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(12) **United States Plant Patent**  
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- (54) **SEEDLESS GRAPEVINE PLANT NAMED ‘ARD48’**
- (50) Latin Name: *Vitis vinifera* Grapevine  
Varietal Denomination: **ARD48**
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- (52) **U.S. Cl.**  
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(57) **ABSTRACT**

A new distinct variety of grapevine named ‘ARD48’ abundantly forms attractive crunchy and juicy seedless berries with a yellow-green skin coloration, lax large clusters which display a naturally sweet flavor, the fruit is commonly ready for harvesting during July in San Joaquin Valley of Central California, U.S.A., and displays good eating qualities as a table grape, the fruit firmness renders the fruit well amenable for handling, shipping, and storage.

**1 Drawing Sheet**

**1**

Classification: The present invention relates to a new *Vitis vinifera* Grapevine.

Variety denomination: The new Grapevine has a varietal denomination ‘ARD48’.

**BACKGROUND OF THE INVENTION**

A breeding program was initiated during the late 90’s near Bakersfield in San Joaquin Valley of Central California. In 2016, during this breeding program, a new variety of *Vitis vinifera* was created by deliberate cross breeding of two parent plants by emasculation of the pollen bearing organ of the female and introducing pollen from another male origin. The female parent of the new variety was 35–33+6 which is a white, sweet and crunchy variety, with very good berry attachment (not patented). The male parent (i.e. the pollen parent) of the new variety was 1–9+20, a white, crisp and meaty variety with dense bunches (not patented).

**TABLE 1**

‘ARD48’ compared with parents & closely related variety:				
	‘ARD48’	35 – 33 + 6	1 – 9 + 20	Thompson Seedless
Berry attachment	Very good	Very good	Very good	Medium
Density of bunch	Lax	Lax	Dense	Very tight (dense)
Capstem/brush	Medium/medium	Thin/long	Thick/medium	Medium/short

The parentage of the new variety can be summarized as follows:

35–33+6 X 1–9+20

**2**

An artificial pollination was created, and the result was an embryo which possessed unique genetic qualities. The rudiments resulting from the above pollination were embryo rescued.

5 In 2017 the plant was transplanted to Bakersfield in San Joaquin Valley of Central California.

It was found that the new grapevine of the present invention possesses the following combination of characteristics:

- (a) Forms attractive crunchy and juicy seedless berries with a yellow-green skin coloration; in lax large clusters which display a naturally sweet flavor,
- (b) Commonly bears fruit during the month of July in the San Joaquin Valley of Central California, U.S.A., and
- (c) Bears fruit that is firm and is well amenable for storage, handling, and shipping.
- (d) Produces 29 bunches per vine, and an average of about 2 bunches per shoot, at a total of 54 lbs. fruit per vine.

20 The new variety during observation to date has displayed no visible disease, and has displayed an ability to well resist cold, drought, heat; but sensitive to direct exposure to sun and wind. The fruit of the new variety has been found to display excellent handling and shipping qualities combined with desirable dessert eating qualities.

25 The new variety of the present invention has been found to undergo asexual propagation beginning in 2018 near Bakersfield in the San Joaquin Valley of Central California, U.S.A. by bud grafting on mature Thompson Seedless rootstock (not patented). Such asexual propagation has been conducted thereafter in successive years to date and has shown that the characteristics of the new variety are strictly transmissible from one generation to another. Accordingly, the new variety undergoes asexual propagation in a true to type manner.

SUMMARY OF THE INVENTION

The new variety 'ARD48' is a yellow-green seedless table grape with high production, e.g., about 29 bunches per vine, and an average of about 2 bunches per shoot.

Asexual reproduction by micro propagation of the new variety as performed near Bakersfield, California, U.S.A., shows that the forgoing and other distinguishing characteristics come true to form and are established and transmitted through succeeding propagations.

BRIEF DESCRIPTION OF THE DRAWING

The accompanying photographic illustration shows typical five-year-old specimens of the new variety, vegetatively propagated, in color as nearly true as it is reasonably possible to make in a color illustration of this character. Colors in the photograph may differ from the color values cited in the detailed botanical description below, which accurately describes the colors of the new Grapevine.

The drawing shows leaves, stems, tendrils and grapes of 'ARD48'.

DETAILED BOTANICAL DESCRIPTION

The chart used in the identification of colors is The R.H.S. Colour Chart of The ROYAL HORTICULTURAL SOCIETY (3<sup>rd</sup> Edition). The description is based on the observation of plants growing on 'Thompson Seedless' rootstock outdoors near San Joaquin Valley of Central California, U.S.A.

TABLE 2

VINE CHARACTERISTICS:	
Vigor	Vigorous upright shoots
Productive capacity	Bearing at a natural, average capacity. Spur pruning. Strong and developed.
Trunk	Diameter is 2.6 inches, at 5.9 inches above ground. Rough with a fibrous, shaggy exterior. Light maple brown coloring greyed orange 177 C

Date of bud burst in Bakersfield California: Feb 28<sup>th</sup>.

TABLE 3

YOUNG SHOOT CHARACTERISTICS:	
Openness of tip	Wide open
Density of prostrate hairs on tip	Sparse
Anthocyanin coloration of prostrate hairs on tip	None
Density of erect hairs on tip	Sparse

TABLE 4

YOUNG LEAF CHARACTERISTICS:	
Color of upper side of blade	Yellow green 144 A
Color of lower side of blade	Yellow green 145 A
Density of erect hairs between main veins on upper side of blade	Medium
Density of erect hairs between main veins on lower side of blade	Sparse

TABLE 4-continued

YOUNG LEAF CHARACTERISTICS:	
Density of prostrate hairs on main veins on upper side of blade	Medium
Density of prostrate hairs on main veins on lower side of blade	Absent or very sparse

TABLE 5

SHOOT CHARACTERISTICS:	
Attitude (before tying)	Semi-erect
Color of dorsal side of internodes	Yellow green 144 A
Color of ventral side of internodes	Yellow green 144 A
Color of dorsal side of nodes	Yellow green 144 A
Color of ventral side of nodes	Yellow green 144 B
Density of erect hairs on internodes	Absent or very sparse
Density of prostrate hairs on internodes	Absent or very sparse
Length of tendrils	5.5 inches
Diameter of tendrils	0.08 inches
Color of tendrils	Yellow green 144 A
Number of tendrils at bloom	4
Positioning of first flowering and fruiting node	The first bunch is in the 3rd node
Inflorescence number per flowering shoot	2

TABLE 6

FLOWER CHARACTERISTICS:	
Reproductive organs	Fully developed stamens and fully developed gynoecium
Flower length	0.2 inches
Flower diameter	0.1 inches
Pistil length	0.12 inches
Pistil color	Yellow green 144 A
Pollen Amount	Abundant
Pollen color	Yellow 10 A
Stamen color	Yellow green 145 D
Stamen length	0.14 inches
Number of stamen	5

First bloom in Bakersfield, California: April 23rd.

Date of full bloom in Bakersfield, California: May 1st.

TABLE 7

MATURE LEAF CHARACTERISTICS:	
Size of blade	7.5 inches x 9.5 inches
Shape of blade	Wedge-shaped
Base descriptors	Pentagonal
Leaf margin	Doubly serrate
Leaf apex	Acute
Blistering of upper side of blade	Absent or very sparse
Depth of upper lateral sinuses	Medium
Number of lobes (Only varieties with lobed leaves)	Five
Arrangement of lobes of upper lateral sinuses	Closed
Arrangement of lobes of petiole sinus	Half open
Length of teeth	0.4 inches
Ratio length/width of teeth	Medium
Shape of teeth	Both sides straight
Density of prostrate hairs between main veins on lower side of blade	Absent or very sparse

TABLE 7-continued

MATURE LEAF CHARACTERISTICS:	
Density of erect hairs on main veins on lower side of blade	Absent or very sparse
Density of erect hairs between the main veins on upper side of blade	Absent or very sparse
Density of prostrate hairs on main veins on upper side of blade	Absent or very sparse
Length of petiole compared to length of middle vein	Moderately shorter
Top side color	Yellow green 146 A
Bottom side color	Yellow green 147 B
Texture of upper side of blade	Smooth
Texture of lower side of blade	Rough
Vein color on upper blade	Yellow green 144 A
Anthocyanin coloration of main veins on upper side of blade	None
Vein color on lower blade	Yellow green 145 C
Venation pattern for upper blade	Netlike
Venation pattern for lower blade	Netlike
Petiole length	4.7 inches
Petiole diameter	0.14 inches
Petiole color	Yellow green 145 A
Petiole texture	Smooth

Date of beginning of berry ripening in Bakersfield California: June 4<sup>th</sup>.

TABLE 8

BUNCH CHARACTERISTICS:	
Size (peduncle excluded)	Large
Density of berries on bunch	Lax
Bunch length	9.5 inches
Bunch diameter	6.5 inches
Length of peduncle of primary bunch	1.1 inches
Diameter of peduncle of primary bunch	0.2 inches
Peduncle of primary bunch color	Yellow green 144 A
Peduncle texture	Smooth
Bunches per vine	29
Average bunch weight	1.87 (lbs)

TABLE 9

BERRY CHARACTERISTICS:	
Size	Large
Length	1.63 inches
Weight	0.39 oz
Diameter	0.85 inches
Shape	Cylindrical
Color of skin (without bloom)	Yellow green 151 A
Flesh color	Yellow green 145 D
Brix	18
Titratable acidity percentage	0.28%
Juice	4.06 pH
Ease of detachment from pedicel	Difficult
Thickness of skin	Medium
Anthocyanin coloration of flesh	None
Firmness of flesh	Very firm
Particular flavor	Natural sweet
Formation of seeds	Rudimentary
Berries per bunch	95
Juiciness of the berry flesh	Juicy

TABLE 10

PEDICEL CHARACTERISTICS:		
5	Length	0.6 inches
	Diameter	0.14 inches
	Color	Yellow green 144 B
	Pedicel texture	Rough

TABLE 11

WOODY SHOOT CHARACTERISTICS:		
15	Woody shoot texture	Rough
	Woody shoot color	Greyed orange 175 A
	Woody shoot length	129 inches
	Diameter	0.5 inches
	Internode length	3.2 inches

Market use of observed plants: Fresh market.  
 Age and growing conditions: Six years growing under Y system in South Joaquin Valley (hot, dry summers).  
 Shipping characteristics: (E.g. number of days fruit has been stored under specific conditions): Fruit was in cold storage. Stored in poly bags inside polystyrene boxes with sulfur pads. After 30 Days rachises were 40% green; 2% berry shattering; no berry wrinkling or cracks were apparent.  
 DNA profile: To further the characterize the new variety DNA was extracted from plant samples and a DNA profile was obtained at California, USA using base pairs for 10 standard microsatellite DNA markers. The data is presented hereafter.

TABLE 12

DNA profile for 'ARD48'			
Marker	Allele Sizes in Base Pairs		
	M 1	226	236
M 2	247	249	
M 3	179	194	
M 4	210	214	
M 5	251	273	
M 6	133	135	
M 7	193	201	
M 8	255	257	
M 9	212	212	
M 10	237	237	

The 'ARD48' variety has not been observed under all possible environmental conditions to date. Accordingly, it is possible that the phenotypic expression may vary somewhat with changes in light intensity and duration, cultural practices, and other environmental conditions.  
 Additional information relating to plant and fruit disease and pest resistance or susceptibility has not been observed to date. Specification of the plant hardiness zone and the heat/cold resistance has not been observed to date.  
 What is claimed is:  
 1. A new and distinct grapevine plant named 'ARD48', substantially as shown and described herein.

