US00PP23745P3

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

(10) **Patent No.: US PP23,745 P3**
(45) **Date of Patent: Jul. 16, 2013**

(54) **STRAWBERRY PLANT NAMED 'MERIT'**

(50) Latin Name: ***Fragaria ananassa***
Varietal Denomination: **MERIT**

(75) Inventors: **Stephen M. Ackerman**, Salinas, CA (US); **Steven D. Nelson**, Watsonville, CA (US); **Michael D. Nelson**, Watsonville, CA (US)

(73) Assignees: **Plant Sciences, Inc.**, Watsonville, CA (US); **Berry R&D, Inc.**, Watsonville, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 363 days.

(21) Appl. No.: **12/926,805**

(22) Filed: **Dec. 10, 2010**

(65) **Prior Publication Data**

US 2012/0151646 P1 Jun. 14, 2012

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

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

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

(56) **References Cited**

PUBLICATIONS

Printout of application information from Community Plant Variety Office (CPVO) website for corresponding CPVO application No. 2011/0145 filed Jan. 21, 2011 (1 page). (http://www.cpvoextranet.cpvo.europa.eu).

Primary Examiner — Annette Para
(74) *Attorney, Agent, or Firm* — Foley & Lardner LLP

(57) **ABSTRACT**

This invention relates to a new and distinct variety of strawberry plant named 'MERIT'. This new strawberry plant named 'MERIT' is primarily adapted to the growing conditions of the central coast of California, and is primarily characterized by its small fruit size; orange red to red fruit color; uniformly shaped conical berries; and small sized plant.

5 Drawing Sheets

Latin name of the genus and species of the plant claimed: *Fragaria ananassa.*

Variety denomination: 'MERIT'.

BACKGROUND OF THE INVENTION

The present invention relates to a new and distinct strawberry variety named 'MERIT'. This new variety is a result of a controlled cross made in 2001 in an ongoing breeding program between strawberry variety designated 'PS-2880' (patented, U.S. Plant Pat. No. 15,597) and strawberry variety designated 'PS-4630' (a non-patented selection). Due to the combining of the reciprocal seed lots it is unknown as to which parent variety is the seed parent and which parent variety is the pollen parent. The variety is botanically known as *Fragaria ananassa.*

The seedling resulting from the aforementioned cross was selected from a controlled breeding plot in Ventura County, California in the fall of 2003. After its selection, the new variety was asexually propagated by stolons in both San Joaquin County, California and Siskiyou County, California. The new variety was extensively tested over the next several years in fruiting fields in Ventura County, California. This propagation has demonstrated that the combination of traits disclosed herein as characterizing the new variety are fixed and remain true to type through successive generations of asexual reproduction.

BRIEF SUMMARY OF THE INVENTION

'MERIT' is primarily adapted to the climate and growing conditions of the central coast of California. The nearby Pacific Ocean provides the needed humidity and moderate

temperatures to produce a strong vigorous plant and maintain fruit quality during the fall production months.

The following traits have been repeatedly observed and are determined to be unique characteristics of 'MERIT', which in combination distinguish this strawberry plant as a new and distinct variety:

1. Small fruit size;
2. Orange-red to red fruit color;
3. Uniformly shaped, conical berries;
4. Small sized plant;
5. Fruiting trusses that are visible above the foliage; and
6. Relatively short fruiting trusses

The strawberry varieties that are believed to be most closely related to the new strawberry variety 'MERIT' are the strawberry variety 'VALOR' (patented, U.S. Plant Pat. No. 20,394) and the strawberry variety 'PREMIER' (patented, U.S. Plant Pat. No. 20,309). In side-by-side comparisons to the similar strawberry varieties 'VALOR' and 'PREMIER', the new strawberry variety 'MERIT' differs by the following combination of characteristics as described in Table 1:

TABLE 1

Characteristic	'MERIT'	'VALOR' (US PP 20,394)	'PREMIER' (US PP 20,309)
1. Color of mature fruit	Ranges from orange red to red	Ranges from red to dark red	Ranges from red to dark red
2. Fruit size	Small	Medium	Medium
3. Marketable yield (gm/plt)	503	529	393

TABLE 1-continued

Characteristic	'MERIT'	'VALOR' (US PP 20,394)	'PREMIER' (US PP 20,309)
4. Plant size	Ranges from medium to small	Medium	Medium
5. Stolon anthocyanin intensity	Weak	Ranges from weak to medium	Ranges from weak to medium
6. Stolon pubescence	Weak	Strong	Medium
7. Color of upper surface	Medium green	Ranges from medium to dark green	Ranges from medium to dark green
8. Interveinal leaf blistering	Ranges from medium to strong	Medium	Medium
9. Foliage gloss	Medium	Medium	Ranges from medium to strong
10. Serrations/leaf	20.3	22.7	25.9
11. Petiole length (cm)	14.2	17.4	15.5
12. Petiolule length (mm)	11.9	17.8	11.8
13. Terminal leaf shape of base	Acute	Obtuse	Obtuse
14. Fruiting truss length at maturity (cm)	24.3	29.7	30.8
15. Fruiting truss pubescence	Medium	Ranges from medium to strong	Strong

For identification a series of molecular markers have been determined for this new variety.

'MERIT' differs from its parents, 'PS-2880' and 'PS-4630' by the following combination of characteristics as described in Table 2.

TABLE 2

Characteristic	'MERIT'	'PS-2880' (US PP 15,597)	'PS-4630'
1. Fruit size	Small	Medium	Large
3. Plant size	Small	Medium to large	Medium to large
4. Insertion of achenes	Level with surface	Above the surface	Level with surface
5. Type of bearing	Everbearing	Everbearing	June bearing

BRIEF DESCRIPTION OF THE PHOTOGRAPHS

The accompanying color photographs illustrate the overall appearance of typical specimens of the new strawberry variety 'MERIT', at various stages of development as true as it is reasonably possible with color reproductions of this type. Color in the photographs may differ slightly from the color value cited in the botanical descriptions which accurately describe the color of 'MERIT'. The depicted plant and plant parts of the new strawberry variety 'MERIT' are approximately 3 to 4 months old. The photographs were taken in Ventura County, California:

FIG. **1** shows typical fruiting field characteristics of 'MERIT' taken in the month of October 2009;

FIG. **2** shows a close-up view of a typical leaf structure of 'MERIT' taken in the month of October 2009;

FIG. **3** shows typical mature and immature field fruit of 'MERIT' taken in the month of October 2009;

FIG. **4** shows a close-up view of mature fruit of 'MERIT' taken in the month of November 2009;

FIG. **5** shows typical internal and external mature fruit characteristics of 'MERIT' taken in the month of November 2009.

DETAILED BOTANICAL DESCRIPTION

The new variety 'MERIT' has not been observed under all possible environmental conditions. The characteristics of the new variety 'MERIT' may vary in detail, depending upon variations in environmental factors, including weather (temperature, humidity and light intensity), day length, soil type and location. In addition, the characteristics of any parental variety or comparison variety included in Tables 1-9 of the present invention may vary in detail, depending upon variations in environmental factors, including weather (temperature, humidity and light intensity), day length, soil type and location.

The aforementioned photographs, together with the following description of the new variety 'MERIT', unless otherwise noted, are based on observations taken during the 2009 growing season in Ventura County, California. These measurements and ratings were taken from plants of 'MERIT' dug from a low-elevation nursery located in San Joaquin County, California during the month of January 2008 and planted approximately 6 months later in Ventura County, California. The approximate age of the observed plants is 3 to 4 months. Yield observations and fruit quality characteristics are averaged from four years of data collected from the 2006 through 2009 growing seasons. Flower measurements and characteristics are from secondary flowers unless otherwise noted. Fruit characteristics and measurements are from secondary fruit unless otherwise noted.

Color terminology where noted follows The Royal Horticultural Society Colour Chart, London (2007).

The following tables 3-9 describe fruit, plant, stolon, foliage, fruiting truss, flower and pest disease characteristics of the new strawberry 'MERIT' in comparison to the similar strawberry variety 'VALOR' and strawberry variety 'PREMIER'.

TABLE 3

FRUIT CHARACTERISTICS

Characteristic	'MERIT'	'VALOR' (US PP 20,394)	'PREMIER' (US PP 20,309)
Color of mature fruit	RHS 34B Ranges from orange red to red	RRHS 46A Ranges from red to dark red	RHS 46A Ranges from red to dark red
Color of internal flesh	RHS 34C Orange red	RHS 45A Ranges from medium to dark red	RHS 45A Ranges from medium to dark red
Fruit length (cm)	3.8	4.0	4.2
Fruit width (cm)	3.3	3.6	3.5
Fruit length/ width ratio	1.14 Slightly longer than broad	1.12 Slightly longer than broad	1.22 Slightly longer than broad
Calyx diameter (cm)	3.8	4.1	4.6
Average fruit weight (gm)	18.1	21.5	21.9
Achene color, shaded side	RHS 160B Greyed yellow group	RHS 160A Greyed yellow group	RHS 160B Greyed yellow group

TABLE 3-continued

FRUIT CHARACTERISTICS

Characteristic	'MERIT'	'VALOR' (US PP 20,394)	'PREMIER' (US PP 20,309)
Achene color, sun exposed side	RHS 184B Greyed purple group	RHS 183A Greyed purple group	RHS 183A Greyed purple group
Achenes per berry	324	331	286
Achene weight (mg)	0.50	0.50	0.60
Marketable fruit yield (gm/plt)	503	529	393
Fruit Size	Small	Medium	Medium
Predominant fruit shape	Conical	Conical	Conical
Difference in shapes between primary and secondary fruit	Slight	Ranges from slight to moderate	None to very slight
Band without achenes	Absent or very narrow	Absent or very narrow	Absent or very narrow
Unevenness of fruit surface	Absent or very weak	Weak	Absent or very weak
Evenness of fruit color	Even	Even	Ranges from slightly uneven to even
Fruit glossiness	Ranges from medium to strong	Ranges from medium to strong	Ranges from medium to strong
Insertion of achenes	Level with surface	Ranges from level with to below the surface	Level with surface
Insertion of calyx	In the basin	In the basin	In the basin
Attitude of the calyx	Spreading	Spreading	Spreading
Size of calyx in relation to fruit diameter	Slightly larger	Slightly larger	Much larger
Adherence of calyx	Strong	Strong	Strong
Firmness of fruit skin	Medium	Strong	Medium
Firmness of fruit flesh	Firm	Firm	Medium
Keeping quality	Very good	Very good	Good
Distribution of red color of the flesh	Marginal and central	Marginal and central	Marginal and central
Hollow center expression	Moderate	Absent or very weak	Weak
Fruit flavor	Ranges from good to very good	Good	Good
Soluble solids (% brix)	8.8	7.8	8.3
Time of first flowering	Early	Medium	Medium
Time of first harvesting	Early	Medium	Medium
Harvest period	Late September to mid December	Late September to mid December	Late September to mid December
Type of bearing	Everbearing	Everbearing	Everbearing

TABLE 4

PLANT CHARACTERISTICS

Characteristic	'MERIT'	'VALOR' (US PP 20,394)	'PREMIER' (US PP 20,309)
Plant height (cm)	24.1	25.9	25.6
Plant spread (cm)	29.0	31.6	33.5
Plant size	Ranges from medium to small	Medium	Medium
Plant habit	Globose	Globose	Globose
Plant density	Medium	Medium	Medium
Plant vigor	Medium	Medium	Medium

TABLE 5

STOLON CHARACTERISTICS

Characteristic	'MERIT'	'VALOR' (US PP 20,394)	'PREMIER' (US PP 20,309)
Stolon color	RHS 145A Yellow green group	RHS 144A Yellow green group	RHS 145A Yellow green group
Stolon anthocyanin coloration	RHS 180D Greyed red group	RHS 180A Greyed red group	RHS 181 B Greyed red group
Stolon anthocyanin intensity	Weak	Ranges from weak to medium	Ranges from weak to medium
Average stolon number per plant from the fruiting field	2.4	6.4	8.5
Stolon diameter at bract (mm)	3.1	3.3	3.6
Stolon pubescence	Weak	Strong	Medium
Attitude of hairs	Upwards	Upwards	Upwards

TABLE 6

FOLIAGE CHARACTERISTICS

Characteristic	'MERIT'	'VALOR' (US PP 20,394)	'PREMIER' (US PP 20,309)
Foliage:			
Color of upper surface	RHS 137A Medium green	RHS N137B Medium to dark green	RHS N137B Medium to dark green
Color of underside	RHS 147C Yellow green group	RHS 147C Yellow green group	RHS 147C Yellow green group
Shape in cross section	Slightly concave to flat	Slightly concave to flat	Slightly concave
Interveinal blistering	Ranges from medium to strong	Medium	Medium
Leaf glossiness	Medium	Medium	Ranges from medium to strong
Number of leaflets	Three	Three	Three
Terminal Leaflet:			
Length (cm)	8.9	8.6	9.6
Width (cm)	7.6	8.7	8.6
Length/ width ratio	1.18 Longer than broad	0.99 As long as broad	1.11 Longer than broad

TABLE 6-continued

FOLIAGE CHARACTERISTICS

Characteristic	'MERIT'	'VALOR' (US PP 20,394)	'PREMIER' (US PP 20,309)
Serrations/leaf	20.3	22.7	25.9
Leaf size	Ranges from medium to small	Medium	Medium
Shape of base	Acute	Obtuse	Obtuse
Shape of teeth	Obtuse	Obtuse	Obtuse
Petiole:			
Petiole Color	RHS 144A Yellow green group	RHS 144A Yellow green group	RHS 144A Yellow green group
Petiole length (cm)	14.2	17.4	15.5
Petiole diameter (mm)	3.4	4.2	4.3
Petiolule color	RHS 144A Yellow green group	RHS 144A Yellow green group	RHS 144A Yellow green group
Petiolule length (mm)	11.9	17.8	11.8
Petiole pubescence	Moderate	Sparce	Sparce
Attitude of hairs	Strongly outward	Strongly outward	Strongly outward
Stipule:			
Color	RHS 146A Yellow green group	RHS 146A Yellow green group	RHS 146B Yellow green group
Anthocyanin coloration	RHS 63A Red purple group	RHS 61A Red purple group	RHS 61A Red purple group
Anthocyanin intensity	Weak	Weak	Medium
Length (mm)	22.2	21.3	24.8
Width (mm)	8.6	10.4	11.3

TABLE 7

FRUITING TRUSS CHARACTERISTICS

Characteristic	'MERIT'	'VALOR' (US PP 20,394)	'PREMIER' (US PP 20,309)
Anthocyanin coloration	RHS 181D Greyed red group	RHS 181C Greyed red group	RHS 181B Greyed red group
Anthocyanin intensity	Absent or very weak	Absent or very weak	Medium
Length at maturity (cm)	24.3	29.7	30.8
Position relative to foliage	Above the foliage	Level with the foliage	Ranges from level with to beneath the foliage
Pubescence	Medium	Ranges from medium to strong	Strong
Attitude at first pick	Prostrate	Prostrate	Prostrate

TABLE 8

FLOWER CHARACTERISTICS

Characteristic	'MERIT'	'VALOR' (US PP 20,394)	'PREMIER' (US PP 20,309)
Petal color	RHS NN155C White	RHS NN155C White	RHS NN155C White
Sepal color	RHS 137A Green group	RHS 137A Green group	RHS 137A Green group
Corolla diameter (mm)	31.0	30.1	35.3
Calyx diameter (mm)	29.8	31.2	33.9
Petal length (mm)	11.7	11.3	13.4
Petal width (mm)	12.0	11.1	12.7
Petal length/ width ratio	0.98	1.02	1.05
Petals/flower	6.2	5.7	5.8
Sepal length (mm)	11.0	10.5	12.3
Sepal width (mm)	3.2	4.7	5.8
Sepal length/ width ratio	3.41	2.23	2.11
Sepals/flower	11.8	11.4	11.6
Size of calyx relative to corolla	Ranges from same size to smaller	Larger	Larger
Size of inner calyx relative to outer calyx	Smaller	Smaller	Smaller
Relative position of petals	Overlapping	Ranges from touching to overlapping	Overlapping

TABLE 9

PEST AND DISEASE REACTIONS

Characteristic	'MERIT'	'VALOR' (US PP 20,394)	'PREMIER' (US PP 20,309)
Two spotted spider mite	Moderately susceptible	Moderately susceptible	Moderately susceptible
Flower thrips	Moderately susceptible	Moderately susceptible	Moderately susceptible
Powdery mildew	Moderately susceptible	Susceptible	Susceptible
Botrytis fruit rot	Moderately susceptible	Moderately susceptible	Moderately susceptible
Angular leaf spot	Moderately resistant	Moderately susceptible	Susceptible

We claim:

1. A new and distinct variety of *Fragaria ananassa* named 'MERIT', as herein described and illustrated by the characteristics set forth above.

* * * * *

Fig. 1

Fig. 2

Fig. 3

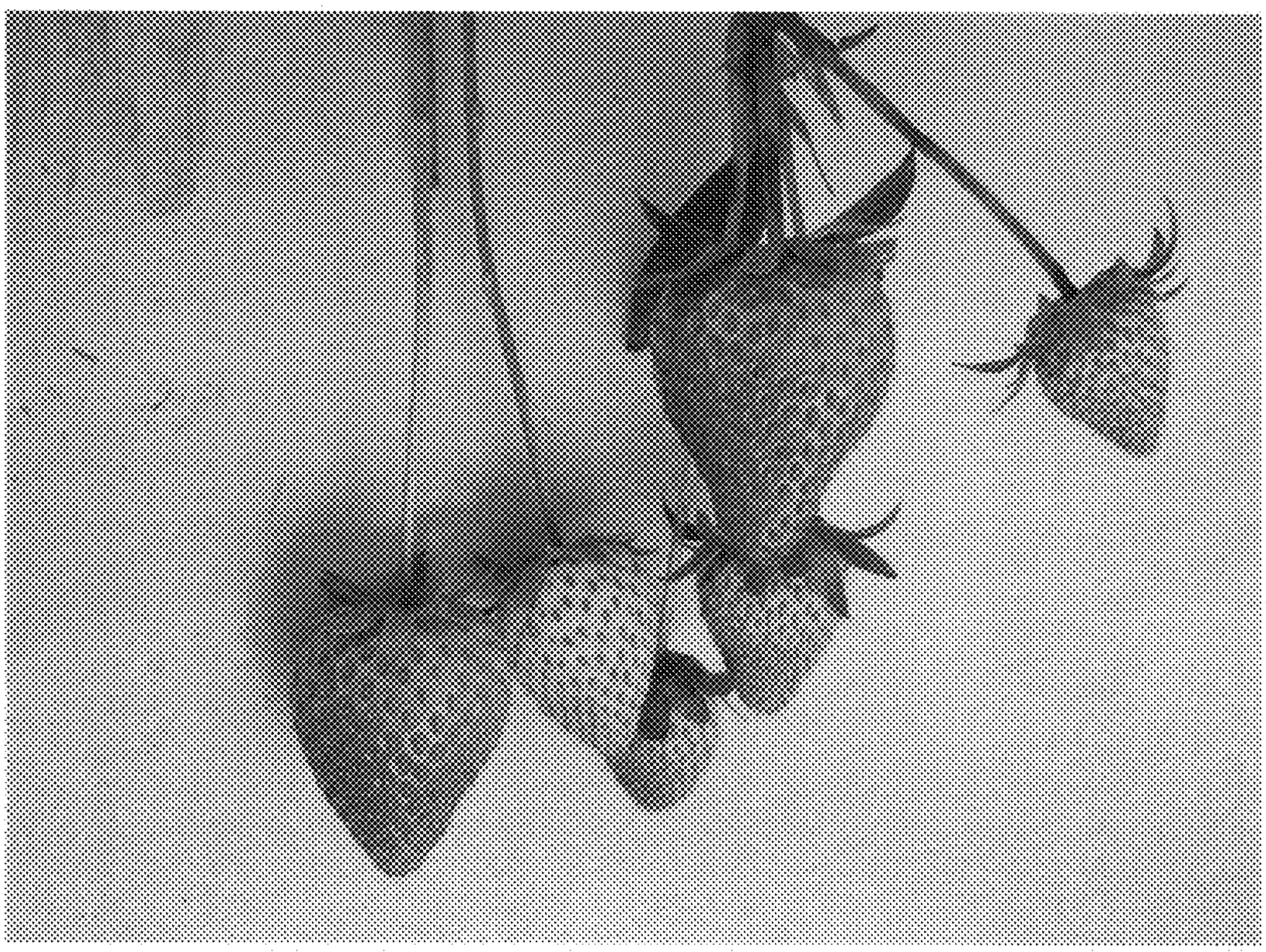

Fig. 4

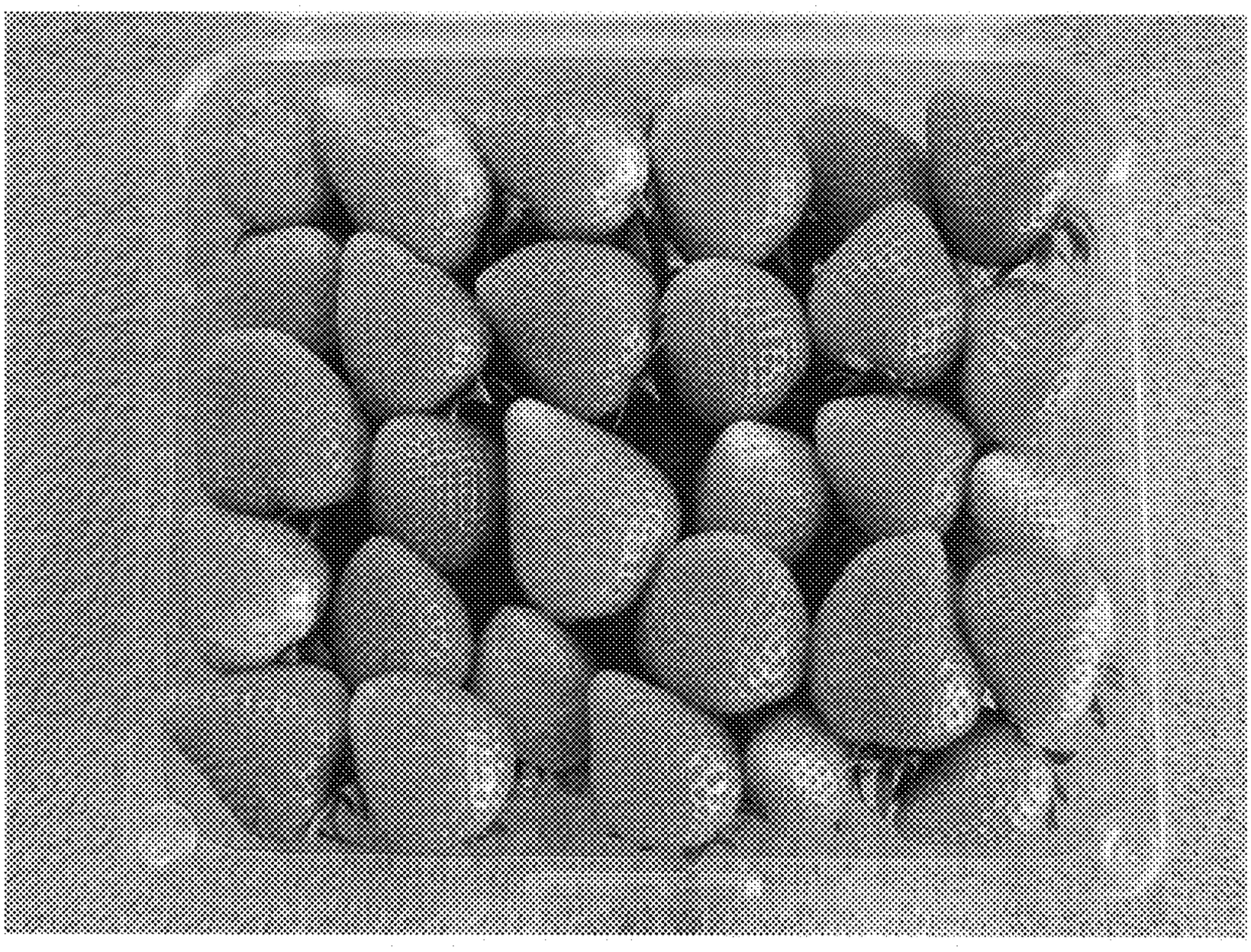

Fig. 5