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(54) **BLACKBERRY PLANT NAMED 'HJ-7'**

(50) Latin Name: *Rubus ursinus*
Varietal Denomination: **HJ-7**

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(57) **ABSTRACT**

Description and specifications of a new and distinct blackberry which originates from seed produced by a hand pollinated cross of two, non-patented varieties; 'Obsidian' as the female and 'Eaton' as the male. This new, trailing cultivar can be distinguished by its consistent, large fruit size and appearance during the early spring and summer period for the fresh market. The fruit of this cultivar is produced on red, strong, thorny canes. When plants are grown and pruned correctly, yield in Central California, USA can be up to 4,500 crates/ac if the fruit is handled and shipped correctly.

2 Drawing Sheets

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

Variety denomination: 'HJ-7'.

BACKGROUND OF THE INVENTION

The present invention relates to a new and distinct trailing blackberry variety designated as 'HJ-7'. This new variety is a result of a controlled cross made by the inventors, Harold A. Johnson Jr. and Judith E. Johnson, in 2005 between the blackberry variety designated 'Obsidian' (female) and the blackberry variety designated 'Eaton' (male), both parental varieties unpatented. The variety 'HJ-7' is botanically known as *Rubus ursinus*.

The seedling resulting from the aforementioned cross was selected from a controlled breeding plot near Watsonville, Santa Cruz County, Calif. in 2007 by the inventors. After its selection, the new variety was further asexually propagated beginning in October of 2007 in Watsonville, Santa Cruz County, Calif. by tissue culture. The new variety was then tested 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.

SUMMARY OF THE INVENTION

'HJ-7' is primarily adapted to the climate and growing conditions of the Santa Cruz and Monterey Counties in Calif., and is being tested in Southern California, and in Europe. 'HJ-7' has reacted favorably to the coastal climates of northern coastal California, but for maximum fruit production, 'HJ-7' requires consistent soil moisture and adequate nutrition. 'HJ-7' reacts favorably to an environment created by plastic tunnels.

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The following traits have been observed and are determined to be unique characteristics of 'HJ-7', which in combination distinguish this blackberry plant as a new and distinct variety.

1. consistent early spring production of large size, good quality fruit.
2. Medium to large fruit size responds favorably to careful packing when shipped in 6 oz. clamshell baskets;
3. thorny and trailing plant structure; and
4. Early spring fruit production, starting in May, with peak production in early June, and continued, limited production through June and further, when grown in Santa Cruz County, Calif.

When the new blackberry variety 'HJ-7' is compared to the female parental variety 'Obsidian', the following trait differences have been observed:

1. The peak fruit production of 'HJ-7' occurs slightly earlier than 'Obsidian', and earlier than most trailing and erect types;
2. in holding testing after picking, the average flavor rating was the same, but 'HJ-7' rated higher in appearance than 'Obsidian' after various days in cold storage;
3. 'HJ-7' has produced less crates per acre than 'Obsidian'.
4. the average soluble solids concentration of 'Obsidian' is 10.8, and 'HJ-7' is 12.0.
5. the average seed size of 'HJ-7' is 3.82 mm in length and 2.33 mm in width, and 'Obsidian' 4.00 mm in length and 1.93 mm in width.

When the new blackberry variety 'HJ-7' is compared to the male parental variety 'Eaton', the following trait differences have been observed:

1. 'HJ-7' has thorns whereas 'Eaton' has no thorns;
2. the fruit size and shape of 'HJ-7' is medium, and ovate to elliptical while the fruit size and shape of 'Eaton' is small, and long conic;

3. 'HJ-7' has determinate inflorescence which limits the number of peduncles as well as the length and number of each pedicel per plant leading to a limited number of berries which are larger in size, whereas 'Eaton' has indeterminate inflorescence which produces a larger number of smaller berries per plant;
4. 'HJ-7' has an abundant supply of pollen which leads to a minimum number of malformed fruit, whereas 'Eaton' lacks consistently good pollen at the end of its indeterminate inflorescences and thus often produces poorly-shaped, small fruit;
5. 'HJ-7' has larger leaves than 'Eaton'; and
6. 'HJ-7' has stronger overall vegetative strength than 'Eaton'.

When the new blackberry variety 'HJ-7' is compared to the similar variety 'HJ-6', the following trait differences have been observed:

1. the fruit production of 'HJ-6' occurs later in the season than 'HJ-7';
2. the overall (total season) production of 'HJ-6' is greater than that of 'HJ-7';
3. the average berry size of 'HJ-6' (8-10 g) is larger than the average berry size of 'HJ-7' (6-7 g);
4. the leaf color of 'HJ-6' is lighter in early June (7.5 GY4-4) than the leaf color of 'HJ-7' at the same point in the season (7.5 GY3-2); and
5. 'HJ-6' is considered superior to 'HJ-7' in side-by-side flavor test results.

BRIEF DESCRIPTIONS OF THE PHOTOGRAPHS

The accompanying color photographs illustrate the overall appearance of typical specimens of the new blackberry variety, 'HJ-7' as true as reasonably possible with color reproductions of this type. Plants shown in the photographs are two years old.

FIG. 1, taken May 18, 2009 illustrates typical early fruit during May showing large, circular berries with large drupelets. This is in contrast to subsequent fruit production which becomes medium ovate in outline. FIG. 1 also illustrates floricanes at two stages of maturity; the darker cane being the more mature. The pedicels and peduncles both have thorns; some pointed outward and some downward. The leaflets have bi-serrate serrations and are ovate with an acuminate to acute apex.

FIG. 2, taken in October 2009, illustrates the typical large fruit produced by 'HJ-7' that is long-conical to oblong in shape, contains large droplets, and is present in all by the early season crop. There are thorns on some pedicels. FIG. 2 further illustrates the typical foliage produced by 'HJ-7'; that comprises mostly 5 leaflets, each leaflet being ovate in shape, with an acuminate to acute apex, bi-serrate serrations, and palmate venation. The leaf petiole, as well as, the fruit peduncle, as further illustrated in FIG. 2, has a red surface.

DETAILED BOTANICAL DESCRIPTION

The following description of 'HJ-7' unless otherwise noted, is based on observations taken during the 2008 and 2009 growing seasons in Santa Cruz County, Calif. The plants observed were two years old. The phenotypical descriptions and color designations stated for the new variety may vary, depending upon variations in environmental factors, including weather (temperature, humidity and light intensity), day

length, soil type, location and cultural conditions. 'HJ-7' has not been observed under all possible environmental conditions.

Table 1 provides a botanical comparison of 'HJ-7' to the following two (2) unpatented, commercially grown varieties in Santa Cruz County, Calif.: (1) 'Obsidian', a trailing, semi-erect, thorny and early ripening variety (female parental variety, unpatented), and (2) 'HJ-6' (U.S. Plant Pat. No. 23,270), a sibling to 'HJ-7'.

TABLE 1

CHARACTERISTIC	Comparison Variety 1 'HJ-6' (U.S. Plant Pat. No. 23,270)	Comparison Variety 2 OBSIDIAN (unpatented)	New Variety 'HJ-7'
<u>Plant Form</u>			
Growth Habit	Trailing, semi-upright	Trailing, semi-upright	Trailing-semi-upright
Plant Height	4 to 5 feet	4 to 5 feet	4 to 5 feet
Suckering	Abundant	Abundant	Abundant
Branching	Indeterminate	Indeterminant	Indeterminate
Cane Texture	Thorny	Thorny	Thorny
Hardiness	Very Hardy	Very Hardy	Very Hardy
Canes	hair on new growth	Hair on new growth	hair on new growth
Diameter-Primocane	Large-1.8 cm	Medium-1.2 cm	Med to Large 1.2-2.0 cm
Floricanes	Same Diameter	Same Diameter	Same Diameter
Immature Primocane	Round to Angular	Round to Angular	Round to Angular
Mature Primocane			
Internode Length			
Color			
Prickles	Red to green	Red to Green	Red to Green
Mature Canes	All red 2.5R 2/2	Upper side red 2.5R 2/6	Upper side red 2.5R2/6
Foliage	Robust, large leaves	Robust, medium leaves	Robust, medium leaves
Predominate Number of Leaflets	Mostly 5; some 3	Mostly 3, some 4, 5	Mostly 3, some 5
Leaf Type	Mainly palmate	Odd palmate to intermediate	Mainly palmate
<u>Leaf Color</u>			
Upper Surface	5 GY 3/4	5 GY 3/4	5GY 3/2
Lower Surface	7.5 GY 5/6	7.5 GY 5/6	7.5 GY6/6
Central Leaflet Shape	Ovate with acuminate apex	Ovate with acute to acuminate apex	Ovate with acuminate apex
Leaflet Relief	Medium	Strong	Strong
Between Veins			
Spine Attitude	Outward, some down	Mainly outward	Outward and many down
Serrations of Leaflets	Shallow	Shallow	Shallow
Leaf Incision of Margin	Bi-serrate	Bi-serrate	Bi-serrate
Pubescence	Infrequent, no glandular hairs	Abundant, no glandular hairs	Infrequent, no glandular hairs
Petioles Width	2.41 mm	1.5-2.0 mm	1.5-2.0 mm
Color	Top-2.5R2/2; Bottom 5GY2/2	Predom 5GY 2/2	Predom5GY 2/2
Texture	Smooth w small thorns	Predom smooth	Smooth
Length	4-6 cm	3-5 cm	2-3 cm
<u>Flowers</u>			
Blooming Period	Mid March-April	Early March-April	Early March-April
<u>Color</u>			
Pedicels	Short Pedicels 3-6 cm	Medium 3-6 cm	Medium 3-6 cm

TABLE 1-continued

CHARACTERISTIC	Comparison Variety 1 'HJ-6' (U.S. Plant Pat. No. 23,270)	Comparison Variety 2 OBSIDIAN (unpatented)	New Variety 'HJ-7'
Size of Florets			
Petals			
Number	5 to 6	5	5
Shape	Irregular elliptical	Irregular elliptical	Irregular elliptical
Color	WhiteN9.25/84.2% R	White N9.25/84.2% R	White N9.25/84.2% R
Pollen	Strong	Strong	Strong
# of Sepals	5-; Length 5 to 10 mm in length; some sepal with leaf extensions	5; Length 4 to 8 mm. Some sepals with leaf extensions	5; Length 4 to 6 mm. Rare leaf extensions on sepals
#of Pistils			
Fruit			
Productivity	Medium--high; long picking season	High	Medium
Time of Fruiting	Late spring to summer, June-July	Late May to July	May to July
Size	Very large; avg 8 gm	Medium-large; avg 6 gm	Medium-large; avg 6-8 gm
Shape	Oblong to conic	Elliptical, some circular	Oblong to conic; some elliptical in early season
Color			
Immature	Green to red	Green to red	Green to red
Mature	N1.75/2.5% R	N1.75/2.5R	N1.75/2.5% R
Glossiness	Medium to full	Medium to full	Medium to Full

TABLE 1-continued

CHARACTERISTIC	Comparison Variety 1 'HJ-6' (U.S. Plant Pat. No. 23,270)	Comparison Variety 2 OBSIDIAN (unpatented)	New Variety 'HJ-7'
Weight	6 to 12 gm	6 to 8 gm	6 to 10 gm
Length	30 to 35 mm	25 to 30 mm	25 to 30 mm
Diameter	20 to 25 mm	20 to 25 mm	20 to 30 mm
Drupelets			
Size	3 to 4 mm	4.0 to 5.0 mm	3 to 4.5 mm
# per Berry			
Seed			
Size	Length 3.54 mm; Width 1.93 mm	Length 4.00 mm; Width 1.93 mm	Length 3.82; Width 2.33 mm
Weight			
Soluble Solids	9.2%	10.8%	12.0%
pH			
Yield Ave of 2 yrs	6991 crates/acre	5408 crates/acre avg.	3842 crates/ac
Disease/Pest Resistance	Red Mite susceptible	Red Mite susceptible	Red Mite susceptible
Uses	Fresh Market	Fresh Market; Processing	Fresh Market
25	When color is identified, the Munsell Book of Color (March 1976) is used. Yield-crates/acre (crate = 4.5 lb)		

What is claimed is:

1. A new and distinct variety of *Rubus ursinus* plant named 'HJ-7', as herein described and illustrated by the characteristics set forth above.

* * * * *

FIG. 1



FIG. 2

