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Adams

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(54) **RASPBERRY PLANT NAMED 'BOUNTIFUL'**

(50) Latin Name: ***Rubus idaeus***
Varietal Denomination: **BOUNTIFUL**

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patent is extended or adjusted under 35
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(52) **U.S. Cl.**

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(58) **Field of Classification Search**

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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 everbearing variety of raspberry plant named 'BOUNTIFUL'. The new variety is primarily adapted to the growing conditions of the central coast of California and is characterized by the following: late primocane production with medium sized fruit of light-red coloration. Fruit is of consistent conic shape, releases very easily from the receptacle and is of good flavor. Foliage is flat to slightly concave, medium green; possessing weak rugosity and equal 3-5 foliates. Primocanes have an absent or very weak waxy coat, medium to dense thorn density and no anthocyanin coloration.

4 Drawing Sheets

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Latin name of the genus and species of the plant claimed:
Rubus idaeus.

Variety denomination: 'BOUNTIFUL'.

BACKGROUND OF THE INVENTION

The present invention relates to a new and distinct fall bearing raspberry variety designated as 'BOUNTIFUL'. This new variety is a result of a controlled cross made in 2007 in Watsonville, Calif. between raspberry variety 'ELEGANCE' (patented, U.S. Plant Pat. No. 21,685) as the female parent and raspberry variety 'PS-3636' (unpatented) as the male parent in an ongoing breeding program. The variety is botanically known as *Rubus idaeus*.

The seedling resulting from the aforementioned cross was asexually propagated by dormant canes in Santa Cruz County, Calif. and was subsequently selected by the inventor from a controlled breeding plot in Watsonville, Calif. in 2009. After its selection, the new variety was further asexually propagated by dormant canes, roots and non-dormant root shoot cuttings in Santa Cruz County, Calif., San Joaquin County, Calif. and Siskiyou County, Calif. The new variety was then extensively tested over the next several years in fruiting fields in Santa Cruz County, Calif. 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

'BOUNTIFUL' is primarily adapted to the climate and growing conditions of the central coast of California. This region provides the necessary year-round temperatures required for it to produce and maintain a strong vigorous

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plant and to remain in fruit production from July through December on primocanes and in the ensuing year from May through July on the floricanes. The following traits have been repeatedly observed and are determined to be unique characteristics of 'BOUNTIFUL', which in combination distinguish this raspberry plant as a new and distinct variety:

1. Late primocane fruiting
2. Very high fruit yield
3. Light fruit color
4. Very weak adherence of receptacle
5. Good flavor

The raspberry variety that is believed to be most closely related to the new raspberry variety 'BOUNTIFUL' is the raspberry variety 'GRANDEUR' (patented, U.S. Plant Pat. No. 20,459). In comparison to the similar raspberry variety 'GRANDEUR', 'BOUNTIFUL' differs by the following combination of characteristics described in Table 1:

TABLE 1

Characteristic	'BOUNTIFUL'	'GRANDEUR' (US PP20,459)
Primocane waxy coat (glaucoicity)	Absent to very weak	Absent to very weak
Predominate number of leaflets	Equal 3-5	Always 3
Leaf shape (cross section)	Flat to slightly concave	Flat to slightly convex
Rugosity	Weak	Strong
Color mature fruit	RHS 34A Light red	RHS 42A Medium red
Primocane fruit weight (g)	4.8	3.9
Floricanes color	RHS 165B Greyed-orange group	RHS 164A Greyed-orange group

'BOUNTIFUL' differs from its parents, 'ELEGANCE' and 'PS-3636' by the following combination of characteristics described in Table 2:

TABLE 2

Characteristic	'BOUNTIFUL'	'ELEGANCE' (U.S. Plant Pat. No. 21,685)	'PS-3636'
Productivity	Very high	Medium to low	Medium
Glossiness (fruit)	Medium	High	Medium
Adherence of receptacle	Very weak	Medium	Medium
Primocane time of fruiting	Late	Late	Late
Fruit size	Medium	Small	Medium
Flavor	Good	Good	Poor

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

BRIEF DESCRIPTIONS OF THE DRAWINGS

The accompanying color photographs illustrate the overall appearance of typical specimens of the new raspberry variety, 'BOUNTIFUL' at various stages of development as true as reasonably possible with color reproductions of this type. Color in the photographs may differ slightly from the color value cited in the detailed botanical description which accurately describes the color of 'BOUNTIFUL'. The depicted plant and plant parts of the new raspberry variety 'BOUNTIFUL' were taken in Watsonville, Calif. and are approximately 2 to 16 months old:

FIG. 1 shows typical primocane foliage and fruit color; foliate and rugosity characteristics of 'BOUNTIFUL' taken in the month of July 2014;

FIG. 2 shows typical coloration of apical growing tip during early primocane rapid growth of 'BOUNTIFUL' taken in the month of May 2013;

FIG. 3 shows typical harvested fruit of 'BOUNTIFUL' taken in the month of August 2013;

FIG. 4 shows typical dormant cane color characteristics of 'BOUNTIFUL' taken in the month of January 2013.

DETAILED BOTANICAL DESCRIPTION

'BOUNTIFUL' has not been observed under all possible environmental conditions. The characteristics of the new variety 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 raspberry variety 'BOUNTIFUL', unless otherwise noted, are based upon observations taken during the 2013-2014 growing season in Watsonville, Calif. Primocane measurements and ratings were taken from plants of 'BOUNTIFUL' dug from a nursery located in Siskiyou County, Calif. during the middle of October 2012 and planted approximately 3 to 4 weeks later in Watsonville, Calif. The approximate age of the observed primocane plants is 7 to 8 months. Floricane measurements and ratings were taken from the same planting of 'BOUNTIFUL' at an approximate age of 16 to 18 months. Yield observations and fruit quality characteristics are averaged from five years of data collected from the 2009 through 2013 production seasons. Flower measurements and characteristics are from secondary flowers unless otherwise noted. Fruit character-

istics and measurements are from secondary fruit unless otherwise noted. Foliage characteristics and measurements are from 3-foliate foliage unless otherwise noted.

Color terminology where noted follows The R.H.S. Colour Chart Fifth Edition, Royal Horticultural Society, London, United Kingdom (1966).

The following tables 3-7 describe fruit, plant, foliage, flower and pest/disease characteristics of the new raspberry 'BOUNTIFUL' in comparison to the similar raspberry varieties 'GRANDEUR' (patented, U.S. Plant Pat. No. 20,459).

TABLE 3

Characteristic	'BOUNTIFUL'	'GRANDEUR' (U.S. Plant Pat. No. 20,459)
Color mature fruit	RHS 34A	RHS 42A
	Light to medium red	Medium red
Color achenes	RHS 159A	RHS 159A
	Orange-white group	Orange-white group
Fruit length (mm)	23.30	22.91
Fruit width (mm)	21.87	20.12
Length/Width ratio	1.06	1.14
	Longer than broad	Longer than broad
Seed weight (mg)	1.66	1.75
Druplets per berry	82	93
Weight of single drupe (g/drupe)	0.058	0.043
Relative size of drupes	Medium	Medium
Fruit size	Medium	Medium
Predominant shape	Conical	Conical
Evenness of color	Even	Even
Glossiness	Medium	Medium
Adherence of receptacle	Very weak	Weak
Firmness of flesh	Firm	Very firm
Firmness of skin	Medium	Very firm
Soluble Solids (% brix)	9.8	10.5
Flavor	Good	Good

TABLE 4

Characteristic	'BOUNTIFUL'	'GRANDEUR' (U.S. Plant Pat. No. 20,459)
<u>General:</u>		
Habit	Semi-upright	Upright
Size	Medium	Medium
Productivity	High	High
Self-fruitfulness	Yes	Yes
Type of bearing	Everbearing	Everbearing
<u>Primocane:</u>		
Color (true)	RHS 145B	RHS 145B
	Yellow-green group	Yellow-green group
Length (cm)	198.6	143.6
Basal diameter (mm)	16.98	21.80
Diameter central $\frac{1}{3}$ (mm)	10.31	12.55
Lateral length at central $\frac{1}{3}$ (cm)	35.2	43.6
No. fruiting laterals per cane	15.2	17.4
Internode length at central	50.34	48.84
$\frac{1}{3}$ (mm)		
Anthocyanin coloration	n/a	RHS 59B
		Red-purple group
Anthocyanin intensity	Absent	Weak
Pubescence	Absent	Absent
Length of vegetative bud (mm)	6.82	11.01

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TABLE 4-continued

PLANT CHARACTERISTICS		
Characteristic	'BOUNTIFUL'	'GRANDEUR' (U.S. Plant Pat. No. 20,459)
Strength of waxy coat (glaucosity)	Absent to very weak	Absent to very weak
Time of flowering	Late	Medium
Time of fruiting	Late	Medium
Length of fruiting season	Long	Long
% of total yield	47%	50%
Flowering period	Late June to Late November	Late June to Late November
Harvest period	Late July to Late December	Late July to Late December
Primocane fruit weight (g)	4.8	3.9
Primocane yield (g/plant)	3,495	2,662
Young Shoots:		
Number (per meter)	25-30	15-20
	Medium	Medium
Anthocyanin presence	Present	Present
Anthocyanin coloration	RHS 179B	RHS 179A
Anthocyanin intensity	Red-purple group	Greyed-red group
Thorns:	Absent to very weak	Medium
Thorn coloration	RHS 179C	RHS 180C
Thorn length at central $\frac{1}{3}$ (mm)	Greedy-red group 1.92	Greedy-red group 0.76
Thorn base at central $\frac{1}{3}$ (mm)	1.34	1.53
Thorn presence	Present	Present
Thorn density per cm at central $\frac{1}{3}$	7.36	3.38
Thorn texture	Dense	Medium
Attitude of the tip	Rigid	Rigid
Floricanes:	Horizontal	Horizontal
Color (true)	RHS 165B	RHS 164A
	Greedy-orange group	Greedy-orange group
Length (cm)	139.7	119.8
Fruiting lateral attitude	Horizontal to drooping	Erect
Time bud burst	Medium	Medium
Time of flowering	Medium	Medium
Time of fruiting	Medium	Medium
Length of fruiting season	Medium to long	Medium to long
% of total yield	53%	50%
Flowering period	Late April to Late June	Late April to Late June
Harvest period	Late May to Late July	Late May to Late July
Floricanes fruit weight (g)	4.6	3.7
Floricanes yield (g/plant)	4,010	2,680

TABLE 5

FOLIAGE CHARACTERISTICS		
Characteristic	'BOUNTIFUL' (3 Foliate)	'GRANDEUR' (U.S. Plant Pat. No. 20,459)
General:		
Color of upper surface	RHS N 137B	RHS N 137A
	Green group	Green group
Color of lower surface	RHS 190B	RHS 190B
	Greyed-green group	Greyed-green group
Shape in cross section	Flat to slightly concave	Flat to slightly convex
Arrangement	Compound	Compound

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TABLE 5-continued

FOLIAGE CHARACTERISTICS		
Characteristic	'BOUNTIFUL' (3 Foliate)	'GRANDEUR' (U.S. Plant Pat. No. 20,459) (3 Foliate)
5		
Relief between veins (rugosity)	Weak	Strong
10		
Glossiness	Weak	Weak
Number of leaflets/leaf	Equal 3-5	Always 3
Terminal Leaflet:		
15		
Length (mm)	133.3	127.5
Width (mm)	83.6	91.6
Length/Width Ratio	1.6	1.4
16		
Size	Longer than broad	Longer than broad
Shape	Medium	Medium to large
Shape of base	Cordate	Cordate
Shape of tip	Rounded	Acuminate
Margins	Acuminate	Biserrate
Lateral Leaflet:		
17		
Length (mm)	113.9	105.5
Width (mm)	65.8	65.1
Length/Width Ratio	1.7	1.6
18		
Length (mm)	37.1	36.2
Orientation	Opposite	Opposite
Arrangement	Compound	Compound
Shape	Ovate	Ovate
Overlapping	Free	Touching
Shape of the base	Acute	Oblique rounded
Shape of the tip	Acuminate	Acuminate
Margins	Biserrate	Biserrate
Petiole:		
19		
Length (mm)	63.82	59.00
Width (mm)	3.22	3.99
20		
Thorn presence	Yes	Yes
Thorn orientation	Erect	Erect
Anthocyanin coloration	RHS 184B	RHS 184C
of upper surface	Greyed-purple group	Greyed-purple group
Anthocyanin intensity of upper surface	Absent to very weak	Weak
21		
Stipule length (mm)	11.19	10.23
Stipule orientation	Erect	Erect to horizontal
22		
TABLE 6		
FLOWER CHARACTERISTICS		
Characteristic	'BOUNTIFUL'	'GRANDEUR' (U.S. Plant Pat. No. 20,459)
50		
Petal color	155C	155C
	White group	White group
Flower diameter (mm)	24.53	22.55
Petal Length (mm)	6.62	6.42
Petal width (mm)	2.89	3.11
55		
Petal length/width ratio	2.29	2.06
	Much longer than broad	Much longer than broad
No. petals/flower	5.4	5.2
No. sepals/flower	5.4	5.2
Relative number of pedicel thorns	25.8	16.2
60		
Pedicel anthocyanin presence	Many	Medium
Pedicel anthocyanin coloration	Present	Present
	RHS 184A	RHS 184A
Peduncle anthocyanin intensity	Greyed-purple group	Greyed-purple group
	Weak	Medium
65		

TABLE 7

PEST AND DISEASE REACTIONS		
Characteristic	'BOUNTIFUL'	'GRANDEUR' (U.S. Plant Pat. No. 20,459)
Spotted wing drosophila (<i>Drosophila suzukii</i>)	Susceptible	Susceptible
Two spotted spider mite (<i>Tetranychus urticae</i>)	Susceptible	Susceptible
Grey fruit mold (<i>Botrytis cinerea</i>)	Susceptible	Susceptible
Powdery mildew (<i>Podosphaera aphanis</i> var. <i>aphanis</i>)	Moderately susceptible	Moderately susceptible

TABLE 7-continued

PEST AND DISEASE REACTIONS		
Characteristic	'BOUNTIFUL'	'GRANDEUR' (U.S. Plant Pat. No. 20,459)
Yellow rust (<i>Phragmidium rubi-idaei</i>)	Moderately resistant	Moderately susceptible

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I claim:

1. A new and distinct variety of raspberry plant named 'BOUNTIFUL', as herein described and illustrated by the characteristics set forth above.

* * * * *

FIG. 1



FIG. 2

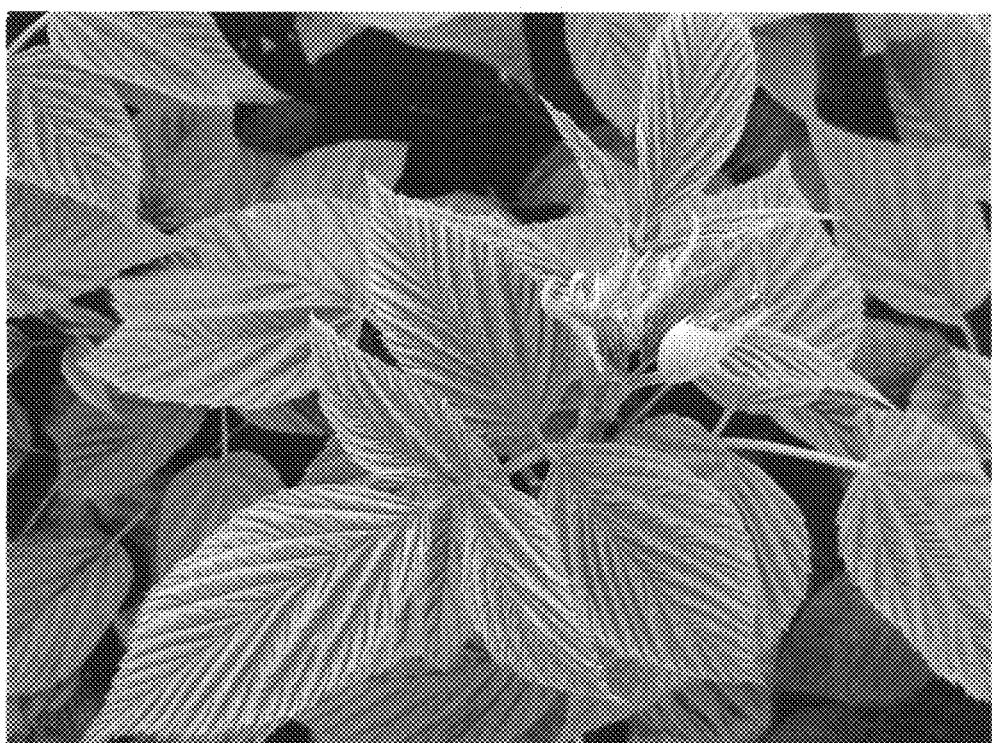


FIG. 3



FIG. 4

