

<b>Details of Application</b>	
<b>Application Number</b>	2016/260
<b>Variety Name</b>	'MU2' Eureka PBR
<b>Genus Species</b>	<i>Pennisetum clandestinum</i>
<b>Common Name</b>	Kikuyu grass
<b>Accepted Date</b>	11 Oct 2016
<b>Applicant</b>	Lawn Solutions Australia, Berry, NSW
<b>Qualified Person</b>	Matthew Roche
<b>Details of Comparative Trial</b>	
<b>Location</b>	Australia's Warm-Season Turf GRC, 65-95 Gynther Road, Stockleigh QLD 4280
<b>Descriptor</b>	Couch grass <i>Cynodon dactylon</i> National descriptor PBR COUCH
<b>Period</b>	16 February 2017 to 12 January 2018
<b>Conditions</b>	Harvested slabs of the above turf varieties were provided by Muscat Turf Pty Ltd to Australian Sports Turf Consultants Qualified Person (QP) Matt Roche on 16 February 2017. Thirty (30) individual 100 mm diameter plugs were removed from the slabs of turf for each variety and planted in the prepared pots which contained River Sands Pro 2 Sports Turf Blend. No weed control or pesticides were applied throughout the duration of the trial. Nutrition was maintained by slow release fertiliser (18-10-9 on 16 Feb 2017, 24:2:9 on 22 Aug 2017 and 18-10-9 on 27 Oct 2017). Plants were irrigated to maintain unstressed growth and were cut routinely from the time of planting to 21 August 2017 to form a sward.
<b>Trial Design</b>	Thirty (30) 175 mm ANOVA squat pots of each variety were arranged in six (6) randomised blocks with five (5) plants per plot. Pots were positioned on benches within an enclosed nursery grow out area. All data were analysed through GenStat® Release 11.0 for Windows using standard Analysis of Variance procedures, which also generated protected Least Significant Differences (LSDs) for comparison of treatment means.
<b>Measurements</b>	Data was collected between November 2017 and January 2018. Single stolon runner length measurements from the side of the pot, sward height and inflorescence density per pot (140 days post last cut). Two stolons and two flowering tillers per pot were collected and stolon, leaf and or flower characteristics and root/rhizome density were measured over 4 days commencing 9 January 2018. Digital photos were taken 8 January 2018. A <i>Curvularia</i> leaf spot disease incidence rating (low = few lesions, moderate = distinct presence of the disease; and high = high incidence of the leaf spot disease was observed on the foliage) was also made on each plant. If multiple plants contained either a low and a moderate rating across a number of pots, a low to moderate rating was provided for example.

<b>RHS Chart - edition</b>	fifth edition
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**Origin and Breeding**

Chance Seedling: ‘MU2’- Eureka PBR was discovered in 2015 as a chance seedling or mutant plant growing among their PBR protected *Pennisetum clandestinum* (kikuyu) variety ‘Crowne’ (Application no. 2009/259) on the breeder’s turf farm at 698 Castlereagh Road, Agnes Banks NSW 2753. The plant, later designated ‘MU2’, was identifiable and chosen having a deeper green colour, no disease (including rust; causal organism *Phakopsora apoda*) present on the foliage while the surrounding ‘Crowne’ turfgrass did and the selection did not show any signs of having (male flower parts) anthers. A selected piece of plant material was removed and broken into vegetative sprigs to propagate and grow on a larger area of material for observation on the breeder’s property. The original plant has now been multiplied at least 3 times without showing any discernible off types and remaining male-sterile. ‘MU2’ has also shown to hold together better following harvesting in sod rolls compared to ‘Crowne’ and “Common” kikuyu varieties. Breeder: Rob Muscat and Frank Muscat, Agnes Banks, NSW

**Choice of Comparators** Characteristics used for grouping varieties to identify the most similar Variety of Common Knowledge

Organ/Plant Part	Context	State of Expression in Group of Varieties
Inflorescence	anthers	absent

**Most Similar Varieties of Common Knowledge identified (VCK)**

Name	Comments
‘RK19’	sold under the trademark of Village Green®
‘KIK203’	sold under the trademark of Kenda®
‘K-5’	sold under the trademark of Oakridge®
‘Crowne’	

**Varieties of Common Knowledge identified and subsequently excluded**

Variety	Distinguishing Characteristics	State of Expression in Candidate Variety	State of Expression in Comparator Variety	Comments
‘Noonan’	inflorescence male-sterility	present	absent	
‘Crofts’	inflorescence male-sterility	present	absent	
‘Breakwell’	inflorescence male-sterility	present	absent	

**Variety Description and Distinctness - Characteristics which distinguish the candidate from one or more of the comparators are marked with a tick.**

Organ/Plant Part: Context	Eureka PBR	Village Green	Crowne	Oakridge	Kenda
<input type="checkbox"/> Plant: ploidy	tetraploid	tetraploid	tetraploid	tetraploid	tetraploid
<input type="checkbox"/> Plant: type	mat-forming	mat-forming	mat-forming	mat-forming	mat-forming
<input type="checkbox"/> Plant: height	medium	medium	medium	medium	medium

<input type="checkbox"/>	Plant: longevity	perennial	perennial	perennial	perennial	perennial
<input type="checkbox"/>	Plant: spreading	laterally by stolons and rhizomes				
<input type="checkbox"/>	Stolon: nodes	simple	simple	simple	simple	simple
<input checked="" type="checkbox"/>	Stolon: internode length	med to long	medium	long	med to long	med to long
<input type="checkbox"/>	Stolon: internode thickness	medium to broad	medium to broad	medium	medium	medium to broad
<input type="checkbox"/>	Stolon: colour when exposed to sunlight	148A	148A	148A	148A	146C
<input type="checkbox"/>	Culms: length	short to medium	medium to long	short to medium	short to medium	med to long
<input type="checkbox"/>	Leaf blade: shape	linear-triangular	linear-triangular	linear-triangular	linear-triangular	linear-triangular
<input checked="" type="checkbox"/>	Leaf blade: length	medium	long	long	long	long
<input type="checkbox"/>	Leaf blade: width	medium	medium	medium	medium	medium
<input type="checkbox"/>	Leaf blade: colour	137B	137A	137B	137A	137A
<input type="checkbox"/>	Ligule: appearance	a fringe of hairs				
<input type="checkbox"/>	Inflorescence: type	an enclosed raceme	comprising only a few spikelets	an enclosed raceme	an enclosed raceme	an enclosed raceme
<input type="checkbox"/>	Culms: habit	decumbent	decumbent	decumbent	decumbent	decumbent
<input type="checkbox"/>	Leaf sheath: appearance	Inflated	inflated	inflated	inflated	inflated
<input type="checkbox"/>	Leaf blade: presentation	flat or conduplicate				
<input type="checkbox"/>	Leaf blade: apex	obtuse	obtuse	obtuse	obtuse	obtuse
<input type="checkbox"/>	Inflorescence: anthers	absent	absent	absent	absent	absent

### **Characteristics Additional to the Descriptor/TG**

<b>Organ/Plant Part: Context</b>	<b>Eureka PBR</b>	<b>Village Green</b>	<b>Crowne</b>	<b>Oakridge</b>	<b>Kenda</b>
<input type="checkbox"/> Plant: habit	prostrate creeping	prostrate creeping	prostrate creeping	prostrate creeping	prostrate creeping
<input type="checkbox"/> Culms: width	Medium	broad	medium	medium	broad
<input type="checkbox"/> Plant: Curvularia disease incidence rating	Low	low	high	low to high	low to high
<input checked="" type="checkbox"/> Inflorescence: density	High	moderate	low	moderate	moderate

<b>Statistical Table</b>					
<b>Organ/Plant Part: Context</b>	<b>Eureka PBR</b>	<b>Village Green</b>	<b>Crowne</b>	<b>Oakridge</b>	<b>Kenda</b>
<input type="checkbox"/> Plant: stolon length from the side of the pot after 140 days post being cut (mm)					
Mean	574.00	466.00	703.00	569.00	586.00
Std. Deviation	129.00	188.00	195.00	188.00	168.00
LSD/sig	153	ns	ns	ns	ns
<input type="checkbox"/> Stolon: first stolon node with a lateral branch					
Mean	4.27	4.33	5.20	4.60	4.86
Std. Deviation	1.50	2.00	1.50	1.50	2.50
LSD/sig	2.04	ns	ns	ns	ns
<input checked="" type="checkbox"/> Stolon: length of fourth internode from stolon tip (mm)					
Mean	12.95	9.94	17.58	14.98	14.64
Std. Deviation	2.80	2.50	4.30	3.50	5.60
LSD/sig	3.06	ns	P≤0.01	ns	ns
<input type="checkbox"/> Stolon: diameter of fourth internode from stolon tip (mm)					
Mean	4.16	4.00	3.59	3.68	4.01
Std. Deviation	0.40	0.30	0.30	0.30	0.50
LSD/sig	0.31	ns	P≤0.01	P≤0.01	ns
<input type="checkbox"/> Stolon: length of leaf sheath of fourth internode from stolon tip (mm)					
Mean	16.81	15.31	19.52	17.07	19.30
Std. Deviation	2.50	2.80	3.00	2.40	3.40
LSD/sig	2.23	ns	P≤0.01	ns	P≤0.01
<input type="checkbox"/> Stolon: length of leaf blade on fourth visible node from stolon tip (mm)					
Mean	20.44	21.65	31.07	23.64	34.24
Std. Deviation	6.90	10.70	9.50	10.90	15.70
LSD/sig	8.65	ns	P≤0.01	ns	P≤0.01
<input type="checkbox"/> Inflorescence: diameter of culm on flowering tillers between 3rd and 4th leaf (mm)					
Mean	1.91	1.94	1.64	1.80	1.96
Std. Deviation	0.30	0.30	0.30	0.30	0.30
Lsd/sig	0.17	ns	P≤0.01	ns	ns
<input type="checkbox"/> Inflorescence: length of flag leaf on flowering tillers (mm)					
Mean	11.56	13.01	15.55	13.73	13.81
Std. Deviation	2.90	6.30	5.00	2.80	4.30
LSD/sig	2.73	ns	P≤0.01	ns	ns
<input type="checkbox"/> Inflorescence: width of flag leaf on flowering tillers (mm)					
Mean	2.39	2.89	2.86	2.80	2.76
Std. Deviation	0.40	0.50	0.40	0.40	0.50
LSD/sig	0.31	P≤0.01	P≤0.01	P≤0.01	P≤0.01
<input type="checkbox"/> Inflorescence: length of sheath on fourth leaf on flowering tillers (mm)					
Mean	11.51	11.58	12.41	11.46	12.67

Std. Deviation	1.40	1.50	2.40	1.60	2.80
LSD/sig	1.59	ns	ns	ns	ns
<input checked="" type="checkbox"/> Inflorescence: length of blade on fourth leaf on flowering tillers (mm)					
Mean	16.75	20.99	25.58	21.38	23.88
Std. Deviation	5.00	6.40	9.40	8.50	8.30
LSD/sig	6.78	ns	P≤0.01	ns	P≤0.01
<input type="checkbox"/> Inflorescence: width of blade on fourth leaf on flowering tillers (mm)					
Mean	2.96	3.22	3.02	2.92	3.24
Std. Deviation	0.50	0.40	0.40	0.40	0.60
LSD/sig	0.3	ns	ns	ns	ns
<input checked="" type="checkbox"/> Inflorescence: density (count per pot)					
Mean	72.00	25.60	5.90	32.50	23.30
Std. Deviation	33.90	14.90	7.50	17.80	19.40
LSD/sig	17.37	P≤0.01	P≤0.01	P≤0.01	P≤0.01
<input type="checkbox"/> Inflorescence: number per tiller within cut sward (count per tiller)					
Mean	3.23	1.72	1.43	1.48	1.67
Std. Deviation	1.30	0.90	0.60	0.60	0.90
LSD/sig	0.66	P≤0.01	P≤0.01	P≤0.01	P≤0.01
<input type="checkbox"/> Sward: height 140 days post being cut (mm)					
Mean	87.37	72.85	80.57	90.10	74.90
Std. Deviation	13.30	10.30	12.90	13.30	14.80
LSD/sig	10.78	P≤0.01	ns	ns	P≤0.01
<input type="checkbox"/> Roots: visible rhizome depth at trial completion (330 dpp)					
Mean	173.00	154.90	158.80	148.50	162.30
Std. Deviation	10.60	27.80	31.30	35.20	26.60
LSD/sig	17.2	P≤0.01	ns	P≤0.01	ns