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Mowrey et al.

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

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

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(57) **ABSTRACT**

This invention relates to a new and distinct variety of strawberry named 'Driscoll Lanai.' The variety is similar to the varieties 'San Juan', and 'Ana Maria'. The variety is distinguished from 'San Juan', and 'Ana Maria', in particular, by a bract frequency that is 80% typically paired, an orange-red external fruit color, an average of 300 achenes per fruit, a flat habit, dense stolon pubescence, a small size of calyx in relation to fruit on secondary fruit, a medium fruit flesh firmness, and moderately resistant to Verticillium wilt.

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 '62A313' (unpatented) and 'San Juan' (U.S. Plant Pat. No. 12,899) in an ongoing breeding program, and was discovered as a seedling in Monterey Country, Calif. in 1999. 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 Monterey Country, Calif., where the variety was identified and selected for further evaluation. 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 Lanai'. 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 Lanai' from those known to us are 'San Juan' (U.S. Plant Pat. No. 12,899) and 'Ana Maria' (U.S. Plant Pat. No. 11,035). There are several characteristics of the new variety that are different from, or not possessed by 'San Juan' and 'Ana Maria'. The new variety is distinguished from 'San Juan' and 'Ana Maria' by having, for example, a bract frequency that is 80% typically paired, an orange-red external fruit color, an average of 300 achenes per fruit, a flat habit, dense stolon pubescence, a small size of calyx in relation to fruit on secondary fruit, a medium fruit flesh firmness, and moderately resistant to Verticillium wilt. Parent variety '62A313' was not available for side-by side comparison. 'Driscoll Lanai' differs from '62A313' by having better shipability and rounder berry shape. A comparison between 'Driscoll Lanai' and parent variety 'San Juan' can be found in Tables 1–4 below.

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 Monterey County, Calif., U.S.A. This description is in accordance with UPOV terminology. Observations of 'Driscoll Lanai', 'San Juan', and 'Ana Maria' were taken in side-by-side comparison in 1999–2003. 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 Lanai' are fully self-fertile and typical of the species.

Table 1 provides information on the plant and fruit characteristics of the new variety 'Driscoll Lanai' compared with characteristics of 'San Juan' and 'Ana Maria'. Table 2 provides additional information of the plant and fruit characteristics of the new variety 'Driscoll Lanai' compared with characteristics of the varieties 'San Juan' and 'Ana Maria'. The information in the Tables for quantitative characteristics is shown in average values. Table 3 provides reactions of the new variety to pests and diseases compared with reactions of the varieties 'San Juan' and 'Ana Maria'. Table 4 provides isozyme characteristics of the new variety as compared to that of the varieties 'San Juan' and 'Ana Maria'.

TABLE 1

QUANTITATIVE COMPARISON OF 'DRISCOLL LANAI', 'SAN JUAN', AND 'ANA MARIA'

	'Driscoll Lanai'	'Ana Maria'	'San Juan'
Plant Characteristics			
Height of Plant (cm)	21.9	27.4	22.1
Spread of Plant (cm)	47.6	52.4	47.6
Number of Crowns	5.3	4.8	3.7
Leaf Characteristics			
Terminal Leaflet Length (cm)	8.1	8.9	8.0
Terminal Leaflet Width (cm)	7.6	8.2	7.6
Terminal Leaflet Length/Width Ratio	1.07	1.09	1.06
# Teeth/ Terminal Leaflet	23.4	21.1	20
Color of upper side	medium green 139A	medium green 147A	medium to dark green 147A
Color of under side	light green 138B	light green 148B	light green 147C
Petiole Length (cm)	18.7	22.9	18.4
Petiole Color	yellow-green 145A	yellow-green 145B	yellow-green 149A
Petiolule Length (mm)	15.5	17.5	13.3
Petiolule Diameter (mm)	3.2	3.8	3.1
Petiolule Color	yellow-green 145A	yellow-green 145B	yellow-green 149A
Bract Frequency	80% typically paired	20% typically single	50% typically paired
Stipule Length (cm)	3.7	3.2	3.2
Stipule Width (cm)	1.2	0.9	1.1

TABLE 1-continued

QUANTITATIVE COMPARISON OF 'DRISCOLL LANAI', 'SAN JUAN', AND 'ANA MARIA'

	'Driscoll Lanai'	'Ana Maria'	'San Juan'
Stolon Characteristics			
Anthocyanin Color	purple red 60A		purple red 59A
Diameter at Bract (mm)	3.74		3.10
Avg. # of Daughter Plants (2002 Nursery)	67	52	57
Flower Characteristics			
Petal Length (cm)	1.21	1.23	1.04
Petal Width (cm)	1.29	1.20	1.07
Petal Length/ Width Ratio	0.94	1.03	0.97
Flower Diameter (cm)	2.58	2.64	2.3
Calyx Diameter (cm)	3.25	3.03	3.12
Sepal Length (mm)	14.80	11.90	11.97
Sepal Width (cm)	7.67	6.24	6.74
Petal Color	white 155C	white 155D	white 155C
Fruiting Truss Length (cm)	30.0	36.0	27.9
Fruit Characteristics			
Fruit Length (cm)	4.5	3.9	4.2
Fruit Width (cm)	3.8	3.6	4.0
Fruit Length/ Width Ratio	1.19	1.10	1.05
Average Berry Weight (g)	23.3	21.6	25.2
External Color	orange red 45B	red 46A	dark red 53A
Internal Color	orange red 47C	orange red 44B	red 44A
Achene Coloration	gray-purple to yellow-green 185B to 154B	dark red to yellow 46B to 16A	dark red to yellow 46B to 16A
Achenes per Berry	300	217	414
Achene Weight (g)	.0059	.0046	.0051
2003 Yield (g/plant)	1,679	1,645	1,449

TABLE 2

QUALITATIVE COMPARISON OF 'DRISCOLL LANAI', 'ANA MARIA' AND 'SAN JUAN'

	'Driscoll Lanai'	'Ana Maria'	'San Juan'
Plant			
Habit	flat	globose to upright	globose to flat globose
Canopy Density	open	medium to open	medium
Vigor	medium	strong	medium
Leaf			
Shape in Cross Section	slightly concave to flat	slightly concave to flat	flat to slightly convex
Interveinal Blistering	medium	medium to strong	medium to strong
Glossiness	weak	medium	weak to medium weak
Number of Leaflets	three only	three only	sometimes more than 3 leaflets (approx. 17% of leaves)
Terminal Leaflet Margin Profile	revolute to flat	flat	revolute to flat
Terminal Leaflet Shape of Base	rounded	rounded to oblique	obtuse to rounded
Terminal Leaflet Shape of Teeth	rounded	obtuse	rounded
Stipule Pubescence	medium to dense	sparse	medium
Petiole Pubescence	medium	sparse	medium
Petiole Pose of Hairs	downward	outward	outward to downward
Stolon			
Amount	many	medium to many	medium to many
Anthocyanin Coloration	strong	medium	strong
Thickness	medium to thick	thin to medium	medium
Pubescence	dense	sparse to medium	medium
Inflorescence			
Position Relative to Foliage	level to above	level to above	beneath to level with
Diameter of Calyx Relative to Corolla on Secondary Flowers	same size to larger	smaller to same size	larger
Diameter of Inner Calyx Relative to Outer on Secondary Flowers	larger	smaller to same size	same size
Spacing of Petals	overlapping	free to touching	overlapping
Fruiting Truss			
Attitude at First Picking	prostrate	semi-erect	prostrate
Fruit			
Predominant Shape	conical to ovoid	conical	conical to almost cylindrical
Difference in Shapes Between Primary and Secondary Fruits	slight	none to very slight	moderate
Band Without Achenes	narrow to medium	narrow to medium	narrow
Unevenness of Surface	weak	weak	medium

TABLE 2-continued

QUALITATIVE COMPARISON OF 'DRISCOLL LANAI', 'ANA MARIA' AND 'SAN JUAN'

	'Driscoll Lanai'	'Ana Maria'	'San Juan'
Evenness of Color	even	even	even
Glossiness	strong	strong	very strong
Insertion of Achenes	level with surface	level with surface	level with surface
Insertion of Calyx	level	level with to set above	level
Pose of the Calyx Segments	spreading to reflexed	spreading	spreading to reflexed
Size of Calyx in Relation to Fruit, on Secondary Fruit	smaller	same size to larger	same size
Adherence of Calyx	strong	weak to medium	strong
Firmness of Flesh	medium	soft to medium	firm
Evenness of Flesh Color	uneven	slightly uneven	slightly uneven to even
Distribution of Flesh Color	marginal and central	marginal and central	marginal and central
Hollow Center Size	medium	small	medium
Sweetness	medium	medium to strong	medium to strong
Texture When Tasted	fine	fine to medium	medium
Acidity	medium	medium	medium
Time of Flowering	mid-February	early-February	mid-February
Harvest Interval in 2003	late March thru early-November	mid-March thru early-November	late-March thru early-November
Type of Bearing	partially everbearing	partially everbearing	partially everbearing

5.4. REACTION TO STRESS, PESTS, AND DISEASE

TABLE 3

REACTIONS TO STRESS PESTS AND DISEASES FOR 'DRISCOLL LANAI', 'SAN JUAN' AND 'ANA MARIA'

	'Driscoll Lanai'	'Ana Maria'	'San Juan'
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 resistant	susceptible	susceptible
Strawberry Mottle Virus	moderately resistant	moderately resistant	moderately resistant
Xanthomonas fragariae	moderately susceptible	moderately susceptible	moderately susceptible

5.5. ISOZYME ANALYSIS

In addition to the morphological description above, the new cultivar 'Driscoll Lanai' 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 Lanai', 'San Juan', and 'Ana Maria' 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 LANAI', 'ANA MARIA' AND 'SAN JUAN'

Locus	'DRISCOLL Lanai'	'ANA MARIA'	'SAN JUAN'
PGI	A1	A1	A2
LAP	B3	B3	B3
PGM	C2	C4	C4

What is claimed:

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

* * * * *

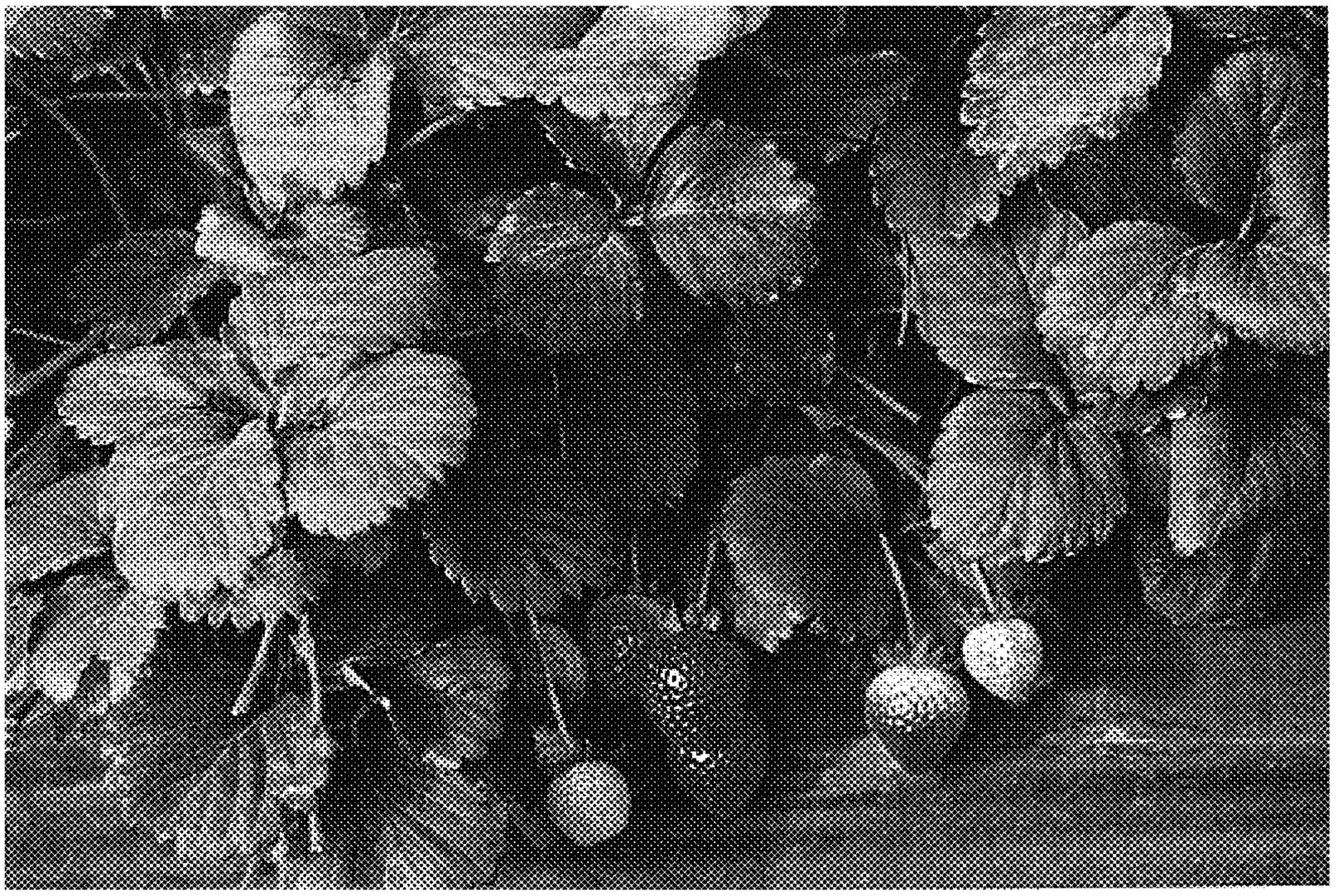

Fig. 1

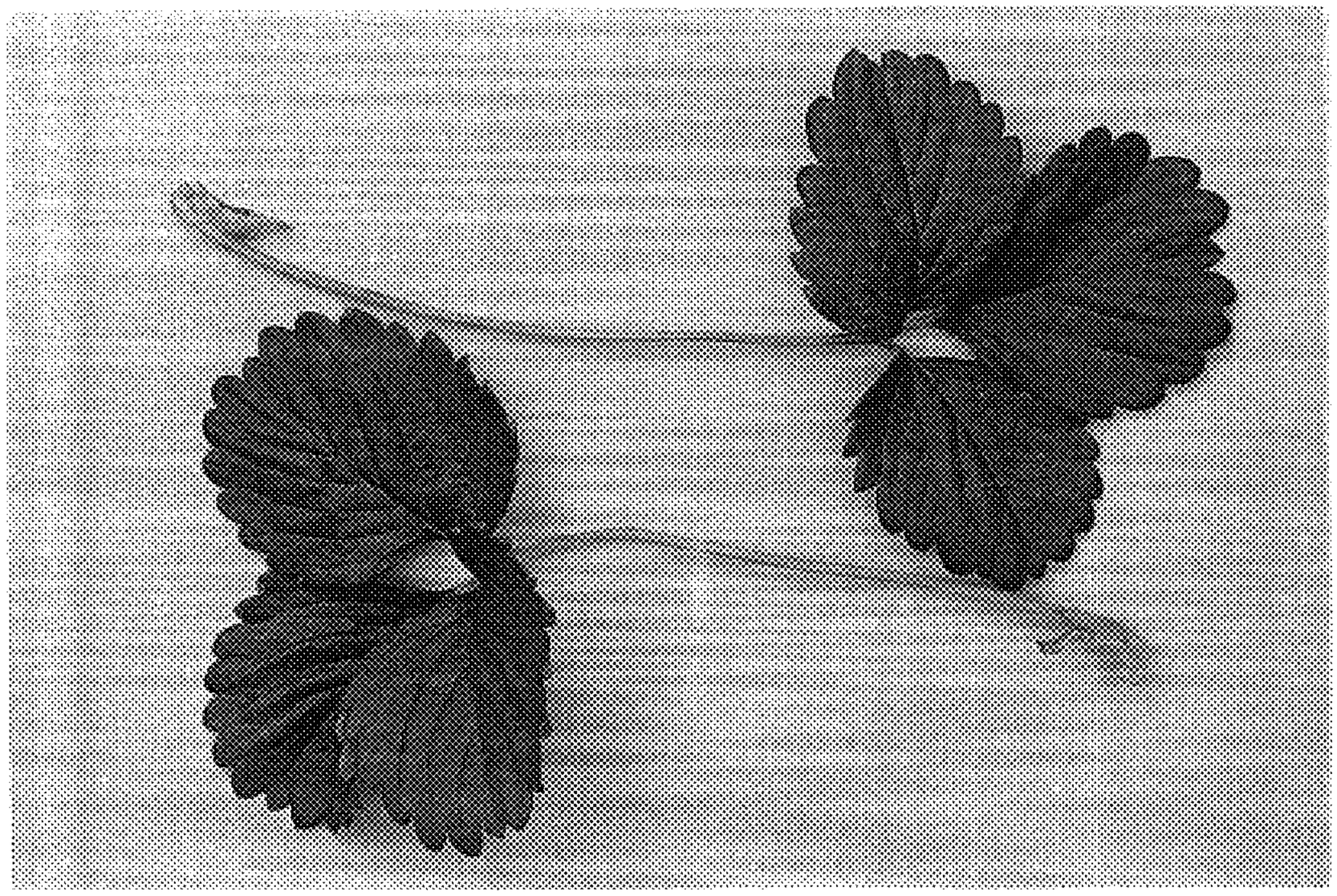

Fig. 2

Fig. 3

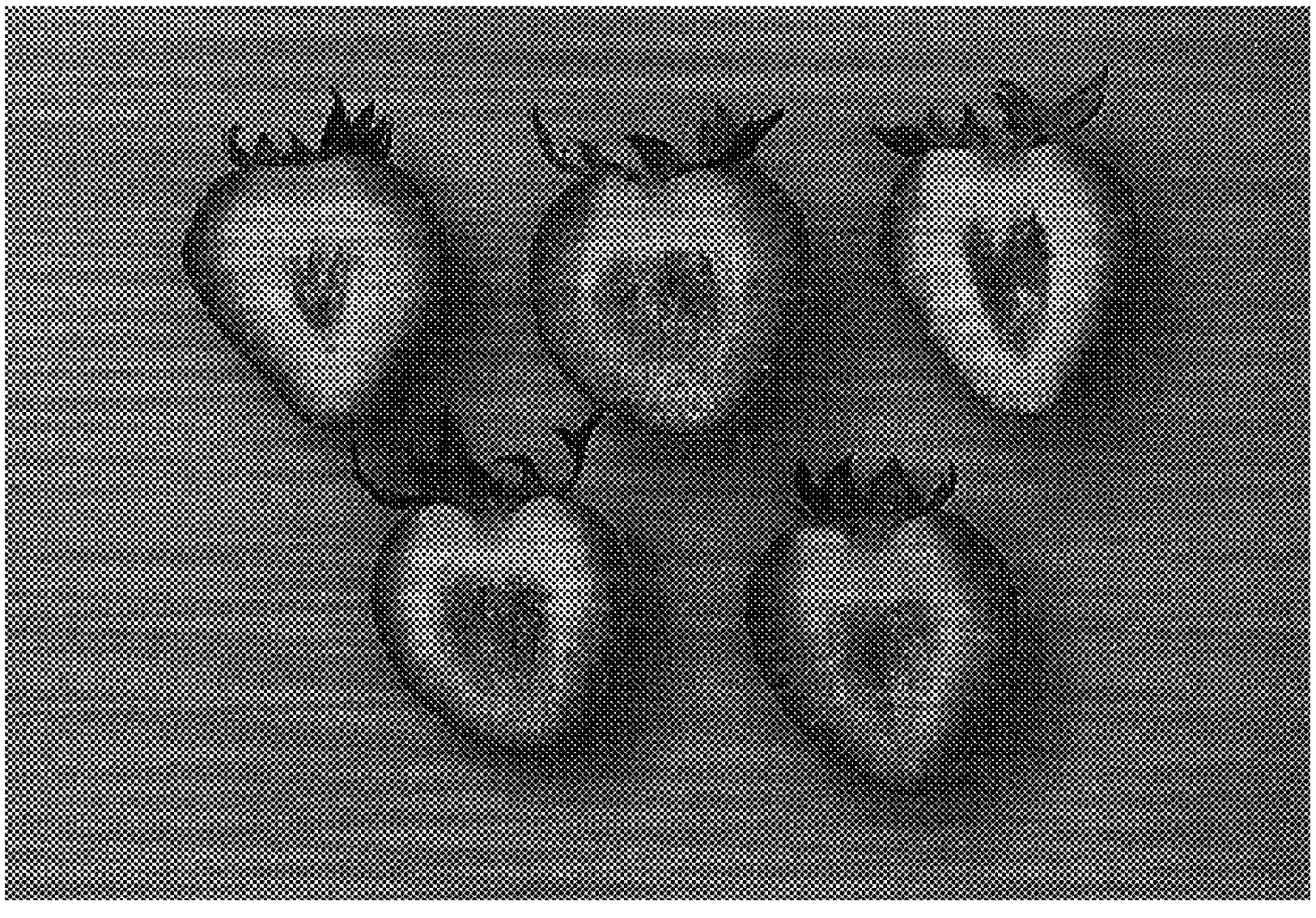

Fig. 4

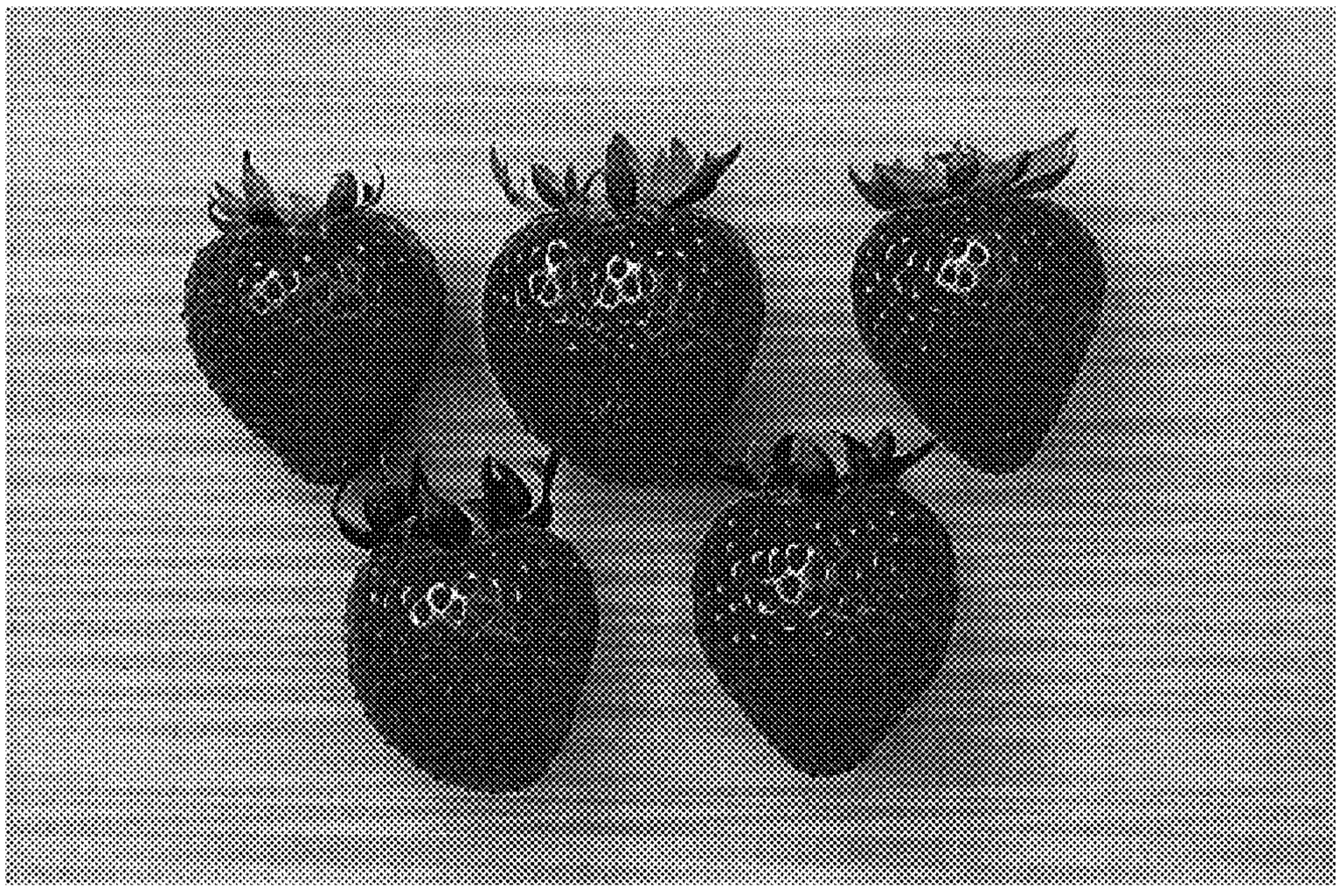

Fig. 5