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(12) **United States Plant Patent**  
**Karniel et al.**

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(45) **Date of Patent:** **Nov. 8, 2011**

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

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

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(73) Assignee: **Agricultural Research and Development Limited Liability Company**, Edison, CA (US)

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

(21) Appl. No.: **12/660,704**

(22) Filed: **Mar. 2, 2010**

(65) **Prior Publication Data**

US 2011/0219498 P1 Sep. 8, 2011

(51) **Int. Cl.**  
**A01H 5/00** (2006.01)

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

(58) **Field of Classification Search** ..... Plt./205,  
Plt./207  
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.  
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(57) **ABSTRACT**

A new distinct variety of grapevine named ARRATEN abundantly forms attractive medium-to-large seedless berries having a 90% fire red skin coloration with 10% creamy yellow, in medium-to-large clusters. The fruit displays a sweet crisp flavor and is firm in texture. The fruit commonly is ready for harvesting during the end of June 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**

**1**

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

Variety denomination: The new Grapevine has the varietal denomination 'ARRATEN'.

**BACKGROUND OF THE INVENTION**

A breeding program was initiated during the late 90's near Bakersfield in San Joaquin Valley of Central California. In 2000, 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 GAR4 which is a dark red, elongated meaty grape variety with a very small seed trace and low sugar content (non-patented in the United States). The male parent (i.e. the pollen parent) of the new variety was GZR2 which is an oval shaped, meaty, juicy and sterile grape variety (non-patented in the United States).

**Comparison between ARRATEN and Crimson**

	ARRATEN	Crimso
Harvest time	Early	Late
Berry shape	Narrow Ellipsoid	Cylindrical
Fertility	Medium high	Medium low

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

GAR4×GZR2

**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.

<sup>5</sup> In 2001 the plant was then 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:

- <sup>10</sup> (a) Forms attractive medium-to-large seedless berries having a 90% fire red skin coloration with 10% creamy yellow; in medium-to-large clusters which display a slight Muscat flavor;
- <sup>15</sup> (b) Commonly bears fruit during the end 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.

<sup>20</sup> 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.

<sup>25</sup> The new variety of the present invention has been found to undergo asexual propagation beginning in 2004 near Bakersfield in the San Joaquin Valley of Central California, U.S.A. by grafting on mature 'Thompson Seedless' rootstock (non-patented in the United States). Such asexual propagation has been conducted thereafter in successive years through 2007, 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 in the drawings is five years old and the variety was created in 2000.

#### SUMMARY OF INVENTION

The new variety ARRATEN is a large, elongated, fire red, seedless table grape and is very weak at the attachment to the stem large production, e.g., about 40 to 50 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 'ARRATEN'.

#### 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*.—A medium to strong vine with upright, healthy looking canes which have a tendency to reach cane maturity before harvest.

*Productive capacity*.—Medium to good crop. An average of 20-25 tons per hectare.

*Trunk*.—Strong, developed for its age. Ranges from 2"-2<sup>3</sup>/<sub>8</sub>". Rough surface with a fibrous, shaggy exterior and has a color of greyed-orange (165-B).

##### Time of bud burst:

*Early*.—Date of bud burst in specified location of culture is Mar. 15, 2011 season in Arvin, Calif.

##### Young shoot:

*Openness of tip*.—Closed.

*Prostrate hairs on tip*.—Medium.

*Anthocyanin coloration of prostrate hairs on tip*.—Weak.

*Erect hairs on tip*.—Medium.

##### Young leaf:

*Color of upper side of blade*.—Yellow green (yellow green 152-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*.—Green and red (green 143-A; greyed red 178-B).

*Color of ventral side of internodes*.—Green and red (green 143-A; greyed red 178-B).

*Color of dorsal side of nodes*.—Yellow-green (153-B).

*Color of ventral side of nodes*.—Yellow-green (153-A).

*Erect hairs on internodes*.—Sparse.

*Length of tendrils*.—3 tendrils 22.5 cm each.

*Color of tendrils*.—Yellow-green (144-A).

##### Flower:

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

##### Mature leaf:

*Size of blade*.—Large (6"×7.5").

*Shape of blade*.—Circular.

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

*Number of lobes*.—Five.

*Color of lobes*.—Top (yellow green 147-A); bottom (yellow green 147-B).

*Depth of upper lateral sinuses*.—Shallow.

##### Lobed leaves:

*Arrangement of lobes of upper lateral sinuses*.—Open.

*Arrangement of lobes of petiole sinus*.—Wide open.

*Length of teeth*.—Medium, 3 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*.—Medium, 3 cm.

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

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

*Length of petiole equal compared to length of middle vein*.—Petiole length is 15.5 cm and main vein length is 15.5 cm.

*Texture*.—Rough.

*Petiole length*.—15.5 cm.

*Petiole color*.—Greyed-red (186-A).

*Petiole strips color*.—Yellow-green (144-B).

*Vein color*.—Yellow green (154-C).

*Vein color*.—Greyed-red (182-A).

##### Reproduction organs:

*Color*.—Yellow-green (144-B).

*Size*.—1 mm.

Time of beginning of ripening: Medium, July 6 Arvin, Calif. season.

##### Bunch:

*Size (peduncle excluded)*.—Large (8.5"×5.5").

*Average weight*.—796 g.

*Density*.—Lax, single berries, some pedicels visible.

*Length of peduncle primary bunch*.—Long (2.5").

##### Berry:

*Size*.—Medium, 20.6 mm.

*Weight*.—9 g.

*Shape*.—Narrow ellipsoid.

*Color of skin (without bloom)*.—Red (greyed purple 187-A).

*Ease of detachment from pedicel*.—Moderately easy.

*Thickness of skin*.—Thin.

*Anthocyanin coloration of flesh*.—Medium.

*Firmness and color of flesh*.—Moderately firm, yellow-orange (19-D).

*Particular flavor*.—None.

*Formation of seeds*.—None.

*Berries per bunch*.—100 berries.

*Market use of the observed plant*.—Fresh market.

##### Woody shoot:

*Main color*.—Yellowish brown (greyed 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.

M.icrosatellite DNA Marker	Allele Sizes in Base Pairs	
MSV01	152	152
MSV02	232	236
MSV04	179	193
MSV06	254	254
MSV07	318	318
MSV08	245	251
MSV09	247	251
MSV10	211	215
MSV12	236	246

-continued

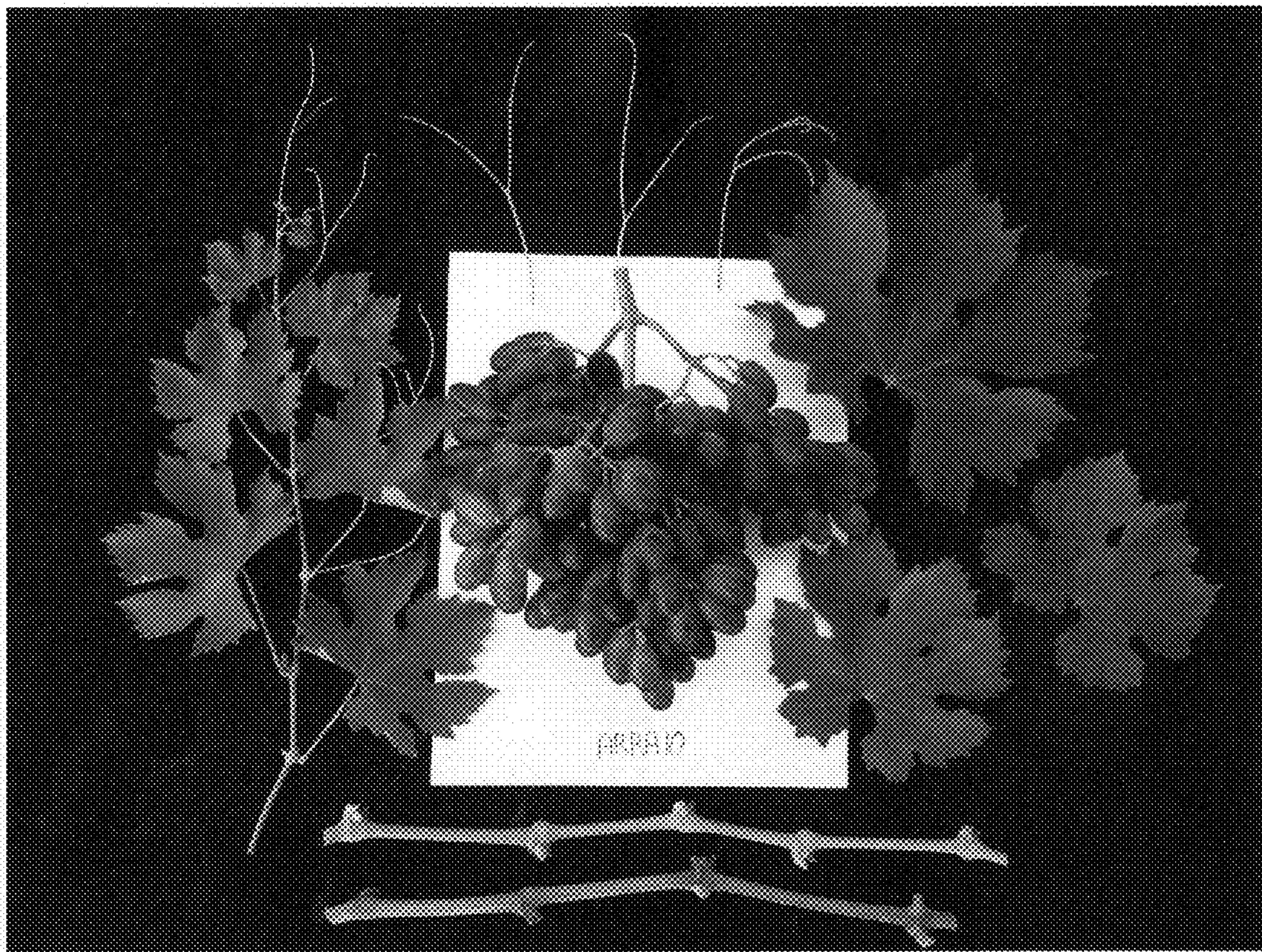
M.icrosatellite DNA Marker	Allele Sizes in Base Pairs	
MSV13	168	168
MSV14	152	180
MSV15	291	299
MSV16	188	194
MSV17	159	159

10 The ARRATEN 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 We claim:

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

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UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : PP22,229 P3  
APPLICATION NO. : 12/660704  
DATED : November 8, 2011  
INVENTOR(S) : Shachar Karniel et al.

Page 1 of 1

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

**PATENT**

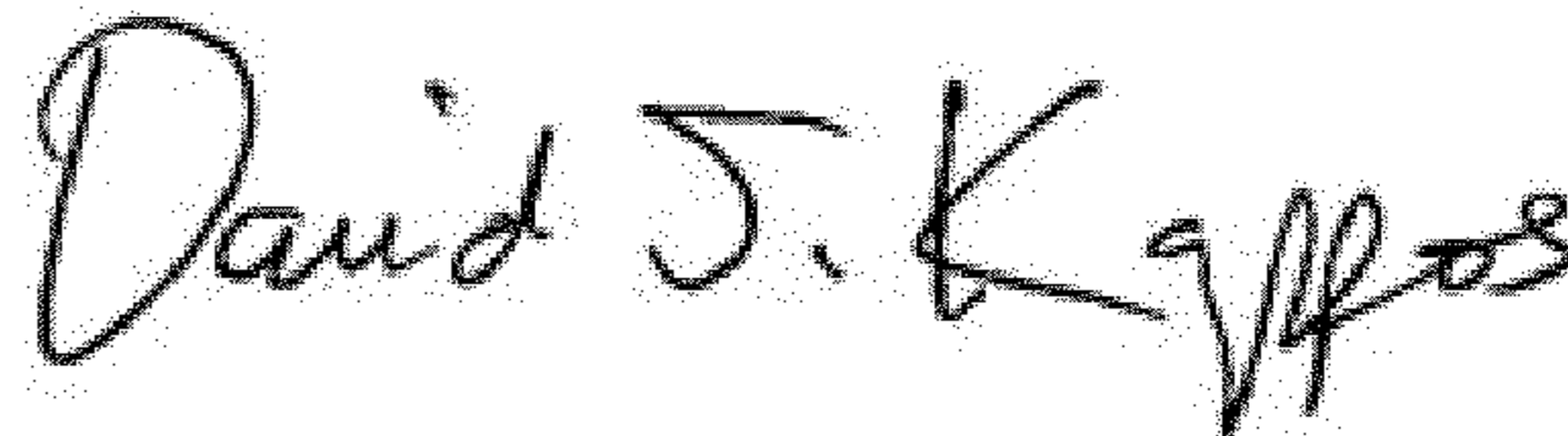
**ERROR**

**In the Claims**

Column 6, Claim 1, line 17.

Delete "viniftra,"  
Insert -- vinifera, --

Signed and Sealed this  
Twenty-ninth Day of May, 2012



David J. Kappos  
*Director of the United States Patent and Trademark Office*