



(12) **United States Plant Patent**
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(54) **SEEDLESS TABLE GRAPE NAMED ‘ARRATHIRTYONE’**

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

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(52) **U.S. Cl.**
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(57) **ABSTRACT**

A new distinct variety of grapevine named ‘ARRATHIRTYONE’ abundantly forms attractive medium-large firm seedless berries with an attractive red skin coloration; in medium-to-large clusters which display a naturally sweet 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. 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 the varietal denomination ‘ARRATHIRTYONE’.

BACKGROUND OF THE INVENTION

A breeding program was initiated during the late 1990’s near Bakersfield in San Joaquin Valley of Central California. In 2006, 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 A.3. which is a medium-sized red seedless grape variety with a fleshy texture and a natural flavor (non-patented in the United States). The male parent (i.e. the pollen parent) of the new variety was G-16 is an early season, white creamy colored variety with a sweet flavor (non-patented in the United States).

Comparison of ‘ARRATHIRTYONE’ with its parents:

	ARRATHIRTYONE	A.3. (Mother)	G-16 (Father)	Crimson Seedless (Comparison Variety)
Seed trace	Small	Large	Small	None
Berry shape	Narrow ellipsoid	Ovoid	Oblong	Cylindrical-oval
Berry Color	Red	Red	White	Red
Bunch Density	Medium	Medium	Medium	Medium-tight

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

A.3.xG-16

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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 2007 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 medium firm seedless berries with a red skin coloration; in medium-to-large clusters which display a naturally sweet 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.

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 2008 near Bakersfield in the San Joaquin Valley of Central California, U.S.A. by grafting on mature Thompson rootstock (non-patented in the United States). Such asexual propagation has been conducted thereafter in successive years through 2009, 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 ‘ARRATHIRTYONE’ is a medium size, red seedless table grape with a medium-high production, e.g., about 48 bunches per vine, and an average of about one to two 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 specimens of vegetative growth of six year old specimens of the new variety, 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.

FIG. 1 shows leaves, stems and grapes of 'ARRATHIR-TYONE'.

DETAILED BOTANICAL DESCRIPTION

The chart used in the identification of colors is The R.H.S. Colour Chart of The ROYAL HORTICULTURAL SOCIETY 1995 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:

Vigor.—Vigorous upright shoots.

Productive capacity.—Bearing at a natural, average capacity. Spur pruning.

Trunk.—Strong and developed. Ranges from 2"-2³/₈". Rough with a fibrous, shaggy exterior. Light maple brown coloring.

Time of bud burst:

Early.—Mid-February in Bakersfield, Calif.

Young shoot:

Openness of tip.—Fully open.

Prostrate hairs on tip.—Absent or very sparse.

Anthocyanin coloration of prostrate hairs on tip.—Absent or very weak.

Erect hairs on tip.—Medium.

Young leaf:

Color of upper side of blade.—Yellow-green (144-A).

Prostrate hairs between main veins on lower side of blade.—Absent or very sparse.

Erect hairs on main veins on lower side of blade.—Absent or very sparse.

Shoot:

Attitude (before tying).—Semi-erect.

Color of dorsal side of internodes.—Green (yellow green 145-C).

Color of ventral side of internodes.—Green (yellow green 145-B).

Color of dorsal side of nodes.—Green (yellow green 145-C).

Color of ventral side of nodes.—Green (yellow green 145-B).

Erect hairs on internode.—Absent or very sparse.

Length of tendrils.—Medium (2").

Color of tendrils.—Yellow green (145-A).

Number of tendrils.—4.

Flower:

Sexual organs.—Fully developed stamens and fully developed gynoecium.

Mature leaf:

Size of blade.—9"×8".

Shape of blade.—Kidney shaped.

Blistering of upper side of blade.—Strong.

Number of lobes.—Seven.

Depth of upper lateral sinuses.—Deep.

Arrangement of lobes of upper lateral sinuses (only varieties with lobed leaves).—Open.

Arrangement of lobes petiole sinus.—Wide open.

Length of teeth.—Long.

Ratio length l width of teeth.—Medium.

Shape of teeth.—Mixture of both sides straight and both sides convex.

Proportion of main veins on upper side of blade with anthocyanin coloration.—Low.

Prostrate hairs between main veins on lower side of blade.—Absent or very sparse.

Erect hairs on main veins on lower side of blade.—Absent or very sparse.

Length of petiole compared to length of middle vein.—Moderately longer.

Top side color.—Yellow green (146-B).

Bottom side color.—Yellow Green (146-C).

Texture.—Smooth.

Vein color.—Yellow Green (145-C).

Petiole length.—6.5".

Petiole color.—Greyed purple (184-B) strips and yellow green (145-A).

Reproductive organs:

Color.—Green (137-C).

Size.—0.003200".

Time of beginning of ripening: Mid-July in Bakersfield, Calif.

Bunch:

Size (penduncle excluded).—Large.

Density.—Lax.

Length of penduncle primary bunch.—Medium.

Average bunch weight.—2 lbs.

Berry:

Size.—Large.

Length.—1.6".

Weight.—0.28 oz.

Diameter.—1³/₁₆".

Shape.—Narrow ellipsoid.

Color of skin (without bloom).—Red.

Ease of detachment from pedicle.—Moderately easy.

Thickness of skin.—Thin.

Anthocyanin coloration of flesh.—Absent or very weak.

Firmness of flesh.—Moderately firm.

Particular flavor.—None.

Formation of seeds.—None

Market use of observed plant.—Fresh market.

Berries per bunch.—110.

Woody shoot:

Main color.—Dark brown (grayed orange 177-B).

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 Styrofoam boxes with

sulphur pads. After 60 Days: rachises were 75% green; 2% berry shuttering; no berry wrinkling or cracks were apparent.

DNA PROFILE

To further characterize the new Arra variety DNA was extracted from dried leaf samples and DNA profiles were obtained at California Seed & Plant Lab, California USA using base pairs for 8 standard microsatellite DNA markers. The data is presented hereafter.

Microsatellite DNA Marker	Allele Sizes in Base Pairs	
M 1	228	234
M 2	239	249
M 3	181	194
M 4	212	212
M 5	251	263

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Microsatellite DNA Marker	Allele Sizes in Base Pairs	
M 6	133	151
M 7	189	205
M 8	251	259
M 9	214	214
M 10	261	261

10 The ‘ARRATHIRTYONE’ 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.

15 What is claimed is:

1. A new and distinct variety of grapevine, botanically known as *Vitis vinifera*, identified as ‘ARRATHIRTYONE’, substantially as shown and described herein.

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