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(12) **United States Plant Patent**
Adams

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(54) **RASPBERRY PLANT NAMED ‘PS-15.031-85’**

(50) Latin Name: *Rubus idaeus*
Varietal Denomination: **PS-15.031-85**

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A01H 5/08 (2018.01)
A01H 6/74 (2018.01)

(52) **U.S. Cl.**
USPC **Plt./204**

(58) **Field of Classification Search**
USPC Plt./203, 204
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

PP31,716 P3 5/2020 Adams

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(57) **ABSTRACT**

This invention relates to a new and distinct everbearing variety of raspberry plant named ‘PS-15.031-85’. The new variety is primarily adapted to the growing conditions of the central coast of California and is characterized by the following: mid-season primocane production with medium sized fruit of moderate red coloration. Fruit is of consistent broad conic shape, releases easily from receptacle, is glossy and possesses very good flavor. Foliage is strongly convex, medium green, possessing strong rugosity, weak gloss and equal 3-5 foliates. Primocanes have an absent or very weak waxy coat, medium thorn density of small dark red prickles and very 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: ‘PS-15.031-85’.

BACKGROUND OF THE INVENTION

The present invention relates to a new and distinct fall bearing raspberry variety designated as ‘PS-15.031-85’. This new variety is a result of a controlled cross made in 2015 in Watsonville, California between raspberry variety ‘MAJESTIC’ (patented, U.S. Plant Pat. No. 31,716) as the female parent and raspberry variety ‘RR 12.050-29’ (unpatented) as the male parent in an ongoing breeding program. The variety is botanically known as *Rubus idaeus* and was tested as RR 15.031-85 and PS-3185.

The seedling resulting from the aforementioned cross was asexually propagated by dormant canes in Santa Cruz County, California and was subsequently selected by the inventor from a controlled breeding plot in Watsonville, California in 2017. After its selection, the new variety was further asexually propagated by dormant canes, roots and non-dormant root shoot cuttings in Watsonville (Santa Cruz County), Manteca (San Joaquin County), and Macdoel (Siskiyou County), California. The new variety was then extensively tested over the next several years in fruiting fields in Watsonville, 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

‘PS-15.031-85’ 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 the floricanes. Damage to fruit and young leaves has been observed in summer temperatures at or above 95° F. (35° C.). No winter damage has been observed on fruiting plants in off-cycle (winter) production regions of USDA climate zones 9b and above. No winter damage has been observed on dormant plants in on-cycle (summer) production regions of USDA climate zones 7b-9b. In climate zones below this, winter hardiness is unknown for ‘PS-15.031-85’. ‘PS-15.031-85’ is not drought tolerant and requires frequent irrigation to maintain proper plant health. The following traits have been repeatedly observed and are determined to be unique characteristics of ‘PS-15.031-85’, which in combination distinguish this raspberry plant as a new and distinct variety:

1. Dark red spines
2. Medium fruit yield
3. Moderate red fruit color
4. Absent to very weak primocane glaucosity
5. Very good flavor

The raspberry variety that is believed to be most closely related to the new raspberry variety ‘PS-15.031-85’ is the raspberry variety ‘MAJESTIC’ (patented, U.S. Plant Pat. No. 31,716). In comparison to the similar raspberry variety ‘MAJESTIC’, ‘PS-15.031-85’ differs by the following combination of characteristics described in Table 1:

Comparison Between ‘PS-15.031-85’ and Majestic

TABLE 1

Characteristic	‘PS-15.031-85’	‘MAJESTIC’
		(U.S. Plant Pat. No. 31,716)
Thorn coloration (tip)	RHS 183B Dark red	RHS N186B Dark greyish purple
Leaf shape (cross section)	Strongly convex	Slightly convex
Rugosity	Strong	Medium
Color mature fruit	RHS N45B Moderate red	RHS 43A Vivid reddish orange
Relative size of drupes	Large	Medium
Predominant shape of fruit	Broad conic	Conical
Peduncle anthocyanin intensity	Strong	Absent to very weak
Relative number of pedicel prickles	11.4 Few	22.1 Many

‘PS-15.031-85’ differs from its parents, ‘MAJESTIC’ and ‘RR 12.050-29’ by the following combination of characteristics described in Table 2:

Comparison Between ‘PS-15.031-85’, Majestic and RR 12.050-29

TABLE 2

Characteristic	‘PS-15.031-85’	‘MAJESTIC’	‘RR 12.050-29’
		(U.S. Plant Pat. No. 31,716)	
Productivity	Medium	High	Medium
Crates/Acre (18 Mo)	8,439	10,490	7,465
Glossiness (fruit)	High	High	Low
Firmness (fruit)	High	High	Very high
Adherence of receptacle	Weak	Very weak	Medium
Floricane time of fruiting	Early	Medium	Medium
Fruit size	Medium	Medium	Large
Primocane fruit weight (g)	5.8	4.2	6.9
Flavor	Very good	Very Good	Poor
Soluble Solids (% brix)	10.4	10.8	7.7

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, ‘PS-15.031-85’ 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 ‘PS-15.031-85’. The depicted plant and plant parts of the new raspberry variety ‘PS-15.031-85’ were taken in Watsonville, California and are approximately 2 to 16 months old:

FIG. 1 shows typical primocane fruit shape, color and gloss characteristics of ‘PS-15.031-85’ taken in the month of October 2022;

FIG. 2 shows typical shape, gloss, coloration, foliate and rugosity characteristics of ‘PS-15.031-85’ taken in the month of October 2022;

FIG. 3 shows typical fruiting lateral characteristics of ‘PS-15.031-85’ taken in the month of June 2023;

FIG. 4 shows typical florican plant characteristics of ‘PS-15.031-85’ taken in the month of June 2023.

DETAILED BOTANICAL DESCRIPTION

‘PS-15.031-85’ 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 ‘PS-15.031-85’, unless otherwise noted, are based upon observations taken during the 2022-2023 growing season in Watsonville, California. Primocane measurements and ratings were taken from plants of ‘PS-15.031-85’ dug from a nursery located in Siskiyou County, California during the middle of October 2021 and planted approximately 3 to 4 weeks later in Watsonville, California. The approximate age of the observed primocane plants is 7 to 8 months. Floricane measurements and ratings were taken from the same planting of ‘PS-15.031-85’ at an approximate age of 16 to 18 months. Yield observations and fruit quality characteristics are averaged from three years of data collected from the 2020 through 2023 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 Sixth Edition, Royal Horticultural Society, London, United Kingdom (2015).

The following Tables 3-7 describe fruit, plant, foliage, flower and pest/disease characteristics of the new raspberry ‘PS-15.031-85’ in comparison to the similar raspberry variety ‘MAJESTIC’ (patented, U.S. Plant Pat. No. 31,716).

Comparison Between PS-15.031-85 and Majestic

TABLE 3

Characteristic	FRUIT CHARACTERISTICS	
	‘PS-15.031-85’	‘MAJESTIC’ (U.S. Plant Pat. No. 31,716)
Color mature fruit	RHS N45B Moderate red	RHS 43A Vivid reddish orange
Color achenes	RHS 159A Light yellowish pink	RHS 159A Light yellowish pink
Fruit length (mm)	24.14	25.49
Fruit width (mm)	24.23	22.73
Length/width ratio	1.00	1.12
Seed weight (mg)	As long as broad	Longer than broad
Drupelets per berry	1.61	1.68
Weight of single drupe (g/drupe)	91	131
Drupe length (mm)	0.068	0.044
Drupe diameter (mm)	4.95	7.15
Relative size of drupes	4.65	4.19
Fruit size	Large	Medium
Fruit per node	Medium	Medium
Predominant shape	10	11
	Broad conic	Conical

TABLE 3-continued

FRUIT CHARACTERISTICS		
Characteristic	'PS-15.031-85'	'MAJESTIC' (U.S. Plant Pat. No. 31,716)
Receptacle length (mm)	23.55	23.55
Receptacle diameter (mm)	9.22	10.41
Receptacle color	RHS 158B Pale yellow	RHS 155B Yellowish white
Evenness of color (fruit)	Even	Even
Glossiness	High	High
Adherence of receptacle	Weak	Weak
Firmness of flesh	High	High
Firmness of skin	High	High
Soluble Solids (% brix)	10.5	10.8
Flavor	Very Good	Very good
Fruit use (Intended market)	Fresh Market	Fresh Market

TABLE 4

PLANT CHARACTERISTICS		
Characteristic	'PS-15.031-85'	'MAJESTIC' (U.S. Plant Pat. No. 31,716)
General:		
Habit	Upright	Upright
Plant height (m)	1.6	1.8
Plant width (cm)	30	35
Time to initiate roots (days)	12-14	10-12
Canes per hill	10.8	10.4
Productivity	Medium	High
Crates/Acre (18-Mo)	8,439	10,490
Self-fruitfulness	Yes	Yes
Type of bearing	Everbearing	Everbearing
Primocane:		
Color (true)	RHS 145B Light yellow green	RHS 145A Strong yellow green
Length (cm)	160.1	178.1
Basal diameter (mm)	11.62	13.62
Diameter central 1/3 (mm)	9.36	11.38
Lateral length at central 1/3 (cm)	40.1	28.5
No. fruiting laterals per cane	14.1	15.3
Total nodes per cane	33	35
Internode length at central 1/3 (mm)	39.01	39.01
Anthocyanin coloration	RHS 59C Moderate purplish red	RHS 59B Deep purplish red
Anthocyanin intensity	Absent to very weak	Absent to very weak
Pubescence	Absent	Absent
Vegetative bud length (mm)	5.81	10.34
Vegetative bud diameter (mm)	4.77	5.46
Vegetative bud shape	Ovate	Ovate
Vegetative bud color	RHS 187B Dark red	RHS 187B Dark red
Strength of waxy coat (glaucosity)	Absent to very weak	Absent to very weak
Time of flowering	Medium	Medium
Time of fruiting	Medium	Medium
Length of fruiting season	Long	Long
% of total yield	43%	44%
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)	5.8	4.2
Primocane yield (g/plant)	1,633	2,571

TABLE 4-continued

PLANT CHARACTERISTICS		
Characteristic	'PS-15.031-85'	'MAJESTIC' (U.S. Plant Pat. No. 31,716)
Young Shoots:		
Number (per meter)	15-20 Medium	15-20 Medium
Anthocyanin presence	Present	Present
Anthocyanin coloration	RHS 180A Moderate red	RHS 179A Moderate red
Anthocyanin intensity	Weak	Medium
Prickles:		
Prickle coloration (tip)	RHS 183B Dark red	RHS N186B Dark greyish purple
Prickle coloration (base)	RHS 183B Dark red	RHS N186C Dark greyish red
Prickle length at central 1/3 (mm)	0.89	0.70
Prickle base at central 1/3 (mm)	0.80	1.23
Prickle presence	Present	Present
Prickle density per cm at central 1/3	8.46 Dense	5.35 Medium
Prickle texture	Rigid	Rigid
Attitude of the tip	Horizontal	Horizontal
Floricanes:		
Color (true)	RHS 165B Brownish orange	RHS 165B Brownish orange
Length (cm)	108.3	130.8
Width at central 1/3 (mm)	9.11	10.88
Total nodes per cane	17	20
Internode length at central 1/3 (mm)	26.10	40.70
Fruiting lateral attitude	Erect	Erect
Time bud burst	Early	Medium
Time of flowering	Early	Medium
Time of fruiting	Early	Medium
Length of fruiting season	Medium to long	Medium to long
% of total yield	57%	56%
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)	5.6	4.0
Floricanes yield (g/plant)	2,165	3,273

TABLE 5

FOLIAGE CHARACTERISTICS		
Characteristic	'PS-15.031-85' (3 Foliolate)	'MAJESTIC' (U.S. Plant Pat. No. 31,716) (3 Foliolate)
General:		
Color of upper surface	RHS NN137A Greyish olive green	RHS 137A Moderate olive green
Color of lower surface	RHS 190B Pale green	RHS 192A Pale yellow green
Venation	Pinnate	Pinnate
Shape in cross section	Strongly convex	Slightly convex
Arrangement	Compound	Compound
Relief between veins (rugosity)	Strong	Medium

TABLE 5-continued

FOLIAGE CHARACTERISTICS		
Characteristic	'PS-15.031-85' (3 Foliate)	'MAJESTIC' (U.S. Plant Pat. No. 31,716) (3 Foliate)
Glossiness	Weak	Weak
Number of leaflets/leaf	Equal 3-5	Equal 3-5
Total leaf length (cm)	22.5	21.2
Total leaf width (cm)	21.3	22.1
Terminal Leaflet:		
Length (mm)	136.2	116.2
Width (mm)	101.7	79.1
Length/width ratio	1.3	1.5
	Longer than broad	Longer than broad
Size	Medium	Medium
Shape	Lobed	Cordate
Shape of base	Cordate	Cordate
Shape of tip	Acuminate	Acuminate
Margins	Biserrate	Biserrate
Lateral Leaflet:		
Length (mm)	106.3	104.9
Width (mm)	72.2	77.2
Length/width ratio	1.5	1.3
	Longer than broad	Longer than broad
Rachis length (mm)	35.6	43.1
Rachis diameter (mm)	2.23	1.90
Rachis anthocyanin coloration of upper surface	RHS 184A	RHS 184A
Rachis anthocyanin intensity	Absent to very weak	Weak
Orientation	Opposite	Opposite
Arrangement	Compound	Compound
Shape	Ovate	Ovate
Overlapping	Overlapping	Overlapping
Shape of the base	Rounded	Rounded
Shape of the tip	Acuminate	Acuminate
Margins	Biserrate	Biserrate
Petiole:		
Length (mm)	52.92	61.10
Width (mm)	3.01	4.68
Prickle presence	Yes	Yes
Prickle orientation	Erect	Erect
Anthocyanin coloration of upper surface	RHS 181C	RHS 180B
Anthocyanin intensity of upper surface	Moderate red	Moderate red
Anthocyanin intensity of upper surface	Weak	Absent to very weak
Stipule length (mm)	10.91	10.70
Stipule width (mm)	0.90	0.89
Stipule orientation	Erect	Erect

TABLE 6

FLOWER CHARACTERISTICS		
Characteristic	'PS-15.031-85'	'MAJESTIC' (U.S. Plant Pat. No. 31,716)
Petal color (upper surface)	RHS NN155A	RHS 155C
Petal color (lower surface)	Yellowish white	Greenish white
	RHS NN155A	RHS 155C
	Yellowish white	Greenish white

TABLE 6-continued

FLOWER CHARACTERISTICS		
Characteristic	'PS-15.031-85'	'MAJESTIC' (U.S. Plant Pat. No. 31,716)
Flower diameter (mm)	26.31	21.22
Petal Length (mm)	8.47	7.46
Petal width (mm)	3.60	3.10
Petal length/width ratio	2.35	2.40
	Much longer than broad	Much longer than broad
Petal shape in cross section	Flat	Flat
Petal shape (overall)	Narrowly spatulate	Narrowly spatulate
Petal shape (apex)	Rounded	Rounded
Petal shape (base)	Attenuate	Attenuate
Petal margin	Entire	Entire
Petal texture	Glabrous	Glabrous
No. petals/flower	5.2	5.2
No. sepals/flower	5.8	5.4
Sepal length (mm)	9.29	9.70
Sepal width at base (mm)	3.60	5.20
Sepal shape	Widely deltate	Widely deltate
Sepal shape (apex)	Acuminate	Acuminate
Sepal coloration (upper surface)	RHS 144A	RHS 144A
Sepal coloration (lower surface)	RHS 144B	RHS 144B
Sepal margin	Strong yellow green	Strong yellow green
Sepal texture	Entire	Entire
No. stamen/flower	Slightly pubescent	Slightly pubescent
Filament length (mm)	81	95
Filament color	4.80	5.19
	RHS 155C	RHS 155C
	Greenish white	Greenish white
Pollen quantity	High	High
Pollen color	RHS 196D	RHS 196D
	Yellowish white	Yellowish white
Anther length (mm)	1.23	1.12
Anther diameter (mm)	0.49	0.51
Anther coloration (pre-dehiscence)	RHS 155C	RHS 155C
Anther coloration (post-dehiscence)	Greenish white	Greenish white
Stigma shape	RHS 165B	RHS 165B
Stigma length (mm)	Brownish orange	Brownish orange
Stigma diameter (mm)	Lobed	Lobed
Stigma coloration	0.12	0.10
	0.40	0.41
	RHS 145D	RHS 145D
Style length (mm)	Light yellow green	Light yellow green
Style diameter (mm)	3.07	3.10
Style coloration	0.42	0.40
	RHS 145D	RHS 145D
	Light yellow green	Light yellow green
Ovule length (mm)	1.12	1.39
Ovule diameter (mm)	0.99	1.42
Ovule coloration	RHS 145B	RHS 145B
	Light yellow green	Light yellow green
Pedicle length (mm)	27.35	20.15
Pedicle diameter (mm)	1.59	1.42
Pedicle anthocyanin coloration	RHS 182A	RHS 181C
Pedicle anthocyanin intensity	Moderate red	Moderate red
Relative number of pedicel prickles	Strong	Absent to very weak
Peduncle anthocyanin presence	11.4	22.1
Peduncle anthocyanin coloration	Few	Many
Peduncle anthocyanin intensity	Present	Present
	RHS 184A	RHS 184A
	Greyish red	Greyish red
	Weak	Absent to very weak

TABLE 7

PEST AND DISEASE REACTIONS		
Characteristic	'PS-15.031-85'	'MAJESTIC' (U.S. Plant Pat. No. 31,716)
Spotted wing <i>drosophila</i> (<i>Drosophila suzukii</i>)	Susceptible	Susceptible
Two spotted spider mite (<i>Tetranychus urticae</i>)	Susceptible	Susceptible
Grey fruit mold (<i>Botrytis cinerae</i>)	Susceptible	Susceptible
Powdery mildew (<i>Podosphaera aphanis</i> var. <i>aphonic</i>)	Moderately susceptible	Moderately susceptible

TABLE 7-continued

PEST AND DISEASE REACTIONS		
Characteristic	'PS-15.031-85'	'MAJESTIC' (U.S. Plant Pat. No. 31,716)
Yellow rust (<i>Phragmidium rubi-idaei</i>)	Moderately resistant	Moderately resistant

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I claim:

1. A new and distinct raspberry variety of raspberry plant named 'PS-15.031-85', as described and illustrated herein.

* * * * *

FIG. 1

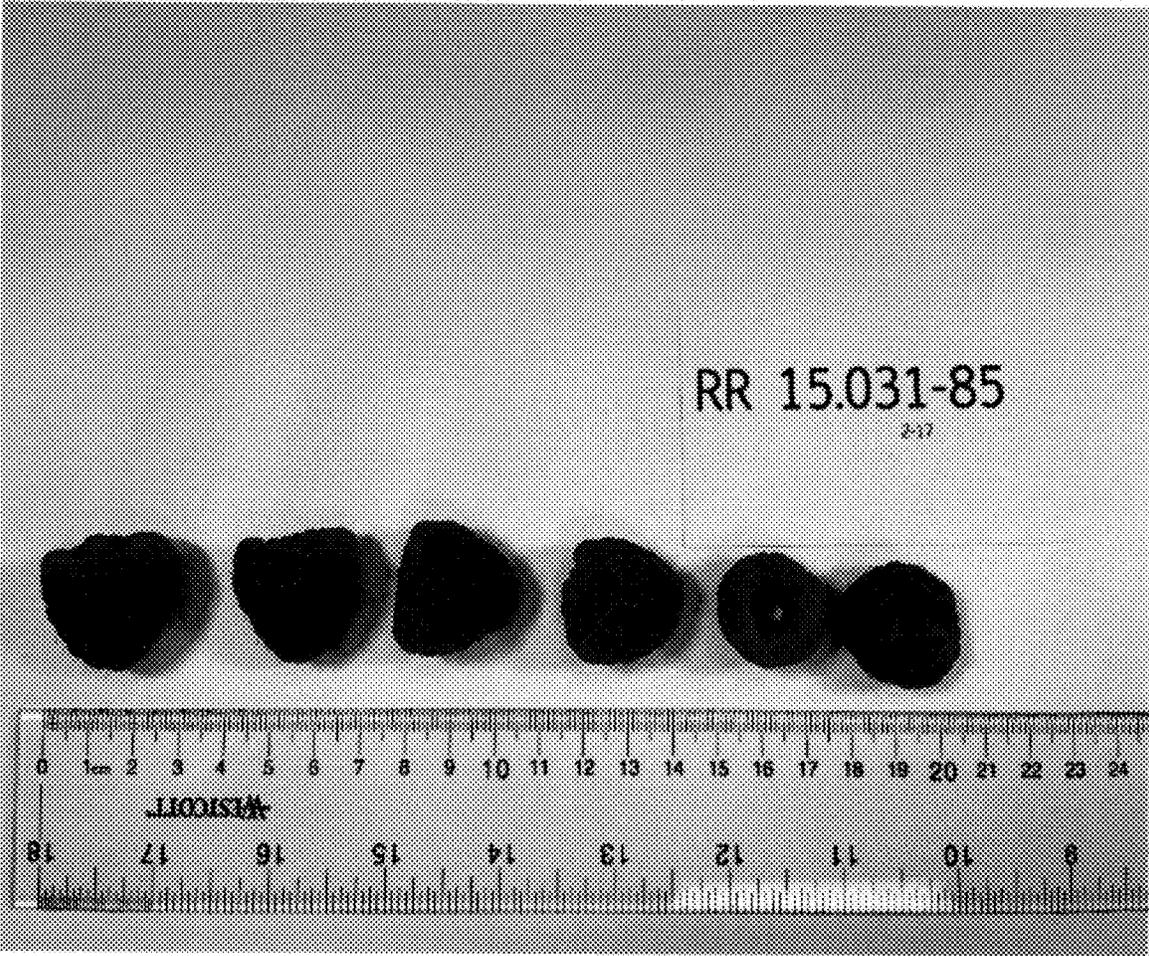


FIG. 2



FIG. 3

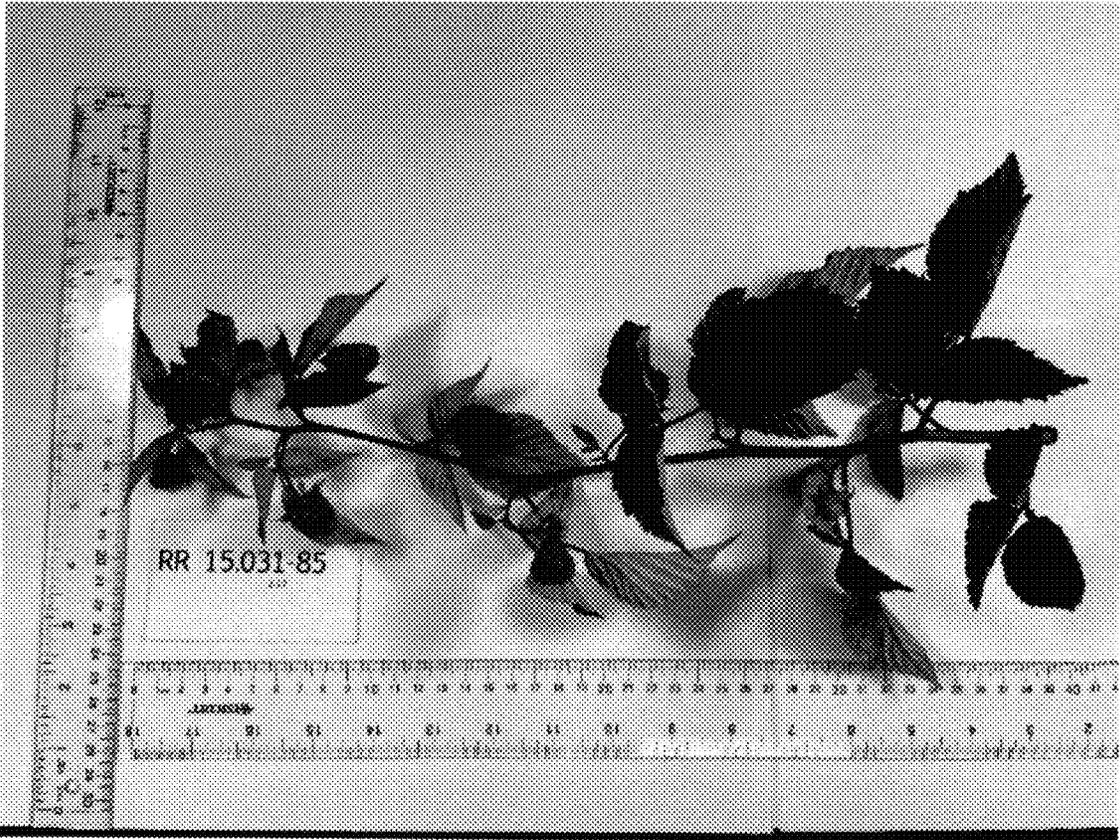


FIG. 4

