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Bagdasarian

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(54) **STRAWBERRY PLANT NAMED 'SWEET ANN'**

(50) Latin Name: ***Fragaria×ananassa***
Varietal Denomination: **Sweet Ann**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(65) **Prior Publication Data**

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(51) **Int. Cl.**
A01H 5/00 (2006.01)

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(58) **Field of Classification Search** Plt./208, Plt./209

See application file for complete search history.

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(57) **ABSTRACT**

A new and distinct variety of strawberry plant named 'Sweet Ann.' This new day-neutral strawberry variety is characterized by vigorous plants which produce high yields of large to very large, sweet fruit with an excellent flavor; well-shaped, long and conical fruit, having a glossy medium red exterior and medium red interior; and which plants maintain an open architecture.

6 Drawing Sheets

Latin name of genus and species: *Fragaria×ananassa.*
Variety denomination: 'Sweet Ann'.

BACKGROUND OF THE INVENTION

The present invention relates to a new and distinct variety of strawberry named 'Sweet Ann.' This new day-neutral strawberry variety is the result of a controlled cross in an ongoing breeding program made by the inventor, Jimmy Bagdasarian, in 2005. Said cross was between a strawberry variety designated '4A28,' a female, and a strawberry variety designated '10B131,' a male, in the ongoing breeding program. Pollen taken from a '10B131' plant pollinated a female '4A28' plant bearing flowers with no anthers. The flowers were covered so that no other pollen could contaminate the procedure. The variety is botanically known as *Fragaria× ananassa.*

The aforementioned controlled cross was carried out in a breeding program at Santa Cruz, Calif., USA. Strawberries developed, were later harvested and the seeds resulting from this cross were extracted and germinated in a greenhouse at Redding, Calif., USA. The resulting seedlings were transplanted to Shastina, Calif. in 2006, and grown for an additional period of time. The seedlings were asexually propagated by stolons in breeding plots in late September to Mid-October in: Irvine, Calif.; Oxnard, Calif.; Santa Maria, Calif.; and Watsonville, Calif. The new variety, designated '16F29,' was selected at Irvine, Calif. (Orange County) in 2007 from among various sibling genotypes as the 29th selection, and later named 'Sweet Ann.'

The new variety has also been "meristemed": small pieces of plant buds (approximately 0.5 mm in diameter) consisting of the undifferentiated meristem tissue and one or two leaf primordia were removed from the buds on crowns of young daughter plants, and then placed on nutrient medium and new plants grown from them. Planting stock from "meristemed" plants are growing in a screenhouse located in Redding, Calif.

The new variety was further asexually propagated by stolons in Macdoel, Calif. (Siskiyou County), Shasta County, and Manteca, Calif. (San Joaquin County). The propagules of 'Sweet Ann' ('16F29') are identical to the original plant in all distinguishing characteristics; accordingly, the propagation has demonstrated that the traits disclosed herein remain fixed and true to type through successive generations of asexual reproduction.

SUMMARY OF THE INVENTION

Sweet Ann is a day-neutral variety exhibiting the following combination of characteristics, which have been observed repeatedly and which distinguish this strawberry plant as a new and distinct variety:

1. The variety produces large to very large sized fruit;
2. The fruit is generally well shaped, long and conical;
3. The fruit is attractive, having a glossy medium red exterior and medium red interior;
4. The fruit has a good acid-sugar balance, is sweet tasting, with an excellent flavor;
5. The variety produces few runners in the fruiting field;
6. The variety exhibits high productivity of fruit; and
7. The plants are vigorous and maintain an open architecture.

The primary market for the 'Sweet Ann' variety is fresh market sales of the fruit. 'Sweet Ann' produces large sized, moderately firm berries that have an excellent flavor. The berries produced by the 'Sweet Ann' variety are also sweet tasting, a very important characteristic for fresh fruit. Table 1 shows a comparison of the Brix levels of 'Sweet Ann' as compared with 'Albion' and 'San Andreas' varieties. The sugar levels of each of the varieties were measured with a refractometer on Nov. 11, 2009, and are set forth in degrees Brix (°Bx).

TABLE 1

Data Sample No.	°Bx 'Sweet Ann'	°Bx 'Albion'	°Bx 'San Andreas'
1	13.0	11.0	7.0
2	12.1	11.0	10.0
3	11.9	11.2	5.75
4	10.5	11.6	8.2
5	13.2	No Data	No Data

'Sweet Ann' possesses other characteristics that are also commonly sought by commercial strawberry growers. The early fruit can be picked with petioles attached and sold as long stemmed berries. "Long stems" are prized as a very special ingredient in some dessert recipes, and typically bring a premium price. In addition, 'Sweet Ann' berries retain their firmness, color and quality even following long distance shipment.

The following Table 2 evidences the superior production of 'Sweet Ann' as compared to 'Ventana,' 'Camarosa,' 'Albion,' and 'Palomar.' Data was collected in Irvine, Calif. from Dec. 12, 2008 through Mar. 2, 2009, to calculate the average weight in grams per berry, and the average number of crates of berries produced per acre, for each of the varieties.

TABLE 2

Variety	Average Grams per Berry	Average Crates Per Acre
'Sweet Ann'	33	2617
'Ventana'	36	1741
'Camarosa'	29.4	1984
'Albion'	28	1803
'Palomar'	36.3	1895

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying color photographs, identified as FIGS. **1** through **6**, show the appearance of typical specimens of the new strawberry variety, initially designated '16F29,' and now named 'Sweet Ann.' These Figures depict the colors, as nearly true as it is reasonably possible given differences in color illustrations of this character. Accordingly, color in the photographs may differ slightly from the colors discussed in the botanical description. The photographs of the depicted plant, plant parts, and fruit of 'Sweet Ann' were taken in August of 2009.

FIG. **1** shows typical fruiting and field characteristics of 'Sweet Ann';

FIG. **2** shows a close up view of a typical leaf structure of 'Sweet Ann';

FIG. **3** shows a close up of a selection of typical mid-season fruit of 'Sweet Ann';

FIG. **4** shows a close up of a selection of typical mid-season calyx of 'Sweet Ann';

FIG. **5** shows typical mid-season fruiting trusses of 'Sweet Ann' with mature and immature fruit; and,

FIG. **6** shows typical mid-season interiors of 'Sweet Ann' fruit.

Leaf samples from three (3) plants of the the variety initially designated as '16F29,' and later named 'Sweet Ann,' were submitted for analysis to a lab for allelic fingerprint. Each of the three (3) allelic fingerprints, from the three (3) leaf samples submitted, was the same as compared to each other. Upon analysis, '16F29' was shown by allelic fingerprinting to be distinct and unique compared to the lab's large database of allelic fingerprints.

DETAILED BOTANICAL DESCRIPTION OF THE PLANT

'Sweet Ann' is the result of a cross between a strawberry variety designated '4A28' and a strawberry variety designated '10B131.' The female parent, '4A28,' is an unreleased proprietary variety having the following plant characteristics: strongly day-neutral; small size; globose habit; open density; and low plant vigor. The male parent, '10B131,' is an unreleased proprietary variety having the following plant characteristics: medium day-neutral; globose habit; tight density; and medium plant vigor. The resulting variety, named 'Sweet Ann,' has the following characteristics: weak day-neutral; large size; globose habit; open density; and high plant vigor.

The new variety was asexually propagated by stolons as described above. 'Sweet Ann' has not been observed under all possible variants in growing conditions, such as temperature, moisture, humidity, light intensity, day length, soil type and geographical location. Thus, the variety may differ in detail depending upon variance in these or other environmental factors.

Independent test plot work was done in Irvine, Oxnard, Santa Maria, and Watsonville, Calif. In these trials, evaluation of the new variety included: yield and yield distribution; fruit size, shape and overall appearance; external and internal fruit color; color and size of plant and plant parts; fruit shelf life; sweetness and fruit flavor; tolerance to disease and rain damage; and plant architecture. The description below is based upon observations of plants which were asexually reproduced by stolons, and were planted outdoors in late April in Macdoel, Calif.

TABLE 3

Characteristics Of 'Sweet Ann'

GENUS/ SPECIES:	*Fragaria* x*Ananassa*	
PLANT:	Type	Day Neutral
	Configuration	Globose and open plant density.
	Vigor	Strong
	Parents	'4-A-28' (Female) and '10-B-131' (Male)
	Height	380 mm
	Width	67 mm
	Disease Tolerance	No formal testing of tolerance to disease has been conducted; however, in field observations, based upon performance and appearance, 'Sweet Ann' exhibits very high tolerance to disease.
FOLIAGE:	Size	The terminal leaflets are greater in length than width and display an average 67 mm in width and approximately 83 mm in length
	Margin	Commonly crenate.
	Shape	Orbicular.
	Base	Obtuse.
	Cross-Section	Moderately concave.
	Blistering	Absent or very weak.
	Glossiness	Medium.
	Color	Adaxial Surface: green 364U Abaxial Surface: green 370U
	Petiole Texture	Medium pubescence with hairs directed outward.
	Petiole Color	Green 383U
	Petiole Length	220 mm
	Petiole Height	380 mm
	Leaflet Petiole	4.25 mm average with range of 1.8 to 8.39 mm

TABLE 3-continued

Characteristics Of 'Sweet Ann'

	Stipule	Commonly anthocyanin coloration is absent or very weak
	Stipule	Adaxial color 350U; Abaxial color 371U
	Stipule Width	43.25 mm average with range of 38.86 to 47.98 mm
	Stipule Length	95.51 mm average with range of 76.38 to 117.49 mm
	Stolons	Weak presence.
	Stamens	mean number 30.6
INFLOR-ESCENCE:	Flowering Time	Early
	Date of Bud Burst, Bloom Time and Duration	
	Southern California	November 1st to removal from field
	Central California	December 1st to removal from field
	Northern California	January 1st to removal from field
	Position	Approximately at or above canopy height.
	Length	Average length of fruiting clusters in mid-season plants is 33 cm.
	Petals	Average 5.4 petals that are overlapping
	Petal Length	Average 13.9 mm, range 12.38 to 14.98 mm
	Petal Width	Average 13.05 mm, range 12.28 to 13.89 mm
	Petal Color	Pantone white 11-0104 TPX
	Calyx	Color adaxial 364U and abaxial 370U that are larger in size relative to the corolla.
FRUIT:	Bearing	Remontant.
	Shape	Generally conical and occasional wedge-shaped and commonly the length is greater than the width.
	Length	Approximately 49.4 mm on average.
	Achenes	Approximately level with the fruit surface.
	Glossiness	Strong.
	External Color	Red 185C
	Internal Color	Red 1788C
	Fruit Center	Commonly solid with some hollowness.

'Sweet Ann' differs from the parent varieties in several important characteristics including those shown in Table 4 below.

TABLE 4

Comparison of 'Sweet Ann' Characteristics to Parent Varieties

	'Sweet Ann'	'4A28' Female Parent	'10B131' Male Parent
Day-Neutralness	Weak day-neutral	Strongly day-neutral	Medium day-neutral
No. Stamens (mean).	30.6	22.8	22.9
No. Petals (mean)	5.4	5.1	5.6
Calyx Color adaxial	364U	370U	370U
Calyx Color abaxial	370U	363U	364U
Leaf Color adaxial	364U	364U	370U
Leaf Color adaxial	370U	357U	363U
Inflorescence Length	33 cm	24 cm	31 cm
Plant Configuration	Globose	Globose	Globose
	Large open density	Small open density	Tight density
Plant Vigor	High	Low	Medium

'Sweet Ann' is distinguished by its production of large to very large fruit of exceptional flavor, medium skin firmness and medium red to full red external color. Contrast is made to 'Albion' (U.S. Plant Pat. No. 16,228) and 'Aromas' (U.S. Plant Pat. No. 10,451), as well as other commercially grown varieties as indicated in the tables below. High productivity, sweetness, and exceptional flavor of the fruit, along with vigorousness of the plant, make this new variety highly competitive in the strawberry industry.

The leaf and fruit color of 'Sweet Ann' is readily distinguished from that of other commercially grown strawberry varieties. Table 5 shows the visually observed characteristics of 'Sweet Ann' leaf and fruit colors as compared to leaf and fruit color characteristics of 'Chandler,' 'Camarosa,' 'Albion,' and 'Catalina.' Color terminology where noted herein is in accordance with the Pantone Color Formula Guide GP 1201.

TABLE 5

Comparison of 'Sweet Ann' Leaf and Fruit Colors

Variety Name	Color Adaxial Leaf	Color Abaxial Leaf	Color External Fruit	Color Internal Fruit
'Sweet Ann'	364U	370U	185C	1788C
'Chandler'	343C	339U	186C	179C
'Camarosa'	349C	348U	193C	185C
'Albion'	357U	74900	n/a	n/a
'Catalina'	343C	349U	193C	185C

In Table 6, a comparison of the mid-tier leaf width, mid-tier leaf length, petiole length, and plant height between 'Sweet Ann' ('16F29') and the varieties 'Albion' and 'Aromas' is shown.

TABLE 6

Comparison of Foliar Characteristics of 'Sweet Ann' to 'Albion' and 'Aromas'

Foliar Characteristic (expressed in mm)		'Sweet Ann'	'Albion'	'Aromas'
Mid-tier Leaf Width:	Mean	67	73	92
	Range	52-88	50-95	67-100
Mid-tier Leaf Length:	Mean	83	68	74
	Range	70-104	50-95	65-85
Petiole Length:	Mean	220	135	156
	Range	150-280	105-170	135-200
Plant Height:	Mean	380	252	257
	Range	290-480	210-270	230-330

Tables 7 and 8 show, respectively, a comparison of certain foliar and flower petal characteristics between 'Sweet Ann' and the varieties 'Diamante' and 'Aromas.'

TABLE 7

Comparison of Foliar Characteristics of 'Sweet Ann' to 'Diamante' and 'Aromas'

Foliar Characteristic	'Sweet Ann'	'Diamante'	'Aromas'
Plant Height (mm)	380	231	257
Plant Width (mm)	67	73	92
Petiole Length (mm)	220	149	156
Leaf Convexity	moderately concave	some flat, most slightly concave	some flat, most slightly concave
Leaf Pubescence	Moderate	Very Light	Moderate

TABLE 8

Comparison of Flower Petals of 'Sweet Ann' to 'Diamante' and 'Aromas'

	'Sweet Ann'	'Diamante'	'Aromas'
Petal Number (mean)	5.4	5.4	5.7
Petal Length (mean) (mm)	13.9	13.4	13.8

TABLE 9

Results	
Lab No: 911589-25491	
Date received: Aug. 26, 2009	
Date reported: Sep. 9, 2009	
Received as:	Strawberry,
Lot(s):	16F29
Qty tested:	3 samples
Test ID 1252	Variety ID by DNA markers
Strawberry variety ID	
Sample submitted by: Jim Bagdasarian	
Analysis: Leaf samples from 3 plants were analyzed.	

TABLE 9-continued

Results		
#	Submitted as	Result
1	16F29	New - added to database
2	16F29	16F29
3	16F29	16F29
Allelic fingerprint (base pairs):		
Marker 54: 204, 206, 229		
Marker 60: 190, 216, 232		
Marker 55: 235, 245, 265		

I claim:

1. A new and distinct strawberry plant named 'Sweet Ann' as herein described and illustrated by the characterizations set forth above.

* * * * *

Figure 1

Figure 2

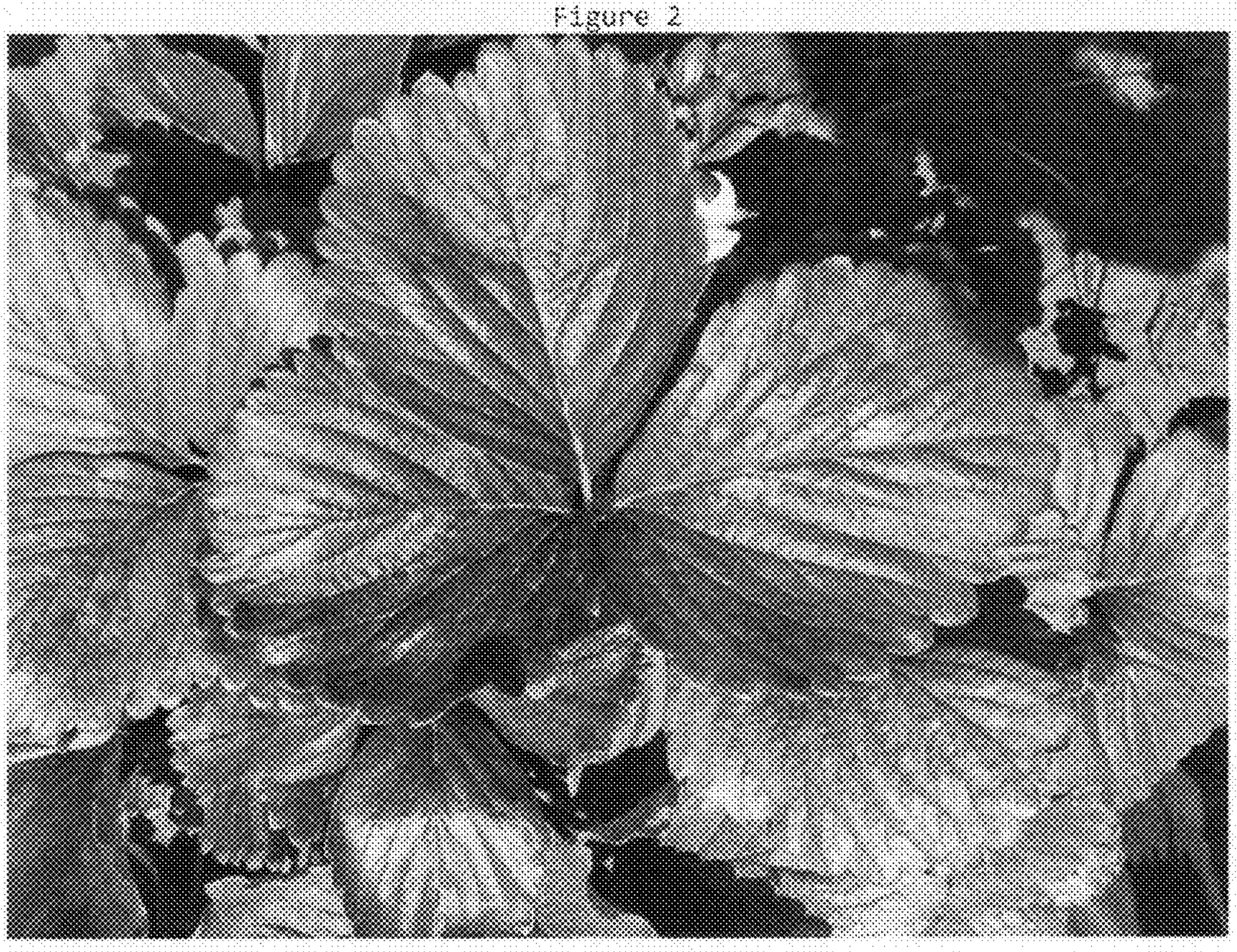

Figure 3

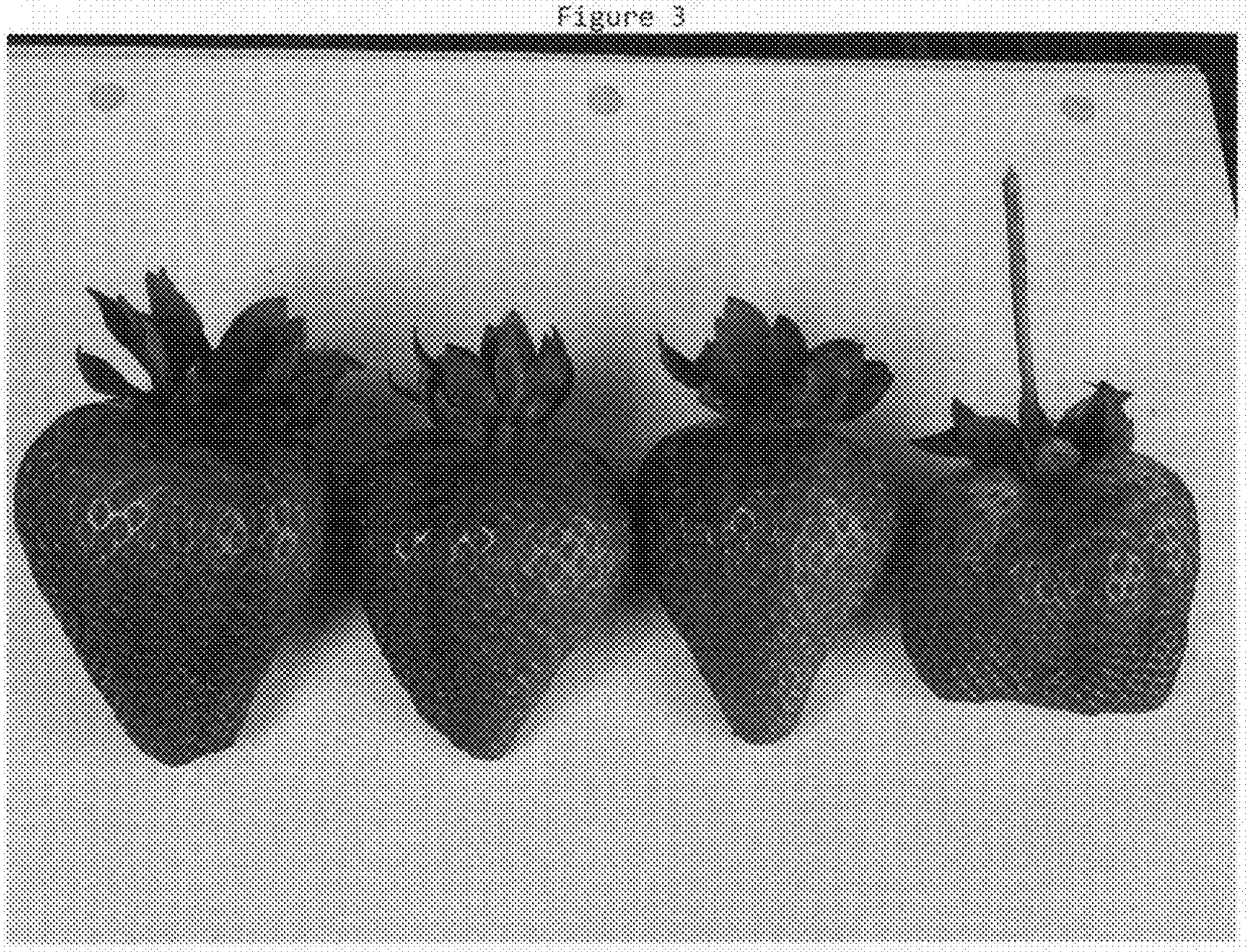

Figure 4

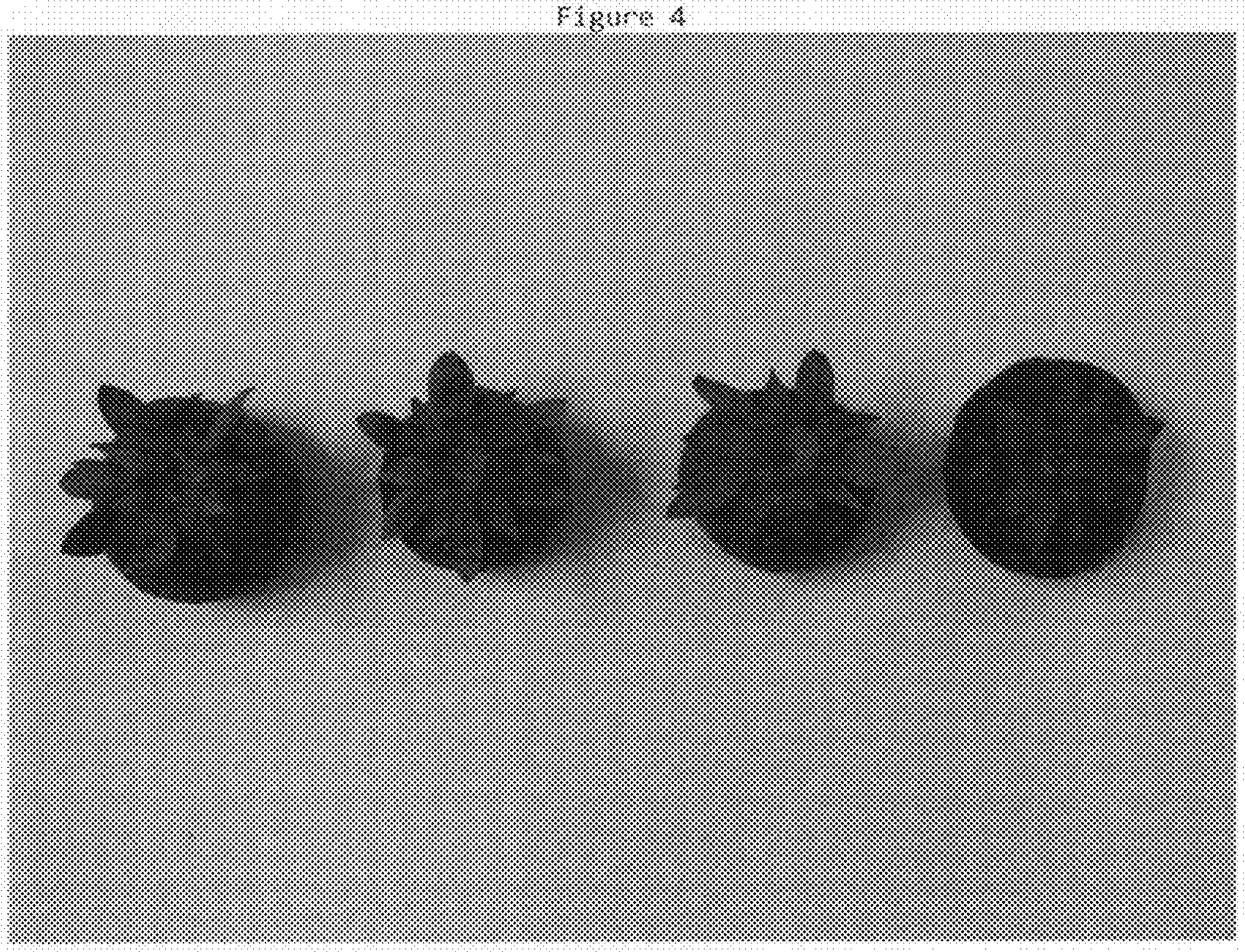

Figure 5

Figure 6