

[54] ST. AUGUSTINE GRASS

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[57] ABSTRACT

A perennial St. Augustine grass having outstanding dark green color, rapid lateral spread, a semi-dwarf growth habit, and a medium level of flowering shoot production. This variety has good gray leafspot resistance throughout the year and is cold tolerant.

4 Drawing Figures

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SUMMARY OF THE VARIETY

This invention relates to a new and distinct perennial St. Augustine grass selected from the progeny of an open pollinated purple stigma diploid parent Ea611081. This purple stigma genotype was labeled 615866 and propagated vegetatively by stolons to provide planting stock for studying performance and making comparisons to present commercial varieties.

Genotype 615866 has a wide leaf blade, a short leaf length, and an outstanding dark green color. These characteristics along with the rapid spread, its medium level of flowering shoot production, its good gray leafspot (*Piricularia grisea*) resistance, and its cold tolerance can be used to distinguish 615866 from other St. Augustine grasses.

BRIEF DESCRIPTION OF THE ILLUSTRATIONS

FIG. 1 is a photograph of 615866 St. Augustine turf showing generally the characteristics of this new grass;

FIG. 2 shows the leaves and stem of a 615866 St. Augustine grass plant;

FIG. 3 shows a spike of a 615866 St. Augustine grass plant; and

FIG. 4 shows florets of a 615866 St. Augustine grass plant.

DETAILED DESCRIPTION OF THE VARIETY

Genotype 615866 possesses a Munsell color designation 7.5 GY 4/4 ¹/₂ and is characterized by compressed and branched culms. The leaf blades are relatively short, averaging 44.8 mm. long, but are very coarse, averaging 7.66 mm. wide. These characteristics can be used to distinguish 615866 from both the dwarf and non-dwarf St. Augustine grasses. The average internode length is 35.0 mm., thus allowing this semi-dwarf to have a vigorous lateral spread. Genotype 615866 has a purple stigma color and an unreduced chromosome number of 18.

Total soluble salts measured in micromhos/cm. specific conductance using a Beckmann Solu-Bridge will allow differentiation between 615866 and other St. Augustine grasses. The average reading for 615866 was 146.1 micromhos/cm. The chromosome numbers,

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stigma colors, morphological measurements of 615866 and other St. Augustine grasses are compared in Tables 1, 2 and 3.

Table 1

Chromosome Numbers and Stigma Colors of 615866 and other St. Augustine grasses		
Selection/Variety	Chromosome Number (Unreduced) ²	Stigma Color
615866	18	Purple
45176	18	"
73176	18	"
Ea611081	18	"
Floratine	27	"
Bitter Blue	27	"
Texas Common	18	White

¹The Munsell designated color is of plant material grown in the greenhouse. The color is subject to variation depending upon the environmental conditions under which the grass is grown.

²Chromosome Number determinations made on pollen mother cells.

Table 2

Comparative Leaf Blade Length, Width and Internode Length for 615866 and Other St. Augustine grasses			
Selection/Variety	Leaf Blade Length (mm.) ¹	Leaf Blade Width (mm.) ²	Internode Length (mm.) ³
615866	44.8 ± 11.6	7.66 ± 0.72	35.0 ± 7.7
45176	44.2 ± 11.8	6.04 ± 0.89	22.8 ± 3.8
73176	33.4 ± 7.3	5.86 ± 1.09	10.8 ± 2.2
Ea611081	78.4 ± 33.3	7.12 ± 1.38	36.0 ± 7.4
Floratine	82.8 ± 25.9	7.81 ± 2.46	36.3 ± 7.3
Bitter Blue	105.2 ± 31.8	8.55 ± 1.25	38.3 ± 8.7
Texas Common	45.0 ± 16.8	6.48 ± 0.85	34.0 ± 4.2
LSD 5%	12.1	.71	4.0

¹All plant material grown unclipped in greenhouse.

²Measurements recorded 15 millimeters above leaf collar.

³Measurements recorded between third and fourth internodes.

Table 3

Specific Conductance Measurements of 615866 and Other St. Augustine grasses	
Selection/Variety	Specific Conductance (micromhos/cm.) ¹
615866	146.1
45176	104.1
73176	107.3
Ea611081	132.3
Bitter Blue	190.2
Texas Common	122.8

¹Measurements were made on a six centimeter stem section.

The characteristic growth habit can be used to distinguish 615866 from the dwarf St. Augustine grasses 73176 and 45176, and the more upright growing types Bitter Blue and Texas Common. In addition, fresh weight clipping yields can be used to distinguish 615866 from the two dwarf selections and Ea611081. This information is illustrated in Tables 4 and 5. In Table 6 it can be seen that the leaf texture of 615866 is similar to that of the coarser types Bitter Blue and Texas Common thus differentiation in these cases must be based on the lower growth habit of 615866.

Table 4

Comparative Growth Habit Averages for 615866 and Other St. Augustine grasses at Apopka, Florida, and Katy, Texas			
Selection/ Variety	Growth Habit ¹		
	Florida 1971	Texas 1971	Florida 1972
615866	3.4	4.1	3.0
45176	2.6	2.5	2.1
73176	2.4	2.5	1.6
Ea611081	3.4	4.0	3.2
Bitter Blue	4.4	4.5	3.7
Texas Common	—	—	—
LSD 5%	—	—	.2

¹Rating 1 - low growing, 5- upright growing

Table 5

Fresh weights of Clippings Removed From Plots of 615866 and Other St. Augustine grasses			
Selection/ Variety	Fresh Weights (gms/.48m × 1.52 m plot)		
	July	August	September
615866	24.7 ± 9.1	40.0 ± 15.1	38.3 ± 8.7
45176	6.3 ± 2.1	19.7 ± 10.0	13.7 ± 6.4
73176	3.0 ± 1.7	6.0 ± 3.6	7.7 ± 2.9
Ea611081	36.7 ± 12.9	74.0 ± 12.5	45.0 ± 8.2
Bitter Blue	22.3 ± 9.9	43.7 ± 15.3	29.7 ± 4.9
LSD 5%	16.6	21.8	11.0

Table 6

Comparative Texture Averages for 615866 and Other St. Augustine grasses at Apopka, Florida, and Katy, Texas			
Selection/ Variety	Texture ¹		
	Florida 1971	Texas 1971	Florida 1972
615866	1.9	1.7	2.3
45176	2.7	2.1	3.0
73176	2.9	2.5	3.1
Ea611081	1.7	2.0	2.3
Bitter Blue	1.4	1.5	2.0
Texas Common	—	1.1	—
LSD 5%	—	—	.2

Genotype 615866 has an outstanding dark green color and a medium level of flowering shoot production.

Field observations have shown that 615866 has the fastest rate of cover of any St. Augustine grass tested including Ea611081. The observations of color and rate of cover used in combination can allow distinction of 615866 from Ea611081. This information is illustrated in Tables 7, 8 and 9.

Table 7

Comparative Color Averages for 615866 and Other St. Augustine grasses at Apopka, Florida, and Katy, Texas			
Selection/ Variety	Color ¹		
	Florida 1971	Texas 1971	Florida 1972
615866	9.4	8.9	8.0
45176	8.7	9.3	7.9
73176	8.9	9.3	8.1
Ea611081	8.7	8.7	7.8
Bitter Blue	9.1	8.7	7.8
Texas Common	—	8.8	—
LSD 5%	—	—	.2

¹Rating 1 - lightest green, 10 - darkest green

Table 8

Comparative Ratings of Average Flowering Shoot Production of 615866 and Other St. Augustine grasses at Apopka, Florida, and Katy, Texas		
Selection Variety	Average Flowering Shoot Production ¹	
	Texas 9/17/71	Florida 6/15/72
615966	1	2.3
45176	3	2.3
73176	0	.7
Ea611081	0	2.0
Bitter Blue	0	1.3
Texas Common	3	—
LSD 10%	—	1.0

¹Rating 0 - no flowering shoot production, 5 - heavy flowering shoot production.

Table 9

Relative Comparison of Percent Turf Cover of 615866 and Other St. Augustine grasses at Apopka, Florida				
Selection/ Variety	Average Percent Area Covered ¹			
	2/15/72	4/3/72	5/1/72	
615866	53	60	97	100
45176	37	47	60	93
73176	40	47	67	93
Ea611081	57	60	87	97
Bitter Blue	47	53	70	97
LSD 5%	8	10	15	N.S.

¹Initial planting made 12/1/71

Genotype 615866 has a lower percent gray leafspot (*Piricularia grisea*) infestation throughout the whole year than any selection other than the very leafspot resistant dwarf 73176. This observation can be used to distinguish 615866 from other less resistant selections such as Bitter Blue and Texas Common. This information is given in Table 10.

Table 10

Comparative Gray Leafspot (<i>Piricularia Grisea</i>) Resistance of 615866 and Other St. Augustine grasses at Apopka, Florida and Katy, Texas.						
Selection/ Variety	Percent Gray Leafspot					
	Florida 6/28/71	4/31/71	6/29/71	7/31/71	9/2/71	9/17/71
615866	20	10	10	10	10	0
45176	20	20	30	10	20	30
73176	20	10	20	10	5	0
Ea611081	20	10	30	20	10	30
Bitter Blue	40	90	10	10	10	20
Texas Common	—	10	60	20	30	20

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The cold tolerance of 615866 and other St. Augustine grasses is shown in Table 11. The cold tolerance of this genotype allows differentiation from other less tolerant St. Augustine grasses under sub-zero (centigrade) stress.

Table 11

Comparative Cold Damage from Below Zero (centigrade) Temperature of 615866 and Other St. Augustine grasses in Apopka, Florida and Katy, Texas			
Selection/ Variety	Texas 1972	Percent Cold Damage ¹	
		Test - A ²	Test - B ³
615866	0	5	27.5
45176	95	60	47.5
73176	99	40	35.0
Ea611081	99	15	50.0

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Table 11 -continued

Comparative Cold Damage from Below Zero (centigrade) Temperature of 615866 and Other St. Augustine grasses in Apopka, Florida and Katy, Texas			
Selection/ Variety	Texas 1972	Percent Cold Damage ¹	
		Test - A ²	Test - B ³
Bitter Blue	20	5	52.5
Texas Common	0	—	—

- ¹Cold damage as measured by percent stolons killed.
²Test - A, Two year old sod.
³Test - B, One year old sod.

What is claimed and desired to be secured by Letters Patent is:

1. A St. Augustine grass, substantially as herein illustrated and described.

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FIG. 1

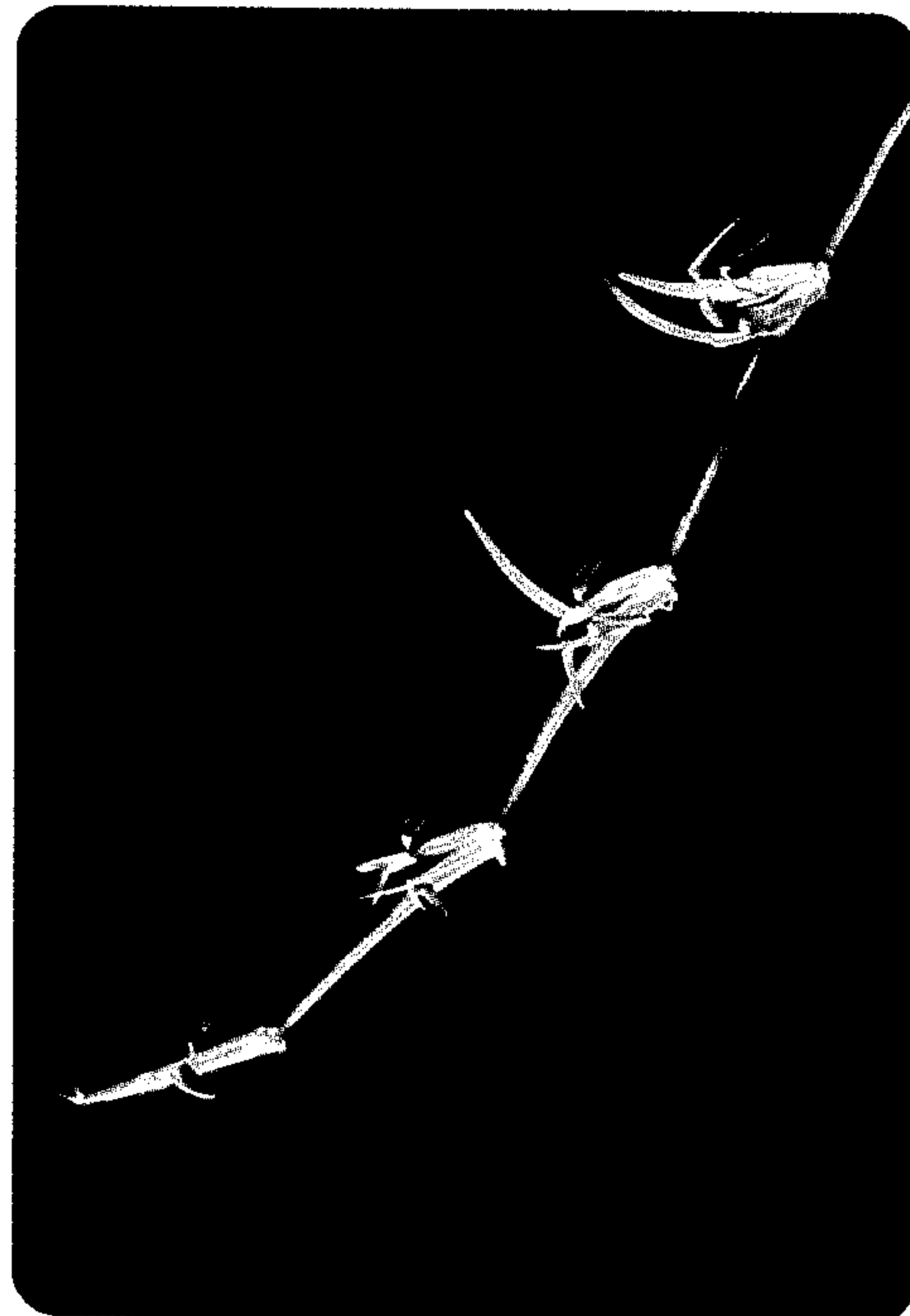


FIG. 2

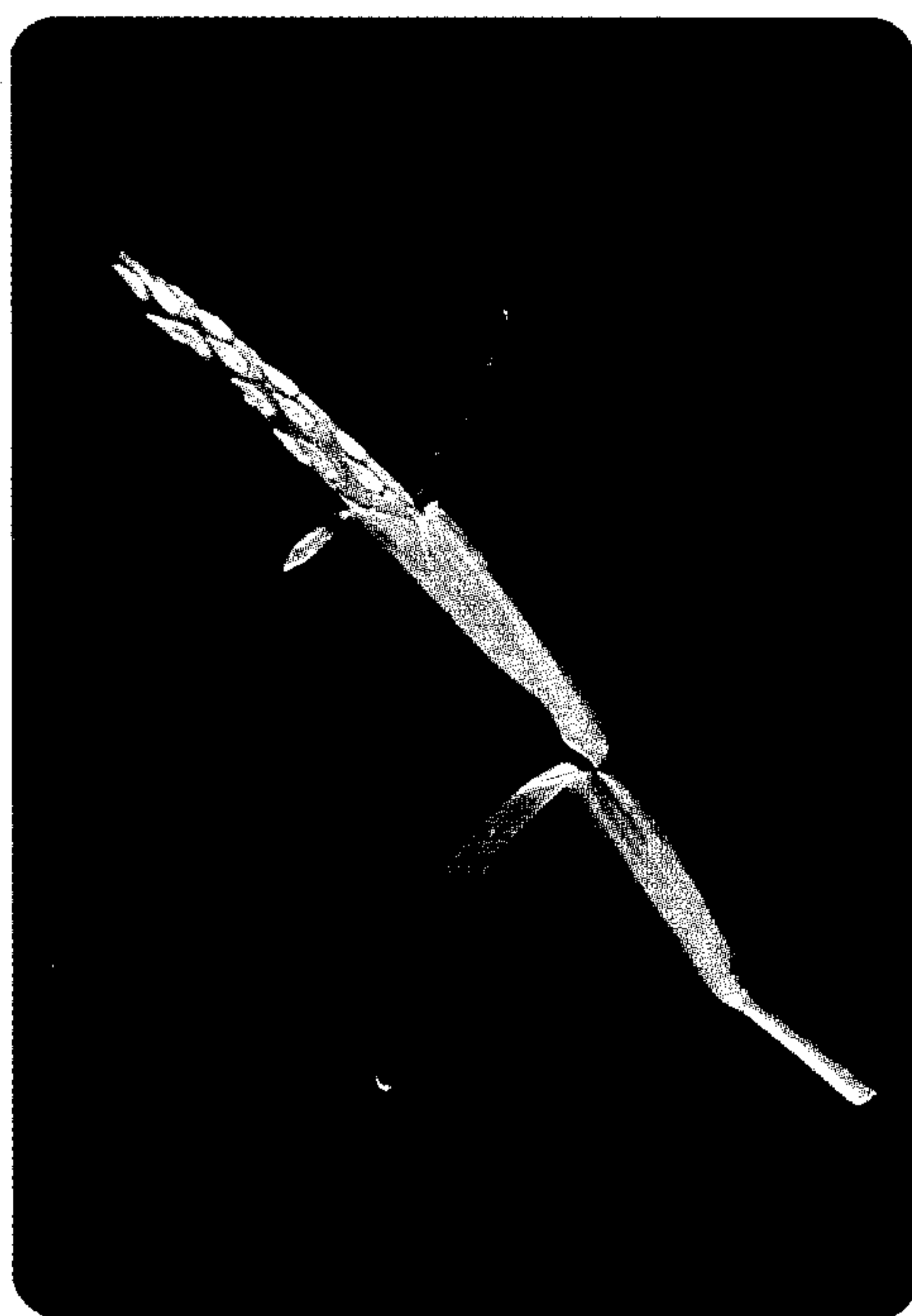


FIG. 3



FIG. 4