6180	18550 95
C777	6070	6550	6220	18840 96
LSD (P=0.05)	722	1252	890	2223
CV %	10.0	16.5	11.9	10.0

Annual performance of perennial ryegrass over 3 years (kgDM/ha), VICTAS Hamilton, 2001-2003, Bronsyn=100.

**Growth of plants in an aluminium solution.**  
T - Aluminium tolerant, **KINGSTON** plant  
S - Susceptible plant

