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(54) SEEDLESS GRAPEVINE NAMED  
‘ARDFORTYTWO’

(50) Latin Name: *Vitis vinifera*  
Varietal Denomination: ARDFORTYTWO

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(57) ABSTRACT

A new distinct variety of grapevine named ‘ARDFOR-  
TYTWO’ abundantly forms attractive crispy seedless berries  
with a red skin coloration, dense medium clusters which  
display a natural sweet flavor, the fruit commonly is ready  
for harvesting during June 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 ‘ARDFORTYTWO’.

BACKGROUND OF THE INVENTION

A breeding program was initiated during the late 1990’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 (non-patented in the United States). The male  
parent (i.e. the pollen parent) of the new variety was  
26-66+2, a red and meaty variety with large berries (non-  
patented in the United States).

TABLE 1

‘ARDFORTYTWO’ compared with parents & closely related variety:				
	‘ARDFORTYTWO’	35-33 + 6	26-66 + 2	Flame (unpatented)
Berry shape	Obtuse ovoid	Obtuse ovoid	Obtuse ovoid	Globose
Cap stem/ brush	Medium/Long	Thin/ Long	Thick/ Long	Short/Thick
Vigor	Normal	Normal	Strong	Strong

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

35-33+6 X 26-66+2

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

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 charac-  
teristics:

(a) Forms attractive crispy seedless berries with a red skin  
coloration; in dense medium clusters which display a  
natural, sweet flavor,

(b) Commonly bears fruit during the month of June 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 72 bunches per vine, and an average of about  
2 bunches per shoot, at a total of 70 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 2018 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 ‘ARDFORTYTWO’ is a red seedless  
table grape with a high production, e.g., about 72 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, 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-FORTYTWO’.

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.

VINE CHARACTERISTICS:	
vigor	Vigorous upright shoots
productive capacity	Bearing at a natural, average capacity. Spur pruning.
trunk	Strong and developed. Diameter is 2.7 inches, measured 9.5 inches above ground. Rough with a fibrous, shaggy exterior. Light maple brown coloring (greyed orange 177C)

Date of bud burst in Bakersfield Calif.: March 1<sup>st</sup>.

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		absent or very sparse

YOUNG LEAF CHARACTERISTICS:		
Color of upper side of blade		yellow green 144A
Color of lower side of blade		yellow green 146A
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)		semi-erect
Color of dorsal side of internodes		yellow green 144A
Color of ventral side of internodes		yellow green 144B
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 protrag hairs on internodes		absent or very sparse
Length of tendrils		3.1 inches
Diameter of tendrils		0.06 inches
Color of tendrils		yellow green 144A
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

FLOWER CHARACTERISTICS:		
Reproductive organs		fully developed stamens and fully developed gynoecium
Flower length		0.21 inches
Flower diameter		0.1 inches
Pistil length		0.13 inches
Pistil color		yellow green 144A
Pollen Amount		rich
Pollen color		yellow 11C
Stamen color		yellow green 145C
Stamen length		0.12 inches
Number of stamen		5

First bloom in Bakersfield, Calif.: April 28<sup>th</sup>.

Date of full bloom in Bakersfield, Calif.: May 4<sup>th</sup>.

MATURE LEAF CHARACTERISTICS:		
Size of blade		4.5 × 4 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		five
(Only varieties with lobed leaves)		open
Arrangement of lobes of upper lateral sinuses		
Arrangement of lobes of petiole sinus		very wide open
Length of teeth		0.18 inches
Ratio length/width of teeth		small
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
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		much shorter
Top side color		green 137B
Bottom side color		yellow green 146B
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 145D
Venation pattern for upper blade		netlike venation
Venation patten for lower blade		netlike venation
Petiole length		2.3 inches

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MATURE LEAF CHARACTERISTICS:	
Petiole diameter	0.02 inches
Petiole color	red 53A
Petiole texture	smooth

Date of beginning of berry ripening in Bakersfield Calif.: May 28<sup>th</sup>.

BUNCH CHARACTERISTICS:	
Size (peduncle excluded)	medium
Density of berries on bunch	dense
Bunch length	6.5 inches
Bunch diameter	7 inches
Length of peduncle of primary bunch	4.3 inches
Diameter of peduncle of primary bunch	0.19 inches
Peduncle of primary bunch color	yellow green 145B
Peduncle texture	smooth
Bunches per vine	72
Average bunch weight	0.98 lbs

BERRY CHARACTERISTICS:	
Size	large
Length	1.1 inches
Weight	0.3 oz
Diameter	0.9 inches
Shape	obtuse ovoid
Color of skin (without bloom)	red 46A
Flesh color	yellow green 145D
Brix	24
Titration acidity percentage	0.32%
Juice	4.22 pH
Ease of detachment from pedicel	difficult
Thickness of skin	thin
Anthocyanin coloration of flesh	none
Firmness of flesh	moderately firm
Particular flavor	natural sweet
Formation of seeds	rudimentary
Berries per bunch	64

PEDICEL CHARACTERISTICS:	
Length	0.35 inches
Diameter	0.09 inches
Color	yellow green 144B
Pedicel texture	rough

WOODY SHOOT CHARACTERISTICS:	
Woody shoot texture	rough
Woody shoot color	greyed orange 165B

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WOODY SHOOT CHARACTERISTICS:	
Woody shoot length	216 inches
Diameter	0.4 inches
Internode length	5.18 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 60% 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 'ARDFORTYTWO'			
Microsatellite DNA Marker		Allele Sizes in Base Pairs	
35	M 1	226	238
	M 2	247	249
	M 3	185	194
	M 4	210	212
	M 5	251	273
	M 6	135	151
	M 7	187	189
	M 8	251	257
	M 9	212	214
	M 10	237	237

The 'ARDFORTYTWO' 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 'ARDFORTYTWO', substantially as shown and described herein.

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