US00PP16070P2

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

(10) **Patent No.: US PP16,070 P2**
(45) **Date of Patent: Oct. 25, 2005**

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

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

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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 123 days.

(21) Appl. No.: **10/679,037**

(22) Filed: **Oct. 2, 2003**

(51) **Int. Cl.**[7] **A01H 5/00**
(52) **U.S. Cl.** **Plt./209**
(58) **Field of Search** Plt./209

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(57) **ABSTRACT**

This invention relates to a new and distinct variety of strawberry named 'Driscoll Malibu.' The variety is similar to the varieties 'Biscayne', and 'Madeira'. The variety is distinguished from 'Biscayne', and 'Madeira', in particular, by a flat terminal leaflet margin profile, dense petiole pubescence, 20% of plants with single bracts, a very narrow band without achenes on the fruit, and a small hollow fruit center.

5 Drawing Sheets

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

1. BACKGROUND OF THE INVENTION

The new variety originated as a result of a controlled cross between the strawberry plants 'Marathon' (U.S. Plant Pat. No. 12,817) and 'Sonora' (U.S. Plant Pat. No. 13,386) in an ongoing breeding program, and was discovered as a seedling in Hillsborough Country, Fla. in 1998. The original seedling of the new cultivar was asexually propagated by stolons in a 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 Malibu' was subsequently asexually propagated and underwent further testing in Hillsborough Country, 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.

2. SUMMARY OF THE INVENTION

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

3. COMPARISON TO SIMILAR VARIETIES

The varieties which we believe to be similar to 'Driscoll Malibu' from those known to us are 'Biscayne' (U.S. Plant Pat. No. 12,186) and 'Madeira' (U.S. Plant Pat. No. 14,109). There are several characteristics of the new variety that are different from, or not possessed by 'Biscayne' and 'Madeira'. The new variety is distinguished from 'Biscayne' and 'Madeira' by having, for example, a flat terminal leaflet margin profile, dense petiole pubescence, 20% of plants with single bracts, a very narrow band without achenes on the fruit, and a small hollow fruit center.

4. 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 whole the plant.

FIG. **2** shows the upper side of the leaves of the plant.

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

FIG. **4** shows the fruit in longitudinal cross-section.

FIG. **5** shows a close-up of the fruit.

5. 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 Country, Fla., U.S.A. This description is in accordance with UPOV terminology. Observations of 'Driscoll Malibu', 'Biscayne', and 'Madeira' were taken in side-by-side comparison in 2002–2003. Color designations, color descriptions, and other phenotypical descriptions may deviate from the stated values and descriptions 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.

5.2 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.

5.3. 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 one-year-old plants. Fruit and flower

measurements are an average of both primary and secondary fruit and flowers. Flowers of 'Driscoll Malibu' are fully self-fertile and typical of the species. The average size of the hollow fruit center of 'Driscoll Malibu' is 8.0 mm. 'Driscoll Malibu' differs from its maternal parent 'Marathon' by possessing darker red fruit and having superior shelf-life. Plants of 'Driscoll Malibu' are less vigorous and more compact than those of 'Marathon.' 'Driscoll Malibu' differs from its paternal parent 'Sonora' by being partially everbearing, while 'Sonora' is fully everbearing. In addition, the fruit of 'Driscoll Malibu' is brighter red than those of 'Sonora.'

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

TABLE 1

QUANTITATIVE COMPARISON OF 'DRISCOLL MALIBU', 'BISCAYNE', AND 'MADEIRA'

	'DRISCOLL MALIBU'	'BISCAYNE'	'MADEIRA'
Plant Characteristics			
Height of Plant (cm)	13.6	13.5	15.8
Spread of Plant (cm)	34.1	32.6	36.1
Number of Crowns	3.9	5.2	4.2
Leaf Characteristics			
Terminal Leaflet Length (cm)	8.7	8.6	9.4
Terminal Leaflet Width (cm)	8.8	8.8	8.4
Terminal Leaflet Length/Width Ratio	0.99	0.98	1.12
# Teeth/Terminal Leaflet	20.1	23.8	18.8
Color of upper side	141A light to medium green	137A light green	147A dark green
Color of under side	139C light gray green	139C light gray green	137B light gray green
Petiole Length (cm)	11.4	11.7	11.0
Petiole Color	144B yellow-green	141D yellow-green	144B yellow-green
Bract Frequency	20% typically single	60% typically double	80% typically double
Stipule Length (cm)	3.8	3.5	3.2
Stipule Width (cm)	2.0	1.9	2.2
Stolon Characteristics			
Anthocyanin color	58A red purple	59B red purple	59C red purple
Diameter at bract (mm)	3.35	3.29	2.77
Avg. # of Daughter plants/Mother (2002 Nursery)	46	59	59
Flower Characteristics			
Petal Length (cm)	1.3	1.4	1.4
Petal Width (cm)	1.4	1.6	1.5
Petal Length/Width Ratio	0.94	0.85	0.91
Flower Diameter (cm)	3.2	3.5	3.3
Calyx Diameter (cm)	4.1	4.6	4.1
Petal Color	155C white	155C white	155C white
Fruiting Truss Length (cm)	13.3	12.5	12.0
Fruit Characteristics			
Fruit Length (cm)	4.8	4.9	5.0
Fruit Width (cm)	3.8	4.1	4.3
Fruit Length/Width Ratio	1.28	1.20	1.18
Average Berry Weight (g)	23.4	24.7	24.3
External Color	46B red	46B red	46A dark red
Internal Color	48C orange red	44A medium red	43A medium red
2002–2003 Yield (g/plant)	199	143	247

TABLE 2

QUALITATIVE COMPARISON OF 'DRISCOLL MALIBU', 'BISCAYNE', AND 'MADEIRA'

	'DRISCOLL MALIBU'	'BISCAYNE'	'MADEIRA'
Plant			
Habit	globose	flat globose	flat globose
Density	medium	medium	medium
Vigor	weak to medium	strong	strong
Leaf			
Shape in cross section	slightly concave to flat	concave	concave
Interveinal blistering	medium	weak	medium
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	obtuse
Terminal leaflet shape of teeth	obtuse to rounded	rounded	rounded
Stipule pubescence	medium	medium	medium
Petiole pubescence	dense	medium	medium
Petiole pose of hairs	downwards	outwards	downwards
Stolon			
Amount	medium	many	many
Anthocyanin coloration	medium to strong	strong	strong to very strong
Thickness	medium to thick	medium	medium to thick
Pubescence	medium	medium	medium
Inflorescence			
Position relative to foliage	level to above	level	beneath
Diameter of calyx relative to corolla on secondary flowers	larger	larger	larger
Diameter of inner calyx relative to outer on secondary flowers	larger	same size	same size
Spacing of petals	overlapping	overlapping	overlapping

TABLE 2-continued

QUALITATIVE COMPARISON OF 'DRISCOLL MALIBU', 'BISCAYNE', AND 'MADEIRA'

	'DRISCOLL MALIBU'	'BISCAYNE'	'MADEIRA'
Fruiting Truss			
Attitude at first picking	prostrate	prostrate	prostrate
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	medium	weak	weak
Evenness of color uneven	slightly uneven	even	even
Glossiness	strong	strong	strong
Insertion of achenes	below to level with the surface	level with surface	level with surface
Insertion of calyx	level	level	level
Pose of the calyx segments	reflexed	spreading	reflexed
Size of calyx in relation to fruit on secondary fruit	same size to larger	larger	smaller
Adherence of calyx	strong	strong	strong
Firmness of flesh	soft to medium	firm	medium
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	small	large	medium
Sweetness	medium	strong	weak to medium
Texture when tasted	medium	fine	fine
Acidity	medium	medium	weak to medium
Time of Flowering	very early	early	very early
Harvest Interval in 2002–2003	late November through late March	early December through late March	late November through late March
Type of Bearing	partially evebearing	partially everbearing	partially everbearing

5.4. REACTION TO STRESS, PESTS, AND DISEASE

TABLE 3

REACTIONS TO PESTS AND DISEASES FOR 'DRISCOLL MALIBU', 'BISCAYNE', AND 'MADEIRA'

	'DRISCOLL MALIBU'	'BISCAYNE'	'MADEIRA'
Reaction to Pests			
Tetranychus urticae	susceptible	susceptible	susceptible
Lygus hesperus	susceptible	susceptible	susceptible
Reaction To Diseases			
Botrytis fruit rot	susceptible	susceptible	susceptible
Powdery mildew	moderately susceptible	moderately susceptible	moderately susceptible
Verticillium wilt	highly susceptible	susceptible	moderately susceptible
Strawberry Mottle Virus	susceptible	susceptible	partially resistant
Xanthomonas fragariae	moderately susceptible	moderately susceptible	moderately susceptible

5.5. ISOZYME ANALYSIS

In addition to the morphological description above, the new cultivar 'Driscoll Malibu' 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 Malibu', 'Biscayne', and 'Madeira' 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 MALIBU', 'BISCAYNE', AND 'MADEIRA'

Locus	'DRISCOLL MALIBU'	'BISCAYNE'	'MADEIRA'
PGI	A1	A1	A1
LAP	B3	B3	B1
PGM	C4	C4	C2

What is claimed:

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

* * * * *

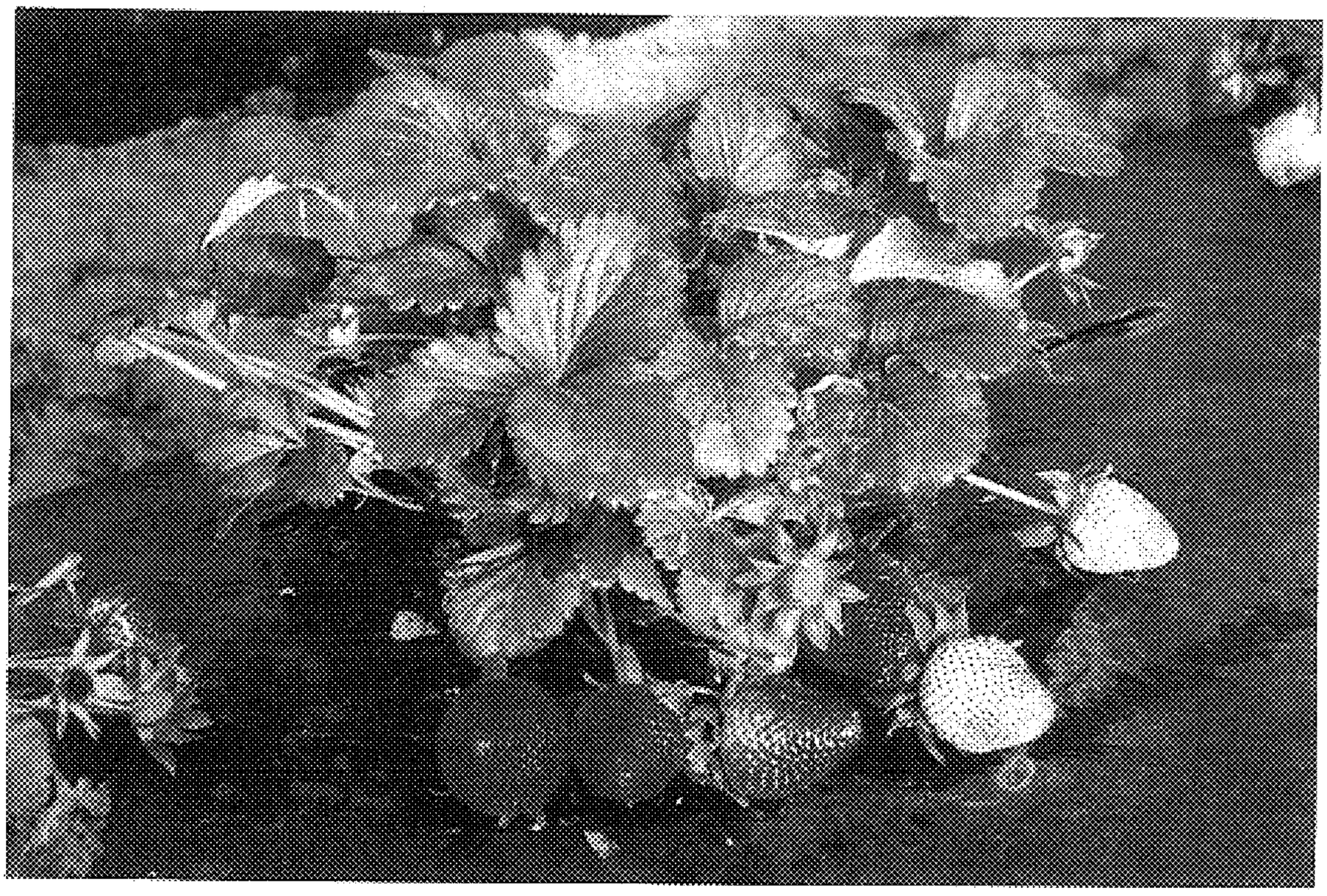

Fig. 1

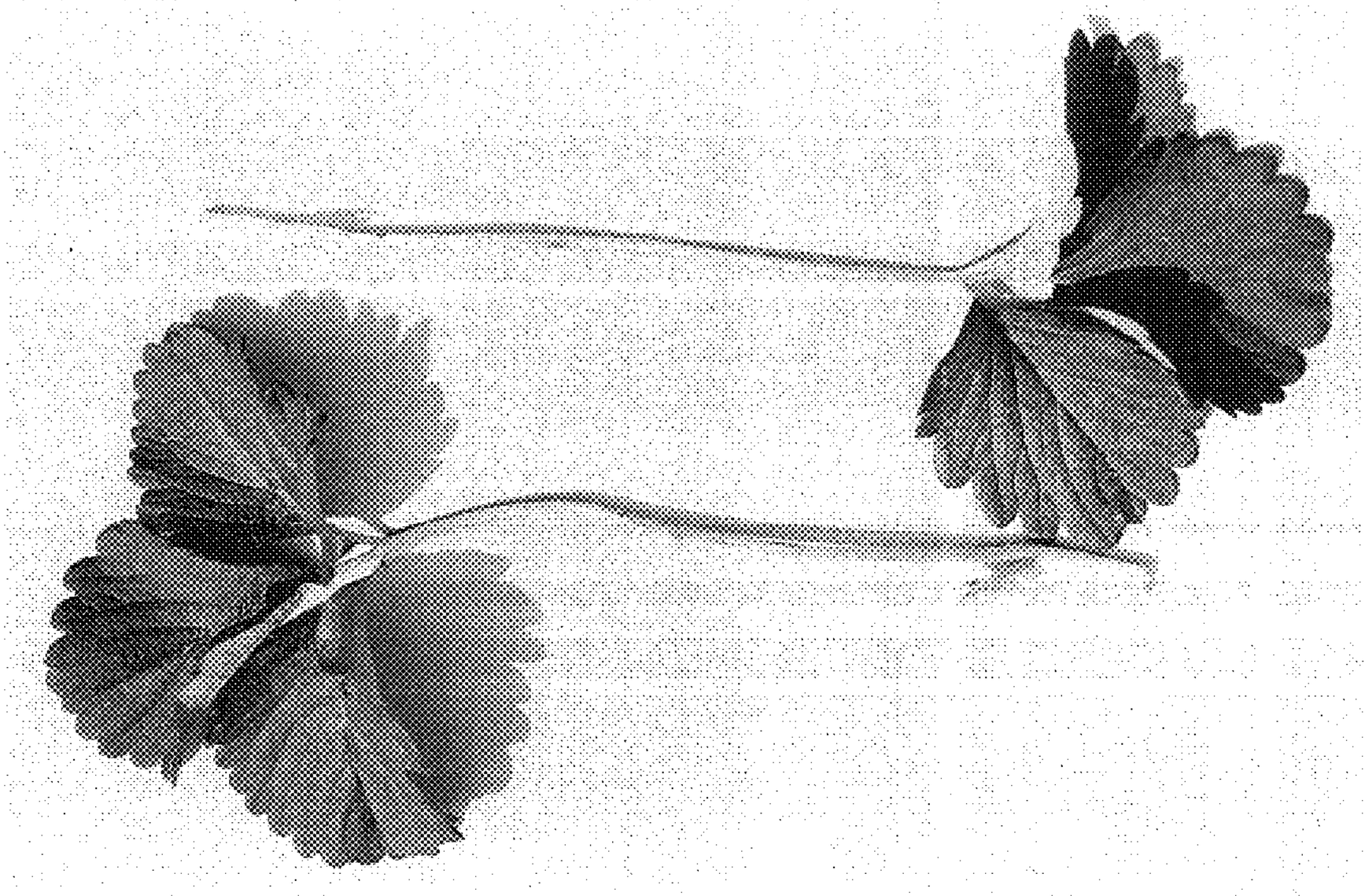

Fig. 2

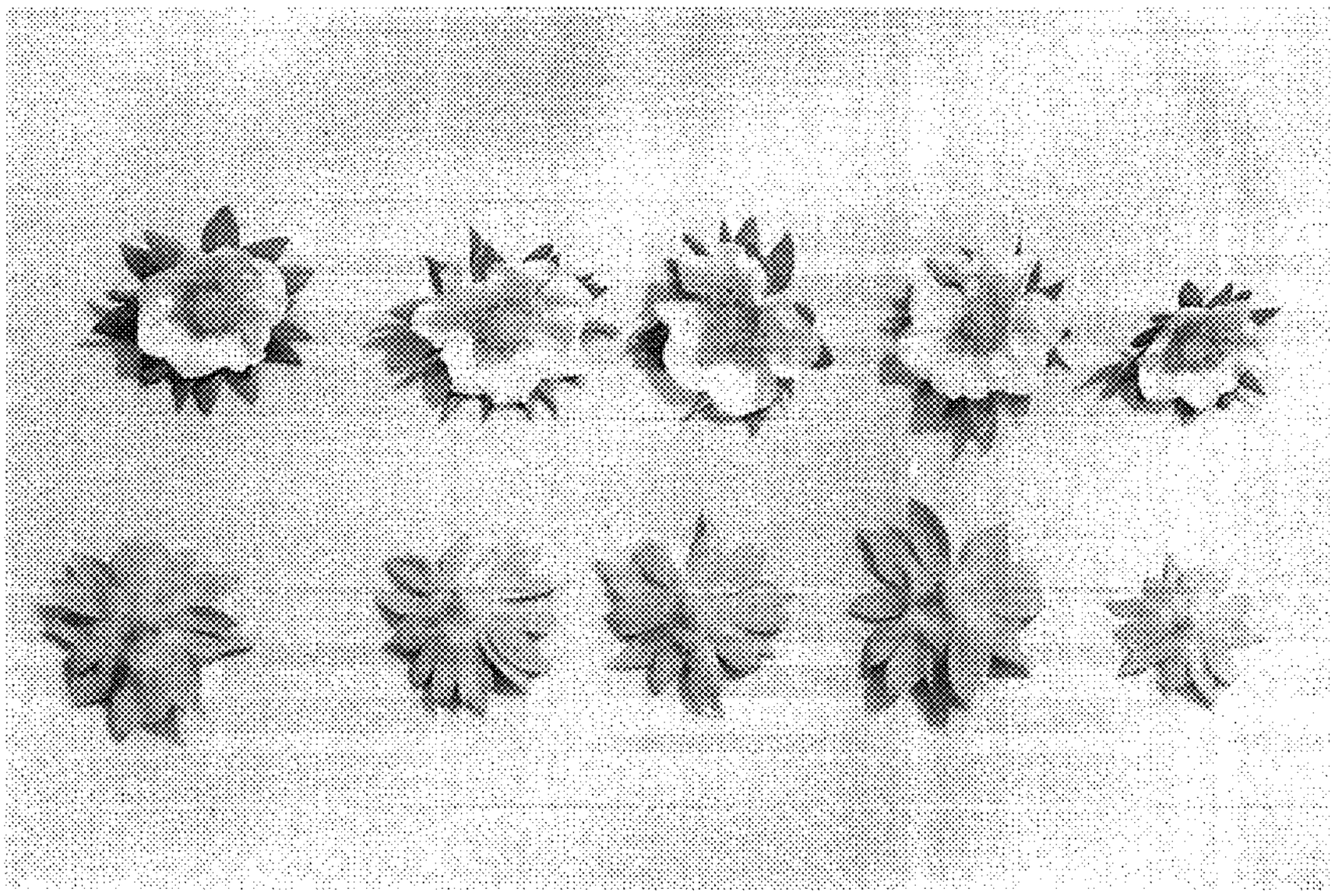

Fig. 3

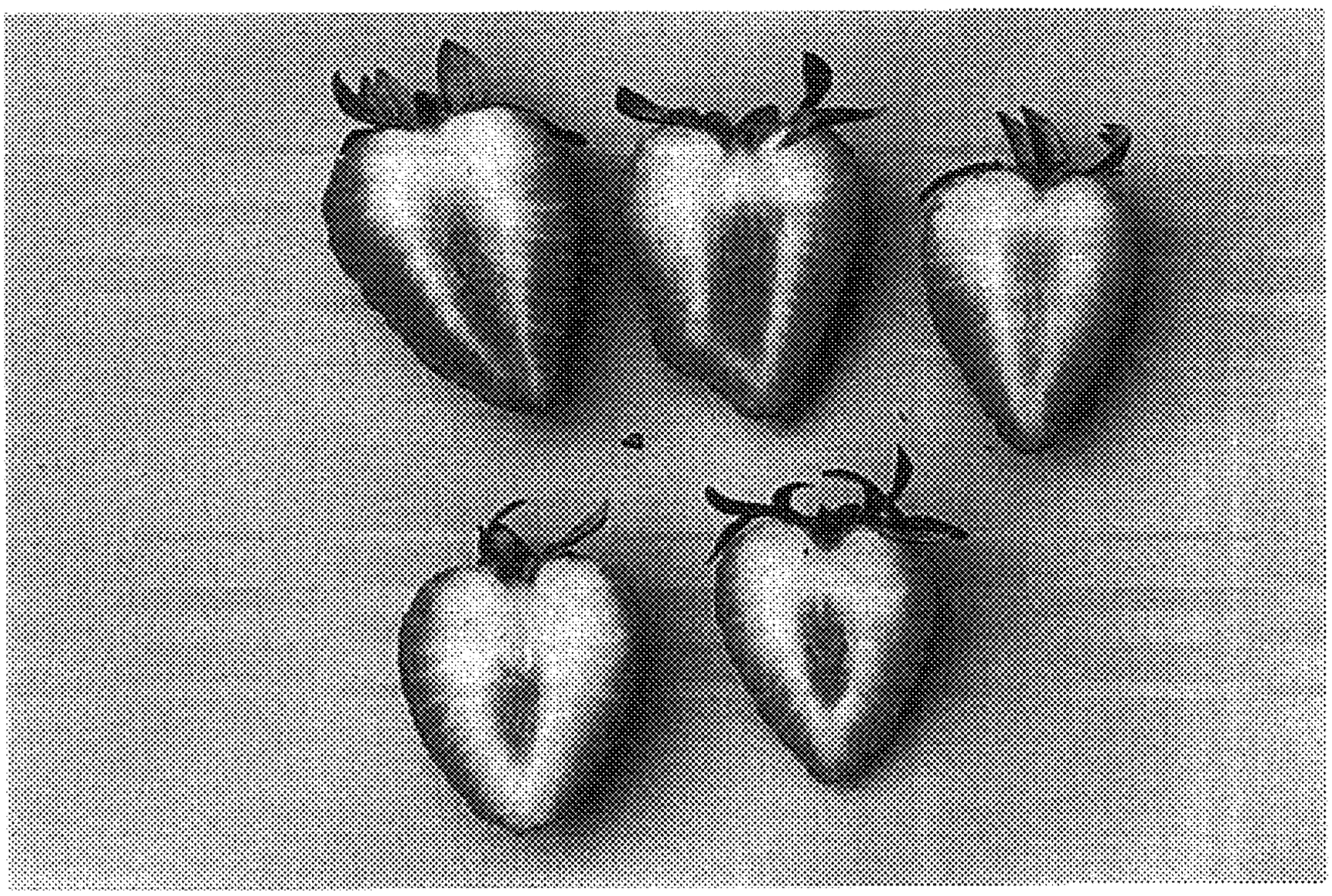

Fig. 4

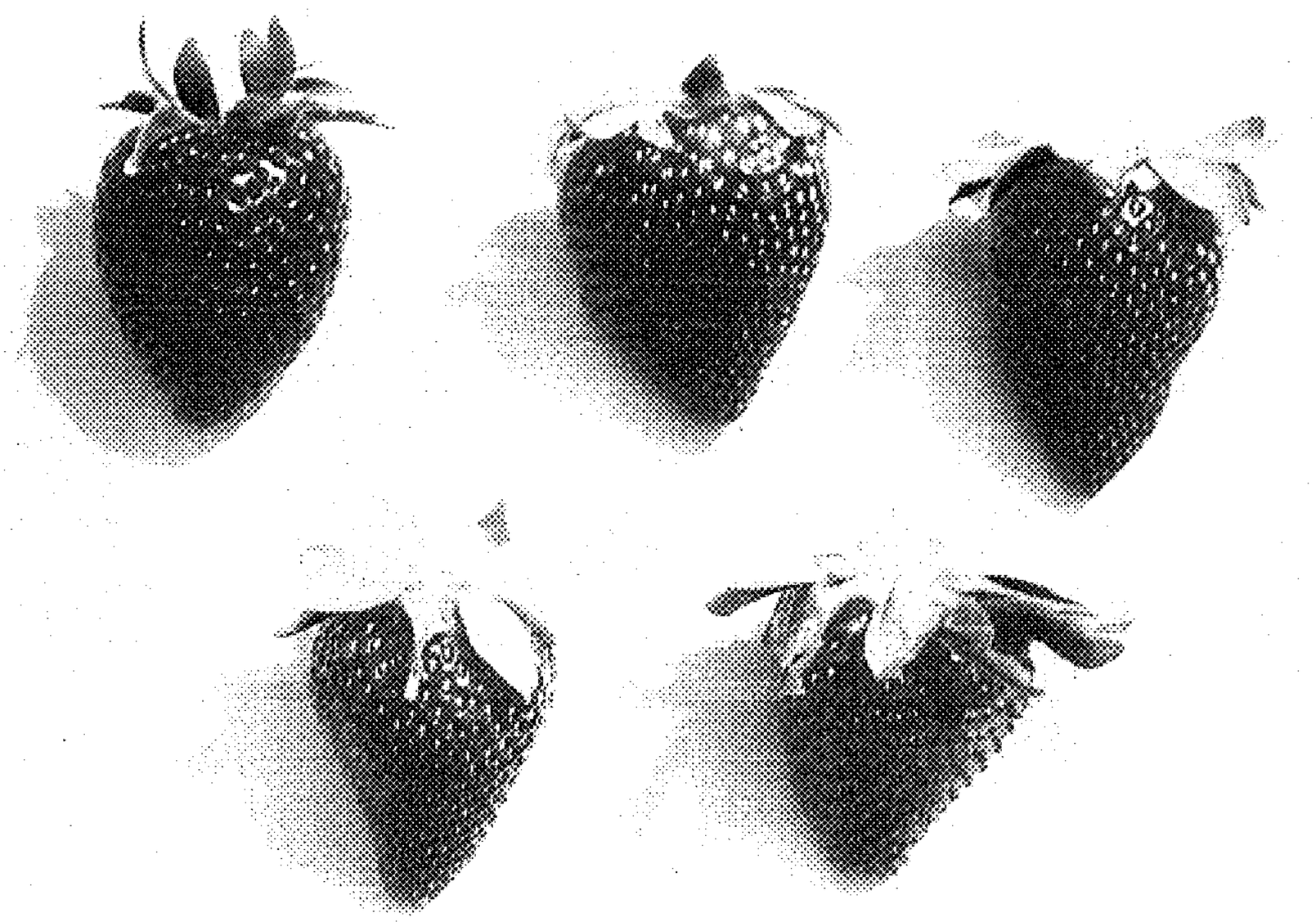

Fig. 5