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Karniel et al.

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(54) **GRAPE PLANT NAMED 'ARRATWO'**

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

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A01H 5/00 (2006.01)

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(58) **Field of Classification Search** Plt./205
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

PP16,399 P3 4/2006 Ellis et al.
PP17,223 P3 11/2006 Giumarra et al.
PP17,224 P3 11/2006 Giumarra et al.
PP18,625 P3 3/2008 Pinhas et al.

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(57) **ABSTRACT**

A new distinct variety of grapevine named 'ARRATWO' abundantly forms attractive large seedless berries having deep purple/red skin coloration in large clusters. The fruit displays a natural flavor and is meaty in texture. 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 'ARRATWO'.

BACKGROUND OF THE INVENTION

A breeding program was initiated during the late 90's near Bakersfield in the San Joaquin Valley of Central California. In 2001, 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 male and introducing pollen from another male origin. The female parent of the new variety was the GAW1 which is a large creamy white very productive seedless grape variety (non-patented in the United States). The male parent (i.e. the pollen parent) of the new variety was GZW5 which is a large red meaty and juicy, seedless grape variety with medium fertility (non-patented in the United States).

Comparison between ARRATWO and Male Parent GZW5

	ARRATWO	GZW5
Berry color	Red	Grayish red
Berry shape	Globose	Obovate
Seed trace	None	Seeded
Density of bunch	Very dense	Loose

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

GAW1×GZW5

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 2002 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 the characteristics:

- (a) Forms attractive large meaty seedless berries with a deep purple/red skin coloration covered with a few blackish spots; in medium-to-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.

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 2005 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 2008, 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. The age of the plant shown in the drawing is five years old and the variety was created in 2001.

SUMMARY OF INVENTION

The new variety 'ARRATWO' is a large, deep purple/red seedless table grape with medium to large production, e.g., about 36 to 42 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., at Arvin, Calif. Ranch 33 which shows that the forgoing and other distinguishing characteristics come true to form and are established and transmitted through succeeding propagations.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying photographic illustration shows typical specimens of vegetative growth of five 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 'ARRATWO'.

DETAILED BOTANICAL DESCRIPTION

The chart used in the identification of colors is the R.H.S. Colour Chart of The Royal Horticultural Society. 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. Color of the trunk is greyed-orange (166-B).

Time of bud burst:

Early.—Date of bud burst in specified location of culture if Mar. 23, 2011 in Arvin, Calif.

Young shoot:

Openness of tip.—Half open.

Prostrate hairs on tip.—Sparse.

Anthocyanin coloration of prostrate hairs on tip.—Medium.

Erect hairs on tip.—Sparse.

Young leaf:

Color of upper side of blade.—Yellow-green (153-A).

Prostrate hairs between main veins on lower side of blade.—Sparse.

Erect hairs on main veins on lower side of blade.—Sparse.

Shoot:

Attitude (before tying).—Semi-erect.

Color of dorsal side of internodes.—Yellow-green (144-A); grey-red (178-A).

Color of ventral side of internodes.—Yellow green (144-A).

Color of dorsal side of nodes.—Yellow-green (146-B).

Color of ventral side of nodes.—Yellow-green (146-C).

Erect hairs on internodes.—Absent or very sparse.

Length of tendrils.—3 tendrils 7.5 cm each.

Color of tendrils.—Yellow-green (146-D).

Flower:

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

Mature leaf:

Size of blade.—Large (7.5×8 inches).

Shape of blade.—Pentagonal.

Blistering of upper side of blade.—Absent or very weak.

Number of lobes.—Five.

Depth of upper lateral sinuses.—Shallow.

Only varieties with lobed leaves.—Mixture of both sides straight and both sides convex.

Arrangement of lobes of upper lateral sinuses.—Open.

Arrangement of lobes of petiole sinus.—Medium, slightly open.

Length of teeth.—Medium, 4 cm.

Ratio length/width of teeth.—Medium.

Shape of teeth.—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 equal compared to length of middle vein.—Equal, petiole length: 9.5 cm; main vein length: 16 cm.

Top side color.—Yellow-green (146-A).

Bottom side color.—Yellow-green (146-B).

Texture.—Smooth.

Vein color.—Yellow-green (146-C).

Petiole length.—9.5 cm.

Petiole color.—Greyed-red (182-C).

Petiole strips color.—Yellow-green (140-B).

Reproductive organs:

Color.—Green (143-C).

Size.—1.2 mm.

Time of beginning of ripening: July 30 Arvin, Calif. season

Bunch:

Size (peduncle excluded).—Medium (8×7 inches).

Density.—Very dense.

Length of peduncle primary bunch.—2.5 cm.

Average bunch weight.—800 g.

Berry:

Size.—23.8 mm.

Weight.—16 g.

Shape.—Obtuse ovoid.

Color of skin (without bloom).—Greyed-purple (185-A).

Ease of detachment from pedicel.—Difficult.

Thickness of skin.—Medium.

Anthocyanin coloration of flesh.—Greyed-purple (185-A).

Firmness and color of flesh.—Moderately firm, yellow-green (145-C).

Particular flavor.—None.

Formation of seeds.—Rudimentary.

Market use of the observed plant.—Fresh market.

Berries per bunch.—80 berries.

Woody shoot:

Main color.—orange brown (grayed orange 164-A).

DNA PROFILE

To further the characterize the new Arra variety DNA was extracted from dried leaf samples and DNA profiles were obtained in Spain, using base pairs for 14 standard microsatellite DNA markers. The data is presented hereafter.

Microsatellite DNA Marker	Allele Sizes in Base Pairs	
MSV01	134	152
MSV02	236	238
MSV04	181	183
MSV06	246	246
MSV07	318	322

-continued

	Microsatellite DNA Marker	Allele Sizes in Base Pairs	
	MSV08	251	258
5	MSV09	251	257
	MSV10	211	215
	MSV12	246	246
	MSV13	166	168
	MSV14	162	180
	MSV15	295	308
10	MSV16	176	186
	MSV17	155	159

We claim:

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

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