US00PP16475P2

(12) **United States Plant Patent**
Gilford et al.

(10) **Patent No.: US PP16,475 P2**
(45) **Date of Patent: Apr. 25, 2006**

(54) **STRAWBERRY PLANT NAMED 'DRISCOLL ATLANTIS'**

(50) Latin Name: ***Fragaria×ananassa***
Varietal Denomination: **Driscoll Atlantis**

(76) Inventors: **Kristie L. Gilford**, 1525 N. Dover Rd., Dover, FL (US) 33527; **Bruce D. Mowrey**, 266 Webb Rd., Watsonville, CA (US) 95076

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 156 days.

(21) Appl. No.: **10/923,532**

(22) Filed: **Aug. 19, 2004**

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

(52) **U.S. Cl.** **Plt./209**

(58) **Field of Classification Search** Plt./209
See application file for complete search history.

Primary Examiner—Anne Marie Grunberg
Assistant Examiner—Annette H Para
(74) *Attorney, Agent, or Firm*—Jones Day

(57) **ABSTRACT**

This invention relates to a new and distinct variety of strawberry named 'Driscoll Atlantis.' The variety is similar to the varieties 'Biscayne' and 'Key Largo.' The variety is distinguished from 'Biscayne' and 'Key Largo,' in particular, by its shorter average stipule length, reduced frequency of paired bracts, shorter sepal length and width, weak leaf glosiness, dense stipule pubescence, and a very narrow band on the fruit where achenes are absent.

5 Drawing Sheets

1. Latin name of the genus and species of the plant claimed: The variety is botanically identified as *Fragaria× ananassa.*

1.1 Variety denomination: The strawberry variety denomination is 'Driscoll Atlantis'.

2. BACKGROUND OF THE INVENTION

The new variety originated as a result of a controlled cross between the strawberry plants '88E94' (unpatented variety) and Mirador (U.S. Plant Pat. No. : 11,279) in an ongoing breeding program, and was discovered as a seedling in Hillsborough, Fla. in 1999. The original seedling of the new cultivar was asexually propagated by stolons in a Nursery in Shasta County, Calif. Propagules were transplanted to a controlled breeding plot in Hillsborough County, Fla., where the variety was identified and selected for further evaluation. 'Driscoll Atlantis' was subsequently asexually propagated and underwent further testing in Hillsborough County, Fla. for three years. This propagation and testing has demonstrated that the combination of traits disclosed herein which characterize the new variety are fixed and retained true to type through successive generations of asexual reproduction.

3. SUMMARY OF THE INVENTION

The present invention relates to a new and distinct variety of strawberry named 'Driscoll Atlantis.' The variety is botanically identified as *Fragaria×ananassa.* The new variety is distinguished from other varieties by a number of characteristics as set forth in Tables 1–4.

4. COMPARISON TO SIMILAR VARIETIES

The varieties which we believe to be similar to 'Driscoll Atlantis' from those known to us are 'Biscayne' (U.S. Plant Pat. No. 12,186) and 'Key Largo' (U.S. Plant Pat. No. 8,649). There are several characteristics of the new variety that are different from, or not possessed by 'Biscayne' and 'Key Largo'. The new variety has a shorter average stipule

length, a reduced frequency of paired bracts, a shorter sepal length and width, weak leaf glosiness, dense stipule pubescence, and a very narrow band on the fruit where achenes are absent.

'Driscoll Atlantis' is distinguished from its parents '88E94' and 'Mirador' by being partially everbearing, in comparison to the fully everbearing trait of both parents.

5. BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying photographs show typical specimens of the new variety, including fruit, foliage and flowers, in color as nearly true as it is reasonably possible to make in color illustrations of these characteristics.

FIG. **1** shows the upper side of the leaves of the plant.

FIG. **2** shows the whole the plant.

FIG. **3** shows the under side and underside of the flowers.

FIG. **4** shows a close-up of the fruit.

FIG. **5** shows the fruit in longitudinal cross-section.

6. DESCRIPTION OF THE NEW VARIETY

The following detailed description of the new variety is based upon observations taken of plants and fruit grown in Hillsborough County, Fla., U.S.A. This description is in accordance with UPOV terminology. Observations of 'Driscoll Atlantis', 'Biscayne' and 'Key Largo' were taken in side by side comparison in the 2003–2004 winter season. Plants for observation were harvested from McArthur, Calif., and held in refrigerated storage until planting in Hillsborough County, Fla. in October 2003. Plants were grown in raised beds of soil under conditions typical of commercial strawberry production in central Florida. Fruits were harvested twice weekly for yield determination from November 2003 to March 2004. Measurements of plant, flower, and fruit characteristics were made in January 2004, approximately four months after planting. Color designations, color descriptions, and other phenotypical descriptions may deviate from the stated values and descrip-

tions depending upon variation in environmental, seasonal, climatic and cultural conditions. Colors are described and the most similar color designations are provided from The Royal Horticultural Society (R.H.S.) Colour Chart.

6.1 PROPAGATION

The new variety is principally propagated by way of stolons. Although propagation by stolons is presently preferred, other known methods of propagating strawberry plants may be employed.

6.2 CHARACTERISTICS OF THE NEW VARIETY

Information on the new variety is presented in Tables 1, 2, 3 and 4. In the tables, the flowers described are secondary flowers except where indicated. The fruit described is the secondary fruit on five month old plants. Fruit and flower measurements are an average of both primary and secondary fruit and flowers.

Table 1 provides information on the plant and fruit characteristics of the new variety 'Driscoll Atlantis' compared with characteristics of 'Biscayne' and 'Key Largo.' Table 2 provides additional information of the plant and fruit characteristics of the new variety 'Driscoll Atlantis' compared with characteristics of the varieties 'Biscayne' and 'Key Largo.' Table 3 provides reactions of the new variety to stresses, pests and diseases compared with reactions of the varieties 'Biscayne' and 'Key Largo.' Table 4 provides isozyme characteristics of the new variety as compared to that of the varieties 'Biscayne' and 'Key Largo.'

TABLE 1

QUANTITATIVE COMPARISON OF 'DRISCOLL ATLANTIS', 'BISCAYNE,' AND 'KEY LARGO'

	'Driscoll Atlantis'	'Biscayne'	'Key Largo'
Plant Characteristics			
Height of Plant (cm)	8.7	10.0	11.6
Spread of Plant (cm)	30.8	31.3	32.1
Number of Crowns	3.7	3.2	4.2
Leaf Characteristics			
Terminal Leaflet Length (cm)	7.0	7.6	8.4
Terminal Leaflet Width (cm)	7.2	8.1	8.0
Terminal Leaflet Length/Width Ratio	0.97	0.93	1.06
# Teeth/Terminal Leaflet	19.0	27.0	21.6
Color of upper side	137A medium green	137A light green	137A light green
Color of under side	140D light gray green	139C light gray green	139C light gray green
Petiole Length (cm)	10.5	9.2	11.5
Petiole Color	145C yellow green	142D yellow green	142D yellow green
Petiolule Length (mm)	4.7	5.5	6.3
Petiolule Diameter (mm)	1.7	2.2	1.9
Petiolule Color	145C yellow green	142D yellow green	142D yellow green
Bract Frequency	50% typically paired	83% typically paired	0%
Stipule Length (cm)	2.9	3.7	3.4
Stipule Width (cm)	1.5	2.0	1.5

TABLE 1-continued

QUANTITATIVE COMPARISON OF 'DRISCOLL ATLANTIS', 'BISCAYNE,' AND 'KEY LARGO'

	'Driscoll Atlantis'	'Biscayne'	'Key Largo'
Stolon Characteristics			
Anthocyanin color	60A red	59B red	
Diameter at bract (mm)	2.92	3.24	3.30
Avg. # of Daughter plants (2003 Nursery)	53	72	52
Flower Characteristics			
Petal Length (cm)	1.3	1.36	1.65
Petal Width (cm)	1.3	1.49	1.46
Petal Length/Width Ratio	0.96	0.91	1.13
Flower Diameter (cm)	2.85	2.76	2.72
Calyx Diameter (cm)	3.48	3.86	5.11
Sepal Length (mm)	12.7	15.3	21.5
Sepal Width (cm)	6.8	7.22	9.15
Petal Color	155C white	155C white	155C white
Receptical Color	149C yellow green	150A yellow green	150A yellow green
Anther Color	9A yellow	9A yellow	9A yellow
Fruiting Truss Length (cm)	18.2	8.7	13.6
Fruit Characteristics			
Fruit Length (cm)	5.0	4.8	4.8
Fruit Width (cm)	3.9	4.0	3.5
Fruit Length/Width Ratio	1.29	1.20	1.37
Average Berry Weight (g)	23.6	26.5	23.2
External Color	45B red	46B red	46B red
Internal Color	42B dark red	44A medium red	44B medium red
Achene Coloration	151D to 185D grey red to yellow green	180B to 150C grey red to yellow green	182B to 150A grey red to yellow green
Achenes per berry	121	109	104
Achene weight (g)	0.000082	0.00046	0.00058
2003–2004 Fruit Yield (g/plant)	327	243	251

TABLE 2

QUALITATIVE COMPARISON OF 'DRISCOLL ATLANTIS', 'BISCAYNE,' AND 'KEY LARGO'

	'Driscoll Atlantis'	'Biscayne'	'Key Largo'
Plant			
Habit	flat globose	flat globose	globose
Canopy Density	medium to dense	medium	medium
Vigor	medium	strong	medium
Leaf			
Shape in cross section	slightly concave to flat	concave	slightly concave
Interveinal blistering	medium	weak	weak
Glossiness	weak	medium	medium
Number of leaflets	three only	three only	three only
Terminal leaflet margin profile	flat	revolute	revolute
Terminal leaflet shape of base	rounded	rounded	slightly oblique

TABLE 2-continued

QUALITATIVE COMPARISON OF 'DRISCOLL ATLANTIS', 'BISCAYNE,' AND 'KEY LARGO'

	'Driscoll Atlantis'	'Biscayne'	'Key Largo'
Terminal leaflet shape of teeth	obtuse to rounded	rounded	rounded
Stipule pubescence	dense	medium	medium
Petiole pubescence	dense	medium	medium
Petiole pose of hairs	outwards	outwards	upward
Stolon			
Anthocyanin coloration	weak to medium	strong	
Thickness	medium	medium	
Pubescence	medium	medium	
Inflorescence			
Position relative to foliage	level to above	level	level to above
Diameter of calyx relative to corolla on secondary flowers	same size to larger	larger	much larger
Diameter of inner calyx relative to outer on secondary flowers	same size	same size	smaller
Spacing of petals	overlapping	overlapping	overlapping
Fruiting Truss			
Attitude at first picking	prostrate	prostrate	semi-erect
Fruit			
Predominant shape	conical	conical	conical
Difference in shapes between primary and secondary fruits	slight	slight	slight
Band without achenes	very narrow	narrow	narrow
Unevenness of surface	weak to medium	weak	weak
Evenness of color	even	even	even
Glossiness	strong	strong	strong
Insertion of achenes	level with surface	level with surface	below surface
Insertion of calyx	level	level	set above
Pose of the calyx segments	spreading to reflexed	spreading	reflexed
Size of calyx in relation to fruit on secondary fruit	same to larger	larger	larger
Adherence of calyx	strong	strong	strong
Firmness of flesh	firm	firm	firm
Evenness of flesh color	slightly uneven	slightly uneven	slightly uneven
Distribution of flesh color	marginal and central	marginal and central	marginal and central
Hollow center size	medium	large	medium
Sweetness	strong	strong	medium
Texture when tasted	medium	fine	medium
Acidity	medium	medium	medium
Time of First Flowering in 2003–2004	Late October	Mid-November	Late November
Harvest Interval in 2003–2004	Late November to Mid-March	Early December to Mid-March	Late December to Mid-March
Type of Bearing	partially everbearing	partially everbearing	partially everbearing

6.3 REACTION TO STRESS, PESTS, AND DISEASE

TABLE 3

REACTIONS TO STRESS PESTS AND DISEASES FOR 'DRISCOLL ATLANTIS', 'BISCAYNE,' AND 'KEY LARGO'

	'Driscoll Atlantis'	'Biscayne'	'Key Largo'
Reaction to Pests			
Tetranychus urticae	susceptible	susceptible	moderately susceptible
Lygus hesperus	susceptible	susceptible	susceptible
Reaction To Diseases			
Botrytis fruit rot	susceptible	susceptible	susceptible
Powdery mildew	susceptible	moderately susceptible	susceptible
Verticillium wilt	moderately susceptible	susceptible	susceptible
Strawberry Mottle Virus	moderately resistant	moderately resistant	moderately resistant
Xanthomonas fragariae	moderately susceptible	moderately susceptible	moderately susceptible

6.4 ISOZYME ANALYSIS

In addition to the morphological description above, the new cultivar 'Driscoll Atlantis' has been analyzed to obtain an indication of its genetic makeup to provide further means for identifying the new variety and distinguishing it from other somewhat similar and/or related strawberry varieties. Specifically, leaf samples of 'Driscoll Atlantis', 'Biscayne' and 'Key Largo' were analyzed by electrophoresis for isozyme patterns of the enzymes phosphoglucoisomerase ("PGI"), leucine aminopeptidase ("LAP") and phosphoglucomutase ("PGM"). See J. Amer. Soc. Hort. Sci. 106:684–687. Isozyme characterization of the three varieties is presented in Table 4, with the letters representing the banding patterns for each enzyme as designated in the above-identified article.

TABLE 4

ISOZYME ANALYSIS FOR 'DRISCOLL ATLANTIS', 'BISCAYNE,' AND 'KEY LARGO'

Locus	'Driscoll Atlantis'	'Biscayne'	'Key Largo'
PGI	A4	A1	A1
LAP	B3	B3	B3
PGM	C4	C4	C4

What is claimed:

1. A new and distinct variety of strawberry plant, substantially as shown and described.

* * * * *

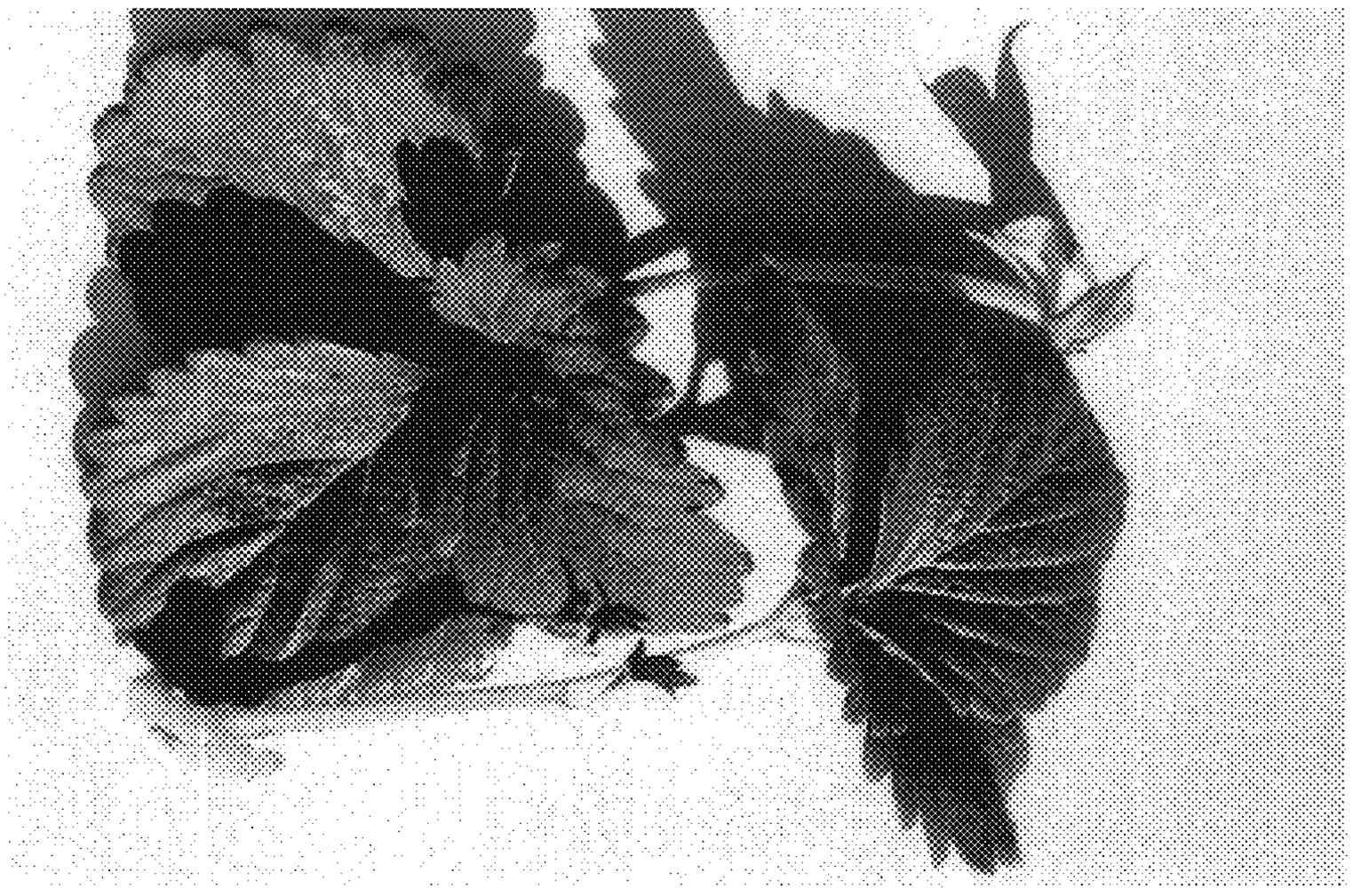

FIG.1

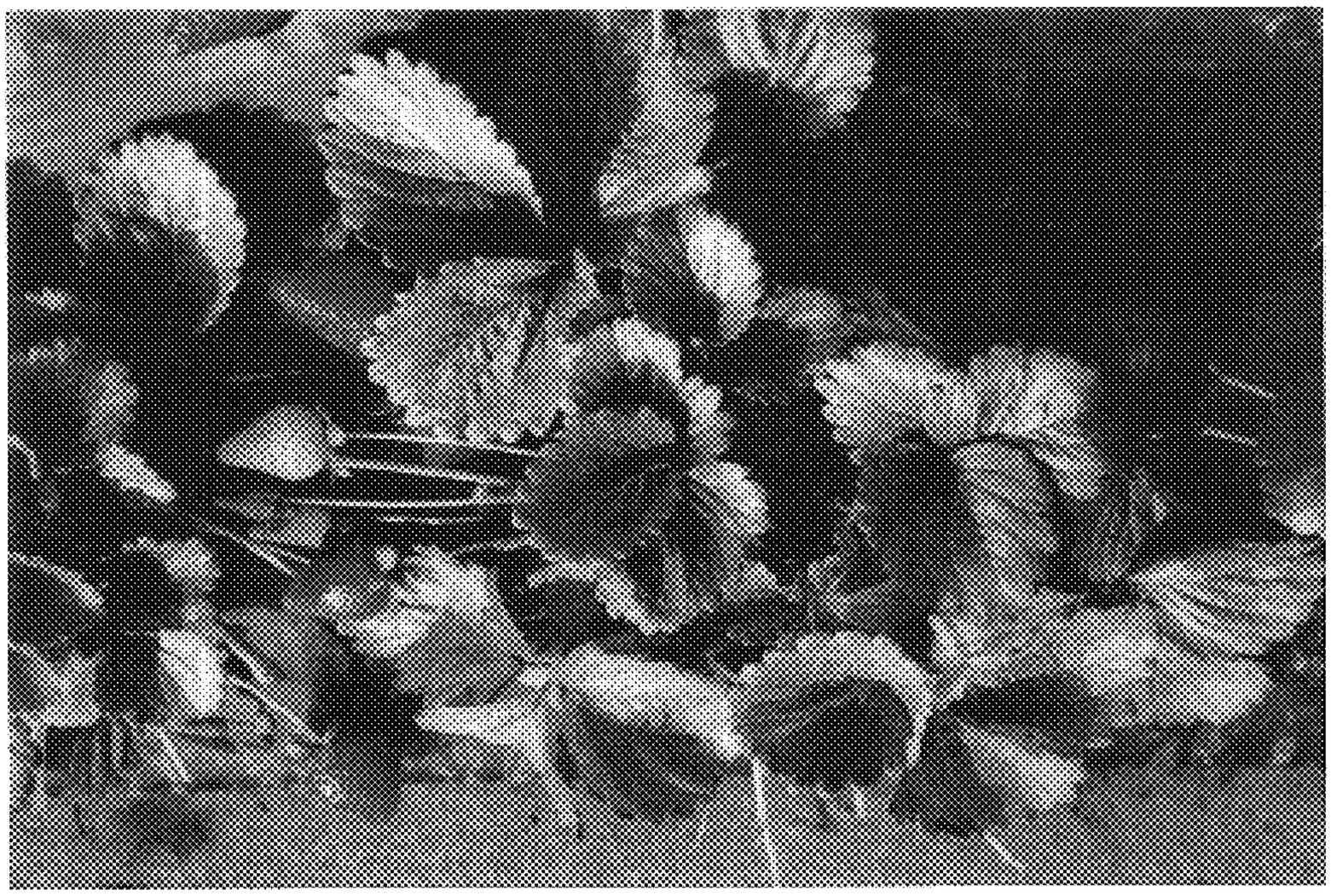

FIG.2

FIG.3

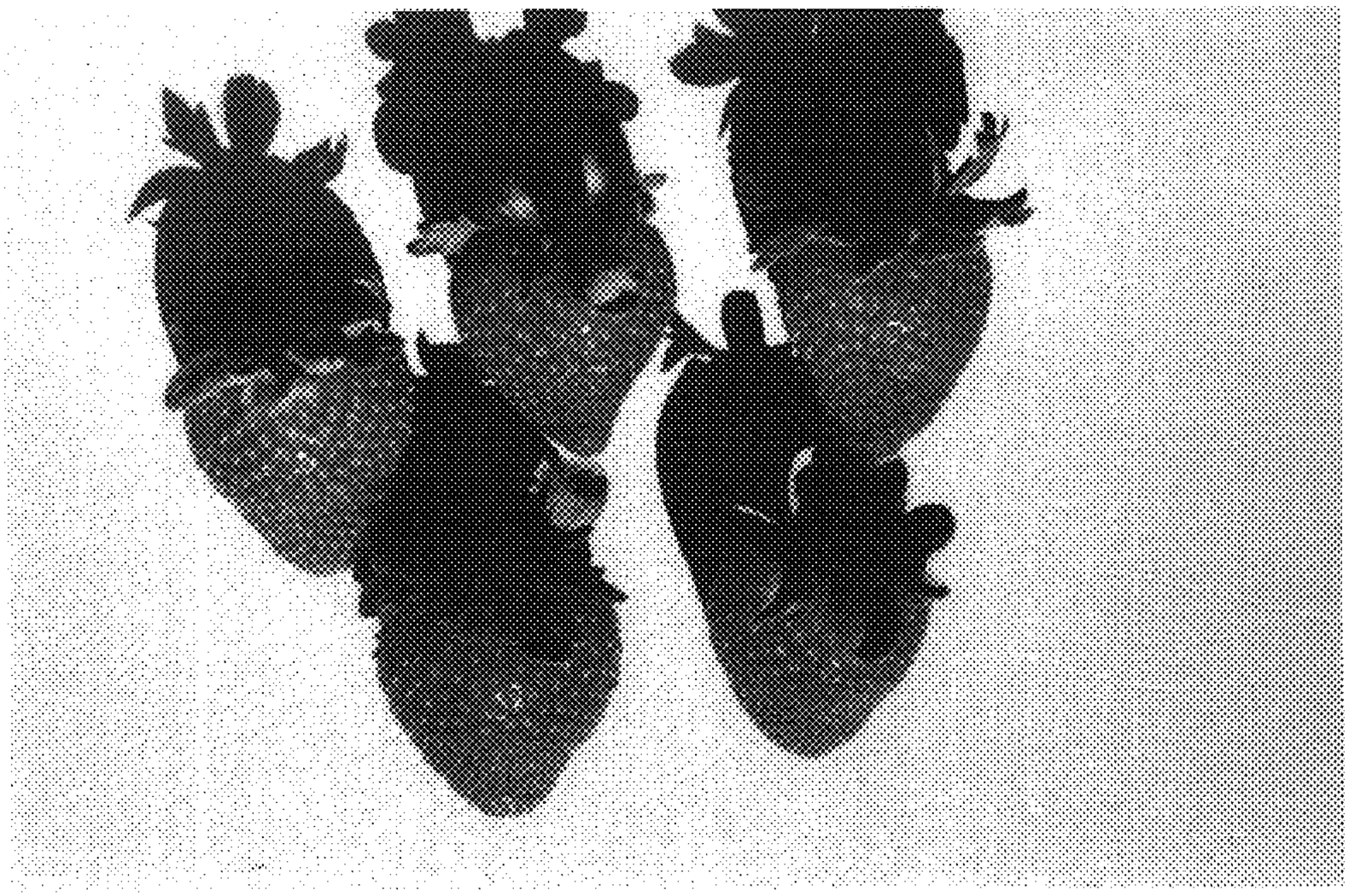

FIG.4

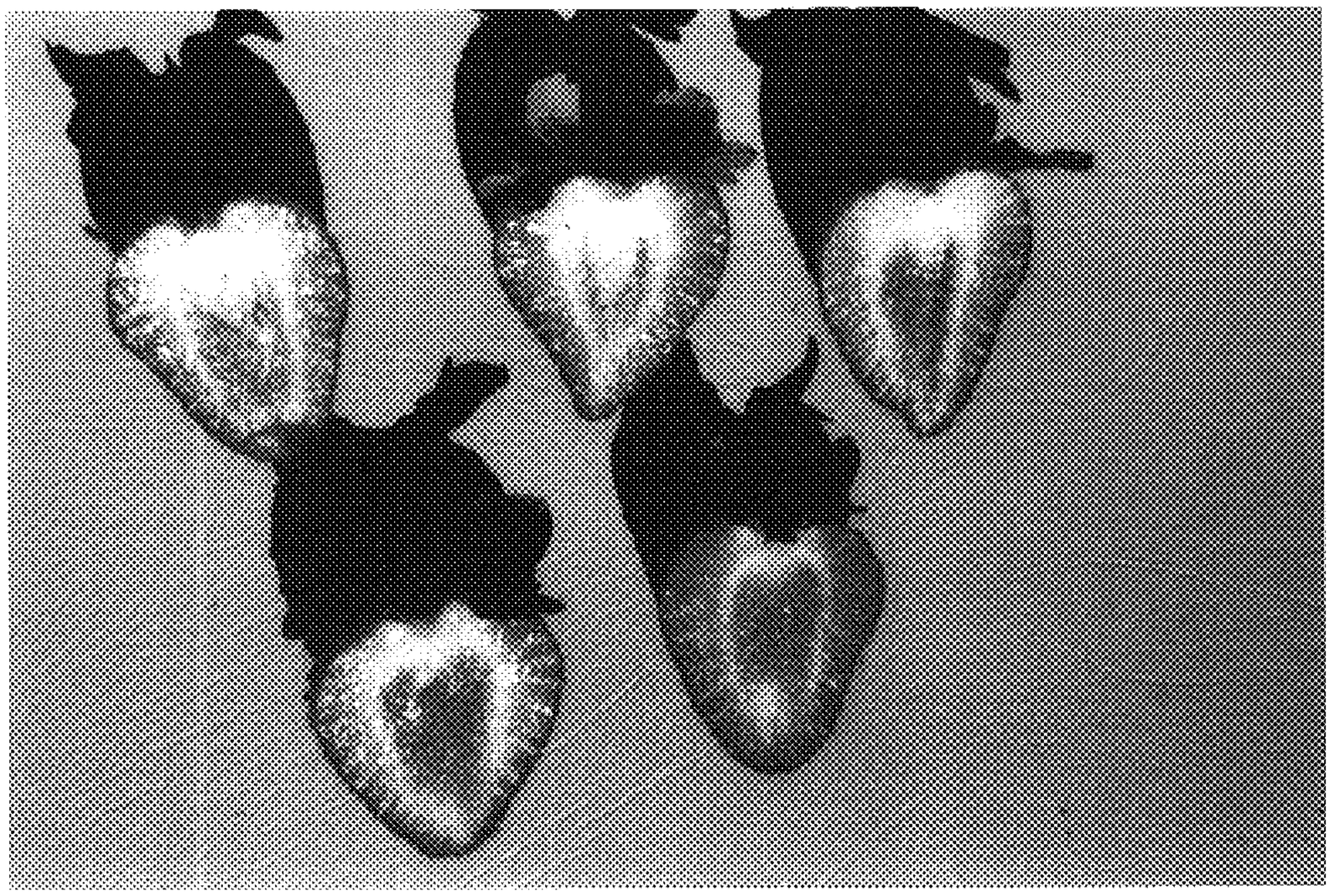

FIG.5