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Adams

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(54) **RASPBERRY PLANT NAMED ‘NOBILITY’**

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

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(57) **ABSTRACT**

This invention relates to a new and distinct fall bearing variety of raspberry plant named ‘NOBILITY’. The new variety is primarily adapted to the growing conditions of the central coast of California and is characterized by the following: early-season primocane production with medium sized fruit of medium-red coloration. Fruit is of consistent conic shape, releases easily from receptacle, is glossy and possesses very good flavor. Foliage is flat to slightly convex, medium green; possessing medium rugosity, weak gloss and mostly 3-foliates. Primocanes have a weak waxy coat, medium thorn density of long spine length and have weak anthocyanin coloration.

4 Drawing Sheets

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Latin name of the genus and species of the plant claimed:
Rubus idaeus.
Variety denomination: ‘NOBILITY’.

BACKGROUND OF THE INVENTION

The present invention relates to a new and distinct fall bearing raspberry variety designated as ‘NOBILITY’. This new variety is a result of a controlled cross made in Watsonville, Calif. by the inventor, Scott W. Adams, in 2009 between raspberry variety designated ‘04.3721’ (unpatented) as the female parent and raspberry variety ‘RADIANCE’ (patented, U.S. Plant Pat. No. 20,342) as the male parent in an ongoing breeding program. The variety is botanically known as *Rubus idaeus* and was tested as ‘PS-09.082-06’ and ‘PS-8206’.

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 2011. 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. and Ventura 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

‘NOBILITY’ is primarily adapted to the climate and growing conditions of the central coast of California. This

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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 floricanes. The following traits have been repeatedly observed and are determined to be unique characteristics of ‘NOBILITY’, which in combination distinguish this raspberry plant as a new and distinct variety:

1. Long spine length
2. Short internode length
3. Early primocane time of fruiting
4. Medium red fruit color
5. Weak primocane glaucosity
6. Very good flavor

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

COMPARISON BETWEEN NOBILITY AND GRANDEUR

TABLE 1

Characteristic	‘NOBILITY’	‘GRANDEUR’ (US PP20,459)
Primocane waxy coat (glaucosity)	Weak	Absent to very weak

TABLE 1-continued

Characteristic	'NOBILITY'	'GRANDEUR' (US PP20,459)
Predominate number of leaflets	Mostly 3	Always 3
Primocane time of fruiting	Early	Medium
Rugosity	Medium	Strong
Color mature fruit	RHS 45A	RHS 42A
Thorn length at central 1/3 (mm)	Medium red	Medium red
Florican coloration (true)	3.04	0.76
	RHS 165B	RHS 164A
	Greyed- orange group	Greyed- orange group

'NOBILITY' differs from its parents, '04.3721' and 'RADIANCE' by the following combination of characteristics described in Table 2:

COMPARISON BETWEEN NOBILITY, 04.3721 AND RADIANCE

TABLE 2

Characteristic	'NOBILITY'	'04.3721'	'RADIANCE' (US PP20,342)
Productivity	Medium	Medium	Medium
Glossiness (fruit)	High	Medium	Medium
Firmness (fruit)	High	Medium to low	High
Adherence of receptacle	Very weak	Strong	Weak
Primocane time of fruiting	Early	Medium	Early
Fruit size	Medium	Large	Small
Flavor	Very good	Poor	Excellent

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 'NOBILITY' 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 'NOBILITY'. The depicted plant and plant parts of the new raspberry variety 'NOBILITY' were taken in Watsonville, Calif. and are approximately two to sixteen months old:

FIG. 1 shows typical primocane foliage and fruit color, foliate and rugosity characteristics of 'NOBILITY' taken in the month of July 2018;

FIG. 2 shows typical green fruit, pedicels and peduncles of 'NOBILITY' taken in the month of September 2019;

FIG. 3 shows typical harvested fruit of 'NOBILITY' taken in the month of July 2018; and

FIG. 4 shows typical dormant cane color characteristics of 'NOBILITY' taken in the month of February 2019.

DETAILED BOTANICAL DESCRIPTION

'NOBILITY' 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 'NOBILITY', unless otherwise noted, are based upon observations taken during the 2018-2019 growing season in Watsonville, Calif. Primocane measurements and ratings were taken from plants of 'NOBILITY' dug from a nursery located in Siskiyou County, Calif. during the middle of October 2017 and planted approximately three to four weeks later in Watsonville, Calif. The approximate age of the observed primocane plants is seven to eight months. Florican measurements and ratings were taken from the same planting of 'NOBILITY' at an approximate age of sixteen to eighteen months. Yield observations and fruit quality characteristics are averaged from three years of data collected from the 2017 through 2019 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-foliolate 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 'NOBILITY' in comparison to the similar raspberry variety 'GRANDEUR' (patented, U.S. Plant Pat. No. 20,459).

COMPARISON BETWEEN NOBILITY AND GRANDEUR

TABLE 3

FRUIT CHARACTERISTICS		
Characteristic	'NOBILITY'	'GRANDEUR' (US PP20,459)
Color mature fruit	RHS 45A	RHS 42A
Color achenes	Medium red RHS 159A Orange- white group	Medium red RHS 159A Orange- white group
Fruit length (mm)	23.28	22.91
Fruit width (mm)	20.60	20.12
Length/width ratio	1.13	1.14
Seed weight (mg)	1.79	1.75
Drupelets per berry	79	93
Weight of single drupe (g/drupe)	0.066	0.043
Drupe length (mm)	6.76	5.25
Drupe diameter (mm)	4.96	3.86
Relative size of drupes	Large	Medium
Fruit size	Medium	Medium
Fruit per node	12	15
Predominant shape	Conical	Conical
Receptacle length (mm)	22.66	19.15
Receptacle diameter (mm)	9.09	10.32
Receptacle color	RHS 155B White group	RHS 155B White group
Evenness of color (fruit)	Even	Even
Glossiness	High	Medium
Adherence of receptacle	Very weak	Very weak
Firmness of flesh	Firm	Very firm
Firmness of skin	Firm	Very firm
Soluble solids (% brix)	11.0	10.5
Flavor	Very good	Good

TABLE 4

PLANT CHARACTERISTICS		
Characteristic	'NOBILITY'	'GRANDEUR' (US PP20,459)
General:		
Habit	Upright	Upright
Plant height (m)	1.38	1.44
Plant width (cm)	38	45
Time to initiate roots (days)	12-14	12-14
Canes per hill	10.6	6.9
Productivity	Medium	High
Self-fruitfulness	Yes	Yes
Type of bearing	Fall bearing	Everbearing
Primocane:		
Color (true)	RHS 145B Yellow-green group	RHS 145B Yellow-green group
Length (cm)	138.1	143.6
Basal diameter (mm)	19.68	21.80
Diameter central 1/3 (mm)	14.04	12.55
Lateral length at central 1/3 (cm)	35.1	43.6
Number of fruiting laterals per cane	12.1	17.4
Total nodes per cane	34	31
Internode length at central 1/3 (mm)	41.07	48.84
Anthocyanin coloration	RHS 59B Red-purple group	RHS 59B Red-purple group
Anthocyanin intensity	Weak	Weak
Pubescence	Absent	Absent
Vegetative bud length (mm)	7.37	11.01
Vegetative bud diameter (mm)	5.20	6.11
Vegetative bud shape	Widely ovate	Widely ovate
Vegetative bud color	RHS 187A Greyed-red group	RHS 187A Greyed-red group
Strength of waxy coat (glaucosity)	Weak	Absent to very weak
Time of flowering	Early	Medium
Time of fruiting	Early	Medium
Length of fruiting season	Long	Long
% of total yield	49%	50%
Flowering period	Late May to mid-November	Late June to late November
Harvest period	Late June to early December	Late July to late December
Primocane fruit weight (g)	4.2	3.8
Primocane yield (g/plant)	2,269	2,662
Young Shoots:		
Number (per meter)	15-20	15-20
Anthocyanin presence	Medium	Medium
Anthocyanin coloration	Present RHS 179B Red-purple group	Present RHS 179A Greyed-red group
Anthocyanin intensity	Weak	Medium
Thorns:		
Thorn coloration (tip)	RHS 200A Brown group	RHS 180C Greyed-red group
Thorn coloration (base)	RHS 145B Yellow-green group	RHS 145B Yellow-green group
Thorn length at central 1/3 (mm)	3.04	0.76
Thorn base at central 1/3 (mm)	2.02	1.53
Thorn presence	Present	Present
Thorn density per cm at central 1/3	3.70	3.38
Thorn texture	Medium	Medium
Attitude of the tip	Rigid Horizontal	Rigid Horizontal

TABLE 4-continued

PLANT CHARACTERISTICS		
Characteristic	'NOBILITY'	'GRANDEUR' (US PP20,459)
Floricanes:		
Color (true)	RHS 165B Greyed-orange group	RHS 164A Greyed-orange group
Length (cm)	95.4	119.8
Width at central 1/3 (mm)	13.44	12.04
Total nodes per cane	19	18
Internode length at central 1/3 (mm)	43.00	49.13
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	51%	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)	4.1	3.7
Floricanes yield (g/plant)	2,292	2,680

TABLE 5

FOLIAGE CHARACTERISTICS		
Characteristic	'NOBILITY' (3-Foliate)	'GRANDEUR' (US PP20,459) (3-Foliate)
General:		
Color of upper surface	RHS 137A Green group	RHS N137A Green group
Color of lower surface	RHS 190B Greyed-green group	RHS 190B Greyed-green group
Venation	Pinnate	Pinnate
Shape in cross section	Flat to slightly convex	Flat to slightly convex
Arrangement	Compound	Compound
Relief between veins (rugosity)	Medium	Strong
Glossiness	Weak	Weak
Number of leaflets per leaf	Mostly 3	Always 3
Total leaf length (cm)	23.1	22.5
Total leaf width (cm)	24.0	23.4
Terminal Leaflet:		
Length (mm)	139.7	127.5
Width (mm)	105.2	91.6
Length/width ratio	1.3	1.4
Size	Longer than broad	Longer than broad
Shape	Medium to large	Medium to large
Shape of base	Cordate	Cordate
Shape of tip	Cordate	Cordate
Margins	Acuminate	Acuminate
Lateral Leaflet:	Biserrate	Biserrate
Length (mm)	107.9	105.5
Width (mm)	67.9	65.1
Length/Width Ratio	1.6	1.6
Rachis length (mm)	Longer than broad	Longer than broad
Rachis diameter (mm)	35.8	36.2
Rachis anthocyanin coloration of upper surface	2.45	1.92
Rachis anthocyanin intensity	RHS 184C Weak	RHS 184A Medium

TABLE 5-continued

FOLIAGE CHARACTERISTICS		
Characteristic	'NOBILITY' (3-Foliate)	'GRANDEUR' (US PP20,459) (3-Foliate)
Orientation	Opposite	Opposite
Arrangement	Compound	Compound
Shape	Ovate	Ovate
Overlapping	Touching	Touching
Shape of the base	Rounded	Oblique rounded
Shape of the tip	Acuminate	Acuminate
Margins	Biserrate	Biserrate
Petiole:		
Length (mm)	45.90	59.00
Width (mm)	3.58	3.99
Thorn presence	Yes	Yes
Thorn orientation	Erect	Erect
Anthocyanin coloration of upper surface	RHS 184C Greyed-purple group	RHS 184C Greyed-purple group
Anthocyanin intensity of upper surface	Absent to very weak	Weak
Stipule length (mm)	9.31	10.23
Stipule orientation	Erect	Erect to horizontal

TABLE 6

FLOWER CHARACTERISTICS		
Characteristic	'NOBILITY'	'GRANDEUR' (US PP20,459)
Petal color (upper surface)	RHS 155C	RHS 155C
Petal color (lower surface)	White group	White group
Flower diameter (mm)	24.92	22.55
Petal Length (mm)	7.07	6.42
Petal width (mm)	3.37	3.11
Petal length/width ratio	2.10	2.06
Petal shape in cross section	Much longer than broad	Much longer than broad
Petal shape (overall)	Flat	Flat
Petal shape (apex)	Ovate	Ovate
Petal shape (base)	Rounded	Rounded
Petal margin	Attenuate	Attenuate
Petal texture	Entire	Entire
Number of petals per flower	Glabrous	Glabrous
Number of sepals per flower	5.5	5.2
Sepal length (mm)	5.5	5.2
Sepal width at base (mm)	10.01	11.20
Sepal shape	5.22	6.49
Sepal shape (apex)	Widely deltate	Widely deltate
Sepal coloration (upper surface)	Acuminate	Acuminate
Sepal coloration (lower surface)	RHS 144A	RHS 144B
Sepal margin	RHS 144B	RHS 144C
Sepal texture	Entire	Entire
	Slightly pubescent	Slightly pubescent

TABLE 6-continued

FLOWER CHARACTERISTICS		
Characteristic	'NOBILITY'	'GRANDEUR' (US PP20,459)
Number of stamens per flower	81	105
Filament length (mm)	4.62	4.45
Filament color	RHS 155C	RHS 155C
Pollen quantity	White group	White group
Pollen color	Medium	Medium
Anther length (mm)	RHS 196D	RHS 196D
Anther diameter (mm)	1.10	0.79
Anther coloration (pre-dehiscence)	0.50	0.49
Anther coloration (post-dehiscence)	RHS 155C	RHS 155C
Stigma shape	RHS 165B	RHS 165B
Stigma length (mm)	Lobed	Lobed
Stigma diameter (mm)	0.11	0.10
Stigma coloration	0.42	0.40
Style length (mm)	RHS 145D	RHS 145D
Style diameter (mm)	2.55	2.03
Style coloration	0.41	0.39
Ovule length (mm)	RHS 145D	RHS 145D
Ovule diameter (mm)	1.55	1.51
Ovule coloration	1.46	1.40
Pedicle length (mm)	RHS 145B	RHS 145B
Pedicle diameter (mm)	21.56	23.86
Pedicle anthocyanin coloration	1.33	1.47
Pedicle anthocyanin intensity	RHS 182B	RHS 178A
Relative number of pedicel thorns	Absent to very weak	Medium
Peduncle anthocyanin presence	23.5	16.2
Peduncle anthocyanin coloration	Many	Medium
Peduncle anthocyanin intensity	Present	Present
	RHS 182C	RHS 184A
	Greyed-purple group	Greyed-purple group
	Absent to very weak	Medium

TABLE 7

PEST AND DISEASE REACTIONS		
Characteristic	'NOBILITY'	'GRANDEUR' (US PP20,459)
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
Yellow rust (<i>Phragmidium rubi-idaei</i>)	Moderately susceptible	Moderately susceptible

I claim:

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

FIG. 1



FIG. 2



FIG. 3



FIG. 4

