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Mowrey et al.

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

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

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See application file for complete search history.

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(57) **ABSTRACT**

This invention relates to a new and distinct variety of strawberry named 'Driscoll Pearl.' The variety is similar to the varieties 'San Juan' and 'Driscoll Lanai.' The variety is distinguished from 'San Juan' and 'Driscoll Lanai,' in particular, by its longer petiole length, longer fruiting truss length, upright growth habit, strong sweetness of fruit, and highly susceptibility to powdery mildew.

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 Pearl'.

2. BACKGROUND OF THE INVENTION

The new variety originated as a result of a controlled cross between the strawberry plants 'San Juan' (U.S. Pant Pat. No. PP12,899) and '88E94' (unpatented) in an ongoing breeding program, and was discovered as a seedling in Monterey County, Calif. in 2000. 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 Monterey County, Calif., where the variety was identified and selected for further evaluation. 'Driscoll Pearl' was subsequently asexually propagated and underwent further testing in Monterey County, Calif. for four 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 Pearl.' 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 Pearl' from those known to us are 'San Juan' and 'Driscoll Lanai' (U.S. Plant Pat. No. PP15,145). There are several characteristics of the new variety that are different from, or not possessed by 'San Juan' and 'Driscoll Lanai'. For example, the new variety has a longer petiole length, a longer fruiting truss length, an upright growth habit, strong

sweetness of fruit, and is highly susceptible to powdery mildew.

The paternal parent, 88E94, was not available for side by side comparison with 'Driscoll Pearl'. 'Driscoll Pearl' differs from 88E94 by having superior fruit size and shelf-life, greater plant vigor, dark red fruit color compared to 88E94s oranged red. 'Driscoll Pearl' also differs from 88E94 by being partially everbearing while 88E94 was fully everbearing. 'Driscoll Pearl' is distinguished from its maternal parent 'San Juan' as indicated in Tables 1–4.

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 whole the plant.

FIG. **2** shows the upper side of the leaves of 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 harvested from a nursery in McArthur, Calif. in October and held in cold storage until planting in Monterey County, Calif. in November and December of the same year. Plants were grown in raised beds of soil under conditions typical of commercial strawberry production in Monterey County, Calif. Fruits were harvested twice weekly from April, 2003 to November, 2003 for yield determination. Observations of 'Driscoll Pearl', 'San Juan', and 'Driscoll Lanai' were made in side by side comparison in August, 2004. 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.

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 eight 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 Pearl' compared with characteristics of 'San Juan' and 'Driscoll Lanai.' Table 2 provides additional information of the plant and fruit characteristics of the new variety 'Driscoll Pearl' compared with characteristics of the varieties 'San Juan' and 'Driscoll Lanai.' Table 3 provides reactions of the new variety to stresses, pests and diseases compared with reactions of the varieties 'San Juan' and 'Driscoll Lanai.' Table 4 provides isozyme characteristics of the new variety as compared to that of the varieties 'San Juan' and 'Driscoll Lanai.'

TABLE 1

QUANTITATIVE COMPARISON OF 'DRISCOLL PEARL,' 'SAN JUAN' AND 'DRISCOLL LANAI'

	'Driscoll Pearl'	'Driscoll Lanai'	'San Juan'
Plant Characteristics			
Height of Plant (cm)	34.5	26.5	26.1
Spread of Plant (cm)	45.7	44.7	46.6
Number of Crowns	5.3	5.0	5.7
Leaf Characteristics			
Terminal Leaflet Length (cm)	7.7	6.6	7.5
Terminal Leaflet Width (cm)	6.9	6.5	7.4
Terminal Leaflet Length/Width Ratio	1.11	1.02	1.01
# Teeth/Terminal Leaflet	20.5	18.8	23.6
Color of upper side	137B medium green	139A medium green	147A medium to dark green
Color of under side	137D light grey green	138B light green	147C light green
Petiole Length (cm)	27.4	22.5	22.7
Petiole Diameter (mm)	4.1	3.6	4.2
Petiole Color	145B yellow green	145A yellow green	149A yellow green
Petiolule Length (mm)	18.2	14.3	10.8
Petiolule Diameter (mm)	2.2	2.5	2.1
Petiolule Color	145C yellow green	145A yellow green	149A yellow green
Bract Frequency	8% typically paired	25% typically single	75% typically paired
Stipule Length (cm)	3.6	3.4	3.3
Stipule Width (cm)	0.6	0.7	0.6
Stolon Characteristics			
Anthocyanin color	59B purple red	60A purple red	59A purple red

TABLE 1-continued

QUANTITATIVE COMPARISON OF 'DRISCOLL PEARL,' 'SAN JUAN' AND 'DRISCOLL LANAI'

	'Driscoll Pearl'	'Driscoll Lanai'	'San Juan'
Diameter at bract (mm)	2.56	3.16	3.19
Avg. # of Daughter plants (2003 Nursery)	68	68	67
Flower Characteristics			
Petal Length (cm)	1.23	0.97	1.06
Petal Width (cm)	1.28	1.04	1.18
Petal Length/Width Ratio	0.96	0.93	0.90
Flower Diameter (cm)	2.34	2.42	2.31
Calyx Diameter (cm)	3.96	3.16	3.19
Sepal Length (mm)	15.4	11.8	11.9
Sepal Width (cm)	8.7	5.9	6.9
Petal Color	155C white	155C white	155C white
Receptical Color	154C yellow green	154C yellow green	154C yellow green
Anther Color	9A yellow	9A yellow	9A yellow
Fruiting Truss Length (cm)	42.8	28.8	31.2
Fruit Characteristics			
Fruit Length (cm)	4.4	3.9	4.5
Fruit Width (cm)	3.8	4.1	4.3
Fruit Length/Width Ratio	1.15	0.96	1.03
Average Berry Weight (g)	24.1	23.4	25.2
External Color	53A dark red	45B orange red	53A dark red
Internal Color	34B orange red	47C orange red	44A red
Achene Coloration	185A to 162A grayed purple to grayed yellow	185B to 154B grayed purple to grayed yellow	46B to 16A dark red to yellow
Achenes per berry	318.4	323.7	330.9
Achene weight (g)	0.00051	0.00049	0.00059
2003 Marketable Yield (g/plant)	1,854	1,679	1,499

TABLE 2

QUALITATIVE COMPARISON OF 'DRISCOLL PEARL,' 'SAN JUAN' AND 'DRISCOLL LANAI'

	'Driscoll Pearl'	'Driscoll Lanai'	'San Juan'
Plant			
Habit	upright	flat	globose to flat globose
Canopy Density	open	open	medium
Vigor	strong to very strong	medium	medium
Leaf			
Shape in cross section	concave	slightly concave to flat	flat to slightly convex
Interveinal blistering	medium	medium	medium to strong
Glossiness	weak to medium	weak	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	revolute to flat	revolute to flat
Terminal leaflet shape of base	obtuse to rounded	rounded	obtuse to rounded

TABLE 2-continued

QUALITATIVE COMPARISON OF 'DRISCOLL PEARL,' 'SAN JUAN' AND 'DRISCOLL LANAI'

	'Driscoll Pearl'	'Driscoll Lanai'	'San Juan'
Terminal leaflet shape of teeth	rounded	rounded	rounded
Stipule pubescence	dense	medium to dense	medium
Petiole pubescence	medium to dense	medium	medium
Petiole pose of hairs	upwards	downward	outward to downward
Stolon			
Anthocyanin coloration	medium	strong	strong
Thickness	thin	medium to thick	medium
Pubescence	medium to dense	dense	medium
Inflorescence			
Position relative to foliage	beneath to level with	level to above	beneath to level with
Diameter of calyx relative to corolla on secondary flowers	larger	same size to larger	larger
Diameter of inner calyx relative to outer on secondary flowers	larger	larger	same size
Spacing of petals	overlapping	overlapping	overlapping
Fruiting Truss			
Attitude at first picking	prostrate	prostrate	prostrate
Fruit			
Predominant shape	conical	conical to ovoid	conical to almost cylindrical
Difference in shapes between primary and secondary fruits	slight	slight	moderate
Band without achenes	very narrow to narrow	narrow to medium	narrow
Unevenness of surface	very weak	weak	medium
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	level
Pose of the calyx segments	spreading to reflexed	spreading to reflexed	spreading to reflexed
Size of calyx in relation to fruit on secondary fruit	smaller	smaller	same size
Adherence of calyx	medium to strong	strong	strong
Firmness of flesh	medium	medium	firm
Evenness of flesh color	slightly uneven	uneven	slightly uneven to even
Distribution of flesh color	marginal and central	marginal and central	marginal and central
Hollow center size	small to medium	medium	medium
Sweetness	strong	medium	medium to strong
Texture when tasted	fine	fine	medium
Acidity	medium	medium	medium
Time of First Flowering in 2003	early to mid-February	mid-February	mid-February
Harvest Interval in 2003	mid to late-March	late-March to Early November	late-March to Early November
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 PEARL,' 'SAN JUAN' AND 'DRISCOLL LANAI'

	'Driscoll Pearl'	'Driscoll Lanai'	'San Juan'
Reaction to Pests			
Tetranychus urticae	moderately susceptible	susceptible	moderately susceptible
Lygus hesperus	susceptible	susceptible	susceptible
Reaction To Diseases			
Botrytis fruit rot	susceptible	susceptible	susceptible
Powdery mildew	highly susceptible	susceptible	susceptible
Verticillium wilt	moderately resistant	moderately resistant	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 Pearl' 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 Pearl', 'San Juan' and 'Driscoll Lanai' 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 PEARL,' 'SAN JUAN' AND 'DRISCOLL LANAI'

Locus	'Driscoll Pearl'	'Driscoll Lanai'	'San Juan'
PGI	A2	A1	A2
LAP	B3	B3	B3
PGM	C4	C2	C4

What is claimed:

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

* * * * *

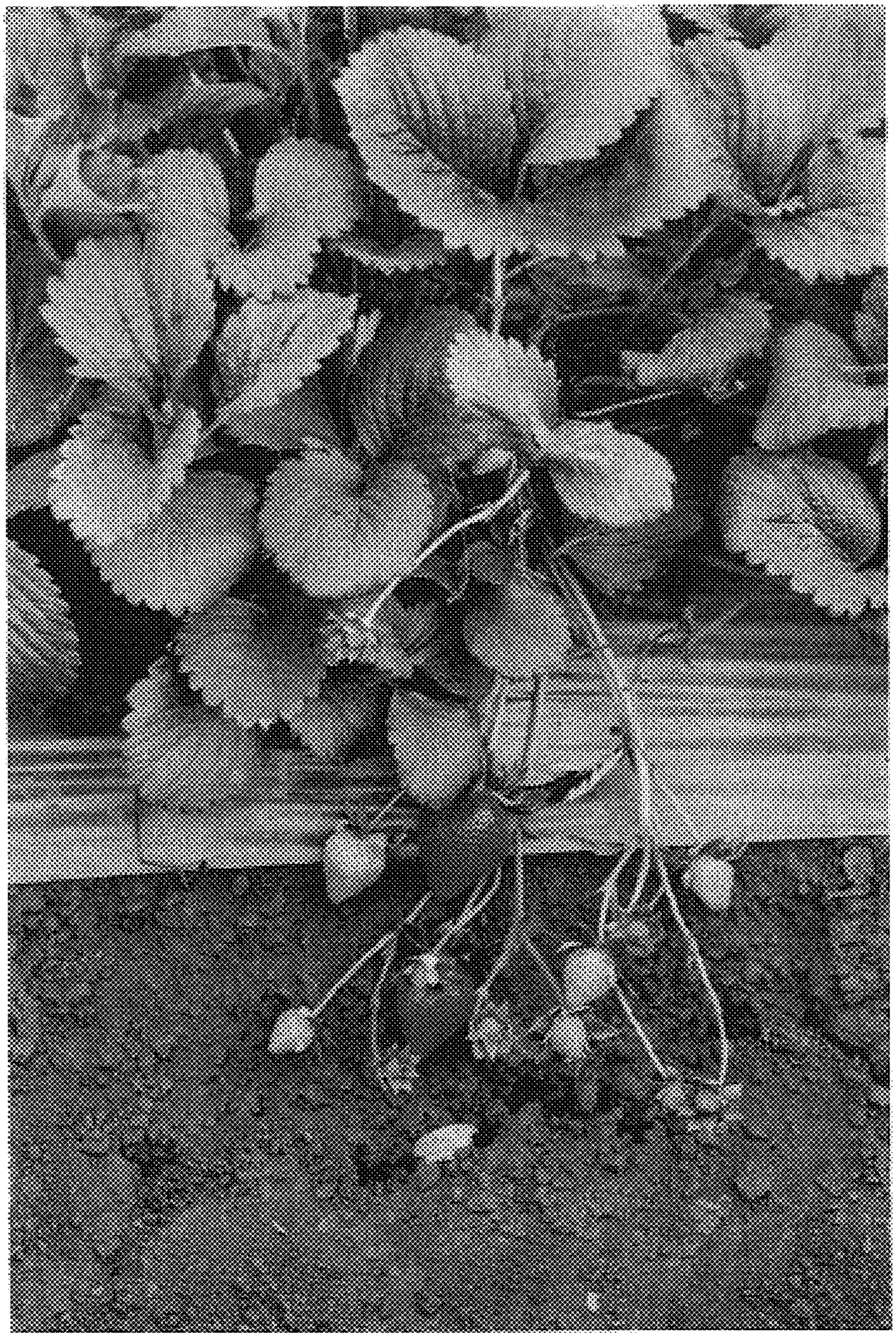

FIG. 1

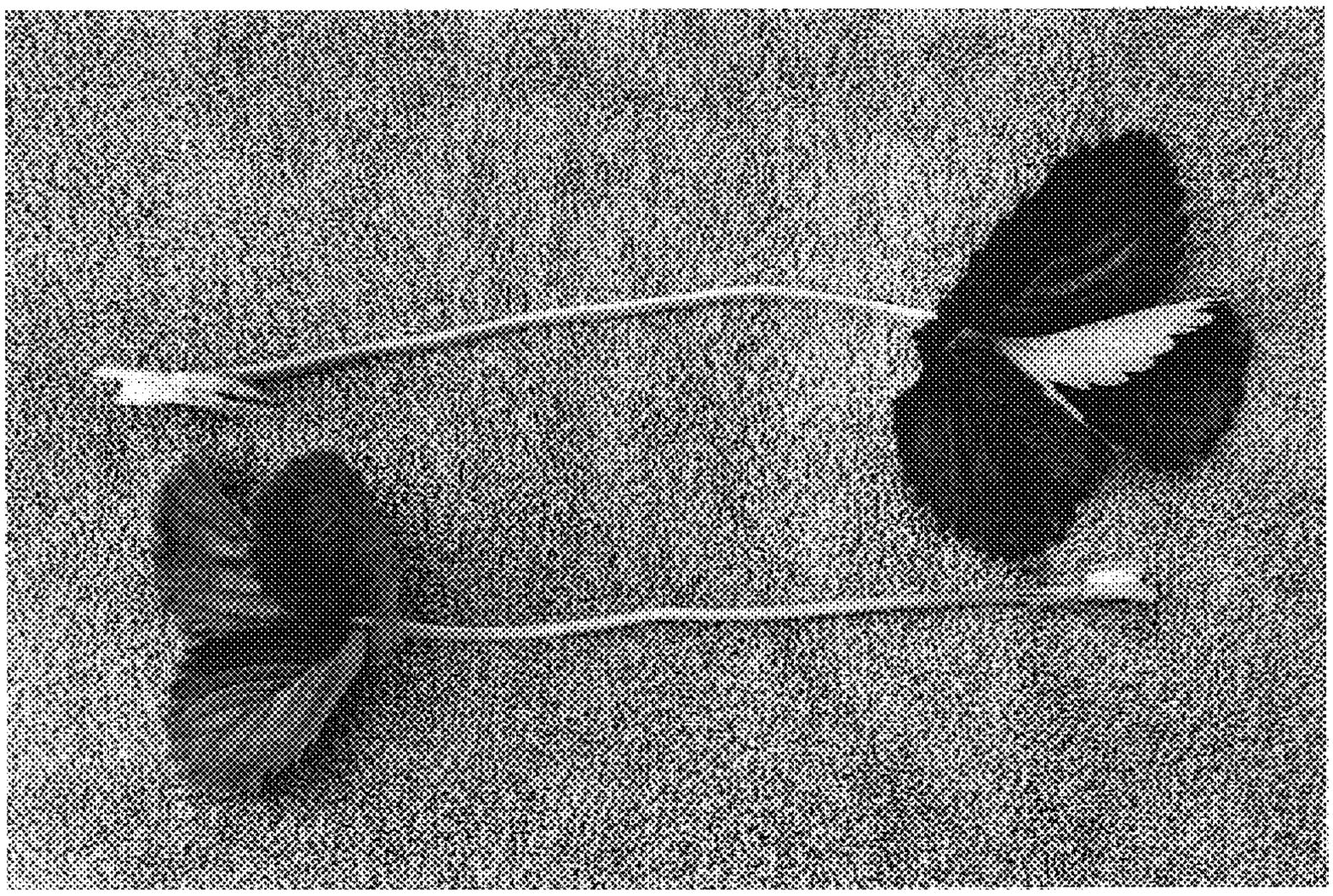

FIG. 2

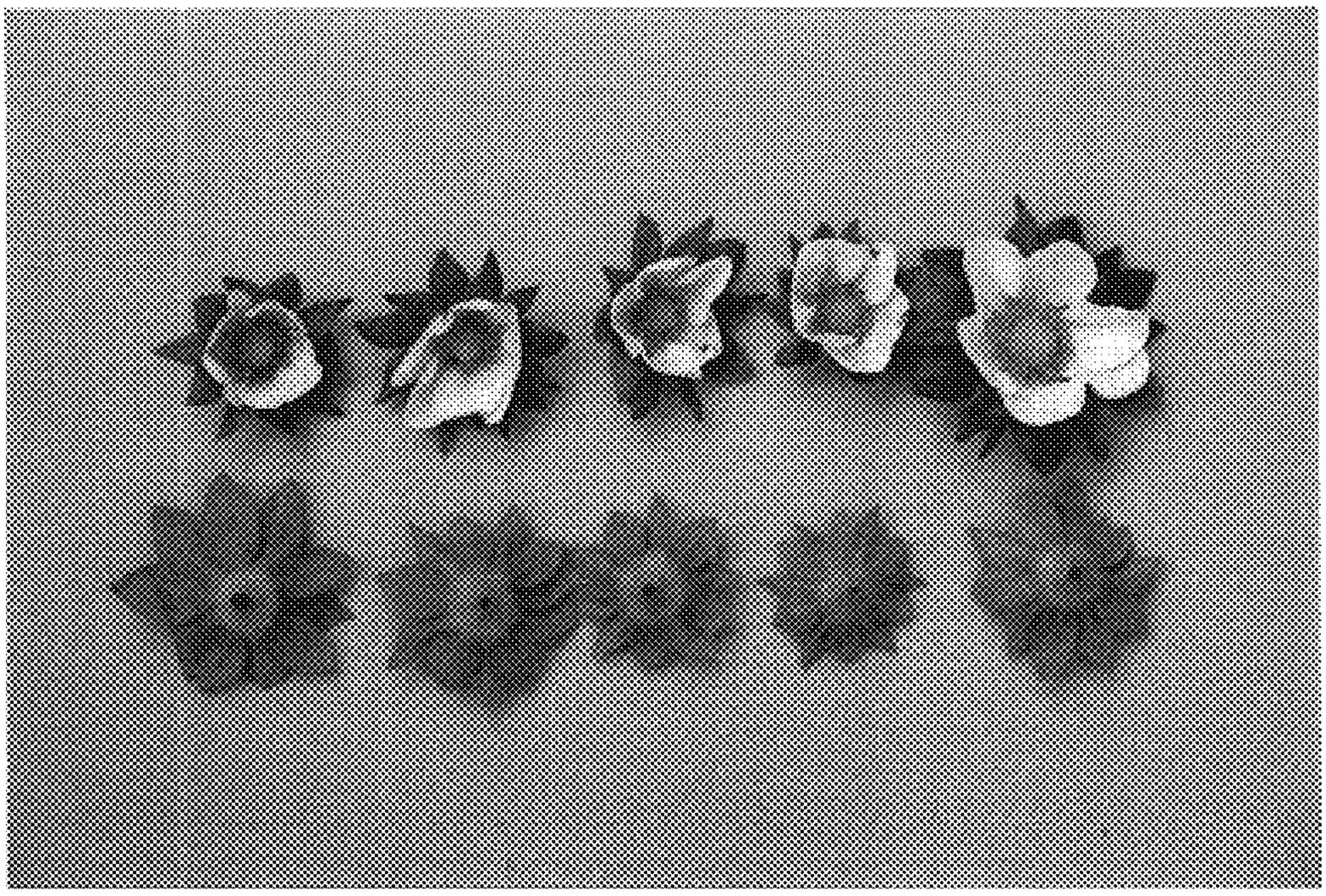

FIG.3

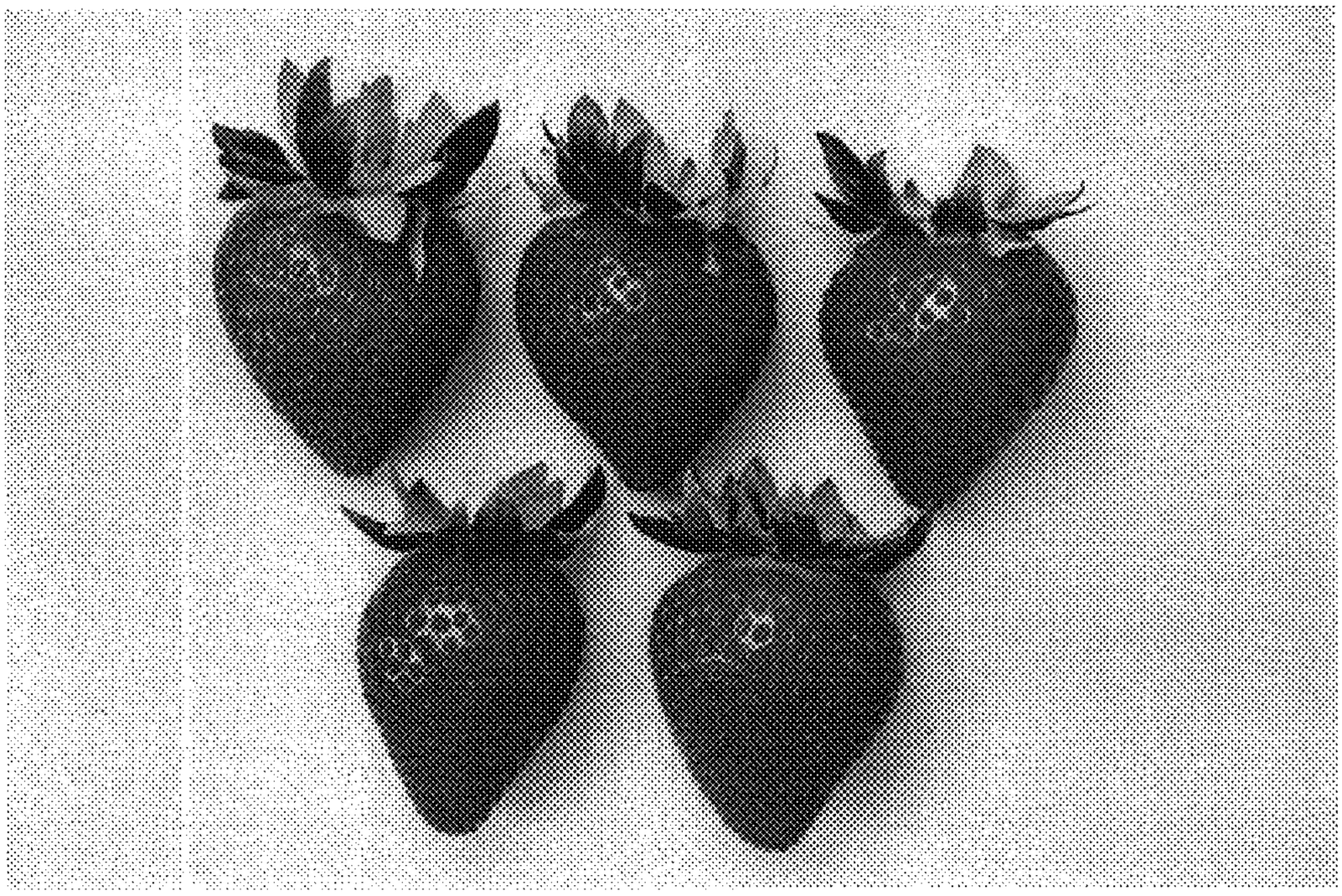

FIG.4

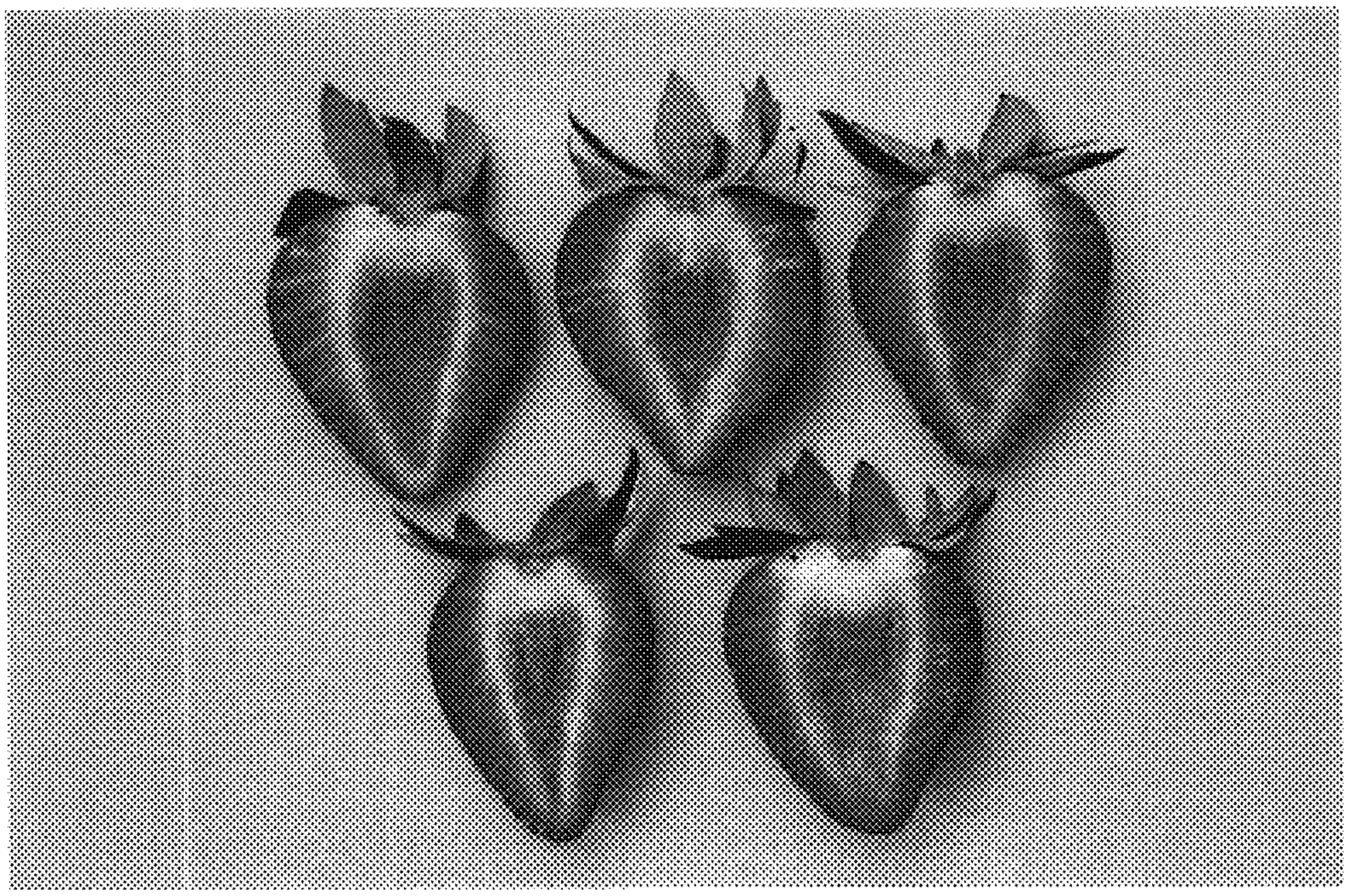

FIG.5