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Adams et al.

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

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

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(57) **ABSTRACT**

This invention relates to a new and distinct everbearing variety of raspberry plant named 'INTREPID'. The new variety is primarily adapted to the growing conditions of the central coast of California and is characterized by the following: medium to small sized fruit of light red coloration. Fruit is of consistent conic shape, high gloss, very easy release from receptacle and poor flavor. Foliage is strongly concave, medium green; possessing weak rugosity and equal 3-5 foliates. Primocanes have a medium strength waxy coal, sparse thorn density and are absent of any anthocyanin coloration.

4 Drawing Sheets

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

Variety denomination: 'INTREPID'.

BACKGROUND OF THE INVENTION

The present invention relates to a new and distinct fall bearing raspberry variety designated as 'INTREPID'. This new variety is a result of a controlled cross made in 2002 in Watsonville, Calif. between raspberry variety 'PS-1049' (patented, U.S. Plant Pat. No. 10,142) as the female parent and raspberry variety 'PS-1764' (patented, U.S. Plant Pat. No. 15,439) 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 2004. 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

'INTREPID' 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 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 'INTREPID', which in combination distinguish this raspberry plant as a new and distinct variety:

1. Small fruit size
2. High fruit yield
3. Light red fruit color
4. Medium primocane glaucosity
5. Light brown floricane color (true)

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

TABLE 1

Characteristic	'INTREPID'	'GRANDEUR' (U.S. Plant Pat. No. 20,459)
Primocane waxy coat (glaucosity)	Medium	Absent to very weak
Predominate number of leaflets	Equal 3-5	Always 3
Leaf shape (cross section)	Strongly concave	Flat to slightly convex
Rugosity	Weak	strong
Color mature fruit	RHS 34A Light red	RHS 42A Medium red
Primocane fruit weight (g)	3.5	3.9

TABLE 1-continued

Characteristic	'INTREPID'	'GRANDEUR' (U.S. Plant Pat. No. 20,459)
Floricane color	RHS 161A Greyed-yellow group	RHS 164A Greyed-orange group

'INTREPID' differs from its parents, 'PS-1764' and 'PS-1049' by the following combination of characteristics described in Table 2:

TABLE 2

Characteristic	'INTREPID'	'PS-1764' (U.S. Plant Pat. No. 15,439)	'PS-1049' (U.S. Plant Pat. No. 10,142)
Productivity	High	Medium	Medium
Glossiness (fruit)	High	High	Medium
Adherence of receptacle	Very weak	Medium	Weak
Primocane time of fruiting	Medium	Medium to late	Medium
Fruit size	Small	Medium	Small
Flavor	Poor	Excellent	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, 'INTREPID' 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 'INTREPID'. The depicted plant and plant parts of the new raspberry variety 'INTREPID' 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 'INTREPID' taken in the month of July 2014;

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

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

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

DETAILED BOTANICAL DESCRIPTION

'INTREPID' 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 'INTREPID', 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 'INTREPID' 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 'INTREPID' 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 2014 production seasons. Flower measurements and characteristics are from secondary flowers unless otherwise noted. Fruit characteristics 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 'INTREPID' in comparison to the similar raspberry varieties 'GRANDEUR' (patented, U.S. Plant Pat. No. 20,459).

TABLE 3

FRUIT CHARACTERISTICS

Characteristic	'INTREPID'	'GRANDEUR' (U.S. Plant Pat. No. 20,459)
Color mature fruit	RHS 34A Light red	RHS 42A Medium red
Color achenes	RHS 159A Orange-white group	RHS 159A Orange-white group
Fruit length (mm)	21.95	22.91
Fruit width (mm)	18.90	20.12
Length/Width ratio	1.16 Longer than broad	1.14 Longer than broad
Seed weight (mg)	1.57	1.75
Druplets per berry	101	93
Weight of single drupe (g/drupe)	0.037	0.043
Relative size of drupes	Small	Medium
Fruit size	Small	Medium
Predominant shape	Conical	Conical
Evenness of color	Even	Even
Glossiness	Medium strong	Medium
Adherence of receptacle	Very weak	Weak
Firmness of flesh	Firm	Very firm
Firmness of skin	Medium	Very firm
Soluble Solids (% brix)	8.9	10.5
Flavor	Poor	Good

TABLE 4

PLANT CHARACTERISTICS

Characteristic	'INTREPID'	'GRANDEUR' (U.S. Plant Pat. No. 20,459)
General:		
Habit	Upright	Upright
Size	Medium	Medium
Productivity	High	High
Self-fruitfulness	Yes	Yes
Type of bearing	Everbearing	Everbearing
Primocane:		
Color (true)	RHS 145A Yellow-green group	RHS 145B Yellow-green group
Length (cm)	170.2	143.6
Basal diameter (mm)	14.51	21.80

TABLE 4-continued

PLANT CHARACTERISTICS

Characteristic	'INTREPID'	'GRANDEUR' (U.S. Plant Pat. No. 20,459)
Diameter central ⅓ (mm)	10.48	12.55
Lateral length at central ⅓ (cm)	57.6	43.6
No. fruiting laterals per cane	17.0	17.4
Internode length at central ⅓ (mm)	51.09	48.84
Anthocyanin coloration	n/a	RHS 59B
	Absent	Weak
Pubescence	Absent	Absent
Length of vegetative bud (mm)	8.74	11.01
Strength of waxy coat (glaucosity)	Medium	Absent to very weak
Time of flowering	Medium	Medium
Time of fruiting	Medium	Medium
Length of fruiting season	Long	Long
% of total yield	51%	50%
Flowering period	Late June to	Late June to
	Late November	Late November
Harvest period	Late July to	Late July to
	Late December	Late December
Primocane fruit weight (g)	3.5	3.9
Primocane yield (g/plant)	2,904	2,662
Young Shoots:		
Number	Medium	Medium
Anthocyanin presence	Present	Present
Anthocyanin coloration	RHS 59B	RHS 179A
	Red-purple group	Greyed-red group
Anthocyanin intensity	Medium	Medium
Thorns:		
Thorn coloration	RHS 180A	RHS 180C
	Greyed-red group	Greyed-red group
Thorn length at central ⅓ (mm)	1.12	0.76
Thorn base at central ⅓ (mm)	1.51	1.53
Thorn presence	Present	Present
Thorn density per cm at central ⅓	1.60	3.38
	Sparce	Medium
Thorn texture	Rigid	Rigid
Attitude of the tip	Horizontal	Horizontal
Floricane:		
Color (true)	RHS 161A	RHS 164A
	Greyed-yellow group	Greyed-orange group
Length (cm)	131.6	119.8
Fruiting lateral attitude	Erect	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	49%	50%
Flowering period	Late April to	Late April to
	Late June	Late June
Harvest period	Late May to	Late May to
	Late July	Late July
Floricane fruit weight (g)	3.3	3.7
Floricane yield (g/plant)	2,768	2,680

TABLE 5

FOLIAGE CHARACTERISTICS

Characteristic	'INTREPID' (3 Foliate)	'GRANDEUR' (U.S. Plant Pat. No. 20,459) (3 Foliate)
General:		
Color of upper surface	RHS 137A	RHS N137A
	Green group	Green group
Color of lower surface	RHS 190B	RHS 190B
	Greyed-green group	Greyed-green group
Shape in cross section	Strongly concave	Flat to slightly convex
Arrangement	Compound	Compound
Relief between veins (rugosity)	Weak	Strong
Glossiness	Weak	Weak
Number of leaflets/leaf	Equal 3-5	Always 3
Terminal Leaflet:		
Length (mm)	147.9	127.5
Width (mm)	76.4	91.6
Length/Width Ratio	1.9	1.4
	Much longer than broad	Longer than broad
Size	Medium	Medium to large
Shape	Ovate	Cordate
Shape of base	Acute	Cordate
Shape of tip	Acuminate	Acuminate
Margins	Biserrate	Biserrate
Lateral Leaflet:		
Length (mm)	117.0	105.5
Width (mm)	52.5	65.1
Length/Width Ratio	2.2	1.6
	Much longer than broad	Longer than broad
Rachis length (mm)	35.1	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:		
Length (mm)	67.08	59.00
Width (min)	2.85	3.99
Thorn presence	Yes	Yes
Thorn orientation	Erect	Erect
Anthocyanin coloration of upper surface	RHS 186A	RHS 184C
	Greyed-purple group	Greyed-purple group
Anthocyanin intensity of upper surface	Absent to very weak	Weak
Stipule length (mm)	6.46	10.23
Stipule orientation	Erect	Erect to horizontal

TABLE 6

FLOWER CHARACTERISTICS

Characteristic	'INTREPID'	'GRANDEUR' (U.S. Plant Pat. No. 20,459)
Petal color	155C	155C
	White group	White group
Flower diameter (mm)	19.11	22.55
Petal Length (mm)	6.11	6.42
Petal width (mm)	2.77	3.11
Petal length/width ratio	2.20	2.06
	Much longer than broad	Much longer than broad
No. petals/flower	5.6	5.2
No. sepals/flower	5.6	5.2
Relative number of pedicel thorns	Few	Medium

TABLE 6-continued

FLOWER CHARACTERISTICS		
Characteristic	'INTREPID'	'GRANDEUR' (U.S. Plant Pat. No. 20,459)
Peduncle anthocyanin presence	Present	Present
Peduncle anthocyanin coloration	RHS 184C Greyed-purple group	RHS 183D Greyed-purple group
Peduncle anthocyanin intensity	Absent to very weak	Medium

TABLE 7

PEST AND DISEASE REACTIONS		
Characteristic	'INTREPID'	'GRANDEUR' (U.S. Plant Pat. No. 20,459)
Spotted wing *drosophila* (*Drosophila suzukii*)	Susceptible	Susceptible

TABLE 7-continued

PEST AND DISEASE REACTIONS		
Characteristic	'INTREPID'	'GRANDEUR' (U.S. Plant Pat. No. 20,459)
Two spotted spider mite (*Tetranychus urticae*)	Highly susceptible	Susceptible
Grey fruit mold (*Botrytis cinerae*)	Susceptible	Susceptible
Powdery mildew (*Podosphaera aphanis* var. *aphanis*)	Moderately susceptible	Moderately susceptible
Yellow rust (*Phragmidium rubi idaci*)	Moderately resistant	Moderately susceptible

We claim:

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

* * * * *

FIG. 1

FIG. 2

FIG. 3

FIG. 4