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(12) **United States Plant Patent**
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(54) **SEEDLESS GRAPEVINE PLANT NAMED**
'ARD47'

(50) Latin Name: *Vitis vinifera* Grapevine
Varietal Denomination: **ARD47**

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(52) **U.S. Cl.**
USPC **Plt./205**

(58) **Field of Classification Search**
USPC **Plt./156, 208, 209, 205**
See application file for complete search history.

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(56) **References Cited**
U.S. PATENT DOCUMENTS
PP33,974 P2 * 3/2022 Cain **A01H 6/88**
Plt./205

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

* cited by examiner
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(57) **ABSTRACT**
A new distinct variety of grapevine named 'ARD47' abundantly forms attractive crunchy seedless berries with a yellow-green skin coloration of medium density and large clusters which display a labrusca flavor, and is commonly ready for harvesting during July-August 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.

(51) **Int. Cl.**
A01H 5/08 (2018.01)
A01H 6/88 (2018.01)

1 Drawing Sheet

1

2

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

Variety denomination: The new Grapevine has a varietal denomination 'ARD47'.

BACKGROUND OF THE INVENTION

A breeding program was initiated during the late 90's near Bakersfield in San Joaquin Valley of Central California. In 2019, 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 (non-patented in the United States). The male parent (i.e. the pollen parent) of the new variety was 26-6+3, a seedless, white, crunchy variety with lax bunches (non-patented in the United States).

TABLE 1-continued

'ARD47' compared with parents & closely related variety:				
	'ARD47'	35 - 33 + 6	26 - 6 + 3	Thompson Seedless
Berry shape	Broad ellipsoid	Obtuse ovoid	Ovoid	Oblong

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

35-33+6-26-6+3

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.

In 2020 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 seedless berries with a yellow-green skin coloration; in medium density and large clusters which display a labrusca flavor,
- (b) Commonly bears fruit during the month of July-August 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.

TABLE 1

'ARD47' compared with parents & closely related variety:				
	'ARD47'	35 - 33 + 6	26 - 6 + 3	Thompson Seedless
Berry attachment	Good	Very good	Very good	Medium
Fertility	Medium fertility	Very fertile	Medium fertility	Low fertility

(d) Produces 29 bunches per vine, and an average of about 2 bunches per shoot, at a total of 51 lbs. fruit per vine.

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.

The new variety of the present invention has been found to undergo asexual propagation beginning in 2021 near Bakersfield in the San Joaquin Valley of Central California, U.S.A. by bud grafting on mature Thompson Seedless rootstock (non-patented in the United States). 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 ‘ARD47’ 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 ‘ARD47’.

DETAILED BOTANICAL DESCRIPTION

The chart used in the identification of colors is The R.H.S. Colour Chart of The ROYAL HORTICULTURAL SOCIETY (3rd 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.
Trunk	Strong and developed. Diameter is 1.2 inches at 7.2 inches above ground. Rough with a fibrous, shaggy exterior. Light maple brown coloring greyed orange 166 C

Date of bud burst in Bakersfield California: March 6th

TABLE 3

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

TABLE 4

YOUNG LEAF CHARACTERISTICS:	
Color of upper side of blade	Yellow Green 143 A
Color of lower side of blade	Yellow Green 144 A
Density of erect hairs between main veins on upper side of blade	Sparse
Density of erect hairs between main veins on lower side of blade	Dense
Density of prostrate hairs on main veins on upper side of blade	Sparse
Density of prostrate hairs on main veins on lower side of blade	Sparse

TABLE 5

SHOOT CHARACTERISTICS:	
Attitude (before tying)	Erect
Color of dorsal side of internodes	Yellow Green 144 B
Color of ventral side of internodes	Yellow Green 144 B
Color of dorsal side of nodes	Yellow Green 144 C
Color of ventral side of nodes	Yellow Green 144 C
Density of erect hairs on internodes	Absent or very sparse
Density of prostrate hairs on internodes	Absent or very sparse
Length of tendrils	6.3 inches
Diameter of tendrils	0.06 inches
Color of tendrils	Yellow Green 153 A
Number of tendrils at bloom	3
Positioning of first flowering and fruiting node	The first bunch is in the 3 rd node
Inflorescence number per flowering shoot	2

TABLE 6

FLOWER CHARACTERISTICS:	
Reproductive organs	Fully developed stamens and fully developed gynoecium
Flower length	0.32 inches
Flower diameter	0.24 inches
Pistil length	0.15 inches
Pistil color	Yellow Green 144 A
Pollen Amount	Rich
Pollen color	Yellow 11 C
Stamen color	Yellow Green 145 C
Stamen length	0.17 inches
Number of stamen	6

First bloom in Bakersfield, California: April 25th

Date of full bloom in Bakersfield, California: April 28th

TABLE 7

MATURE LEAF CHARACTERISTICS:	
Size of blade	6.5 inches × 7 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	Deep
Number of lobes (Only varieties with lobed leaves)	Five
Arrangement of lobes of upper lateral sinuses	Closed
Arrangement of lobes of petiole sinus	Wide open
Length of teeth	0.34 inches
Ratio length/width of teeth	Large
Shape of teeth	Mixture of both sides straight and both sides convex
Density of prostrate hairs between main veins on lower side of blade	Absent or very sparse
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	Green 137 B
Bottom side color	Yellow Green 147 B
Texture of upper side of blade	Rough
Texture of lower side of blade	Slightly rough
Vein color on upper blade	Yellow Green 146 D
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
Venation pattern for lower blade	Netlike venation
Petiole length	4.5 inches
Petiole diameter	0.15 inches
Petiole color	Yellow Green 146 D
Petiole texture	Smooth

Date of beginning of berry ripening in Bakersfield California: June 3rd

TABLE 8

BUNCH CHARACTERISTICS:	
Size (peduncle excluded)	Large
Density of berries on bunch	Medium
Bunch length	10 inches
Bunch diameter	6.5 inches
Length of peduncle of primary bunch	0.6 inches
Diameter of peduncle of primary bunch	0.15 inches
Peduncle of primary bunch color	Yellow Green 145 A
Peduncle texture	Smooth
Bunches per vine	29
Average bunch weight	1.76 lbs

TABLE 9

BERRY CHARACTERISTICS:	
Size	Large
Length	1.04 inches
Weight	0.27 oz
Diameter	0.88 inches
Shape	Broad ellipsoid
Color of skin (without bloom)	Yellow Green 153 B
Flesh color	Yellow Green 145 D

TABLE 9-continued

BERRY CHARACTERISTICS:		
5	Brix	18.7
	Titrate acidity percentage	0.48%
	Juice	3.8 pH
	Ease of detachment from pedicel	Moderately easy
	Thickness of skin	Medium
	Anthocyanin coloration of flesh	None
	Firmness of flesh	Very firm
10	Particular flavor	Foxy
	Formation of seeds	None
	Berries per bunch	135
	Juiciness of the berry flesh	Juicy

TABLE 10

PEDICEL CHARACTERISTICS:		
20	Length	0.37 inches
	Diameter	0.14 inches
	Color	Yellow Green 144 B
	Pedicel texture	Rough

TABLE 11

WOODY SHOOT CHARACTERISTICS:		
30	Woody shoot texture	Smooth
	Woody shoot color	Greyed orange 165 B
	Woody shoot length	140 inches
	Diameter	0.26 inches
	Internode length	2.94 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 70% green; 0% berry shattering; no berry wrinkling or cracks were apparent.

DNA PROFILE

To further characterize the new variety DNA was extracted from plant samples and a DNA profile was obtained at California Seed & Plant Lab, California USA using base pairs for 10 standard microsatellite DNA markers. The data is presented hereafter.

TABLE 12

DNA profile for ARD47			
Microsatellite DNA Marker	Allele Sizes in Base Pairs		
M 1	236	238	
M 2	247	249	
M 3	185	185	

TABLE 12-continued

DNA profile for ARD47		
Microsatellite DNA Marker	Allele Sizes in Base Pairs	
M 4	214	220
M 5	253	271
M 6	120	151
M 7	193	205
M 8	249	253
M 9	214	214
M 10	233	237

The 'ARD47' 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, botanically known as *Vitis vinifera*, identified as 'ARD47', substantially as shown and described herein.

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