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- (54) **SEEDLESS GRAPEVINE NAMED ‘ARDFORTYTHREE’**
- (50) Latin Name: *Vitis vinifera*
Varietal Denomination: **ARDFORTYTHREE**
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- (52) **U.S. Cl.**
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(57) **ABSTRACT**

A new distinct variety of grapevine named ‘ARDFORTYTHREE’ abundantly forms attractive meaty seedless berries with a red skin coloration, medium density and large clusters which display a natural flavor, the fruit commonly is ready for harvesting during August in San Joaquin Valley of Central California, U.S.A, and displays good eating qualities as a table grape as the fruit firmness renders the fruit well amenable for handling, shipping, and storage.

1 Drawing Sheet

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Classification: The present invention relates to a new *Vitis vinifera* Grapevine.
Variety denomination: The new Grapevine has a varietal denomination ‘ARDFORTYTHREE’.

BACKGROUND OF THE INVENTION

A breeding program was initiated during the late 1990’s near Bakersfield in San Joaquin Valley of Central California. In 2013, 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 10-10+2, which is a very fertile and crispy seedless white table grape variety (non-patented in the United States). The male parent (i.e. the pollen parent) of the new variety was 25-51+2, a naturally sweet and crisp seedless red variety (non-patented in the United States).

TABLE 1

‘ARDFORTYTHREE’ compared with parents & closely related variety:				
	‘ARDFORTYTHREE’	10 – 10 + 2	25 – 51 + 2	‘Scarlet Royal’ (U.S. Plant Pat. No. 16,229)
Berry skin	Thin	Thin	Thin	Medium-Thick
Berry shape	Narrow ellipsoid	Cylindrical	Broad ellipsoid	Oval
Berry Color	Red	White	Red	Dark red

The parentage of the new variety can be summarized as follows: 10-10+2×25-51+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.

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In 2014 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 meaty seedless berries with a red skin coloration; in medium density and large clusters which display a natural flavor,
- (b) Commonly bears fruit during the month of 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.
- (d) Produces 85 bunches per vine, and an average of about 2 bunches per shoot, at a total of 85 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 2015 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 ‘ARDFORTYTHREE’ is a red seedless table grape with a high production, e.g., about 85 bunches per vine, and an average of about 2 bunches per shoot.

Asexual reproduction by micropropagation of the new variety as performed near Bakersfield, Calif., 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 six-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 and grapes of 'ARD-FORTYTHREE'.

DETAILED BOTANICAL DESCRIPTION

The chart used in the identification of colors is The RHS 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.

VINE CHARACTERISTICS:

vigor	Vigorous upright shoots
productive capacity	Bearing at a natural, average capacity. Spur pruning.
trunk	Strong and developed. Diameter is 3.9 inches, measured at 5.6 inches above ground. Rough with a fibrous, shaggy exterior. Light maple brown coloring (greyed orange 177C)

Date of bud burst in Bakersfield, Calif.: March 8th.

YOUNG SHOOT CHARACTERISTICS:

Openness of tip	wide open
Density of prostrate hairs on tip	absent or very sparse
Anthocyanin coloration of prostrate hairs on tip	none
Density of erect hairs on tip	sparse

YOUNG LEAF CHARACTERISTICS:

Color of upper side of blade	yellow green 144A
Color of lower side of blade	yellow green 146D
Density of erect hairs between main veins on upper side of blade	absent or very sparse
Density of erect hairs between main veins on lower side of blade	absent or very sparse
Density of prostrate hairs on main veins on upper side of blade	absent or very sparse
Density of prostrate hairs on main veins on lower side of blade	absent or very sparse

SHOOT CHARACTERISTICS:

Attitude (before tying)	horizontal
Color of dorsal side of internodes	yellow green 1446

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SHOOT CHARACTERISTICS:

5	Color of ventral side of internodes	yellow green 145A
	Color of dorsal side of nodes	yellow green 145A
	Color of ventral side of nodes	yellow green 145B
	Density of erect hairs on internodes	absent or very sparse
	Density of prostrate hairs on internodes	absent or very sparse
	Length of tendrils	4.3 inches
10	Diameter of tendrils	0.07 inches
	Color of tendrils	yellow green 151A
	Number of tendrils at bloom	3
	Positioning of first flowering and fruiting node	The first bunch is in the 3 rd node
15	Inflorescence number per flowering shoot	2

FLOWER CHARACTERISTICS:

20	Reproductive organs	fully developed stamens and fully developed gynoecium
	Flower length	0.2 inches
	Flower diameter	0.1 inches
	Pistil length	0.8 inches
25	Pistil color	yellow green 144B
	Pollen Amount	rich
	Pollen color	yellow 8A
	Stamen color	yellow green 145C
	Stamen length	0.9 inches
	Number of stamen	6

First bloom in Bakersfield, Calif.: May 22nd.

Date of full bloom in Bakersfield, Calif.: May 28th.

MATURE LEAF CHARACTERISTICS:

	Size of blade	6 × 5.5 inches
	Shape of blade	wedge-shaped
	Base descriptors	pentagonal
40	Leaf margin	serrate
	Leaf apex	acute
	Blistering of upper side of blade	absent or very sparse
	Depth of upper lateral sinuses	shallow
	Number of lobes (Only varieties with lobed leaves)	seven
	Arrangement of lobes of upper lateral sinuses	strongly overlapped
45	Arrangement of lobes of petiole sinus	wide open
	Length of teeth	0.28 inches
	Ratio length/width of teeth	medium
50	Shape of teeth	both sides straight
	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
55	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	equal
	Top side color	green 137B
	Bottom side color	yellow green 146B
60	Texture of upper side of blade	smooth
	Texture of lower side of blade	rough
	Vein color on upper blade	yellow green 146D
	Vein color on lower blade	yellow green 145C
	Venation pattern for upper blade	netlike venation
	Venation pattern for lower blade	netlike venation
65	Petiole length	4.6 inches

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MATURE LEAF CHARACTERISTICS:	
Petiole diameter	0.15 inches
Petiole color	yellow green 146D
Petiole texture	smooth

Date of beginning of berry ripening in Bakersfield Calif.:
August 5th.

BUNCH CHARACTERISTICS:	
Size (peduncle excluded)	large
Density of berries on bunch	medium
Bunch length	8.5 inches
Bunch diameter	6.1 inches
Length of peduncle of primary bunch	6.15 inches
Diameter of peduncle of primary bunch	0.2 inches
Peduncle of primary bunch color	yellow green 145B
Peduncle texture	smooth
Bunches per vine	85
Average bunch weight	lib

BERRY CHARACTERISTICS:	
Size	large
Length	1.2 inches
Weight	0.3 oz
Diameter	0.8 inches
Shape	narrow ellipsoid
Color of skin (without bloom)	red 46A
Flesh color	yellow green 145D
Brix	21.6
Titration acidity percentage	0.33%
Juice	3.97 pH
Ease of detachment from pedicel	moderately easy
Thickness of skin	thin
Anthocyanin coloration of flesh	none
Firmness of flesh	moderately firm
Particular flavor	none
Formation of seeds	rudimentary
Berries per bunch	75

PEDICEL CHARACTERISTICS:	
Length	0.64 inches
Diameter	0.07 inches
Color	yellow green 145B
Pedicel texture	rough

WOODY SHOOT CHARACTERISTICS:	
Woody shoot texture	rough
Woody shoot color	greyed orange 165B
Woody shoot length	115 inches
Diameter	0.44 inches
Internode length	3.9 inches

Market use of observed plants: Fresh market.
 Age and growing conditions: Six years growing under Y system in South Joaquin Valley during hot, dry summers. Shipping characteristics: Fruit was in cold storage. Stored in poly bags inside Styrofoam boxes with sulfur pads. After 60 Days: rachises were 10% green; 0% 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 Seed & Plant Lab, California USA using base pairs for 10 standard microsatellite DNA markers. The data is presented hereafter.

TABLE 2

DNA profile for 'ARDFORTYTHREE'		
Microsatellite DNA Marker	Allele Sizes in Base Pairs	
M 1	228	236
M 2	249	249
M 3	194	194
M 4	212	216
M 5	251	273
M 6	133	151
M 7	187	205
M 8	247	259
M 9	212	214
M 10	237	261

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

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