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**Doguet et al.**

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(54) **ZOYSIAGRASS PLANT NAMED ‘6136’**

(50) Latin Name: *Zoysia japonica*  
Varietal Denomination: **6136**

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(52) **U.S. Cl.** ..... **Plt./390**

(58) **Field of Classification Search** ..... **Plt./390**  
See application file for complete search history.

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(57) **ABSTRACT**

An asexually reproduced variety of perennial zoysiagrass  
with a unique combination of morphological characters  
including medium leaf blade width, cool-season brown  
patch resistance, and absence of leaf hairs.

**2 Drawing Sheets**

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Latin name of the genus and species of the plant claimed:  
The present invention relates to the genus and species *Zoysia*  
*japonica* (L.) Merr.  
Variety denomination: ‘6136’.

**BACKGROUND OF THE INVENTION**

**Field of Invention**

The present invention relates to a new and distinct asexu-  
ally reproduced variety of perennial zoysiagrass (*Zoysia*  
*japonica* (L.)) Merr.

**BRIEF SUMMARY OF THE INVENTION**

**Background of the Invention**

This invention relates to a new and distinct perennial  
zoysiagrass cultivar identified as ‘6136’ zoysiagrass (herein  
referred to as ‘6136’). The inventors, David L. Doguet and  
Virginia G. Lehman, discovered ‘6136’ under cultivated  
conditions near Poteet, Tex. in a collection of plants from  
Kobe, Japan made by Jack Murray (deceased). ‘6136’ was  
identified as a distinctly different vegetative patch or clonal  
plant differing with brown patch resistance from the sur-  
rounding plants. The inventors asexually reproduced ‘6136’  
by taking vegetative cuttings of stolons and rhizomes, cut-  
ting the rhizomes and stolons into segments, each with a  
vegetative bud, and rooting them in potting media.

For purposes of registration under the “International Con-  
vention for the Protection of New Varieties of Plants”  
(generally known by its French acronym as the UPOV  
Convention) and noting Section 1612 of the Manual of Plant  
Examining Procedure, it is proposed that the title of the  
invention is Zoysiagrass plant named ‘6136’.

**BRIEF DESCRIPTIONS OF THE  
ILLUSTRATIONS**

FIG. 1. Plant of ‘6136’ zoysiagrass, showing stolon  
growth.

FIG. 2. Tiller and inflorescence of ‘6136’ zoysiagrass.

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**COMPLETE DESCRIPTION OF THE VARIETY**

‘6136’ was characterized in greenhouse and field condi-  
tions. ‘6136’ is a unique variety of zoysiagrass (*Zoysia*  
*japonica* (L.)) Merr. that was discovered under cultivated  
conditions. The inventors, David L. Doguet and Virginia G.  
Lehman, discovered ‘6136’ in a collection of plants from  
Kobe, Japan made by Jack Murray (deceased) that was  
planted near Poteet, Tex. ‘6136’ was identified as a distinctly  
different vegetative patch or clonal plant differing in leaf  
texture and brown patch resistance from the surrounding  
plants. The plants were located in USDA Plant Hardiness  
Zone 8. The inventors asexually reproduced ‘6136’ by  
taking vegetative cuttings of stolons and rhizomes, cutting  
the rhizomes and stolons into segments, each with a veg-  
etative bud, and rooting them in potting media. Planting of  
the rooted material provided planting stock for studying  
performance and for comparison of morphological charac-  
ters after propagation. ‘6136’ has been propagated by  
rhizomes, stolons, tillers, and sod. Asexually reproduced  
plants of ‘6136’ have remained stable and true to type  
through successive generations of propagation. No seedling  
establishment from ‘6136’ has been noticed in either green-  
house or field studies.

‘6136’ is a perennial zoysiagrass that spreads by both  
stolons and rhizomes. Characteristics of ‘6136’ measured in  
2005 were taken from plants that were approximately 15  
months in age. The greenhouse was located near Lebanon,  
Oreg., with a nighttime low temperature of 50 degrees F.,  
and daytime high of 80 degrees F., and a minimum soil  
temperature of 77 degrees F. The plants were grown with a  
minimum 14-hour day length, supplemented with photosyn-  
thetically active radiation equivalent to approximately 50%  
sunlight. The plants were fertilized with the equivalent of 1  
pound of actual N per month, using a soluble fertilizer of  
20-20-20 in two equal soluble applications per month.

‘6136’ has a medium leaf texture with a leaf length longer  
than ‘Diamond’ but shorter than ‘Crowne’ and ‘BM230’  
(Table 1). ‘6136’ has a floral area longer than ‘Diamond’  
(Table 2). ‘6136’ has an absence of leaf hairs versus  
‘Palisades’, ‘Zorro’, ‘Crowne’, and ‘Cavalier’ which each  
have many leaf surface hairs (Table 3). ‘Palisades’ and  
‘Crowne’ have larger stolon nodes than ‘6136’ (Table 4).



No seeds of '6136' have developed; no seedlings have been noted in field production area or field test areas. The inflorescences produced in the greenhouse have consisted of empty glumes.

'6136' has now shown susceptibility to the zoysiagrass mite when tested at Poteet, Tex., where susceptible varieties have shown the coachwhip leaf symptoms of the mite. '6136' has shown resistance which distinguishes it from vegetative zoysiagrass varieties in both test plots and sod expansion plantings at Poteet, Tex. and in experimental plantings near Houston, Tex. to cool-season brown patch (*Rhizoctonia solani*). '6136' has shown resistance to Fall armyworm when adjacent *Paspalum* and *Cynodon* sp. plants have shown severe damage. '6136' has shown good turfgrass performance and temperature adaptation when tested as far north as Beltsville, Md., USDA hardiness zone 7a, which would extend the area of adaptation for '6136' in a line from northern Maryland across central Tennessee through northern Arkansas through Oklahoma in an East/West line and on a North/South line from Washington D.C., south through Mexico. '6136' will be limited only by winter survival in colder regions. '6136' is similar to most medium to coarse textured zoysiagrasses in water use demands as shown in test situations near Poteet, Tex., and will be limited by adequate precipitation in drier to arid regions. '6136' is adapted from sandy to heavier loam soil textures and from slightly acid to slightly alkaline soil pH.

TABLE 1

Leaf blade widths and lengths and texture class of selected zoysiagrass cultivars, measured under greenhouse conditions in Lebanon, OR, 2005.				
Variety	Leaf Stiffness	Length, 4th youngest crown leaf cm	Width, 4th youngest crown leaf mm	Leaf Texture Class
'6136'	Medium Stiff	1.42	2.16	Medium
'Crowne'	Medium Stiff	3.39	3.01	Medium-Coarse
'Royal'	Medium Stiff	—	0.78	Very Fine
'Diamond'	Soft	0.85	0.92	Very Fine
'Cavalier'	Medium Stiff	—	0.55	Very Fine
BM 230	Medium	2.33	3.28	Coarse

TABLE 2

Inflorescence and leaf characters of selected zoysiagrass cultivars, measured under greenhouse conditions in Lebanon, OR, 2005.					
Variety	Length floral area cm	Length, flag leaf collar to first lower node mm	Sheath length, 4th crown leaf cm	Anther length mm	Node width at base of inflorescence mm
'6136'	2.31	8.6	1.10	1.83	0.57
'Crowne'	3.05	11.0	3.05	—	0.71
'Cavalier'	—	—	1.25	—	—
'Diamond'	1.3	—	0.9	—	—
'Royal'	—	—	1.43	—	—
'Palisades'	—	—	4.15	—	—
'BM230'	2.73	14.75	1.75	1.74	0.84

TABLE 3

Adaxial leaf hair presence or absence of selected zoysiagrass cultivars, measured under greenhouse conditions in Lebanon, OR, 2005.	
Variety	Leaf hair, adaxial Presence/Number
'6136'	Absent
'Palisades'	Many
'Zorro'	Many
'Diamond'	Absent
'Royal'	Absent
'Crowne'	Many
'Cavalier'	Many
'BM230'	Absent

TABLE 4

Stolon characters of selected zoysiagrass cultivars, measured under greenhouse conditions in Lebanon, OR, 2005.					
Variety	Thickness 1 <sup>st</sup> youngest stolon node mm	Thickness 2 <sup>nd</sup> youngest stolon node mm	Stolon Internode length, 1 <sup>st</sup> to 2 <sup>nd</sup> node cm	Stolon Internode length, 2 <sup>nd</sup> to 3 <sup>rd</sup> node cm	Stolon Internode length, 3 <sup>rd</sup> to 4 <sup>th</sup> node cm
'6136'	1.58	1.96	1.67	2.38	2.85
'Cavalier'	1.94	2.05	2.8	2.55	2.45
'Diamond'	0.88	1.16	1.27	1.5	1.34
'Zorro'	1.67	2.03	2.32	2.43	2.76
'Royal'	1.65	1.84	2.1	2.28	2.17
'Palisades'	2.05	2.19	2.93	4.28	5.35
'Crowne'	2.13	2.27	3.2	2.43	2.95
'BM 230'	2.05	2.24	—	—	—

#### COMPLETE BOTANICAL DESCRIPTION OF THE VARIETY

**Origin:** '6136' is a cultivar of a single clone discovered under cultivated conditions in a Poteet, Tex. planting of zoysiagrass clones derived from a collection of zoysiagrasses from Kobe, Japan made by Jack Murray (deceased).

**Classification:** *Zoysia japonica* (L.) Merr.

**Growth habit:** '6136' is a perennial plant that spreads by stolons and rhizomes and produces a dense, fine textured turfgrass. The inflorescence of '6136' is a terminal spike-like raceme, with spikelets on short pedicels.

**Leaf blade:** Rolled in the bud, flat surface.

**Leaf blade pubescence:** No hairs on abaxial or adaxial leaf surface.

**Leaf sheath pubescence:** Absent except for long hairs at mouth of sheath; '6136' mean length: 2.11 mm; Zorro: 4.47 mm; Cavalier: 4.41 mm.

**Leaf blade margin:** '6136'=slight roughness; BM230=rough; Cavalier=mostly smooth.

**Leaf blade veins:** Obscure.

**Leaf blade flexibility (softness):** Medium stiff.

**Vegetative leaf, 2nd youngest vegetative leaf:**

*Blade length range.*—1.2 cm to 2.1 cm, mean length: 1.89 cm.

*Blade width mean.*—'6136': 1.8 mm to 2.4 mm, mean width: 2.07 mm; 'Zorro' mean width: 1.76 mm.

Sheath length mean, 4<sup>th</sup> youngest vegetative leaf:

*Range*.—0.7 to 1.4 cm, mean length: 1.1 cm; Mean, Cavalier: 1.25.

Stolon leaf angle, third youngest leaf: ‘6136’: 72.9; ‘Cavalier’: 80.8; ‘Crowne’: 109.2.

Inflorescence characters:

*Culm total length, including floral area to node below flag leaf*.—10.9 cm. Length of stem of inflorescence: 8.61 cm. Floral area length: 2.31 cm.

*Culm width, stem thickness, base of floral area*.—0.57 mm.

*Anther length*.—1.83 mm.

*Floret (seed) length*.—3.47 mm.

*Floret (seed) width*.—0.75 mm.

*Node thickness, node below flag leaf*.—0.76 mm.

*Pedicel length*.—2.6 mm.

*Flag leaf length*.—‘6136’: 0.55 cm; ‘Crowne’: 1.53 cm.

*Flag leaf width*.—‘6136’: 0.89 mm; ‘Crowne’: 1.41 mm.

Mature plant height, including inflorescence: 12.9 cm; ‘Crowne’: 14.6 cm.

Color notations, vegetative characters, based on The R.H.S. Colour Chart (light quality, photoperiod, and general growth of the plants affect color notations):

*Leaf blade color adaxial leaf surface*.—144A green.

*Leaf blade color abaxial leaf surface*.—146A green.

*Stolon color*.—144B yellow green and 71A red purple.

Color notations, floral characters, based on The R.H.S. Colour Chart (light quality, photoperiod, and general growth of the plants affect color notations):

*Culm stalk*.—144A yellow green and 146A yellow green.

*Stigma*.—155A white.

*Anther color, fresh*.—59A red purple.

*Anthers, mature, dried*.—166C greyed orange.

Turf quality (rated 1–9, 9 best): 7; ‘Meyer’. 5.

#### References Cited

U.S. Patent Documents		
October, 1998.	Engelke, M. C.	U.S. PP 10,636. ‘Diamond’ zoysiagrass
October, 2000.	Engelke, M. C.	U.S. PP 11,570. ‘Crowne’ zoysiagrass
December, 1986.	Youngner, V. B.	U.S. PP 5,845. ‘El Toro’ zoysiagrass
September, 2000.	Engelke, M. C.	U.S. PP 11,515. ‘Palisades’ zoysiagrass

I claim:

1. A new and distinct variety of zoysiagrass plant, substantially as described and illustrated herein, characterized particularly by a unique combination of morphological characters.

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Fig. 1





Fig. 2