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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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(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 asexually 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 surrounding plants. The inventors asexually reproduced '6136' by taking vegetative cuttings of stolons and rhizomes, cutting the rhizomes and stolons into segments, each with a vegetative bud, and rooting them in potting media.

For purposes of registration under the "International Convention 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 conditions. '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 vegetative bud, and rooting them in potting media. Planting of the rooted material provided planting stock for studying performance and for comparison of morphological characters 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 greenhouse 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 photosynthetically 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 1st youngest stolon node mm	Thickness 2nd youngest stolon node mm	Stolon Internode length, 1st to 2nd node cm	Stolon Internode length, 2nd to 3rd node cm	Stolon Internode length, 3rd to 4th 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, 4th 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, bsae 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.

* * * * *

Fig. 1

Fig. 2