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IN THE UNITED STATES DISTRICT COURT

FOR THE EASTERN DISTRICT OF CALIFORNIA

SUN WORLD INTERNATIONAL, LLC, a Delaware limited liability company, Plaintiff, v. HINES GROWERS, INC., a Delaware corporation, Defendant.	Civil Action No. **COMPLAINT FOR PATENT INFRINGEMENT AND BREACH OF CONTRACT**

NATURE OF THE ACTION

1. This is a civil action for patent infringement under federal law and breach of contract under California law.

THE PARTIES

2. Plaintiff SUN WORLD INTERNATIONAL, LLC ("Sun World") is a Delaware limited liability company having its principal place of business at ,5701 Truxtun Avenue, Suite 200, Bakersfield, California 93309.

3. Defendant HINES GROWERS, INC. ("Hines") is a Delaware corporation with its headquarters at 2575 Olive Hill Road, Fallbrook, California 92028. On information and belief, Hines maintains an 800 acre growing facility in Winters, California, in Yolo County.

JURISDICTION AND VENUE

4. This Complaint arises under the federal patent laws, 35 U.S.C. §§ 161, 163 and 271, and the law of the State of California.

5. This Court has subject matter jurisdiction over the federal claims pursuant to 28 U.S.C. §§ 1331 and 1338(a), and over the state claim pursuant to 28 U.S.C. § 1367(a).

6. This Court has personal jurisdiction over Hines in that Hines resides within the State of California, regularly transacts business within the State of California and this Judicial District, and Hines' acts described herein are directed toward the State of California and this Judicial District and have caused Sun World's injuries alleged herein.

7. Venue is proper in this Judicial District pursuant to 28 U.S.C. §§ 1391(b) and (c) and 1400(b) as a substantial portion of the events herein took place in this Judicial District and because Hines is a resident of this Judicial District insofar as it is subject to this Court's personal jurisdiction with respect to this action.

FACTUAL BACKGROUND

8. Sun World is an agricultural company headquartered in Bakersfield, California, engaged in developing, growing, marketing and licensing others to produce high quality, proprietary fruit products, including apricot, nectarine, peach, plum and table grape varieties.

9. Sun World protects its intellectual property rights in its products in a variety of ways, including by seeking and obtaining patent protection. Among the patents that Sun World solely owns are U.S. Patent No. PP11,631, entitled "Peach Tree Named 'Supechsix'"; U.S. Patent No. PP13,142, entitled "Peach Tree Named 'Supechthirteen'"; U.S. Patent No. PP19,064, entitled "Plum Tree Named 'Suplumthirtyone'"; U.S. Patent No. PP15,897, entitled "Plum Tree Named 'Suplumthirtyfive'"; U.S. Patent No. PP15,999, entitled "Apricot Tree Named 'Suapriten'"; U.S. Patent No. PP13,444, entitled "Grapevine CV. 'Sugratwentyone'"; U.S. Patent No. PP13,164, entitled "Grapevine CV. 'Sugratwentythree'"; U.S. Patent No. PP16,177,

entitled "Grapevine Named 'Sugratwentyfour'"; and U.S. Patent No. PP19,065, entitled "Grapevine Plant Named 'Sugrathirtyone'" (collectively, "the Sun World Patents").

10. In April 2013, Sun World entered a Proprietary Plant Distribution License Agreement ("the Agreement") with Hines under which Hines was authorized to propagate and distribute plants protected by the Sun World Patents. Attached hereto as Exhibit 1 is a true and correct copy of the Agreement between Sun World and Hines.

11. Sun World provided to Hines plant material for the Sugratwentyone, Sugratwentythree, Sugratwentyfour, and Sugrathirtyone varieties for propagation and distribution pursuant to the Agreement.

12. At Hines' instructions, plant material for at least the Supechsix, Suplumthirtyfive, and Suapriten was provided to Sierra Gold Nurseries of Yuba City, California for propagation, but Hines did not obtain an executed Propagation Sub-License from Hines as required by Article 5.2 of the Agreement.

13. Hines breached the Agreement for at least the reasons that it failed to pay the license fee required by Article 4.1, failed to obtain an executed Propagation Sub-License as required by Article 5.2, and failed to cooperate reasonably with Sun World pursuant to Article 7.4(c).

14. On August 15, 2013, Sun World provided written notice to Hines that Hines was in breach of the Agreement. Sun World requested that Hines remedy these breaches within twenty days, and that failure to do so would result in automatic termination of the Agreement.

15. On September 24, 2013, Sun World provided written notice to Hines that the Agreement was terminated and demanded the return of the plant material protected by the Sun World Patents.

16. Hines has not responded to Sun World's notifications or requests. Further, Hines has not provided the report nor the notification required by Article 7.5(b)-(c) of the Agreement upon termination.

17. On information and belief, after the termination of the Agreement, Hines has taken delivery from Sierra Gold Nurseries and used numerous plants that are protected by the Sun World Patents, including at least the Supechsix, Suplumthirtyfive, and Suapriten.

18. On further information and belief, after the termination of the Agreement, Hines has conducted in-house propagation and used other plants protected by the Sun World Patents, including at least the Sugratwentyone, Sugratwentythree, Sugratwentyfour, and Sugrathirtyone.

FIRST CLAIM FOR RELIEF

(Infringement of U.S. Patent No. PP11,631)

19. Plaintiff Sun World incorporates by reference and realleges each of the allegations set forth in Paragraphs 1-18 above.

20. This is a claim for patent infringement under 35 U.S.C. §§ 161, 163 and 271.

21. Sun World is the sole owner of U.S. Patent Nos. PP11,631, entitled "Peach Tree Named 'Supechsix'" ("the Supechsix patent"). Attached hereto as Exhibit 2 is a true and correct copy of the Supechsix patent.

22. Hines has infringed and is infringing the Supechsix patent by making, using, selling and/or offering to sell plants that are asexual reproductions of the patented Supechsix plant material within the United States during the term of the Supechsix patent without authority to do so.

23. Hines' infringement of the Supechsix patent has damaged Sun World in an amount to be proven at trial.

24. Hines' infringement has been willful and with full knowledge of the Supechsix patent.

25. Hines' infringement of the Supechsix patent will continue unless enjoined by this Court. Hines' infringement of the Supechsix patent is irreparably harming Sun World. Unless Hines is enjoined from infringing the Supechsix patent, Sun World will continue to suffer irreparable injury for which it has no adequate remedy at law.

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SECOND CLAIM FOR RELIEF

(Infringement of U.S. Patent No. PP15,897)

26. Plaintiff Sun World incorporates by reference and realleges each of the allegations set forth in Paragraphs 1-25 above.

27. This is a claim for patent infringement under 35 U.S.C. §§ 161, 163 and 271.

28. Sun World is the sole owner of U.S. Patent No. PP15,897, entitled "Plum Tree Named 'Suplumthirtyfive'" ("the Suplumthirtyfive patent"). Attached hereto as Exhibit 3 is a true and correct copy of the Suplumthirtyfive patent.

29. Hines has infringed and is infringing the Suplumthirtyfive patent by making, using, selling and/or offering to sell plants that are asexual reproductions of the patented Suplumthirtyfive plant material within the United States during the term of the Suplumthirtyfive patent without authority to do so.

30. Hines' infringement of the Suplumthirtyfive patent has damaged Sun World in an amount to be proven at trial.

31. Hines' infringement has been willful and with full knowledge of the Suplumthirtyfive patent.

32. Hines' infringement of the Suplumthirtyfive patent will continue unless enjoined by this Court. Hines' infringement of the Suplumthirtyfive patent is irreparably harming Sun World. Unless Hines is enjoined from infringing the Suplumthirtyfive patent, Sun World will continue to suffer irreparable injury for which it has no adequate remedy at law.

THIRD CLAIM FOR RELIEF

(Infringement of U.S. Patent No. PP15,999)

33. Plaintiff Sun World incorporates by reference and realleges each of the allegations set forth in Paragraphs 1-32 above.

34. This is a claim for patent infringement under 35 U.S.C. §§ 161, 163 and 271.

35. Sun World is the sole owner of U.S. Patent No. PP15,999, entitled "Apricot Tree Named 'Suapriten'" ("the Suapriten patent"). Attached hereto as Exhibit 4 is a true and correct copy of the Suapriten patent.

36. Hines has infringed and is infringing the Suapriten patent by making, using, selling and/or offering to sell plants that are asexual reproductions of the patented Suapriten plant material within the United States during the term of the Suapriten patent without authority to do so.

37. Hines' infringement of the Suapriten patent has damaged Sun World in an amount to be proven at trial.

38. Hines' infringement has been willful and with full knowledge of the Suapriten patent.

39. Hines' infringement of the Suapriten patent will continue unless enjoined by this Court. Hines' infringement of the Suapriten patent is irreparably harming Sun World. Unless Hines is enjoined from infringing the Suapriten patent, Sun World will continue to suffer irreparable injury for which it has no adequate remedy at law.

FOURTH CLAIM FOR RELIEF

(Infringement of U.S. Patent No. PP13,444)

40. Plaintiff Sun World incorporates by reference and realleges each of the allegations set forth in Paragraphs 1-39 above.

41. This is a claim for patent infringement under 35 U.S.C. §§ 161, 163 and 271.

42. Sun World is the sole owner of U.S. Patent No. PP13,444, entitled "Grapevine CV. 'Sugratwentyone'" ("the Sugratwentyone patent"). Attached hereto as Exhibit 5 is a true and correct copy of the Sugratwentyone patent.

43. Hines has infringed and is infringing the Sugratwentyone patent by making, using, selling and/or offering to sell plants that are asexual reproductions of the patented Sugratwentyone plant material within the United States during the term of the Sugratwentyone patent without authority to do so.

44. Hines' infringement of the Sugratwentyone patent has damaged Sun World in an amount to be proven at trial.

45. Hines' infringement has been willful and with full knowledge of the Sugratwentyone patent.

46. Hines' infringement of the Sugratwentyone patent will continue unless enjoined by this Court. Hines' infringement of the Sugratwentyone patent is irreparably harming Sun World. Unless Hines is enjoined from infringing the Sugratwentyone patent, Sun World will continue to suffer irreparable injury for which it has no adequate remedy at law.

FIFTH CLAIM FOR RELIEF

(Infringement of U.S. Patent No. PP13,164)

47. Plaintiff Sun World incorporates by reference and realleges each of the allegations set forth in Paragraphs 1-46 above.

48. This is a claim for patent infringement under 35 U.S.C. §§ 161, 163 and 271.

49. Sun World is the sole owner of U.S. Patent No. PP13,164, entitled "Grapevine CV. 'Sugratwentythree'" ("the Sugratwentythree patent"). Attached hereto as Exhibit 6 is a true and correct copy of the Sugratwentythree patent.

50. Hines has infringed and is infringing the Sugratwentythree patent by making, using, selling and/or offering to sell plants that are asexual reproductions of the patented Sugratwentythree plant material within the United States during the term of the Sugratwentythree patent without authority to do so.

51. Hines' infringement of the Sugratwentythree patent has damaged Sun World in an amount to be proven at trial.

52. Hines' infringement has been willful and with full knowledge of the Sugratwentythree patent.

53. Hines' infringement of the Sugratwentythree patent will continue unless enjoined by this Court. Hines' infringement of the Sugratwentythree patent is irreparably harming Sun World. Unless Hines is enjoined from infringing the Sugratwentythree patent, Sun World will continue to suffer irreparable injury for which it has no adequate remedy at law.

SIXTH CLAIM FOR RELIEF

(Infringement of U.S. Patent No. PP16,177)

54. Plaintiff Sun World incorporates by reference and realleges each of the allegations set forth in Paragraphs 1-53 above.

55. This is a claim for patent infringement under 35 U.S.C. §§ 161, 163 and 271.

56. Sun World is the sole owner of U.S. Patent No. PP16,177, entitled "Grapevine Named 'Sugratwentyfour'" ("the Sugratwentyfour patent"). Attached hereto as Exhibit 7 is a true and correct copy of the Sugratwentyfour patent.

57. Hines has infringed and is infringing the Sugratwentyfour patent by making, using, selling and/or offering to sell plants that are asexual reproductions of the patented Sugratwentyfour plant material within the United States during the term of the Sugratwentyfour patent without authority to do so.

58. Hines' infringement of the Sugratwentyfour patent has damaged Sun World in an amount to be proven at trial.

59. Hines' infringement has been willful and with full knowledge of the Sugratwentyfour patent.

60. Hines' infringement of the Sugratwentyfour patent will continue unless enjoined by this Court. Hines' infringement of the Sugratwentyfour patent is irreparably harming Sun World. Unless Hines is enjoined from infringing the Sugratwentyfour patent, Sun World will continue to suffer irreparable injury for which it has no adequate remedy at law.

SEVENTH CLAIM FOR RELIEF

(Infringement of U.S. Patent No. PP19,065)

61. Plaintiff Sun World incorporates by reference and realleges each of the allegations set forth in Paragraphs 1-60 above.

62. This is a claim for patent infringement under 35 U.S.C. §§ 161, 163 and 271.

63. Sun World is the sole owner of U.S. Patent No. PP19,065, entitled "Grapevine Plant Named 'Sugrathirtyone'" ("the Sugrathirtyone patent"). Attached hereto as Exhibit 8 is a true and correct copy of the Sugrathirtyone patent.

64. Hines has infringed and is infringing the Sugrathirtyone patent by making, using, selling and/or offering to sell plants that are asexual reproductions of the patented Sugrathirtyone plant material within the United States during the term of the Sugrathirtyone patent without authority to do so.

65. Hines' infringement of the Sugrathirtyone patent has damaged Sun World in an amount to be proven at trial.

66. Hines' infringement has been willful and with full knowledge of the Sugrathirtyone patent.

67. Hines' infringement of the Sugrathirtyone patent will continue unless enjoined by this Court. Hines' infringement of the Sugrathirtyone patent is irreparably harming Sun World. Unless Hines is enjoined from infringing the Sugrathirtyone patent, Sun World will continue to suffer irreparable injury for which it has no adequate remedy at law.

EIGHTH CLAIM FOR RELIEF

(Breach of Contract)

68. Plaintiff Sun World incorporates by reference and realleges each of the allegations set forth in Paragraphs 1-67 above.

69. This is a claim for breach of contract under the law of the State of California.

70. Hines entered into a Proprietary Plant Distribution License Agreement with Sun World.

71. Article 7.18 of the Agreement provides that "[t]his Agreement shall be deemed to have been entered into and shall be construed in accordance with the laws of the State of California."

72. Sun World has performed all conditions, covenants, and promises it was required to perform under the Agreement.

73. Hines breached the Agreement by failing to pay the license fee, failing to obtain an executed Propagation Sub-License, failing to cooperate reasonably with Sun World, failing to return the plant material on request, and failing to provide the reports and notifications required upon termination of the Agreement.

74. Hines' breach has damaged Sun World in an amount to be proven at trial.

75. Hines' breach of the Agreement is irreparably harming Sun World. Sun World will continue to suffer irreparable injury for which it has no adequate remedy at law unless Hines is enjoined from propagating, using, selling, or distributing the plants that were the

subject of the Agreement, and ordered to provide the report required by Article 7.5(b), the notifications required by Article 7.5(c), and the removal and return to Sun World of all Sun World plant material at Hines' sole cost and expense as provided in Article 7.5.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff Sun World prays for judgment and seeks relief as follows:

A. A judgment that Hines has infringed the Supechsix, Suplumthirtyfive, Suapriten, Sugratwentyone, Sugratwentythree, Sugratwentyfour, and Sugrathirtyone patents;

B. Preliminary and permanent injunctions against further infringement of the Supechsix, Suplumthirtyfive, Suapriten, Sugratwentyone, Sugratwentythree, Sugratwentyfour, and Sugrathirtyone patents;

C. An award of damages for Hines' infringement of the Supechsix, Suplumthirtyfive, Suapriten, Sugratwentyone, Sugratwentythree, Sugratwentyfour, and Sugrathirtyone patents;

D. An order adjudging that Hines' infringement of the Supechsix, Suplumthirtyfive, Suapriten, Sugratwentyone, Sugratwentythree, Sugratwentyfour, and Sugrathirtyone patents has been willful and declaring this to be an exceptional case;

E. A trebling of the award of damages under 35 U.S.C. § 284, or such other enhancement of the award of damages that the Court deems appropriate;

F. An award of attorneys' fees and non-taxable costs under 35 U.S.C. § 285;

G. A judgment that Hines has breached its Proprietary Plant Distribution License Agreement with Sun World;

H. An award of damages for Hines' breach of the Proprietary Plant Distribution License Agreement;

I. Preliminary and permanent injunctions pursuant to Article 7.5 of the Proprietary Plant Distribution License Agreement preventing unauthorized propagation, use, sale, or distribution of plants protected by the Sun World patents and orders of specific performance compelling Hines to provide the report required by Article 7.5(b), the notifications required by

Article 7.5(c), and the removal and return to Sun World of all Sun World plant material at Hines' sole cost and expense as provided in Article 7.5;

J. An award of attorneys' fees pursuant to Article 7.9 of the Proprietary Plant Distribution License Agreement;

K. An award of taxable costs; and

L. Such other and further relief as this Court may deem just and proper.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: November 5, 2013

By: /s/ Paul A. Stewart
Paul A. Stewart

Attorneys for Plaintiff SUN WORLD INTERNATIONAL, LLC

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PROPRIETARY PLANT DISTRIBUTION LICENSE AGREEMENT

This **PROPRIETARY PLANT DISTRIBUTION LICENSE AGREEMENT** (the "Agreement") is made and effective this 3rd day of April, 2013 by and between SUN WORLD INTERNATIONAL, LLC., a Delaware limited liability company with its main offices located at 16350 Driver Road, Bakersfield, Ca 93308 ("USA"), hereinafter referred to "SUN WORLD" and HINES GROWERS, INC., a Wholesale Plant Grower with its main offices located at 2575 Olive Hill Rd., Fallbrook, CA 92028, hereinafter referred to as "HINES".

RECITALS:

WHEREAS, SUN WORLD is engaged, among other things, in the business of breeding, developing, commercializing, and protecting proprietary apricot, nectarine, peach, plum and grape cultivars and in the growing and marketing of high quality, exclusive and proprietary fruit and agricultural products;

WHEREAS, HINES is in the business of providing commercial propagation and plant material supply services to various retail outlets ("Retailers") in the United States, and many of the stonefruit trees and grapevines propagated, grown and distributed by HINES, are of the same botanical species as the Sun World Varieties. Hines has the staff, facilities, specifications and space, customer base and knowledge to perform such services contemplated in this Agreement;

WHEREAS, SUN WORLD is the sole exclusive owner of all proprietary and intellectual property rights (including but not limited to confidential information) in and to certain apricot, nectarine, peach and plum (Prunus species) (hereinafter referred to as the "Sun World Prunus Cultivar(s)") and table grape (Vitis vinifera) cultivars (hereinafter referred to as the "Sun World Vitis Cultivar(s)") (jointly and collectively referred to as the "Sun World Cultivar or Sun World Cultivars") and as such claims the exclusive right to control and regulate the disclosure, test growing, evaluation, reproduction, growing, and distribution of such;

WHEREAS, HINES acknowledges that prior legal access to the Sun World Cultivars has been limited to selected growing agents and affiliates of SUN WORLD who have entered into confidential, contractual arrangements with SUN WORLD;

WHEREAS, the genetic nature of Sun World Cultivars is such that propagation of a Sun World Cultivar cannot practically be accomplished from the seed or fruit of the plants and can lawfully be accomplished only by asexual propagation using living plant tissue of a Sun World Cultivar itself, obtained from SUN WORLD with its consent or permission;

WHEREAS, HINES desires to enter into a limited, non-transferable and non assignable propagation and distribution agreement with SUN WORLD in order to commercially propagate and distribute certain Sun World Cultivars to various Retailers under specific terms and conditions set

forth herein;

NOW THEREFORE, for and in consideration of the covenants, conditions, and grants hereinafter granted by SUN WORLD, and other good and valuable consideration, the receipt and sufficiency thereof being hereby acknowledged by HINES, and incorporating by this reference the foregoing recitals, the parties hereto agree as follows:

ARTICLE 1

DEFINITIONS

"Sun World Prunus Cultivar or Sun World Prunus Cultivars" - Any buds, scions, tissues, plants, propagating materials, sports, stocks, mutants and progeny that are comprised of the apricot, nectarine, peach and plum varieties (Prunus species) (including but not limited to other progeny) that are bred, developed and owned by SUN WORLD (or its predecessor) and further described in Annex "A" attached hereto.

"Sun World Vitis Cultivar or Sun World Vitis Cultivars" - Any buds, scions, tissues, plants, propagating materials, sports, stocks, mutants and progeny that are comprised of the table grape varieties (Vitis vinifera) (including but not limited to other progeny) that are bred, developed and owned by SUN WORLD (or its predecessor) and described in Annex "A" attached hereto..

"Sun World Cultivar or Sun World Cultivars" - collectively refers to the Sun World Prunus Cultivar(s) and Sun World Vitis Cultivar(s).

"Propagating Material" - living plant tissue (including whole plants) that can be used to asexually propagate a Sun World Cultivar and the Plants.

"Intellectual Property Rights" - Applications and issued Grants of Patents, Utility Models, Breeder's Rights Certificates and other statutory patent-like protection mechanisms that have been obtained or may be obtained with respect to the Sun World Cultivars, their plants or their respective materials that are subject to this Agreement.

"the Plant(s)" - The actual individual plant or plants of the Sun World Cultivar, including any buds, scions, tissues, plants, mutants, sports, stocks and progeny that comprise the Sun World Cultivar and any subsequent asexual propagating materials arising from the growth or culture of the tree (e.g., prunings) and that have been or will be placed in the custody of a Retailer.

"Retailers " – Those Hines clients who commercially market live plant materials for the purpose of home improvement in the United States.

"Contracted Nursery" - A commercial nursery in the United States who has met the qualifications outlined in Annex "D" and has executed a propagation sub-license agreement described in Annex "C" with HINES and has been countersigned by SUN WORLD.

"Production Territory" – means 'United States'.

ARTICLE 2

SUN WORLD PRIMARY DUTIES

2.1 Primary Duties of SUN WORLD. SUN WORLD agrees that its primary duties shall consist of the following: (a) to provide HINES or its Contracted Nursery with suitable budwood or propagating material necessary to provide the services identified in this Agreement (b) to disclose certain applicable records to selected *Sun World Cultivars*; (c) to pay all fees for maintaining SUN WORLD's proprietary property rights and when applicable its Intellectual Property Rights; SUN WORLD warrants and represents that its primary duties will be performed according to the terms and conditions as hereinafter set forth in this Agreement.

ARTICLE 3

GRANT AND HINES PRIMARY DUTIES

3.1 Grant. SUN WORLD grants to HINES and through HINES to the Contracted Nurseries, authorization to provide non-exclusive commercial propagation and nursery services for the Sun World Cultivars identified in Annex "A" attached hereto. Such authorizations will include the right, subject to the parameters of this Agreement, to exclusively distribute the Sun World Cultivars in the Production Territory to the Retailers identified in Annex "B" attached hereto.

3.2 Primary Duties of HINES. HINES agrees its primary duties to be performed shall consist of the following: (a) to perform and/or direct Contracted Nurseries to perform, according to this Agreement, asexual propagation of selected Sun World Cultivars as described in Article 5; (b) to grow, produce and distribute or direct Contracted Nurseries to grow, produce and distribute the Sun World Cultivars identified in Annex "A" to the Retailers identified in Annex "B"; (c) to provide SUN WORLD with an annual report of all propagation and plant material distribution activity in the format of Exhibit X; (d) to collect and remit propagation fees, as hereinafter defined, for the benefit of SUN WORLD; and (e) to perform all other activities, or provide assistance and/or cause the Contracted Nurseries under its direction to perform all other activities, which are necessary or desirable in order to commercially propagate and distribute the Sun World Cultivars as provided in this Agreement. HINES warrants and represents that its primary duties will be performed according to the terms and conditions as hereinafter set forth in this Agreement.

ARTICLE 4

LICENSE FEE

4.1 License Fee. In consideration of SUN WORLD granting its authorization to HINES pursuant to Article 3.1, HINES agrees to pay to SUN WORLD a one-time "License Fee" of Twenty Five

Thousand and 00/100 Dollars (US$25,000.00) payable upon execution of this Agreement. HINES acknowledges that no portion of the License Fee shall be refunded to HINES by SUN WORLD if this Agreement is terminated for any reason.

ARTICLE 5

COMMERCIAL PROPAGATION AND NURSERY SERVICES

5.1 Scope and Grant. In consideration of the mutual covenants and conditions set forth in herein, SUN WORLD grants to HINES authorization to commercially propagate certain Sun World Cultivars as identified on Annex "A" (and any Sun World Cultivars added thereto) on the appropriate rootstock and to produce and distribute the Sun World Cultivars to the Retailers as identified on Annex "B" under the terms and conditions of this Agreement.

5.2 Commercial Propagation of the Sun World Cultivars. Incorporating the covenants and limitations contained in Article 5, and any limitations and restrictions reasonably inserted by SUN WORLD during the duration of this Agreement, HINES is hereby authorized by SUN WORLD to provide commercial propagation services for the Cultivars listed on Annex "A" (and any Cultivars added thereto):

(a) All propagation, planting, and growing (including but not limited to the burning, shredding or destruction of canes during pruning), pursuant to this Agreement shall be done and conducted solely at HINES's nursery described on Annex "E", or at the nursery facilities of Contracted Nurseries that have executed a Propagation Sub-License agreement in Annex "D" (such facilities and real property shall be referred to as the "Propagation Sites"). HINES agrees to provide SUN WORLD upon request and where practicable with plot maps of each of the Propagation Sites.

(b) HINES will deliver to Contracted Nurseries (when applicable and pursuant to this Agreement) bundles of Propagating Material in preparation for performing the service of propagating, planting and growing the Sun World Cultivars under the direction of HINES.

(c) HINES, or the Contracted Nurseries under HINES's direction, will perform all propagation and nursery services for Sun World Cultivars. HINES acknowledges that the type, quantity and distribution of the Sun World Cultivars propagated and distributed will be performed by HINES. HINES acknowledges that there are restrictions and limitations on the quantity of Sun World Cultivars that are authorized by SUN WORLD to be reproduced. Any propagation, growing or distribution of Sun World Cultivars without SUN WORLD's authorization will be considered a material default and SUN WORLD shall reserve the right to terminate the Agreement pursuant to Article 7.3.

(d) HINES, or the Contracted Nurseries under HINES's direction, shall asexually propagate the Sun World Cultivars on the appropriate rootstock that have been deemed compatible for such species. (Once the propagation of the selected Sun World Cultivar has been performed,

and the Sun World Cultivars are ready for distribution pursuant to Article 5.3, such Sun World Cultivar(s) shall be referred to as the "Plants").

(e) HINES, or the Contracted Nurseries under HINES's direction, shall produce commercially viable Plants that comply with applicable specifications subscribed by any law or agency applicable to such propagation or nursery activities and further agrees to monitor such activities with due diligence.

5.3 Distribution of Plants. HINES is authorized by SUN WORLD to distribute or cause the distribution through the Contracted Nurseries of the Plants to the Retailers identified in Annex "B" subject to the limitations and restrictions, provided from time to time by SUN WORLD, under the following terms and conditions:

(a) HINES shall not distribute buds or Propagation Material of the Sun World Cultivars to the Retailers for grafting or top-working trees and vines and such authorization by SUN WORLD is strictly withheld from this Agreement unless otherwise approved in writing by SUN WORLD.

(b) Unless otherwise agreed to in advance and in writing, HINES shall be responsible for collecting and remitting a one-time per Unit fee (the "Propagation Fee") in an amount prescribed by SUN WORLD and indicated in Annex "A" attached hereto (with the Sun World Varieties and quantities amended from time to time).

(c) The Propagation Fees will be due and payable to SUN WORLD by HINES on or before January 1st of each year during the duration of this Agreement and remitting to SUN WORLD the entire balance due of the Propagation Fees for the previous year. Along with HINES's payment of Propagation Fees to SUN WORLD, HINES agrees to provide SUN WORLD with a written report in the form of Exhibit "X" showing the quantities of all Plants that were distributed by HINES and the Contracted Nurseries.

(d) HINES warrants that HINES and the Contracted Nurseries will distribute all Plants labeled according to California and/or United States law, specifically to the rules that govern lease agreements.

(e) HINES agrees to identify, label and use on any written documents the cultivar name for the Plants as listed in Annex "A" of this Agreement, and any other patent notification language as required, as amended from time to time.

*****sample*****

Supechsix is the exclusive intellectual property and trade secret of Sun World International, LLC and is protected under United States Plant Patent PP11,631. Asexual reproduction of the patented plants without license is strictly prohibited.

Exhibit 1

(f) Annually or as otherwise determined by the parties, representatives from SUN WORLD and HINES shall meet and/or discuss all operations under this Agreement. Such meetings or discussions shall include, but not be limited to, market and quality conditions, performance projections, distribution of the Plants, potential Retailers, anticipated market demands and any circumstances affecting operations hereunder. Any agreements made on required courses of action shall be documented in writing.

(g) HINES shall prepare and keep full, complete and proper records of all Units of Sun World Cultivars propagated and Plants distributed during the term of this Agreement. SUN WORLD shall retain the right at all times, with a prior fourteen (14) day written notice to HINES, during the term of this Agreement to audit or appoint a designated agent to audit the above written statements delivered by HINES and its supporting records and data; provided, however, that SUN WORLD shall cause any such audit for a given season to commence within three (3) years following delivery of such written statements to SUN WORLD. If the audit discloses an understatement of Units causing an underpayment of Propagation Fees due SUN WORLD, HINES shall immediately pay to SUN WORLD the additional Propagation Fees found to be due, if any. If SUN WORLD's audit discloses a total underpayment of Propagation Fees for any season so audited which is less of ten percent (10%), HINES shall pay for the reasonable costs and expenses of SUN WORLD's audit. If the audit discloses that the Propagation Fees have been overpaid by HINES, the excess shall be credited and applied to any amounts then due SUN WORLD by HINES, if any, and the balance shall immediately be refunded to HINES unless HINES desires to receive credit from SUN WORLD in the proceeding year.

ARTICLE 6

SUN WORLD OWNERSHIP RIGHTS AND PROPAGATION RESTRICTIONS

6.1 Scope. HINES recognizes and expressly acknowledges the following facts: (a) SUN WORLD is the owner of certain temporary intangible intellectual property relating to certain Sun World Cultivars that are the subject of this Agreement; (b) nothing in this Agreement is intended in any way to transfer any ownership of intellectual property rights over plants or offspring of the Sun World Cultivars; (c) intellectual property protection of the Sun World Cultivars is a convenience to both parties, but is not the basis of this Agreement; this Agreement is based on the value of the plants of the Sun World Cultivars. To the extent that this Agreement recites a license under any plant patents or plant variety rights, such a license is incidental to the central purpose of this Agreement; and (d) it is not possible legitimately to propagate or possess any of the Sun World Cultivars without authorized and express permission from SUN WORLD.

6.2 Intellectual Property Rights Maintenance.

(a) HINES agrees it will cooperate with SUN WORLD, SUN WORLD's agents and attorneys and any governmental agency in making reports and inspections with respect to the Sun World

Cultivars and with respect to defending and maintaining any Intellectual Property Rights, where they exist, in force and effect. Unless otherwise agreed between the parties, SUN WORLD shall be responsible for all costs incurred at SUN WORLD's request pursuant to this Article.

(b) When essential for purposes of governmental indexing and/or obtaining patents or plant breeders' rights or of all protective rights thereon, appropriate governmental authorities or SUN WORLD, SUN WORLD's representatives or agents, shall be permitted by HINES and/or the Contracted Nurseries with reasonable notice to enter the real property to inspect the Sun World Cultivars.

(c) HINES agrees it will cooperate with SUN WORLD, SUN WORLD's attorneys and any governmental agency in making reports and inspections with respect to defending and maintaining its Intellectual Property Rights in force and effect, including but not limited to the recordation of any documents deemed necessary by SUN WORLD in order to show ownership of the Sun World Cultivars. HINES agrees it will not to raise or cause to be raised any questions concerning, or objections to the validity of, SUN WORLD's proprietary property rights, including its Intellectual Property Rights, on any grounds whatsoever, or to take any actions that in any way impair SUN WORLD's rights. HINES acknowledges failure to comply with the provisions of this Article 6.2(c) will be considered a material default and SUN WORLD shall reserve the right to terminate the Agreement pursuant to Article 7.3.

6.3 Propagation Covenants and Restrictions of HINES: HINES does hereby covenant and agree to the following:

(a) All buds, scions, sports, mutants, tissues, plants or other stocks, including but not limited to any progeny, that comprise the Sun World Cultivars and Plants shall remain the sole and absolute proprietary property of SUN WORLD. HINES agrees all Sun World Cultivars shall be held by HINES in trust and for the benefit of SUN WORLD and are to be used by HINES solely for the purposes stated herein. HINES shall at all times be considered as the custodian of the Sun World Cultivars in respect of all plants being propagated and grown by HINES under the provisions of this Agreement but shall not be a custodian for any other purpose unless otherwise provided in this Agreement.

(b) HINES agrees to permit SUN WORLD or its authorized agents to inspect at all times, during normal business hours, the location where the Sun World Cultivars are located.

(c) HINES agrees that any sites where the Sun World Cultivars are located, including but not limited to Propagation Sites, will be reasonably protected against theft and will be secure from misappropriation by third parties.

(d) HINES will perform and monitor the quality of all propagation activity and agree that such activity will be performed in the most favorable conditions and that the Sun World Cultivars will remain in the best possible condition at all times. HINES, shall produce, or cause to be produced, commercially viable Sun World Cultivars that comply with applicable specifications subscribed by any

law or agency applicable to such propagation or nursery activities.

(e) HINES expressly agrees that it shall not propagate or reproduce the Sun World Cultivars, or to use any part thereof for asexual propagation, propagation or hybridizing purposes or any part thereof for germplasm source or parental stock for the breeding, creation, or development of different fruit varieties, without specific written license from SUN WORLD to do so in each and every instance. HINES shall use its best efforts to prohibit third parties from engaging in any activity prohibited by this Agreement, but shall not be held responsible for infringement activities of third parties which takes place through no fault of HINES.

(f) HINES shall not ship, transport, sell, donate or otherwise transfer or assign any of the Sun World Cultivars or any part thereof to any other person or persons, for any purpose whatsoever except where specifically authorized to do so in this Agreement.

(g) Any mutants, sport or sports discovered by HINES, its employees or agents on the Sun World Cultivars covered by this Agreement shall be reported immediately to SUN WORLD and shall be the exclusive personal property of SUN WORLD. Any sport or sports or mutations derived from the Sun World Cultivars shall be considered as an improvement or new use of the licensed technology of the Sun World Cultivars and shall remain the sole exclusive personal property of SUN WORLD. HINES acknowledges they must receive written permission of SUN WORLD to propagate or grow such personal property owned by SUN WORLD.

(h) HINES, its employees, representatives and agents agree to execute all documents, including any filings or recordation's of such documents, to perfect and evidence SUN WORLD's unrestricted world-wide ownership of the mutants, sport or sports (including applications for patent or breeder's plant variety protection or other protective rights thereto) and to testify, in any proceeding involving such rights if requested by SUN WORLD to do so.

(i) HINES agrees that without the specific written permission of SUN WORLD it will not describe for publication any plant, plant parts or any mutations from such plant covered by this Agreement. It is not the intent of this provision to restrict HINES from the promotion and distribution of the Sun World Cultivars, but to restrict any publication of scientific and confidential information regarding the Sun World Cultivars that could compromise and/or jeopardize their proprietary nature.

(j) HINES agrees that it will not use on other plants, or plant products, any trademark, trade names or varietal names or terms confusingly similar thereto used by SUN WORLD to designate the Plants hereunder and shall identify the Sun World Cultivars according to Annex "A", as amended from time to time.

6.4 Infringement Notification.

(a) HINES agrees to notify SUN WORLD promptly of any known propagation, sale or use of the Sun World Cultivars and Plants by Retailers, nurseries or persons not duly authorized to

propagate, use or distribute the Sun World Cultivars and Plants. Notification of such infringement shall include all details known to HINES, such as name and address of the alleged infringer, location, size of plantings, or any other information that would enable SUN WORLD to investigate and determine or evaluate such infringement. SUN WORLD has the exclusive right to control and bring any legal action against any infringer. In any event, HINES agrees to provide assistance and cooperation as deemed necessary by SUN WORLD, in any legal action contemplated or initiated by SUN WORLD against any infringer. Unless otherwise agreed between the parties, SUN WORLD shall be responsible for all costs incurred at SUN WORLD's request pursuant to this Article. HINES shall have an affirmative duty to provide SUN WORLD with documentation of costs incurred pursuant to this Article.

(b) HINES agrees that it shall not, whether by themselves, its servants, agents or otherwise howsoever, raise or cause to be raised any questions concerning, or objections to the validity or existence of SUN WORLD's or its related companies' proprietary property rights to any Sun World Cultivars and Plants on any ground whatsoever or to take any actions that in any way impair the validity of any SUN WORLD rights. HINES acknowledges failure to comply with the provisions of this Article 6.4(b) will be considered a material default and SUN WORLD shall reserve the right to terminate the Agreement pursuant to Article 7.3.

6.5 Warranty. SUN WORLD makes no warranty, expressed or implied, that the Sun World Cultivars will be successfully propagated and/or grown for fruit in any area, soil type or climate and shall have no liability to HINES, the Contracted Nurseries, Retailers or otherwise, on account of any defect or failure of any of Sun World Cultivars.

ARTICLE 7

GENERAL PROVISIONS

7.1 Term. This Agreement shall be for a term beginning on the date this Agreement is fully executed by both parties and ending on the fifth anniversary of such date (the "Initial Term"); provided however, this Agreement may be renewed for additional three (3) year terms by mutual agreement of the Parties and shall stay in force and effect if and so long as HINES is in full compliance with the terms and conditions of this Agreement and provides SUN WORLD with written notice specifying its desire to renew this Agreement by no earlier than one (1) year and no later than one hundred and eighty (180) days prior to the end of the Initial Term or any subsequent three (3) year term. If HINES fails to provide written notice by such dates, this Agreement will automatically terminate at the end of the Initial Term or any subsequent three (3) year term as the case may be.

7.2 Removal and Return of Sun World Cultivars. If, HINES does not exercise the right to seek renewal of term within one hundred and eighty (180) days pursuant to Article 7.1, HINES shall provide SUN WORLD with a report showing the quantity, location and status (e.g. Propagation Fees that have been collected by Contracted Nurseries for trees or vines that have not been delivered, etc.) of the Sun World Cultivars or any other information as requested by SUN WORLD. Under the direction and supervision of SUN WORLD, or its designated agent, HINES shall remove and return or

destroy, at HINES's sole cost and expense, such Sun World Cultivars then in their possession or control that have not been previously distributed to a Retailer and for which has not been paid. Under no circumstances shall HINES or any Contracted Nursery have the right to continue propagating the Sun World Cultivars or have the right to direct the disposition of said Sun World Cultivars after the termination of this Agreement. HINES agrees to notify all Contracted Nurseries that HINES rights pursuant to this Agreement have been terminated and any continued propagation or distribution of the Sun World Cultivars are in violation of SUN WORLD's rights under California and United States law.

7.3 Brand/Trademark Usage and Ownership The Parties agree that HINES shall be responsible for developing a brand (the "Brand") and seeking registration of Brand as a trademark with the United States Patent and Trademark Office for use in identifying and promoting all Sun World Cultivars with Retailers. The use of the Brand shall be limited to use by HINES and Retailers on the Sun World Cultivars and use on any Prunus or Vitis vinifera species other than the Sun World Cultivars is expressly prohibited. Moreover, at the conclusion of the term of this Agreement, whether by termination or natural lapse, HINES agrees to cease use of the Brand on any Vitis vinifera or Prunus species.

7.4 Events of Default by HINES In addition to other rights contained in the Agreement to terminate this Agreement or a portion of this Agreement, SUN WORLD will have the right to terminate this Agreement at any time with the occurrence of any one or more of the following events or conditions (an "Event of Default"): (a) if HINES fails to report and pay Propagation Fee as defined in Article 5.3 or License Fee as defined in Article 4 when and as the same becomes due and payable; (b) if HINES fails to obtain a propagation sub-license agreement from a Contracted Nursery in accordance to the terms set forth in Articles 5.2(a); (c) if HINES fails to perform any item or provision set forth or referred to in this Agreement, including but not limited to their failure to cooperate reasonably (e.g. failure to effect transfer of materials or failure to execute and record documents to enforce SUN WORLD's rights contained in this Agreement, etc.) with SUN WORLD; (d) if HINES fails to comply with the provisions in Article 5; (e) if HINES propagates and distributes Sun World Cultivars in a country other than the United States or to a person or entity not authorized by SUN WORLD pursuant to the terms of this Agreement; (f) if HINES has an event of a default or unsettled controversy or cause of action affecting or involving any of the Sun World Cultivars and HINES fails to cure such default or resolve the unsettled controversy or dismiss such cause of action within twenty (20) days of their required notification to SUN WORLD of such event and further fails to acquire the disputed property or arrange to remove the Sun World Cultivars as required in Article 7.2; (g) if HINES has a breach of warranty, representation, or statement made or furnished to SUN WORLD, by or on behalf of HINES; (h) if HINES makes a general assignment for the benefit of creditors, or shall admit in writing their inability to pay their debts as they become due, or shall file a petition in bankruptcy, or shall be adjudicated as bankrupt or as insolvent, or shall file a petition in any proceeding seeking a similar relief under any present or future statute, law, or regulation, or shall file an answer admitting, or fail to protest timely the material allegations of a petition filed against it in any such proceeding, or shall seek or consent to or acquiesce in the appointment of any trustee, receiver, or liquidator of HINES or any material part of their properties; or remove Sun World Cultivars as required in Article 7.2. In the event that HINES files a petition in bankruptcy, the

event of default shall be deemed to have occurred one day prior to the filing of the petition for bankruptcy.

7.5 Termination of Agreement by SUN WORLD. In the event SUN WORLD elects to terminate this Agreement upon an Event of Default pursuant to 7.3, HINES acknowledges and agrees: (a) all authorizations and grants contained in this Agreement shall immediately terminate; (b) to provide SUN WORLD with a report showing the quantity, location and status of all propagated but undelivered trees or vines of the Sun World Cultivars; and (c) to notify, with simultaneous copies to SUN WORLD, all Contracted Nurseries that SUN WORLD or its designated representative, shall immediately acquire, by reason of HINES default hereunder, HINES rights and obligations pursuant to such Contracted Nurseries executed agreements and that HINES rights pursuant to this Agreement have been terminated and any continued propagation of the Sun World Cultivars or distribution of the Plants are in violation of SUN WORLD's proprietary ownership rights in and to the Sun World Cultivars. HINES acknowledges that in such event, SUN WORLD, in its sole opinion, has the right, under the direction and supervision of SUN WORLD, or its designated agent, to request HINES and/or their Contracted Nurseries to remove and return, at HINES sole cost and expense, such Sun World Cultivars then in the possession or control of HINES that have not been previously committed to a Retailer or Propagation Fees have not been paid. SUN WORLD and HINES agree to meet regarding other procedures or courses of action SUN WORLD will take to eliminate the impact of the Event of Default, taking into account all circumstances surrounding such cause or event. In addition, HINES expressly consent and agree that SUN WORLD may, in addition to any other available remedies, obtain the entry of temporary and permanent restraining orders and injunctions and orders of specific performance, in the event of any material breach or threatened material breach of this Agreement by HINES or in the event of any threatened or actual infringement of any of SUN WORLD's proprietary or Intellectual Property rights.

7.6 Independent Contractor Status. HINES shall at all times be considered as a custodian with respect to the Sun World Cultivars being propagated and grown by HINES under the provisions of this Agreement. HINES acknowledges that at no time has SUN WORLD appointed HINES as an agent of SUN WORLD's and each party shall operate as independent businesses, each acting for its own individual account and profit and not for any joint business of the other parties. The parties do not intend to create and are not creating a partnership, syndicate, group, agency, pool, or other unincorporated organization for the purpose of carrying on any joint business or financial operation. No party shall by this Agreement obtain any rights to the operational control, or other proprietary interests of the other party's business, and each party intends to enter and is entering into this Agreement as a separate business and as an independent contractor. Unless otherwise provided for in this Agreement, no party shall be responsible for the actions or agreements of the other, nor shall any party have any authority to create any obligation of the other. Each party shall be responsible for any expenses or losses had by the other party except as may be specifically set forth in the terms and conditions of this Agreement.

7.7 Force Majeure. With the exception of monetary payments due SUN WORLD and/or HINES, none of the parties to this Agreement shall be required to perform, or be liable for failure to perform, if non-performance is caused by strikes, work stoppages, or labor demands or difficulties;

labor shortages or inability to procure labor; shortages of equipment, materials or supplies; shortages or lack of cooling or processing facilities; water shortages; war, hostilities or national emergencies; acts of God, the elements; mechanical breakdowns; power failures; or other cause also beyond the control of the party unable to perform.

7.8 Notices. All notices to be given under this Agreement shall be considered delivered fourteen (14) days after mailing by certified or registered mail or when delivered to a party or one (1) day after transmission by facsimile or email to a party (with written confirmation of receipt), whichever is earlier. Such notices shall be sent to the following address, unless otherwise notified in writing:

SUN WORLD:

SUN WORLD INTERNATIONAL, LLC
Attn: David Marguleas, Executive Vice President
16350 Driver Road
Bakersfield, CA 93308 (USA)
Telephone #: 661-392-5002
Facsimile #: 661-392-4689
e-mail address: dmarguleas@sun-world.com

HINES:

HINES GROWERS, LLC
Attn: ~~Joe Gray, Senior Vice President~~ STEPHEN THIGPEN
2575 Olive Hill Rd.
Fallbrook, Ca 92028
Fallbrook, CA _____ USA
Telephone #: 760-731-1528
Facsimile #: _____
e-mail address: sthigpe@abuneshort.com

7.9 Attorney's Fees. If any one of the parties shall bring any action against the other under this Agreement, the prevailing party in that action shall be entitled to judgment for reasonable attorney's fees.

7.10 Assignability. HINES expressly agrees that it will not assign this Agreement in whole or in part to any other person or persons, domestic or foreign, for any purpose whatsoever without the prior written consent of SUN WORLD (which consent may be withheld in the sole discretion of SUN WORLD), and it is hereby understood and agreed that this Agreement is personal to HINES and to the specific country of the United States where the Sun World Cultivars and Plants are to be distributed and grown. Any attempted assignment (whether voluntary, involuntary or by operation of law), without SUN WORLD's prior written consent, shall be invalid and ineffective and shall constitute a material default of this Agreement. In the event there is an organizational restructuring or change of ownership or control of either party to this Agreement for any reason the restructuring party shall immediately notify the other party in writing within ten (10) days of such restructure.

7.11 Certain Rules of Construction. Time is of the essence of this Agreement. Notwithstanding the fact that certain references elsewhere in this Agreement to acts required to be

performed by HINES hereunder omits to state that such acts shall be performed at HINES's sole cost and expense, unless the text clearly states the contrary, each and every act to be performed or obligation to be fulfilled by HINES pursuant to this Agreement shall be performed or fulfilled at HINES's sole cost and expense. The captions, section numbers, and article numbers appearing in the Agreement are inserted only as a matter of convenience and in no way define, limit, construe, or describe the scope or intent of such articles of this Agreement, nor in any way affect this Agreement. In this Agreement each of the neuter, feminine or masculine gender(s) includes the other or others, and the singular number includes the plural, whenever the context so requires.

7.12 Enforceability. Failure by any of the parties hereto, at any time, to require performance by the other party of any provision or part hereof shall in no way affect the full right to require such performance at any time thereafter; nor shall the waiver by any of the parties hereto, of a breach of any provisions hereof, constitute a waiver of the provision itself. If any provision or a portion of any provision of this Agreement, or its application to any circumstance, is held by a court of competent jurisdiction to be invalid or unenforceable, then all other provisions of this Agreement will continue in full force and effect and a suitable and equitable provision will be substituted for the invalid or unenforceable provision or parts thereof in order to carry out, so far as may be practical and permitted under applicable law, the purpose of this Agreement.

7.13 Entities. If at any time during the term of this Agreement there is more than a single person or entity acting as "HINES" under this Agreement, then all such persons or entities shall be jointly and severally liable for the performance of the duties, covenants and obligations assigned to HINES under this Agreement. HINES warrants that it is authorized and has the full legal capacity to execute this Agreement which is a legal and binding agreement of HINES enforceable against HINES in accordance with its terms. HINES is not a party to any other contract agreement, commitment or obligation relating to the propagation and growing of the Plants or the use, marketing or distribution of the Plants in the United States.

7.14 Indemnification. HINES shall defend and save SUN WORLD, or any company of which SUN WORLD may be a subsidiary, or any other subsidiary of any such company, or, their officers, directors, employees and assigns, harmless from, and hereby agrees to indemnify all of them, against any and all liability to SUN WORLD or to any other person or persons for or on account of any death of or injury to persons or damage to property of any nature or type whatsoever that may result from or by reason of the use of the Sun World Cultivars or Plants pursuant to this Agreement, by HINES, its agent, contractors, servants and employees their acts, omissions or negligence. SUN WORLD shall defend and save HINES, or any company of which HINES may be a subsidiary, or any other subsidiary of any such company, or, their officers, directors, employees, shareholders and assigns, harmless from, and hereby agrees to indemnify all of them, against any and all liability to HINES or to any other person or persons for or on account of any death of or injury to persons or damage to property of any nature or type whatsoever that may result from or by reason of or from or by reason while performing propagation services pursuant to this Agreement by SUN WORLD, its agent, contractors, servants and employees, or from or by reason of their acts, omissions or negligence. Notwithstanding the foregoing, neither party shall make a claim against the other party, its parent corporation or their directors, officers, employees, attorneys or agents of such party, for

any special, indirect, consequential or punitive damages in respect of any claim for breach of contract or any other theory of liability arising out of or related to the transactions contemplated by this Agreement. Neither party shall be liable to the other party or any other individual or entity connected with or claiming through such party for any claim, loss or damage of any kind arising out of or in connection with the deficiency or inadequacy of the Sun World Cultivars for any purpose whether or not known or disclosed to HINES by SUN WORLD or disclosed by HINES to SUN WORLD. Neither party shall be liable for any loss of profits, sales, business, data or other direct, indirect, special, incidental or consequential damages irrespective of whether such party has been informed or, knew of, or should have known of the likelihood of such damages. This limitation applies to all causes of action in the aggregate including without limitation breach of contract, breach of warranty, negligence, strict liability, misrepresentation and other torts. Neither party may not claim or bring action against the other party on behalf of any third party.

7.15 Insurance. HINES will provide and maintain in force at HINES's own expense the following insurance: (a) proof of Workers' Compensation Insurance in accordance with the laws of the State of California; and (b) Comprehensive General Liability Insurance, including product liability, in limits no less than Two Million Dollars ($2,000,000.) combined single limit. HINES shall name SUN WORLD, its subsidiaries and affiliated companies, as additional insured, provide a waiver of subrogation and thirty (30) days notice to SUN WORLD in the event of cancellation or material change in the policy. HINES will deliver to SUN WORLD no later than seven (7) days after the commencement of this Agreement a certificate of insurance stating that the above insurance is in effect. The certificates of insurance from the General Comprehensive Liability insurance carrier will include a statement that HINES is insured for work performed by HINES and HINES's employees and that all Sun World Cultivars related claims arising in any manner from such work shall be covered. All underwriters will have no right to recovery or subrogation against SUN WORLD, its divisions, affiliates, or subsidiary companies, it being the intention of the parties that the insurance so affected shall protect both parties and be primarily liable for all losses covered by the above described insurance. It is further understood that the insurance provided by HINES under this Agreement shall be primary insurance for all assureds, and such other insurance carried by SUN WORLD, its parent corporation and its affiliated and subsidiary companies shall not be called upon by HINES's insurers for contributing, deficiency, concurrent or double insurance or otherwise.

7.16 Confidentiality. The parties agree to maintain in confidence the terms of this Agreement, except in the following five (5) circumstances: (a) as required by law for the preparation, filing, substantiation or audits of tax returns; (b) as required for the preparation of audited financial statements consistent with general accepting accounting principles; (c) as required by court order; (d) as necessary for the conduct of the business of each of the parties, including but not limited to each party's annual reports, reports and correspondence to either party's respective stock exchange and their shareholders; or (e) as necessary to enforce the terms of this Agreement. If any disclosure is made to any person pursuant to items 7.16 (a) through (e) above, that person shall be advised of this agreement of confidentiality and shall be requested to maintain all information regarding this Agreement in confidence and not to disclose the same. Notwithstanding the foregoing, the parties acknowledge and understand that in the course of operating under this Agreement both parties will disclose to each other confidential information with respect thereto. Each party shall hold such

confidential information in trust and in confidence and restrict such confidential information to such officers and employees of each party as may actually require access to such confidential information in the performance of their duties under this Agreement. This provision shall survive the Agreement and shall remain in full force and effect and be binding upon the parties even after the termination of this Agreement.

7.17 Complete Agreement; Counterparts. This Agreement, including the attached Annexes, contains the entire agreement between SUN WORLD and HINES hereto and supersedes any and all prior written or oral agreements between the Parties regarding the matters contained herein unless otherwise noted in this Agreement. Each of the Parties hereto acknowledges that no other party, nor agent or attorney of any Party, has made any promise, representation or other warranty whatsoever, expressed or implied, not contained herein concerning the subject matter hereof, to induce it to execute this Agreement. This Agreement shall not be changed and no provision in this Agreement shall be waived except by an agreement in writing signed by the Parties. This Agreement may be executed in any number of counterparts and all such counter parts taken together shall be deemed to constitute one and the same instrument.

7.18 California Law. This Agreement shall be deemed to have been entered into and shall be construed and enforced in accordance with the laws of the State of California.

[SIGNATURES ON THE FOLLOWING PAGE]

IN WITNESS WHEREOF, this Agreement has been executed by the parties on and as of the date first written below.

"SUN WORLD"

SUN WORLD INTERNATIONAL, LLC,
a Delaware limited liability company

By: _____ Date: 4/4/2013
David Marguleas
Its: Executive Vice President

By: _____ Date: 4/4/2013
David Dever
Its: President / Chief Executive Officer

"HINES"

HINES GROWERS, LLC
a _____

By: _____ Date: 4-3-13
Joe Gray
Its: Senior Vice President

By: _____ Date: 4-3-13
Name: Stephen P. Tithof
Its: President

ANNEX "A"

***Sun World Prunus Cultivars;* Sun World Vitis Cultivars; Plants; Trademark Designation; Propagation Fees;**

Sun World Prunus Cultivars	*US Patent #*	*Year Supplied*	*Qty*
Supechsix	US PP11,631	_____	_____
Supechthirteen	US PP13,142	_____	_____
Suplumthirtyone	US PP19,064	_____	_____
Suplumthirtyfive	US PP15,897	_____	_____
Suapriten	US PP15,999	_____	_____
Sun World Vitis Cultivars			
Sugratwentyone	US PP13,444	_____	_____
Sugratwentythree	US PP13,164	_____	_____
Sugratwentyfour	US PP16,177	_____	_____
Sugrathirtyone	US PP19,065	_____	_____

Propagation Fees
Sun World Prunus Cultivars: $.95/Tree
Sun World Vitis Cultivars $.85/Vine

Trademark Designation
-TBD-

ANNEX "A" will be revised on or December 15th of each year during the duration of the Agreement as *Sun World Cultivars* are delivered to HINES.

***

ANNEX "B"
Authorized Retailers
(as amended from time to time)

THE HOME DEPOT®

***

ANNEX "C"
Propagation Sub-License Agreement

This PROPAGATION SUB-LICENSE AGREEMENT (the "Agreement") is effective on the ____day of _____, _____ by and between SUN WORLD INTERNATIONAL, LLC., a Delaware limited liability company, having its main office at: 16350 Driver Road, Bakersfield, California 93308, hereinafter referred to as "SUN WORLD", and HINES GROWERS, LLC., a _____, having its main office at 8633 Winters Road, Winters, CA 95694, hereinafter referred to as "HINES", and _____, a, _____ having its main office at:_____ and farmlands located at _____ (nursery or growing location, town, county, state), hereinafter referred to as "CONTRACTED NURSERY".

WITNESSETH

WHEREAS, SUN WORLD is the owner of all proprietary and Intellectual Property Rights to certain plant varieties designated in Schedule 1, hereinafter referred to as the "Sun World Cultivar(s)"; and

WHEREAS, SUN WORLD has granted HINES authorization under license to contract with CONTRACTED NURSERY to propagate and grow certain Sun World Cultivar(s), subject to the conditions set forth herein and in accordance with other instructions that may be issued by SUN WORLD and/or HINES;

NOW THEREFORE, for good and valuable consideration, SUN WORLD and HINES hereby grants to CONTRACTED NURSERY a non-exclusive, limited sub-license to propagate and grow Sun World Cultivar(s) subject to the terms and conditions contained herein and CONTRACTED NURSERY accepts such sub-license under said terms and conditions:

DEFINITIONS:

"Sun World Cultivar(s)" - any cultivar(s) or propagating material listed and identified in Schedule 1 below (and any Sun World Cultivar(s) added thereto).

"Plants" - the number of finished plants of each Sun World Cultivar(s) propagated on Prunus rootstock (stonefruit) or Vitus wood (table grape) under the control of CONTRACTED NURSERY as specified in Schedule 1, including any buds, scions, tissues, plants, mutants, sports, stocks and progeny (including if applicable the harvested fruit) that comprise the Sun World Cultivar(s) or Plants and any subsequent asexual propagating materials arising from the growth or culture of either, including but not limited to prunings.

TERMS AND CONDITIONS:

1. All Sun World Cultivar(s) and/or the Plants shall remain the sole and absolute personal property of SUN WORLD.
2. CONTRACTED NURSERY acknowledges that its sole purpose is to provide a service to HINES and such service shall be limited to HINES's desire for CONTRACTED NURSERY to propagate and grow the Plants as specified in Schedule 1 below.
3. HINES agrees to provide to CONTRACTED NURSERY sufficient Sun World Cultivar(s) propagating materials to propagate the quantity of Plants listed in Schedule 1 below and further agrees to use only

the Sun World Cultivar(s) or other propagating materials provided by HINES to propagate such Plants.

4. CONTRACTED NURSERY agrees to provide the appropriate rootstock (if applicable) to propagate and grow the quantity of Plants listed in Schedule 1 below and further acknowledges that this Agreement does not authorize or give CONTRACTED NURSERY permission to propagate any additional Plants over and above the quantity listed.
5. CONTRACTED NURSERY agrees to produce Plants as specified by HINES and SUN WORLD and further agrees to observe all applicable USA laws and regulations governing such nursery activities pursuant to this Agreement.
6. CONTRACTED NURSERY agrees to complete Schedule 1 for each grafting season by no later than each _____ during the duration of this Agreement in order to inform HINES of exactly how many Plants were propagated and what rootstock (where applicable) was used with the Sun World Cultivar(s).
8. CONTRACTED NURSERY acknowledges that quantities over and above the quantity ordered shall be disclosed and taken by HINES and CONTRACTED NURSERY warrants that it will not keep any of the Plants or propagation materials for any purpose whatsoever, including but not limited to permitting a third party, domestic or foreign, to propagate or reproduce the Plants, or any part thereof for germplasm source or parental stock for the breeding, creation, or development of different fruit varieties.
9. CONTRACTED NURSERY is not authorized to sell, transfer, lease, transfer or assign any of the *Sun World Cultivar(s)* or Plants to any other persons, domestic or foreign without the express written permission of SUN WORLD and/or HINES. Nothing in this Agreement provides CONTRACTED NURSERY the right to market any of the fruit produced from the *Sun World Cultivars* such right is specifically withheld from this Agreement. CONTRACTED NURSERY assumes all responsibility for any infringement of this provision, even in the case said infringement or breach is committed by its employees and agents, affiliates, successors and their employees.
10. CONTRACTED NURSERY shall propagate and grow the Plants only on land owned by CONTRACTED NURSERY and at the location designated above, unless notified to HINES and authorized in writing by SUN WORLD. In addition, CONTRACTED NURSERY agrees to provide HINES upon request and where practicable with plot maps of each of the propagation sites where the *Sun World Cultivar* and/or Plants will be located. If the land where the Plants are grown is to be sold or transferred for any reason, either the new owner must sign a copy of this Agreement and give it to SUN WORLD and HINES, or SUN WORLD and/or HINES must be immediately notified and Plants must be destroyed in HINES's presence before any sale or transfer occurs.
11. Any mutants or sports discovered on the Plants shall be reported immediately to SUN WORLD and HINES and shall be considered the exclusive personal and proprietary property of SUN WORLD. CONTRACTED NURSERY acknowledges that it is not authorized to propagate or grow any mutants or sports emanating from the Plants.
12. CONTRACTED NURSERY agrees to permit employees/directors/designees of SUN WORLD and/or HINES to have access to their lands and, if deemed necessary by SUN WORLD and/or HINES, to their records pertaining to Sun World Cultivar(s) and Plants.
13. Any disagreement between the parties to this Agreement will be resolved by referring the dispute to an arbitrator who is acceptable to all parties.
14. Notwithstanding other rights of termination provided in this Agreement, this Agreement shall be terminated by notification from SUN WORLD and/or HINES to the CONTRACTED NURSERY if (i) the CONTRACTED NURSERY breaches any of the provisions of this Agreement; or (ii) the CONTRACTED NURSERY has a receiver or official manager or administrator appointed or enters into an arrangement with its creditors or composition with its creditors.
15. CONTRACTED NURSERY shall be liable to SUN WORLD and/or HINES in damages for any breach of this

Agreement with respect to the Plants.

16. Any notices or reports required to be sent to any party to this Agreement shall be sent by facsimile at the telephone number listed below.

17. CONTRACTED NURSERY warrants that it is authorized and has the full legal capacity to execute this Agreement which is a legal and binding agreement of CONTRACTED NURSERY. The execution, delivery, and performance by SUN WORLD, HINES and CONTRACTED NURSERY of this Agreement will not conflict with or violate the laws of the country where the services are to be performed and no approval or filing with the government or any agency thereof is required in connection with the execution, delivery and performance of this Agreement.

18. The parties recognize and expressly acknowledges the following facts: (a) SUN WORLD is the owner of certain temporary intangible intellectual property relating to certain *Sun World Cultivars* that are the subject of this Agreement; (b) nothing in this Agreement is intended in any way to transfer any ownership of intellectual property rights over plants or offspring of the *Sun World Cultivars*; (c) intellectual property protection of the *Sun World Cultivars* is a convenience to both parties, but is not the basis of this Agreement; this Agreement is based on the value of the plants of the *Sun World Cultivars*. To the extent that this Agreement recites a license under any plant patents or plant variety rights, such a license is incidental to the central purpose of this Agreement; and (d) it is not possible legitimately to propagate or possess any of the *Sun World Cultivars* without authorized and express permission from SUN WORLD;

19. The term of this Agreement begins on _____and ends on _____.

"SUN WORLD"

SUN WORLD INTERNATIONAL, LLC.,
a Delaware limited liability company

BY: _____
David O. Margulеas
ITS: Executive Vice President

DATE: _____

"HINES"

HINES GROWERS, LLC
a _____

BY: _____
Joe Gray
ITS: Senior Vice President

DATE: 4-3-13

"CONTRACTED NURSERY"

BY: _____
(Please Sign)

ITS:_____
(Please Print Name & Title)

DATE: _____

Schedule 1
Sun World Cultivars

- TO BE COMPLETED FOR EACH CONTRACTED NURSERY -

Exhibit 1

ANNEX "D"
QUALIFICATIONS FOR CONTRACTED NURSERIES;

Scope: HINES acknowledges and agrees that the following criteria must be met by the proposed commercial nursery prior to the distribution of the *Sun World Cultivars* for: (a) propagation; or (b) distribution. Each nursery must:

1. Own or exclusively control the real property on which said licensing activity would take place; *and*

2. Not be engaged at any time in the illicit or unauthorized propagation or production of any plant materials; *and*

5. Be recognized as a commercial nurseryman in the agricultural community, maintain all required permits, and operate in an area proven to be capable of producing commercially viable plants; *and*

6. Agree to execute all required and standard SUN WORLD documents including but not limited to propagation sub-license agreements and perform any public recordations necessary to demonstrate SUN WORLD's ownership of the *Sun World Cultivars* or Plants; *and*

7. Observe such requirements as deemed necessary for the execution of non-propagation third party agreements and contractual conditions.

Upon SUN WORLD's request, HINES must provide sufficient proof to SUN WORLD, of the proposed nursery or Grower's compliance with the above requirements. Pursuant to the specific terms of the Agreement, SUN WORLD retains the right to approve all sub-licensees, which approval shall not be unreasonably withheld. In the event SUN WORLD elects to withhold its consent, SUN WORLD agrees to notify HINES within fifteen (15) days with specific reasons for withholding such consent.

***

ANNEX "E"
PROPAGATION SITES

- TO BE UPDATED -

Exhibit 1

EXHIBIT "X"
PLANT DISTRIBUTION/ROYALTY REPORT

Exhibit X of the PROPRIETARY PLANT DISTRIBUTION LICENSE AGREEMENT between SUN WORLD and HINES dated_____.

The table below shows the plants distributed and royalty fees collected by HINES on behalf of SUN WORLD.

Retailer	Nursery	Variety	Qty Plants Distributed	Per Plant Royalty	Total Royalty	Nursery Invoice #	Distribution Date
Total							

* Royalty is calculated by charging the agreed propagation fee to each plant delivered

SPECIAL INSTRUCTIONS

EXHIBIT "X" will be submitted by January 1st of each year during the duration of this Agreement. All other terms of agreement remain in full force and effect. I acknowledge that the information in the table above is correct. I also acknowledge that this amendment shall be considered an addendum to the Agreement and shall be incorporated by reference into said Agreement.

HINES GROWERS, LLC

BY: _____

NAME: _____

ITS: _____

DATE: _____

SUN WORLD INTERNATIONAL, LLC

BY: _____
David O. Marguleas

ITS: Executive Vice President

DATE: _____

US00PP11631P

United States Patent [19]

Fear et al.

[11] **Patent Number: Plant 11,631**

[45] **Date of Patent: Nov. 14, 2000**

[54] **PEACH TREE NAMED 'SUPECHSIX'**

[75] Inventors: **Carlos D. Fear**, Aptos; **Bruce D. Mowrey**, La Selva Beach; **David W. Cain**, Bakersfield, all of Calif.

[73] Assignee: **Sun World International, Inc.**, Bakersfield, Calif.

[21] Appl. No.: **09/007,371**

[22] Filed: **Jan. 15, 1998**

[51] **Int. Cl.**[7] **A01H 5/00**

[52] **U.S. Cl.** **Plt./197**

[58] **Field of Search** Plt./197

[56] **References Cited**

U.S. PATENT DOCUMENTS

P.P. 4,917	11/1982	Zaiger	Plt./197
P.P. 5,463	5/1985	Zaiger	Plt./197
P.P. 6,025	9/1987	Balakian	Plt./198

Primary Examiner—Howard J. Locker
Assistant Examiner—Wendy A. Baker
Attorney, Agent, or Firm—Knobbe, Martens, Olson & Bear, LLP

[57] **ABSTRACT**

A new and distinct variety of peach tree characterized by its very early ripening fruit which has a round shape, an indented stylar tip, and a high (70–100%) percentage of red coloration.

2 Drawing Sheets

BACKGROUND AND SUMMARY OF THE INVENTION

This invention relates to the discovery and asexual propagation of a new variety of hybrid peach tree, *Prunus persica* cv. Supechsix. The tree is a very early ripening commercial peach variety for market use. It arose in a controlled cross made by Carlos D. Fear, was first selected by Bruce D. Mowrey, was evaluated by Bruce D. Mowrey and David W. Cain, and was asexually propagated by Bruce D. Mowrey. Its seed parent is Flordaprince (unpatented), and its pollen parent is Queencrest®, which is the subject of U.S. Plant Pat. No. 6025.

The new peach tree variety cv. Supechsix may be distinguished from other presently available peach cultivars, particularly the Goldcrest cultivar (unpatented), by the following combination of characteristics: its larger size, a greater percentage of desirable red coloration (70–100% vs. 70–90%), a more round shape with an indented stylar tip rather than a slight pointed tip, and a lower winter chilling requirement of approximately 400 hours below 45° F. vs. 650 hours for Goldcrest. The new variety holds these distinguishing characteristics through succeeding asexual propagations by budding, which propagations were carried out in the vicinity of Wasco, Kern County, Calif.

Among the characteristics which distinguish the new variety of peach tree from its pollen parent, Queencrest®, are the following: the new variety ripens approximately 15 days before Queencrest® and it has a lower winter chilling requirement of about 400 hours vs 600 hours for Queencrest®. It also has a more desirable round shape and has an indented stylar tip as opposed to the pointed tip of Queencrest®, which can be damaged during harvest and shipping. It has a higher (70–100%) distribution of desirable red coloration as compared to Queencrest® (50–80%). The extent of blush varies depending on the degree of exposure to sunlight.

The new variety may be distinguished from its seed parent, Flordaprince in the following characteristics: it has a higher winter chilling requirement of approximately 400 hours of temperature below 45° F. vs 150 hours for Flordaprince. It also ripens approximately 12–15 days before Flordaprince and has a more round and less blocky shape. Further, Supechsix has more (70–100%) external red blush

than Flordaprince (50–80%) and is firmer and has better shipping and storage ability than Flordaprince. The instant variety has been successfully stored in non-atmospherically controlled storage at 32° to 38° F. for up to 20 days. It has been successfully transported via commercial refrigerated trucks over distances in excess of 2000 miles.

The new variety may be distinguished from the peach tree variety described in U.S. Plant Pat. No. 4917 by having different parents, being not heterozygous for the nectarine trait, by having acid levels characterized as standard or normal type as opposed to subacid as described for U.S. Plant Pat. No. 4,917, and by ripening approximately two to three weeks earlier than U.S. Plant Pat, No. 4,917.

The Supechsix variety may be distinguished from the peach variety Stark Gulf Queen™ (U.S. Plant Pat. No. 5,463) by having different parent, not being heterozygous for the nectarine trait, and by ripening approximately thirty days earlier than Stark Gulf Queen™ when grown in the San Joaquin valley of California (late April as opposed to early June).

BRIEF DESCRIPTION OF THE FIGURES

FIG. **1** illustrates, in full color, a typical stem and mature leaves of the peach tree and the ripe fruit as viewed from the stem and in profile. The drawing also illustrates the fruit sectioned in half from end to end, one-half of the fruit shown with the stone in place in the flesh.

FIG. **2** illustrates, in full color, a comparison of the stage of bloom between Supechsix and its pollen parent, Queencrest®. Two representative stems of Supechsix are shown on the left, and two representative stems of Queencrest® are shown on the right.

The colors illustrated in the FIGURES are as accurate as reasonably possible to attain in color photographic reproductions of this type.

DETAILED BOTANICAL DESCRIPTION OF THE INVENTION

Throughout this specification, color names beginning with a small letter signify that the name of that color, are used in common speech, is aptly descriptive. Color names with capital letters designate values based upon the R.H.S,

Colour Chart, published by The Royal Horticultural Society, London.

The descriptive matter which follows pertains to peach trees of the new variety grafted onto Nemared root stock and grown in the vicinity of Wasco, Kern County, Calif. during 1996 and is believed to apply to plants grown under similar conditions of soil and climate elsewhere. Such trees were four years old, and were maintained at height of about 10 feet and a crown diameter of about 10 feet by annual prunings.

Tree

When budded on Nemared root stock the tree is of medium size and medium vigor typical of most commercial peach varieties grown in California. Trees typically produce about 72.5 cm long lateral shoots when grown using normal commercial practices. It is semi-upright in habit and vase-formed in shape. The foliage is of medium density. The trees are hardy, regular bearers and medium productive.

The trunk is round in outline and of medium circumference, averaging 28.4 inches at 1 foot above ground level on 7-year old trees. Surface texture is medium and smooth exhibiting slight exfoliation of the bark. The branches are likewise round in outline and average 10.7 inches in circumference on 7-year-old trees as measured 1 foot from the trunk juncture with the branch. Surface texture is medium smooth with a dull surface apperance. Trunks and branches are about Grey-Brown 199B in color. Lenticles are few and large, averaging about 4.3 cm long with an average density of 1.6 lenticles per square centimeter. The tree is productive for an early season peach, producing about 110 pounds of fruit per tree.

Leaves

In general, leaves are of a large size, having an average length of about 16,6 cm and an average width of about 4.3 cm. Leaves are lanceolate in outline and upfolded in profile. Leave blade tips curve downwardly at an acute angle. The leaf margin is finely serrate, and is slightly undulated. The leaf is cuspidate at the apex, V-shaped at the base, and medium in thickness. The upper surface of the leaf is about Yellow-Green 147A in color, and of medium glossiness. The upper leaf surface is smooth with a semi-glossy appearance; pubescence is absent. The lower leaf is about Yellow-Green 147B in color, and weak in glossiness. Pubescence is absent from the lower surface, which has a smooth texture and a dull appearance.

The petiole is of medium length and medium thickness. There is an average of 2.2 small, globose glands alternately positioned on both the leaf base and the petiole. Stipules fall off.

Wood (leaf) buds are medium in size and ovoid in shape. Their position, relative to the shoot, is adpressed. Their support is said and not decurrent. The time of bud burst is early.

On flowering shoots anthocyanin coloration is present in medium intensity. The shoots are of medium size and thickness, about 5.5 mm. Internode length is medium, about 2.8 cm. Buds are of average density and are isolated in groups of two or more on one-year-old shoots. The ratio of wood (leaf) buds to flowering shoots is about 1/2.5.

Flowers

Flowers buds are, in general, hardy, of medium size and length, plump, and freely positioned. Buds are pubescent and about Greyed-Orange 165A in color.

Flowers bloom early, and attain full bloom by about February 19 in Wasco, Kern County, Calif. Blooms have a duration of about 10 days. The fully opened flower is large, about 3.7 cm, and is of rosaceous shape with overlapping petals. The fully opened flower is about Red-Purple 65D in color. The peduncle is short in length and medium in thickness; pubescence is absent.

The receptacle is of medium depth. Pubescence is present on the inner surface at the white bud stage. Pubescence is, however, absent from the outer surface.

Sepals are adpressed to petals and ovate in shape, with no pubescence on the inner surface and pubescence present on the outer surface.

Petals are large in size, about 46 mm wide, transverse broad elliptic in shape, have short claw length, medium margin waviness, and a medium base angle. The division of the upper margins is entire, and pubescence is absent on both inner and outer surfaces.

The stigma is above the anthers. The anthers are about Red 43C in color just before dehiscence. Pollen is about Yellow-Orange 14D in color. Stamens are perigynously positioned. The number of pistils is always one; no supplementary pistils have been observed. The ovary and style are both pubescent, displaying dense hairs.

Fruit

The fruit, as described, was firm at maturity on April 29. The fruit at firm ripe maturity is small, weighing on average 112.9 g, and having an axial diameter of 5.0 cm and a transverse diameter in the suture plane of 6.4 cm. At right angles to the suture plane, the diameter is about 6.2 cm, thus indicating a uniform, globose shape. The position of the maximum diameter is towards the middle of the fruit. The fruit is symmetric about the suture line. The fruit ripens very early with normal commercial harvest occurring between April 29 and May 11.

The fruit is for market use and has a medium keeping quality and good shipping quality. It exhibits good resistance to insects and diseases when grown under commercial conditions in Kern County, Calif.

The suture is an inconspicuous line. The ventral surface is rounded slightly with equal lips. The apex is distinctly depressed, and exhibits pubescence of medium density. The pistil base does not persist.

The stem cavity is circular, with the suture showing on one side. The depth of the cavity is about 1.3 cm, and its width is about 2.7 cm. The base of the fruit is rounded. The apex is slightly depressed in shape and the pistil point is oblique in shape.

The stem is about 0.8 cm in length, stout, glabrous, and adheres strongly to the stone. The skin, which is of medium thickness and texture, is tenacious to the flesh, and is without roughness or reticulation. The skin shows no tendency to crack in dry season. Ground color of the skin is about Yellow 11B; blush color of the skin is about Red 53B. Down is abundant and rolls up when rubbed.

The color of the flesh of firm, ripe fruit is about Yellow-Orange 19A surrounding the pit cavity and the pit cavity is about Yellow 11B in color. Slight red coloration about Red

39A may develop in soft, ripe fruit. Amygdalin is wanting and juice is moderate. The flesh has a low to medium sugar content. Flesh texture is medium coarse and melting, with abundant coarse fibers. Fruit ripens earliest at the apex, and is of fair to good eating quality. The flavor and aroma are delicate, typical of an early season peach.

The stone clings, adhering to the flesh over its entire surface. Due to this variety's very early ripening characteristics, the stone is physiologically immature and is not fully lignified when the fruit is ripe. Fibers of the stone are long. The stone is medium in size, being about 3.1 cm in length, 2.1 cm in breadth, and having a stalk end of about 0.4 cm. The angle of the stalk end is obtuse. The form of the stone in profile is generally oval. The form in ventral view is globular. The stone's base is slightly oblique, its apex is

rounded and its hilum is oval in shape. The position of the stone's maximum breadth is toward the middle and the sides are generally equal. The surface of the stone is regularly furrowed near the base and is pitted throughout. There is a partly developed outgrowing keel. The ridges are rounded towards the base and the pits are elongated. The ventral edge of the stone is thin with a wing toward the base and the dorsal edge is narrow with shallow grooves throughout, The color of the stone is about Greyed-Orange 165D. The stone has a moderate tendency to split.

What is claimed is:

1. A new variety of peach tree cv. Supechsix, as illustrated and described herein.

* * * * *

Figure 1

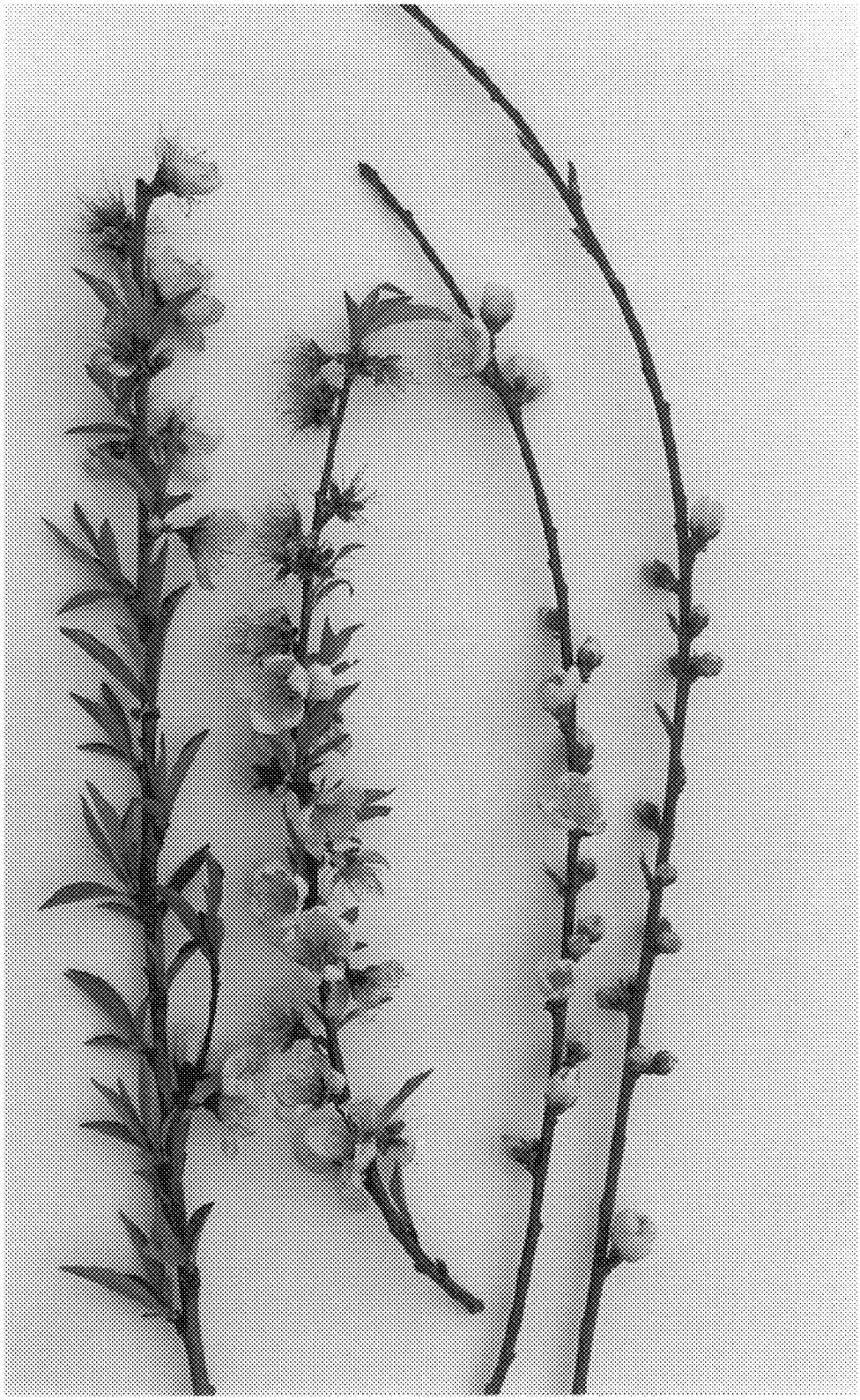


Figure 2

US00PP15897P2

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

(10) **Patent No.: US PP15,897 P2**
(45) **Date of Patent: Jul. 26, 2005**

(54) **PLUM TREE NAMED 'SUPLUMTHIRTYFIVE'**

(50) Latin Name: ***Prunus salicina***
Varietal Denomination: **Suplumthirtyfive**

(75) Inventors: **Bruce D. Mowrey**, Watsonville, CA (US); **David W. Cain**, Bakersfield, CA (US); **Terry A. Bacon**, Bakersfield, CA (US)

(73) Assignee: **Sun World International, Inc.**, Bakersfield, 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.: **10/867,613**

(22) Filed: **Jun. 14, 2004**

(51) **Int. Cl.**[7] **A01H 5/00**
(52) **U.S. Cl.** **Plt./184**
(58) **Field of Search** Plt./184

(56) **References Cited**

U.S. PATENT DOCUMENTS

PP4,902 P	10/1982	Weinberger	Plt./184
PP5,487 P	6/1985	Weinberger	Plt./184

Primary Examiner—Anne Marie Grunberg
Assistant Examiner—June Hwu
(74) *Attorney, Agent, or Firm*—Knobbe, Martens, Olson & Bear, LLP

(57) **ABSTRACT**

A new and distinct plum tree variety, *Prunus salicina* 'Suplumthirtyfive,' that is a heavy and consistent producer of early-season (June 16–22) black plums that are larger (66 mm) than other commercial plums in 'Santa Rosa' (unpatented) ripening season. The amber-colored flesh is crisp and juicy with sugar levels (17–19° brix) that are higher than other commercial plum varieties harvested at the same time.

1 Drawing Sheet

Latin name of the genus and species claimed: *Prunus salicina*.

Variety denomination: 'Suplumthirtyfive'.

BACKGROUND OF THE INVENTION

The present invention relates to a new and distinct variety of plum tree, herein after referred to by the cultivar name 'Suplumthirtyfive.' The new variety 'Suplumthirtyfive' originated by hybridization, being first hybridized by Bruce Mowrey and selected by David Cain. The new variety was first evaluated by David Cain and Terry Bacon near Wasco, Calif. in Kern County.

SUMMARY OF THE INVENTION

The new variety 'Suplumthirtyfive' is characterized by possessing black skinned, firm, crisp, yellow-fleshed plums with plentiful juice that ripen early in the season. The skin is of medium thickness with a moderate amount of bloom, and a mildly bitter taste. The fruit production is both heavy and consistent. The plums are large (approximately 66 mm), firm, and have higher sugar levels (approximately 17–19° brix) than other plum varieties ripening during the 'Santa Rosa' (unpatented) ripening season in the San Joaquin Valley, Calif.

The seed parent of the new variety 'Suplumthirtyfive' is '90P-063' (unpatented) that was selected from a progeny of 'Suplumfifteen' (U.S. Plant Pat. No. 5487) crossed with pollen of 'Suplumeleven' (U.S. Plant Pat. No. 4,902). The pollen parent is '91P-083' (unpatented) that was itself selected from a progeny of a cross between two unpatented breeding selections, '232-205' crossed with pollen of '275-136.' The parent varieties were first crossed in March 1994, with the date of planting of February 1995, and the date of first flowering being March 1997. The new plum variety was

first asexually propagated by Terry Bacon near Wasco, Kern County, Calif. in 2001, by budding onto 'Nemared' (unpatented) rootstock.

The new variety 'Suplumthirtyfive' is distinguished from its seed parent, '90P-063' in that the new variety ripens approximately 25 days earlier and has amber flesh, while the seed parent has red flesh. The new variety can be distinguished from its pollen parent, '91P-083' in that the new variety ripens 20 days earlier and has amber flesh while the pollen parent has red flesh.

The new plum variety 'Suplumthirtyfive' may be distinguished from presently available cultivars in commerce by the following combination of characteristics: 'Suplumthirtyfive' most closely resembles the commercial plum tree variety, 'Black Amber' (unpatented), but may be distinguished from 'Black Amber' in that the new variety ripens approximately seven days earlier and has a larger fruit diameter (approximately 66 mm compared to approximately 61 mm for 'Black Amber'). The new variety ripens about the same time as the 'Santa Rosa' variety, but has larger fruits with black skin, while 'Santa Rosa' has fruits of approximately 58 mm diameter with red skin.

The new variety 'Suplumthirtyfive' has been shown to maintain its distinguishing characteristics through successive asexual propagations by, for example, budding onto 'Nemared' (unpatented) rootstock.

BRIEF DESCRIPTION OF THE FIGURE

The accompanying color photographic illustration (FIG. **1**) shows typical specimens of the foliage and fruit of the new plum variety 'Suplumthirtyfive.' The illustration shows the upper and lower surface of the leaves, an exterior and sectional view of a fruit divided across its suture plane to show flesh color, pit cavity and the stone remaining in place.

The photographic illustration was taken shortly after being picked (shipping ripe) and the colors are as nearly true as is reasonably possible in a color representation of this type.

DETAILED BOTANICAL DESCRIPTION OF THE INVENTION

Throughout this specification, color names beginning with a small letter signify that the name of that color, as used in common speech is aptly descriptive. Color names beginning with a capital letter designate values based upon The R.H.S. Colour Chart published by The Royal Horticultural Society, London, England.

The new variety 'Suplumthirtyfive' has not been observed under all possible environmental conditions. The phenotype may vary somewhat with variations in environment such as temperature, daylength, and light intensity, without, however, any variance in genotype.

The descriptive matter which follows pertains to eight year old 'Suplumthirtyfive' plants grown in the vicinity of Wasco, Kern County, Calif., during 2002 and is believed to apply to plants of the variety grown under similar conditions of soil and climate elsewhere.

TREE

General: (measurements taken on 8 year old tree unless otherwise noted).

Tree size.—Medium. Normal for most plum varieties. Reaches a height of approximately 3 meters including normal pruning.

Tree vigor.—Moderately Vigorous. growth of approximately 1.5 to approximately 2 meters height the first growing season.

Tree growth.—Upright-spreading.

Tree productivity.—Productive. Fruit set is usually two or more times desired amount for marketable size fruit. Thinning and spacing of fruit is necessary.

Tree form.—Vase formed.

Bearer.—Regular. No alternate bearing observed.

Fertility.—Unknown. Should be planted with another variety to ensure consistent production.

Tree canopy density.—Medium-dense. Pruning is required to open tree vase shape, allowing more sunlight to center of tree.

Tree hardiness.—Hardy in all fruit growing areas of California. Winter chilling requirement is approximately 650 hours at or below 7.2° C.

Tree disease resistance/susceptibility.—No specific testing for relative plant disease resistance/susceptibility has been designed. Under close observation in Wasco, Kern County, Calif., no particular plant/fruit disease resistance/susceptibility has been observed.

Trunk: (measurements at 30 cm above soil line).

Trunk diameter.—Approximately 16 cm. Varies with soil type, fertility, climatic conditions and cultural practices.

Trunk texture.—Medium shaggy, increases with age of tree.

Trunk color.—Near Greyed-green 197D to near Greyed-green 197A on exposed areas and near Greyed-orange 164B in recesses. Becomes darker with age.

Branches: (measurements at approximately 90 cm above soil line).

Branch size.—Diameter ranged from approximately 7 to approximately 9 cm.

Branch texture.—Smooth on 1st year wood, increasing roughness with tree age.

Branch color.—Branches vary from near Greyed-green 197D to near Greyed-green 197A on exposed areas and near Greyed-orange 164B in recesses.

Branch lenticels.—Number: Numerous—varies from approximately 2 to approximately 9 per square centimeter. Lenticel number varies widely depending on environmental conditions and vigor of the plant. Color: Near Greyed-green 197A. Typical size: Approximately 6 mm in length and approximately 1.5 mm wide.

Flowering shoots: (data taken in July at midpoint of current-season growth).

Flowering shoot size.—Average diameter: approximately 5 mm.

Flowering shoot color.—Topside: Near Yellow-green 147B with highlights of near Greyed-red 180C. Underside: Near Yellow-green 147B.

Flowering shoot lenticels.—Plentiful; very small. Number varies from approximately 5 to approximately 18 per linear centimeter. Lenticel number varies widely depending on environmental conditions and vigor of the plant.

Flowering shoot leaf buds.—Shape: Pointed-obovate. Width: 1 mm. Length: Approximately 1.5 mm. Color: Near Greyed-orange 177A.

Flowering shoot flower buds.—Shape: Rounded-conical. Width: Approximately 0.5 mm. Length: Approximately 0.5 mm. Color: Near Greyed-orange 177A. Number per node: Usually 2.

LEAVES

(data taken in July on fully expanded leaf at midpoint of current-season growth)

Leaf size.—Average length: Approximately 95 mm. Average width: Approximately 40 mm.

Leaf thickness.—Medium.

Leaf color.—Upper surface: Near Yellow-green 147A. Lower surface: Near Yellow-green 147B.

Leaf form.—Elliptic.

Tip.—Acuminate.

Base.—Cuspidate.

Leaf margin/venation.—Margin: Slightly serrated. Venation: Pinately net veined.

Leaf surface texture.—Smooth.

Leaf petiole.—Average length: Approximately 11 mm. Average diameter: Approximately 1.5 mm. Color: Near Greyed-red 180B, with green background.

Leaf stipules.—Absent.

Leaf glands.—Form: Globose. Number: Varies from approximately 4 to approximately 6. Position: Opposite on upper portion of petiole and base of leaf blade. Average size: Small, approximately 0.3 mm by approximately 0.3 mm. Color: Near Greyed-orange 166B.

FLOWERS

(fully opened)

General:

Flower blooming period.—First bloom: Feb. 27, 2002. Full bloom: Mar. 2, 2002.

Flower size.—Average diameter: approximately 26 mm.

Flower aroma.—Very slight.

Flower peduncle:
Length.—Approximately 9 mm.
Diameter.—Approximately 1 mm.
Color.—Near Green 142A.
Flower petals:
Number.—Approximately 5.
Arrangement.—Slightly overlapping.
Length.—Approximately 11 mm.
Diameter.—Approximately 9 mm.
Shape.—Circular.
Apex shape.—Rounded.
Base shape.—Narrows at point of attachment.
Color.—White.
Surface texture.—Smooth.
Margins.—Smooth.
Flower sepals:
Number.—5.
Length.—Approximately 4.5 mm.
Diameter.—Approximately 2.5 mm.
Shape.—Obovate.
Color.—Near Green 142B.
Surface texture.—Smooth.
Flower stamens:
Number.—Approximately 24 to 29, average approximately 26.
Average length.—Approximately 7 mm.
Filament color.—White.
Anther color.—Near Greyed-yellow 160B.
Pollen color.—Near Greyed-yellow 160B.
Flower pistil:
Number.—Usually one, occasionally two.
Average length.—Approximately 9 mm.
Ovary diameter.—Approximately 1 mm.
Pubescence.—None.
Stigma position.—Extends below anthers.

FRUIT

(data taken at firm-ripe on mature tree managed to obtain maximum quality)

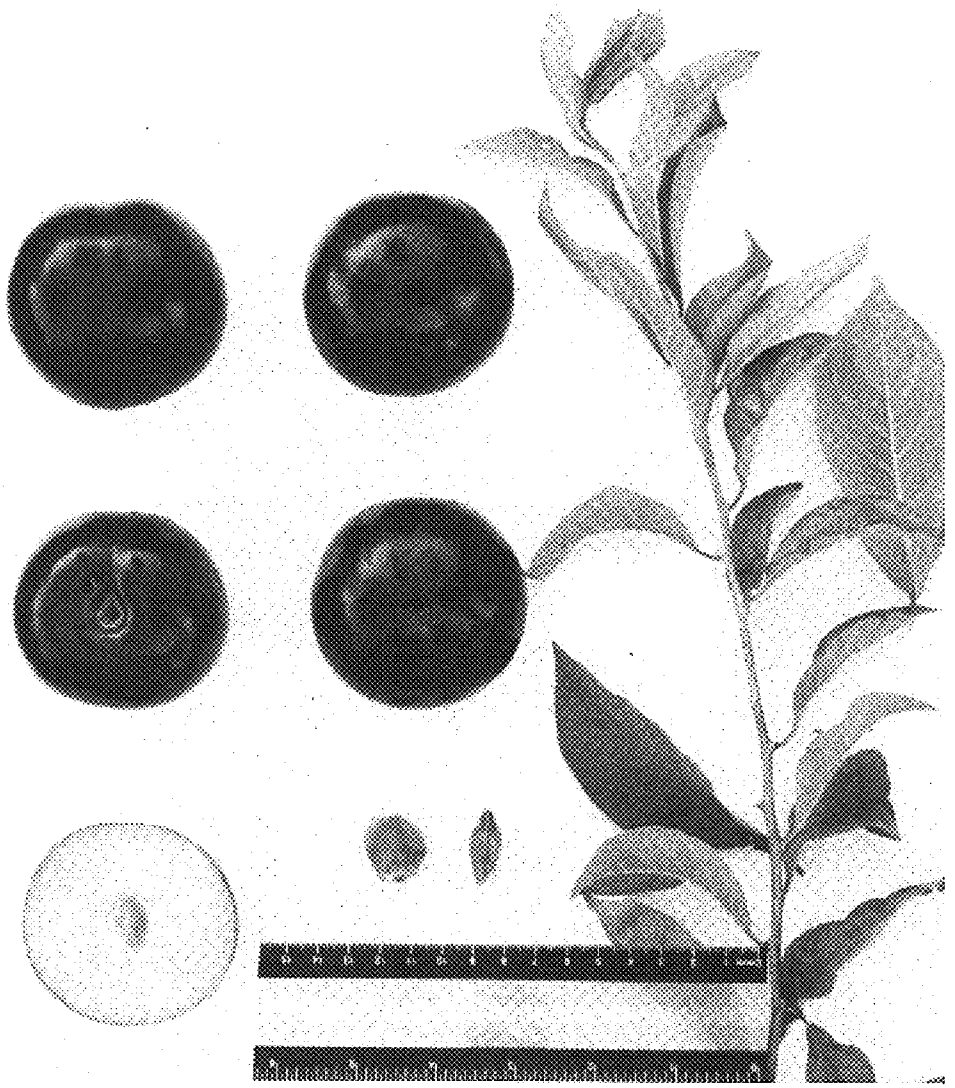
General:
Fruit harvest.—Date of first pick: Approximately Jun. 16, 2002. Date of last pick: Approximately Jun. 22, 2002.
Fruit size:
Length (*stem end to apex*).—Approximately 62 mm.
Diameter in line with suture plane.—Approximately 66 mm.
Diameter perpendicular to suture plane.—Approximately 66 mm.
Average weight.—Approximately 160 gm.
Fruit form:
Viewed from apex.—Rounded, symmetrical.
Viewed from side, facing suture.—Rounded, almost symmetrical.
Viewed from side, perpendicular to suture.—Rounded, symmetrical.

Fruit apex shape: Rounded, to slightly flattened.
Fruit stem-end cavity depth: Shallow.
Fruit stem:
Length.—Approximately 8 mm.
Diameter.—Approximately 2 mm.
Color.—Near Green 143C.
Fruit skin:
Thickness.—Medium.
Adherence to flesh.—Tenacious.
Surface texture.—Smooth.
Pubescence.—None.
Bloom.—Moderate amount.
Ground color.—Rarely visible, but near Yellow-orange 23C when visible.
Overcolor.—Near Greyed-purple 187B, becoming black when fully ripe.
Taste.—Mildly bitter.
Fruit flesh:
Ripens.—Evenly.
Texture.—Fine, firm, crisp and juicy.
Fibers.—Few.
Flavor.—Mildly sweet.
Brix.—Approximately 18 degrees.
Juice.—Plentiful.
Aroma.—Slight.
Color.—Amber (near Greyed-yellow 162C).
Fruit use: Dessert. Market, local and long distance.
Fruit shipping/keeping quality: Good. Holds well in cold storage for six weeks and maintains good firmness and eating quality. Minimal bruising and scarring in packing and shipping trials.
Stone: (measurements taken on dried stones).
Stone freeness.—Semi-freestone.
Stone size.—Length: Approximately 20 mm. Diameter in line with suture plane: Approximately 18 mm. Diameter perpendicular to suture plane: 5 mm. Stone Form (viewed from side): Rounded, asymmetrical.
Stone form (*viewed from stem end*).—Oval, nearly symmetrical.
Stone base shape.—Narrows to stem attachment, then flattened 4 mm at stem attachment.
Stone apex shape.—Rounded with a small dull point.
Stone surface.—Irregularly furrowed near base. Lightly ridged toward base. Lightly pitted throughout.
Stone halves.—Nearly equal.
Stone ridges.—One on each side of the suture, small and narrow, beginning at the base and extending throughout the length of the stone.
Stone outgrowing keel.—Well developed.
Stone tendency to split.—Slight.
Stone color.—Near Greyed-orange 165C when dried.

What is claimed is:

1. A new and distinct variety of plum tree named 'Suplumthirtyfive' as herein illustrated and described.

* * * * *



US00PP15999P2

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

(10) **Patent No.: US PP15,999 P2**
(45) **Date of Patent: Sep. 27, 2005**

(54) **APRICOT TREE NAMED 'SUAPRITEN'**

(50) Latin Name: ***Prunus armeniaca***
Varietal Denomination: **Suapriten**

(75) Inventors: **David W. Cain**, Bakersfield, CA (US); **Terry A. Bacon**, Bakersfield, CA (US); **Bruce D. Mowrey**, Watsonville, CA (US)

(73) Assignee: **Sun World International, Inc.**, Bakersfield, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 43 days.

(21) Appl. No.: **10/871,270**

(22) Filed: **Jun. 17, 2004**

(51) **Int. Cl.**[7] **A01H 5/00**
(52) **U.S. Cl.** **Plt./186**
(58) **Field of Search** Plt./186

(56) **References Cited**

U.S. PATENT DOCUMENTS

PP9,593 P 6/1996 Zaiger et al. Plt./186

Primary Examiner—Anne Marie Grunberg
Assistant Examiner—June Hwu
(74) *Attorney, Agent, or Firm*—Knobbe, Martens, Olson & Bear, LLP

(57) **ABSTRACT**

A new and distinct apricot, *Prunus armeniaca* cv. 'Suapriten' that ripens early in the season and produces heavy, consistent crops in early districts of the California San Joaquin Valley. Harvest begins about five days after the apricot variety 'Poppy' (U.S. Plant Pat. No. 9,593) harvest begins. The fruit is large (averaging approximately 61 mm), firm and develops a bright golden-orange color with red blush on exposed fruit. The flavor has been judged to be superior to other early-season apricots with approximately 15° brix that is well balanced by a slightly tart skin, a slight aroma, and plentiful juice.

1 Drawing Sheet

Latin name of the genus and species claimed: *Prunus armeniaca.*

Variety denomination: 'Suapriten'.

BACKGROUND OF THE INVENTION

The present invention relates to a new and distinct variety of apricot tree, herein after referred to by the cultivar name 'Suapriten.' The new variety 'Suapriten' originated by hybridization, and was first hybridized by Bruce Mowrey. The new variety was selected by David Cain and was evaluated by David Cain and Terry Bacon near Wasco, Calif. in Kern County.

SUMMARY OF THE INVENTION

The new variety is characterized by having firm, large fruit (averaging approximately 61 mm in diameter) that develops a bright golden-orange color with red blush on sunlight-exposed fruit. The flavor is superior to other early-season apricots, with approximately 15° brix that is well balanced by a slightly tart skin, a slight aroma, and plentiful juice. The new variety 'Suapriten' ripens early in the season and produces heavy, consistent crops in early districts of the California San Joaquin Valley relative to other early apricot varieties. Harvesting of 'Suapriten' typically begins in the second week of May in Kern County, Calif., approximately seven days after the beginning of harvesting of the apricot variety 'Poppy' (U.S. Plant Pat. No. 9,593).

The seed parent of the new variety 'Suapriten' is '063-160' (unpatented) and the pollen parent is '90A-006' (unpatented). The parent varieties were first crossed in 1992, with the date of planting of February 1993, and the time of first flowering being February of 1995. The new apricot variety was first asexually propagated by David Cain near Wasco, Kern County, Calif. in 1997 by budding onto 'Nemaguard' (unpatented) rootstock.

The new variety 'Suapriten' can be distinguished from its seed parent, '063-160' in that the fruit ripens approximately five days earlier, and is larger and firmer than the fruit of the seed parent. The new variety can be distinguished from its pollen parent, '90A-006' in that the fruit is larger and develops red blush in sunlight while the fruit of the pollen parent '90A-006' does not.

The new apricot variety 'Suapriten' may be distinguished from presently available cultivars in commerce by the following combination of characteristics: The new variety most nearly resembles the apricot variety 'Poppy' (U.S. Plant Pat. No. 9,593). It may be distinguished from 'Poppy' by ripening approximately seven days later, having larger sized fruits (averaging approximately 61 mm in diameter compared with approximately 58 mm in diameter with 'Poppy'), and having more red blush on exposed fruit.

The new variety 'Suapriten' has been shown to maintain its distinguishing characteristics through successive asexual propagations by, for example, budding onto 'Nemaguard' rootstock.

BRIEF DESCRIPTION OF THE FIGURE

The accompanying color photographic illustration (FIG. **1**) shows typical specimens of the foliage and fruit of the new apricot variety 'Suapriten.' The illustration shows the upper and lower surface of the leaves, an exterior and sectional view of a fruit divided across its suture plane to show flesh color, pit cavity and stone remaining in place.

The photographic illustration was taken shortly after being picked (shipping ripe) and the colors are as nearly true as is reasonably possible in a color representation of this type.

DETAILED BOTANICAL DESCRIPTION OF THE INVENTION

Throughout this specification, color names beginning with a small letter signify that the name of that color, as used

in common speech is aptly descriptive. Color names beginning with a capital letter designate values based upon The R.H.S. Colour Chart published by The Royal Horticultural Society, London, England.

The new variety 'Suapriten' has not been observed under all possible environmental conditions. The phenotype may vary somewhat with variations in environment such as temperature, daylength, and light intensity, without, however, any variance in genotype.

The descriptive matter which follows pertains to eight year old 'Suapriten' plants grown in the vicinity of Wasco, Kern County, Calif., during 2002 and is believed to apply to plants of the variety grown under similar conditions of soil and climate elsewhere.

TREE

General: (measurements taken on 8 year old tree unless otherwise noted).

Tree size.—Large. Normal for most apricot varieties. Reaches a height of approximately 3.5 meters including normal pruning.

Tree vigor.—Vigorous. Growth of approximately 1.8 to approximately 2 meters height the first growing season.

Tree growth.—Upright-spreading.

Tree productivity.—Productive. Fruit set is usually two or more times the desired amount for marketable size fruit. Thinning and spacing of fruit is necessary.

Tree form.—Vase formed.

Bearer.—Regular. No alternate bearing observed.

Fertility.—Partially self-fertile. Suapriten has set well under tent to exclude bees, but pollinator variety may increase set.

Tree canopy density.—Dense. Pruning is required to open tree vase shape, allowing more sunlight to center of tree.

Tree hardiness.—Hardy in all fruit growing areas of California. Winter chilling requirement is approximately 500 hours at or below 7.2° C.

Tree disease resistance/susceptibility.—No specific testing for relative plant disease resistance/susceptibility has been designed. Under close observation in area described in Wasco, Kern County, Calif., no particular plant/fruit disease resistance/susceptibility has been observed.

Trunk: (measurements at 30 cm above soil line).

Trunk diameter.—Approximately 19 cm. Varies with soil type, fertility, climatic conditions and cultural practices.

Trunk texture.—Smooth to slightly shaggy; increases with age of tree.

Trunk color.—Near Greyed-green 197D in exposed areas to near Greyed-orange 166A in recesses, becoming darker with age.

Branches: (measurements at approximately 90 cm above soil line).

Branch diameter.—Approximately 8 to approximately 9 cm.

Branch texture.—Smooth on 1st year wood, increasing roughness with tree age.

Branch color.—Branches vary from near Greyed-green 197D to near Greyed-green 197B in exposed areas and near Greyed-orange 165B in recesses.

Branch lenticels.—Number:Few — varies from 0 to approximately 3 per square centimeter. Lenticel number varies widely depending on environmental conditions and vigor of the plant. Color: Near Greyed-white 156A. Typical size: Approximately 4 mm in length and approximately 2 mm wide.

Flowering shoots: (data taken in July at midpoint of current-season growth).

Flowering shoot size.—Average diameter; approximately 5 mm.

Flowering shoot color.—Topside: Near Greyed-orange 165A. Underside: Near Greyed-orange 165A.

Flowering shoot lenticels.—Few — varies from approximately 2 to approximately 7 per linear centimeter. Lenticel number varies widely depending on environmental conditions and vigor of the plant.

Flowering shoot leaf buds.—Shape: Ovoid. Width: Approximately 1.5 mm. Length: Approximately 2 mm. Color: Near Greyed-orange 165A.

Flowering shoot flower buds.—Shape: Elongated ovoid. Width: Approximately 1.5 mm. Length: Approximately 4 mm. Color: Approximately Near Greyed-orange 165A. Number: Usually 2.

LEAVES

(data taken in July on fully expanded leaf at midpoint of current-season growth)

Leaf size.—Average length: Approximately 75 mm. Average width: Approximately 70 mm.

Leaf thickness.—Medium.

Leaf color.—Upper surface: Approximately Green 136B. Lower surface: Approximately Green 139B.

Leaf form.—Circular.

Leaf tip.—Cuspidate.

Leaf base.—Rounded-to-truncate.

Leaf margin.—Slightly serrated.

Venation.—Pinately net veined.

Leaf surface texture.—Smooth.

Leaf petiole.—Average length: Approximately 34 mm. Average diameter: Approximately 1.5 mm. Color: Near Red 53B.

Leaf glands.—Form: Globose. Number: Varies from 0 to approximately 5. Position: Alternate on upper portion of petiole and base of leaf blade. Average size: Approximately 0.7 mm by approximately 0.7 mm. Color: Near Greyed-orange 165A.

FLOWERS

(fully opened)

General:

Flower blooming period.—First bloom: Feb. 19, 2002. Full bloom: Feb. 24, 2002.

Flower size.—Average diameter: approximately 28 mm.

Flower aroma.—Very slight.

Flower peduncle:

Length.—Approximately 3 mm.

Diameter.—Approximately 2 mm.

Color.—Near Yellow-green 145C, with highlights of near Red 46D.

Flower petals:

Number.—5.

Arrangement.—Overlapping.

Length.—Approximately 13 mm.

Diameter.—Approximately 11 mm.

Shape.—Circular.

Apex shape.—Rounded.

Base shape.—Narrows at point of attachment.

Color.—White.

Surface texture.—Smooth.

Margins.—Smooth.

Flower sepals:
Number.—5.
Length.—Approximately 6 mm.
Diameter.—Approximately 4.5 mm.
Shape.—Elliptical with cuspidate apex.
Color.—Near Red 47A.
Surface texture.—Smooth.
Flower stamens:
Number.—Approximately 14 to 18, average approximately 17.
Average length.—Approximately 10 mm.
Filament color.—White.
Anther color.—Near Yellow 12B.
Pollen color.—Near Yellow 12B.
Flower pistil:
Number.—Usually one, occasionally two.
Average length.—Approximately 8 mm.
Ovary diameter.—Approximately 3 mm.
Pubescence.—Heavy.
Stigma position.—Level with anthers.

FRUIT

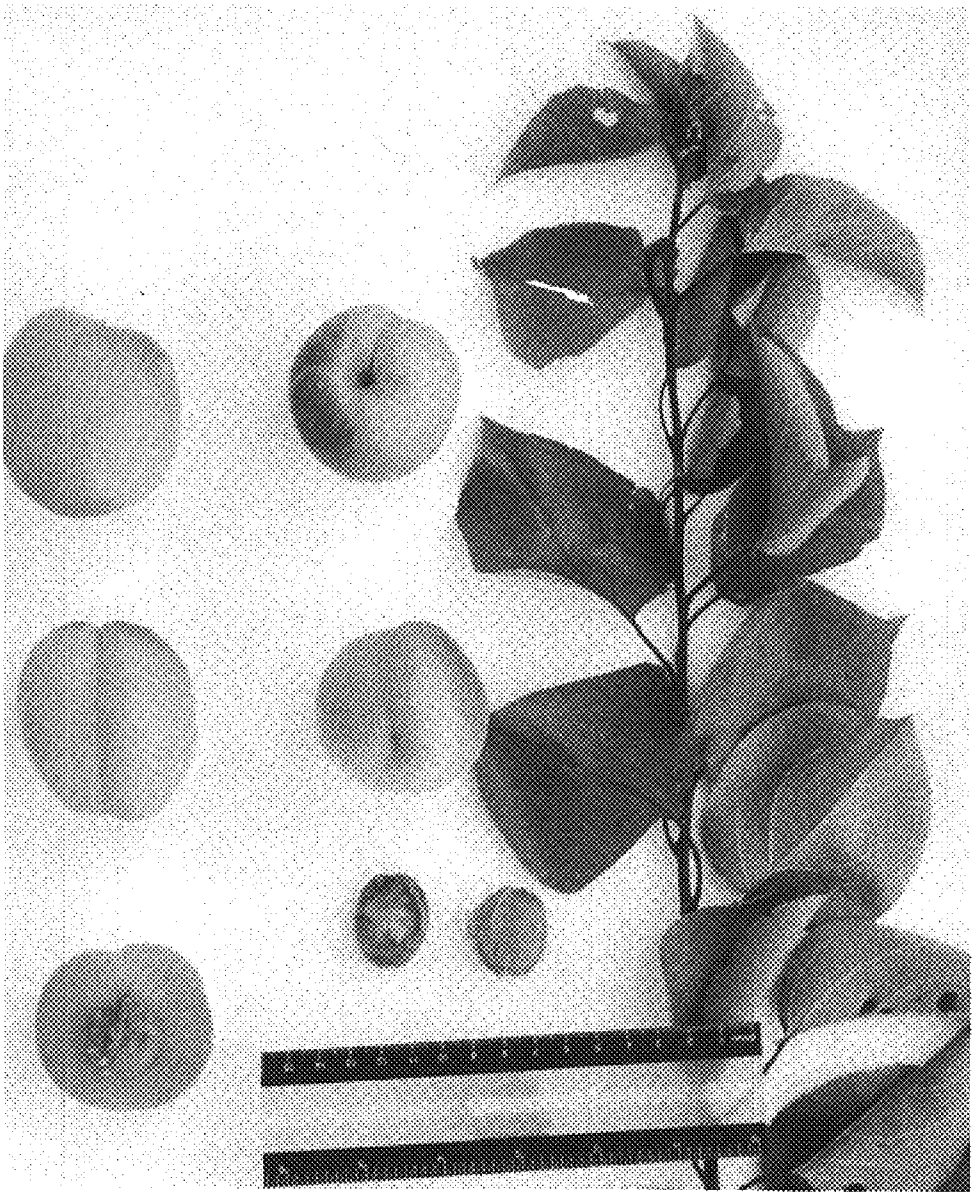
(data taken at firm-ripe on mature tree managed to obtain maximum quality)
General:
Fruit harvest.—Date of first pick: Approximately May 14, 2002. Date of last pick: Approximately May 24, 2002.
Fruit size:
Length (*stem end to apex*).—Approximately 60 mm.
Diameter in line with suture plane.—Approximately 61 mm.
Diameter perpendicular to suture plane.—Approximately 61 mm.
Average weight.—Approximately 110 gm.
Fruit form:
Viewed from apex.—Rounded with slightly pronounced suture. Viewed from side, facing suture: Oblong, slightly asymmetrical. Viewed from side, perpendicular to suture: Oblong, asymmetrical.
Fruit apex shape: Rounded, indented, asymmetrical, one half longer than the other.
Fruit stem-end cavity depth: Shallow.
Fruit stem:
Length.—Approximately 8 mm.
Diameter.—Approximately 2 mm.
Color.—Near Green 143C.
Fruit skin:
Thickness.—Medium.
Adherence to flesh.—Tenacious.
Surface texture.—Smooth.

Pubescence.—Short, with moderate amount.
Ground color.—Orange, near Yellow-orange 20B.
Overcolor.—Some red blush, near Orange-red 34A developing where fruit is exposed to sunlight.
Taste.—Mildly acidic.
Fruit flesh:
Ripens.—Evenly.
Texture.—Fine, firm.
Fibers.—Few, short.
Flavor.—Sweet-tart.
Brix.—Approximately 15°.
Juice.—Moderate.
Aroma.—Slight.
Color.—Orange, near Orange 26A to near Orange 24A.
Pit cavity color.—Near Orange 26A.
Pit cavity length.—Approximately 35 mm.
Pit cavity diameter in line with suture plane.—Approximately 25 mm.
Pit cavity diameter perpendicular to suture plane.—Approximately 14 mm.
Fruit use: Dessert. Market, local and long distance.
Fruit shipping/keeping quality: Good. Holds well in cold storage for three weeks and maintains good firmness and eating quality. Minimal bruising and scarring in packing and shipping trials.
Stone: (measurements taken on dried stones)
Stone freeness.—Semi-freestone.
Stone size.—Length: Approximately 35 mm. Diameter in line with suture plane: Approximately 25 mm. Diameter perpendicular to suture plane: Approximately 14 mm.
Stone form (*viewed from side*).—Oblong.
Stone form (*viewed from stem end*).—Oval, flattened.
Stone base shape.—Rounded, retuse at stem attachment.
Stone apex shape.—Rounded with a slight dull point.
Stone surface.—Irregularly furrowed near base. Heavily ridged throughout. Lightly pitted throughout.
Stone halves.—Equal.
Stone ridges.—One well-developed ridge is present on each side of the suture. The ridge is narrow, beginning at the base and extending throughout the length of the stone.
Stone outgrowing keel.—Well developed.
Stone tendency to split.—None.
Stone color.—Near Greyed-orange 164C.

What is claimed is:

1. A new and distinct variety of apricot tree named 'Suapriten' as herein illustrated and described.

* * * * *



US00PP13444P3

(12) **United States Plant Patent**
Cain

(10) **Patent No.: US PP13,444 P3**
(45) **Date of Patent: Dec. 31, 2002**

(54) **GRAPEVINE CV. 'SUGRATWENTYONE'**

(75) Inventor: **David W. Cain**, Bakersfield, CA (US)

(73) Assignee: **Sun World International, Inc.**, Bakersfield, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 1 day.

(21) Appl. No.: **09/771,294**

(22) Filed: **Jan. 25, 2001**

(65) **Prior Publication Data**

US 2002/0100086 P1 Jul. 25, 2002

(51) **Int. Cl.**[7] **A01H 5/00**
(52) **U.S. Cl.** **Plt./205**
(58) **Field of Search** Plt./205

(56) **References Cited**

U.S. PATENT DOCUMENTS

PP4,787 P 11/1981 Olmo et al. Plt./47

Primary Examiner—Bruce R. Campell
Assistant Examiner—Michelle Kizilkaya
(74) *Attorney, Agent, or Firm*—Knobbe, Martens, Olson & Bear

(57) **ABSTRACT**

A new and distinct grapevine variety characterized by naturally large, red, seedless berries that are crisp, round and uniform. Berries of the new 'Sugratwentyone' variety are thin-skinned and are strongly attached to large, slightly compact clusters.

1 Drawing Sheet

BACKGROUND AND SUMMARY OF THE INVENTION

This invention relates to the discovery and asexual propagation of a new variety of grapevine, *Vitis vinifera* cv. 'Sugratwentyone'. The new variety was first hybridized by David W. Cain in Wasco, Kern County, Calif., the variety being originated by controlled bybridization and subsequent ovule culture of normally abortive seeds. The new 'Sugratwentyone' variety is characterized by producing large clusters of red, naturally large seedless berries that are uniform, crisp and round.

The seed parent is 'Sun World Breeding Selection 90089-165-268' (nonpatented). The pollen parent is 'Sun World International Breeding Selection 90227-127-008' (nonpatented). The parent varieties were first crossed in May, 1993, with the date of first flowering being May, 1995. The new 'Sugratwentyone' variety was first asexually propagated by David W. Cain in December, 1995, near Wasco, Kern County, Calif., using hardwood cuttings.

The new grapevine variety cv. 'Sugratwentyone' differs from its seed parent by producing larger, more nearly round light red berries (as compared to the smaller, reddish-black berries of the seed parent) that ripen approximately one month later. 'Sugratwentyone' differs from its pollen parent by producing berries that are rounder and light red in color, in comparison to the oval, black berries of the pollen parent.

The new variety cv. 'Sugratwentyone' can be distinguished from commonly grown grape varieties such as the 'Redglobe' (U.S. Plant Pat. No. 4,787) and the 'Flame Seedless' (nonpatented) by possessing large clusters of red seedless berries that are crisp and uniform. The berries of the new 'Sugratwentyone' variety color with some difficulty in hot conditions, and are prone to bunch rot due to a combination of thin skin and a slightly compact cluster structure. Moreover, the berries of 'Sugratwentyone' are naturally very large, being among the largest of known seedless grapes. Manipulation by either gibberellic acid or girdling produces berries that are even larger. The berries are strongly attached

to the cluster, mainly due to increased lignification of the peduncle, rachis, pedicel, and torus.

'Sugratwentyone' most nearly resembles the 'Redglobe' variety, but is distinguished from 'Redglobe' by forming berries that are slightly smaller and contain small, vestigial seed remnants as compared to the 'Redglobe' variety. The new variety cv. 'Sugratwentyone' remotely resembles the 'Flame Seedless' variety, but produces berries that are naturally much larger, ripening about six weeks after the 'Flame Seedless' variety.

The new 'Sugratwentyone' variety has been shown to maintain its distinguishing characteristics through successive asexual propagations by, for example, cuttings.

BRIEF DESCRIPTION OF THE FIGURE

The accompanying drawing in FIG. **1** illustrates in full color a typical cluster of berries, a young shoot, and a mature leaf blade of the new grapevine.

DETAILED BOTANICAL DESCRIPTION OF THE INVENTION

Throughout this specification, color names beginning with a small letter signify that the name of that color, as used in common speech, is aptly descriptive. Color names beginning with a capital letter designate values based upon The R.H.S. Colour Chart, published by The Royal Horticultural Society, London, England.

Many of the description values in this specification are based on and conform to those set forth by the International Board for Plant Genetic Resources Institute Grape Descriptors (Vitis spp.) of 1983 and/or 1997 which was developed in collaboration with the Office International de la Vigne et du Vin (OIV) and the International Union for the Protection of New Varieties of Plants (UPOV).

The descriptive matter which follows pertains to 'Sugratwentyone' plants grown in the vicinity of Wasco, Kern County, Calif., during 2000, and is believed to apply to

plants of the variety grown under similar conditions of soil and climate elsewhere:

VINE

General:
Size.—Small.
Vigor.—Weak.
Density of foilage.—Medium to open.
Productivity.—Productive.
Root stock.—Own root.
Trunk:
Shape.—Medium.
Straps.—Long.
Surface texture.—Shaggy.
Inner bark color.—About 177B.

SHOOTS

Young shoot:
Form of tip.—Wide open.
Distribution of anthocyanin coloration of tip.—Absent.
Intensity of anthocyanin coloration of tip.—Absent.
Density of prostrate hairs on tip.—Very sparse.
Density of erect hairs on tip.—Absent.
Flowering shoot:
Vigor during flowering.—Medium.
Attitude during flowering on shoots which are not tied.—Horizontal.
Color of dorsal side of internodes.—About green 144A.
Color of ventral side of internodes.—About green 144A.
Color of dorsal side of nodes.—About green 144A.
Color of ventral side of nodes.—About green 144A.
Density of erect hairs on nodes.—None.
Erect hairs on internode.—Absent.
Density of prostrate hairs on nodes.—None.
Density of prostrate hairs on internodes.—Absent.
Anthocyanin coloration of buds.—Absent.
Tendrils:
Distribution on the shoot at full flowering.—Discontinuous.
Thickness.—Medium.
Color.—About 144B.
Form.—Trifurcated.
Number of consecutive tendrils.—Up to two.
Length of tendril.—Short to medium, about 18.2 cm.

LEAVES

Young leaves:
Color of upper surface of first 4 distal unfolded leaves.—Copper yellow.
Average intensity of anthocyanin coloration of six distal leaves prior to flowering.—Very weak to weak.
Density of prostrate hairs between veins at lower surface of 4th distal unfolded leaf.—Absent.
Density of erect hairs between veins at lower surface of 4th distal unfolded leaf.—Absent.
Density of prostrate hairs on veins at lower surface of 4th distal unfolded leaf.—Very sparse.
Density of erect hairs on veins at lower surface of 4th distal unfolded leaf.—Absent.
Mature leaves:
Average length.—About 15.4 cm.
Average width.—About 16.8 cm.
Size of blade.—Medium.
Shape of blade.—Pentagonal.
Number of lobes.—3 to 5.
Anthocyanin coloration of main veins on the upper side of the blade.—Absent.
Mature leaf profile.—Undulate.
Blistering surface of blade upper surface.—Medium.
Leaf blade tip.—In the plane of the leaf.
Undulation of margin.—Medium.
Apex.—Cuspidate.
Thickness.—Medium.
Undulation of blade between main and lateral veins.—Only near petiole.
Shape of teeth.—Both sides convex.
Length of teeth.—Medium.
Ratio length/width of teeth.—Medium.
General shape of petiole sinus.—Slightly open.
Tooth at petiole sinus.—Present.
Petiole sinus limited by veins.—Absent.
Shape of upper lateral sinus.—Closed to lobes slightly overlapping.
Depth of upper lateral sinus.—Medium.
Density of prostrate hairs between veins on lower surface of blade.—Absent.
Density of erect hairs between veins on lower surface of blade.—Absent.
Density of prostrate hairs on main veins on lower surface of blade.—None or very sparse.
Density of erect hairs on main veins on lower surface of blade.—Sparse.
Density of prostrate hairs on main veins on upper surface of blade.—Absent.
Autumn coloration of leaves.—About yellow 11B (color development occurs late, and leaves are typically killed by frost before extensive color change).
Upper surface:
Color.—About 137A.
Surface texture.—Rugose.
Surface appearance.—Semi-glossy.
Goffering of blade.—Absent.
Lower surface:
Color.—About 137C.
Anthocyanin coloration of main veins on lower leaf surface.—Absent.
Glossiness.—Weak.
Pubescence.—Absent.
Surface texture.—Rugose.
Petiole:
Length of petiole.—Long, about 14.4 cm.
Length of petiole compared to middle vein.—Slightly shorter.
Density of prostrate hairs on petiole.—None.
Density of erect hairs on petiole.—None.
Shape of base of petiole sinus.—V-shaped.
Woody shoot:
Shape.—Medium.
Internode length.—Medium, about 91.6 mm.
Width at node.—About 14.6 mm.
Cross section.—Circular.
Surface.—Striate.
Main color.—About yellowish brown 166C.
Lenticels.—Absent.
Density of erect hairs on nodes.—None.
Density of erect hairs on internodes.—None.
Growth of axillary shoots.—Very weak, about 14.7 cm.

Buds:

Shape.—Pointed.

Size.—Medium, about 0.05 cm length by 0.54 cm width.

Position.—Slightly held out.

Cane bud fruitfulness.—Basal most fruitful, seldom dead.

Time of bud burst.—Late.

FLOWERS

General:

Flowers sex.—Hermaphrodite.

Length of first inflorescence.—Medium, about 16.4 cm.

Position of first flowering node.—3rd.

Number of inflorescences per shoot.—1.1 to 2.

Date of full bloom.—May 4, 2000.

Time of bloom.—Late, as compared with similar varieties in the growing area of Wasco, Kern County, Calif.

Size (*diameter of fully open flower*).—Large.

FRUIT

General:

Ripening period.—Medium to late, about 25 days after the unpatented 'Thompson Seedless' variety.

Use.—Fresh market.

Keeping quality.—Medium.

Resistance.—Insects: Medium. Diseases: Medium.

Shipping quality.—Good.

Date of first harvest.—Aug. 20, 2000.

Solids-sugar.—Low (~15%) to medium (~18%).

Refractometer test.—16.7° brix.

Acid.—Low, about 42 g/L tartaric acid.

Juice pH.—4.24 (on Oct. 13, 2000).

Cluster:

Bunch size (*peduncle excluded*).—Large.

Bunch length (*peduncle excluded*).—Intermediate, about 18.5 cm.

Bunch width.—About 13.6 cm.

Bunch weight.—Medium to high, averaging about 548.6 g.

Bunch density.—Medium.

Number of berries.—About 80.2.

Form.—Conical.

Peduncle:

Length of peduncle.—Short to medium, about 4.5 cm.

Lignification of peduncle.—Strong.

Color.—About 144B.

Berry:

Size.—Very large.

Uniformity of size.—Uniform.

Berry weight.—Very high, about 8.7 g, or up to 13.9 g with girdling and gibberellic acid application.

Shape.—Round.

Presence of seeds.—Rudimentary, about 2.16 mg/seed.

Cross section.—Circular.

Dimensions.—About 25.6 mm longitudinal axis, 25.2 mm horizontal axis.

Skin color (*without bloom*).—Red-Grey, about 184B Greyed Purple group.

Coloration of flesh.—Clear.

Juiciness of flesh.—Slightly juicy.

Berry firmness.—Firm.

Particular flavor.—None.

Bloom (*cuticular wax*).—Medium.

Pedicel length.—Intermediate, about 9.3 mm.

Berry separation from pedicel.—Very difficult.

Visibility of hilum.—Slightly clear.

Torus.—Large.

Skin:

Thickness.—Thin.

Texture.—Tender.

Reticulation.—Absent.

Roughness.—Absent.

Tenacity.—Tenacious to flesh.

Tendency to crack.—None.

What is claimed is:

1. A new and distinct variety of grapevine cv. 'Sugratwentyone' as herein illustrated and described.

* * * * *

FIG. 1

US00PP13164P2

(12) **United States Plant Patent**
Cain

(10) **Patent No.: US PP13,164 P2**
(45) **Date of Patent: Nov. 5, 2002**

(54) **GRAPEVINE CV. 'SUGRATWENTYTHREE'**

(75) Inventor: **David W. Cain**, Bakersfield, CA (US)

(73) Assignee: **Sun World International, Inc.**, Bakersfield, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 2 days.

(21) Appl. No.: **09/772,099**

(22) Filed: **Jan. 25, 2001**

(65) **Prior Publication Data**

US 2002/0100087 P1 Jul. 25, 2002

(51) **Int. Cl.**[7] **A01H 5/00**

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

(58) **Field of Search** Plt./205

Primary Examiner—Bruce R. Campell
Assistant Examiner—Michelle Kizilkaya
(74) *Attorney, Agent, or Firm*—Knobbe, Martens, Olson & Bear

(57) **ABSTRACT**

A new and distinct grapevine variety characterized by round to ovate seedless black berries that are naturally large, firm, and of high eating quality.

1 Drawing Sheet

BACKGROUND AND SUMMARY OF THE INVENTION

This invention relates to the discovery and asexual propagation of a new variety of grapevine, *Vitis vinifera* cv. 'Sugratwentythree'. The new variety was first hybridized by David W. Cain in Wasco, Kern County, Calif., the variety being originated by controlled hybridization and subsequent ovule culture of normally abortive seeds. The new variety is characterized by producing naturally large black seedless grapes that are responsive to girdling to increase berry size. The high quality, firm berries are round to ovate in shape, and ripen in midseason.

The seed parent is the 'Sun World Breeding Selection 89339-089-291' (nonpatented) variety and the pollen parent is the 'Sun World Breeding Selection 89098-194-167' (nonpatented). The parent varieties were first crossed in May, 1992, with the date of first flowering being May 1995. The new 'Sugratwentythree' variety was first asexually propagated by David W. Cain in December 1995 in Wasco, Kern County, Calif., using hardwood cuttings.

The new grapevine variety cv. 'Sugratwentythree' most nearly resembles its seed parent, 'Sun World Breeding Selection 89339-089-291'. 'Sugratwentythree' differs from its seed parent by having a far superior eating quality. 'Sugratwentythree' produces slightly larger, firmer berries that contain smaller vestigial seed traces, as compared to its maternal parent. The new variety 'Sugratwentythree' differs from its paternal parent, 'Sun World Breeding Selection 89098-194-167' by producing berries that are less prone to cracking and rot. Moreover, 'Sugratwentythree' berries are larger, firmer, and have a later ripening date as compared to the berries of the pollen parent.

The new variety cv. 'Sugratwentythree' distinguished from other commonly grown black grapes such as the 'Ribier' (nonpatented) and the 'Summer Royal' (nonpatented) by several important characteristics.

'Sugratwentythree' resembles the 'Ribier' variety, but differs from it by having small, soft, vestigial seed traces as compared to the lignified, normal-sized seeds present in the

'Ribier' variety. Additionally, berries of the new variety 'Sugratwentythree' are firmer and have a higher sugar content compared to the berries of the 'Ribier' variety.

The new variety cv. 'Sugratwentythree' also resembles the nonpatented 'Summer Royal' grape variety. It is distinguished from this variety by having larger berries (6 to 8 grams per berry as compared to 4.3 to 5.3 grams per berry in the 'Summer Royal' variety). Berries of the 'Sugratwentythree' variety ripen approximately 1 week earlier than the 'Summer Royal' variety, on clusters that are more compact compared to the 'Summer Royal' variety.

The new 'Sugratwentythree' variety has been shown to maintain its distinguishing characteristics through successive asexual propagations by, for example, cuttings.

BRIEF DESCRIPTION OF THE FIGURE

The accompanying drawing in FIG. **1** illustrates in full color a typical cluster of berries, a young shoot, and a mature leaf blade of the new grapevine.

DETAILED BOTANICAL DESCRIPTION OF THE INVENTION

Throughout this specification, color names beginning with a small letter signify that the name of that color, as used in common speech, is aptly descriptive. Color names beginning with a capital letter designate values based upon The R.H.S. Colour Chart, published by The Royal Horticultural Society, London, England.

Many of the description values in this specification are based on and conform to those set forth by the International Board for Plant Genetic Resources Institute Grape Descriptors (Vitis spp.) of 1983 and/or 1997 which was developed in collaboration with the Office International de la Vigne et du Vin (OIV) and the International Union for the Protection of New Varieties of Plants (UPOV).

The descriptive matter which follows pertains to 'Sugratwentythree' plants grown in the vicinity of Wasco, Kern County, Calif., during 2000, and is believed to apply to plants of the variety grown under similar conditions of soil and climate elsewhere:

VINE

General:
- *Size.*—Large.
- *Vigor.*—Vigorous.
- *Density of foliage.*—Dense.
- *Productivity.*—Medium to low productive.
- *Root stock.*—Own.

Trunk:
- *Shape.*—Stocky.
- *Straps.*—Long, split.
- *Surface texture.*—Shaggy.
- *Inner bark color.*—About 177B.

SHOOTS

Young shoot:
- *Form of tip.*—Fully open.
- *Distribution of anthocyanin coloration of tip.*—Piping (striped).
- *Intensity of anthocyanin coloration of tip.*—Medium.
- *Density of prostrate hairs on tip.*—Medium.
- *Density of erect hairs on tip.*—Absent.

Flowering shoot:
- *Vigor during flowering.*—*Medium.*
- *Attitude during flowering on shoots which are not tied.*—Horizontal.
- *Color of dorsal side of internodes.*—About Green 144A with Red 183B stripes.
- *Color of ventral side of internodes.*—About Green 144A.
- *Color of dorsal side of nodes.*—About Green 144A with Red 183B stripes.
- *Color of ventral side of nodes.*—About Green 144A.
- *Density of erect hairs on nodes.*—None.
- *Erect hairs on internode.*—Absent.
- *Density of prostrate hairs on nodes.*—None.
- *Density of prostrate hairs on internodes.*—Absent.
- *Anthocyanin coloration of buds.*—Absent.

Tendrils:
- *Distribution on the shoot at full flowering.*—Discontinuous.
- *Thickness.*—Thick.
- *Color.*—Basal area of dorsal side heavily pigmented at approximately Red 183B; ventral side and tips about Green 144B.
- *Form.*—Trifurcated.
- *Number of consecutive tendrils.*—Up to two.
- *Length of tendril.*—Medium, about 22.6 cm.

LEAVES

Young leaves:
- *Color of upper surface of first 4 distal unfolded leaves.*—Green to faintly copper.
- *Average intensity of anthocyanin coloration of six distal leaves prior to flowering.*—Weak.
- *Density of prostrate hairs between veins at lower surface of 4th distal unfolded leaf.*—Absent.
- *Density of erect hairs between veins at lower surface of 4th distal unfolded leaf.*—Absent.
- *Density of prostrate hairs on veins at lower surface of 4th distal unfolded leaf.*—Medium.
- *Density of erect hairs on veins at lower surface of 4th distal unfolded leaf.*—Absent.

Mature leaves:
- *Average length.*—About 15.3 cm.
- *Average width.*—About 19.4 cm.

- *Size of blade.*—Large.
- *Shape of blade.*—Pentagonal.
- *Number of lobes.*—5.
- *Anthocyanin coloration of main veins on the upper side of the blade.*—Absent.
- *Mature leaf profile.*—Undulate.
- *Blistering surface of blade upper surface.*—Strong.
- *Leaf blade tip.*—In the plane of the leaf.
- *Undulation of margin.*—Pronounced.
- *Apex.*—Cuspidate.
- *Thickness.*—Medium.
- *Undulation of blade between main and lateral veins.*—Overall.
- *Shape of teeth.*—Both sides straight.
- *Length of teeth.*—Medium.
- *Ratio length/width of teeth.*—Small.
- *General shape of petiole sinus.*—Lobes slightly overlapping.
- *Tooth at petiole sinus.*—Present.
- *Petiole sinus limited by veins.*—Absent.
- *Shape of upper lateral sinus.*—Lobes slightly overlapping.
- *Depth of upper lateral sinus.*—Medium.
- *Density of prostrate hairs between veins on lower surface of blade.*—Absent.
- *Density of erect hairs between veins on lower surface of blade.*—Absent.
- *Density of prostrate hairs on main veins on lower surface of blade.*—Sparse.
- *Density of erect hairs on main veins on lower surface of blade.*—Sparse.
- *Density of prostrate hairs on main veins on upper surface of blade.*—Absent.
- *Autumn coloration of leaves.*—About Yellow 11B (typically, frost kills leaves before extensive color change, as leaves change color very late in the season).

Upper surface:
- *Color.*—About 137A to 137B.
- *Surface texture.*—Rugose.
- *Surface appearance.*—Semi-glossy.
- *Goffering of blade.*—Present.

Lower surface:
- *Color.*—About 137D.
- *Anthocyanin coloration of main veins on lower leaf surface.*—Absent.
- *Glossiness.*—Weak.
- *Pubescence.*—Absent.
- *Surface texture.*—Rugose.

Petiole:
- *Length of petiole.*—Short.
- *Length of petiole compared to middle vein.*—Much shorter.
- *Density of prostrate hairs on petiole.*—None.
- *Density of erect hairs on petiole.*—None.
- *Shape of base of petiole sinus.*—V-shaped.

Woody shoot:
- *Shape.*—Stocky.
- *Internode length.*—Medium, about 125 mm.
- *Width at node.*—About 12.6 mm.
- *Cross section.*—Circular.
- *Surface.*—Striate.
- *Main color.*—About Reddish-Brown 176A.
- *Lenticels.*—Absent.
- *Density of erect hairs on nodes.*—None.
- *Density of erect hairs on internodes.*—None.
- *Growth of axillary shoots.*—Medium, about 29.5 cm.

Buds:

Shape.—Slightly pointed.

Size.—Medium, about 0.52 cm length by 0.61 cm width.

Position.—Slightly held out.

Cane bud fruitfulness.—Basal fruitful.

Time of bud burst.—Medium.

FLOWERS

General:

Flower sex.—Hermaphrodite.

Length of first inflorescence.—Short, about 13.0 cm.

Position of first flowering node.—3rd to 4th.

Number of inflorescences per shoot.—Up to 1.

Date of full bloom.—May 6, 2000.

Time of bloom.—Medium, as compared with similar varieties in the growing area of Wasco, Kern County, Calif.

Size (*diameter of fully open flower*).—Medium.

FRUIT

General:

Ripening period.—Medium, about 12 days after 'Thompson Seedless' variety.

Use.—Fresh market.

Keeping quality.—Good.

Resistance.—Insects: Medium. Diseases: Medium.

Shipping quality.—Good.

Date of first harvest.—Aug. 10, 2000.

Solids-sugar.—Medium (~18%).

Refractometer test.—About 17.0° brix.

Cluster:

Bunch size (*peduncle excluded*).—Medium.

Bunch length (*peduncle excluded*).—Intermediate, about 14.3 cm.

Bunch width.—About 14.1 cm.

Bunch weight.—Medium, averaging about 498 grams.

Bunch density.—Dense.

Number of berries.—About 86.

Form.—Conical.

Peduncle:

Length of peduncle.—Short, about 4.1 cm.

Lignification of peduncle.—Medium.

Color.—About 145B.

Berry:

Size.—Large.

Uniformity of size.—Variable.

Berry weight.—High, about 7.33 g/berry.

Shape.—Round to ovate.

Presence of seeds.—Rudimentary, about 0.44 mg/seed.

Cross section.—Circular.

Dimensions.—About 23.9 mm longitudinal by 22.1 mm horizontal axis.

Skin color (*without bloom*).—About Blue-Black 202A.

Coloration of flesh.—None.

Juiciness of flesh.—Slightly juicy.

Berry firmness.—Firm.

Particular flavor.—None.

Bloom (*cuticular wax*).—Strong.

Pedicel length.—Long, about 8.5 mm.

Berry separation from pedicel.—Difficult.

Visibility of hilum.—Unclear.

Skin:

Thickness.—Medium.

Texture.—Medium.

Reticulation.—Absent.

Roughness.—Absent.

Tenacity.—Tenacious to flesh.

Tendency to crack.—None.

Sugratwentythree: Table of R.H.S. Color Codes:

			R.H.S. Color Chart
VINE:	Trunk:	Inner bark color:	177B
SHOOTS:	Flowering Shoot:	Dorsal side of internodes:	144A with 183B stripes
		Ventral side of internodes:	144A
		Dorsal side of nodes:	144A with 183B stripes
		Ventral side of nodes:	144A
	Tendrils:	Basal area of dorsal side:	183B
		Ventral side and tips:	144B
LEAVES:	Mature Leaves:	Autmn coloration of leaves:	11B
	Upper Surface:		137A to 137B
	Lower Surface:		137D
	Woody Shoot:		176A
FRUIT:	Peduncle		145B
	Berry:	Skin color (without bloom):	202A

What is claimed is:

1. A new and distinct variety of grapevine cv. 'Sugratwentythree' as herein illustrated and described.

* * * * *

FIG. 1

US00PP16177P3

(12) United States Plant Patent

Cain et al.

(10) Patent No.: US PP16,177 P3

(45) Date of Patent: Jan. 3, 2006

(54) **GRAPEVINE NAMED 'SUGRATWENTYFOUR'**

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

(75) Inventors: **David W. Cain**, Bakersfield, CA (US); **Michael J. Striem**, Bakersfield, CA (US)

(73) Assignee: **Sun World International, Inc.**, Bakersfield, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 150 days.

(21) Appl. No.: **10/618,357**

(22) Filed: **Jul. 10, 2003**

(65) **Prior Publication Data**

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

(52) **U.S. Cl.** **Plt./207**

(58) **Field of Classification Search** Plt./207
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

PP5,151 P 12/1983 Hahn et al. Plt./47

Primary Examiner—Anne Marie Grunberg
(74) *Attorney, Agent, or Firm*—Knobbe, Martens, Olson & Bear, LLP

(57) **ABSTRACT**

A new and distinct grapevine variety characterized by medium-sized round, green-yellowish seedless grapes with mild muscat flavor and a crisp texture. The new variety is a mid-season variety, ripening before any other muscat flavored, seedless grape cultivars grown in California. The grapes of the new variety have medium sugar content and excellent eating quality.

1 Drawing Sheet

1

Latin name of the genus and species claimed: *Vitis vinifera.*

Variety denomination: 'Sugratwentyfour'.

BACKGROUND AND SUMMARY OF THE INVENTION

This invention relates to the discovery and asexual propagation of a new variety of grapevine as herein described and illustrated. The new variety is characterized by medium-sized, white seedless berries having a desirable distinctive muscat flavor, and a crisp juicy flesh. The grapes are round with a tough skin that is greenish yellow in color, and are of excellent eating quality. The new variety ripens midseason, before any other muscat flavored, seedless grape cultivars grown in California.

The new variety was first hybridized by David W. Cain and Michael J. Striem in Wasco, Kern County, Calif., the variety being originated by controlled hybridization and subsequent ovule culture of seed traces and abortive embryo. The seed parent is the variety 'Black Monukka' (unpatented), and the pollen parent is 'Sugrafive' (U.S. Plant Pat. No. 5,151). The parent varieties were first crossed in May 1988, with the date of first sowing being August 1988 and the date of first flowering being May, 1991. The new 'Sugratwentyfour' variety was first asexually propagated by David W. Cain in January, 1992, in Wasco, Kern County, using hardwood cuttings.

The new grapevine variety 'Sugratwentyfour' resembles its seed parent 'Black Monukka' in most characteristics. However, the new variety differs from its seed parent in having light-yellow colored grapes, while 'Black Monukka' bears black colored grapes.

2

The new grapevine variety 'Sugratwentyfour' resembles its pollen parent 'Sugrafive' in many characteristics such as berry color, berry firmness and berry texture. The new variety 'Sugratwentyfour' differs from its pollen parent 'Sugrafive' by having more nearly round berries than 'Sugrafive.' Further, the new variety 'Sugratwentyfour' ripens later than 'Sugrafive.'

'Sugratwentyfour' is distinguished from other commonly grown white seedless grapevine varieties such as 'Sugraeighteen', 'Sugraone', 'Perlette', and 'Thompson Seedless.'

The new grapevine variety 'Sugratwentyfour' resembles the 'Sugraeighteen' grapevine variety by its distinct muscat flavor, berry shape and color. The new grapevine variety differs from the 'Sugraeighteen' variety by having a substantially earlier ripening period—grapes of 'Sugratwentyfour' ripen about the same time as 'Sugraone' and 'Thompson Seedless' varieties. Additionally, the vine of the new variety is more vigorous and less productive (cane pruned) than 'Sugraeighteen' (spur pruned).

The new grapevine variety 'Sugratwentyfour' differs from the 'Sugraone', 'Perlette' and 'Thompson Seedless' and other commonly grown white seedless grapevine varieties by possessing a distinct and moderately mild muscat flavor somewhat similar to that of the seeded Italia grapevine varieties. It also differs from the above listed varieties by having much more nearly round berries than 'Sugraone' or 'Thompson Seedless.'

The new 'Sugratwentyfour' variety has been shown to maintain its distinguishing characteristics through successive asexual propagations by, for example, cuttings.

BRIEF DESCRIPTION OF THE FIGURE

The accompanying photographic illustration in FIG. **1** illustrates in full color a typical cluster of berries, a young shoot, and a mature leaf blade of the new grapevine. The colors are as nearly true as is reasonably possible in a color representation of this type.

DETAILED BOTANICAL DESCRIPTION OF THE INVENTION

Throughout this specification, color names beginning with a small letter signify that the name of that color, as used in common speech, is aptly descriptive. Color names beginning with a capital letter designate values based upon The R.H.S. Colour Chart, published by The Royal Horticultural Society, London, England.

Many of the description values in this specification are based on and conform to those set forth by the International Board for Plant Genetic Resources Institute Grape Descriptors (*Vitis* spp.) of 1983 and/or 1997 which was developed in collaboration with the Office International de la Vigne et du Vin (OIV) and the International Union for the Protection of New Varieties of Plants (UPOV).

The descriptive matter which follows pertains to 'Sugratwentyfour' plants grown in the vicinity of Wasco, Kern County, Calif., during 2002, and is believed to apply to plants of the variety grown under similar conditions of soil and climate elsewhere.

VINE

General:

- *Width.*—Approximately 175–200 cm.
- *Height.*—Approximately 240–270 cm.
- *Vigor.*—Medium — plants are moderately vigorous when pruned to six canes per vine.
- *Density of foliage.*—Medium.
- *Productivity.*—Medium productive — when grown on on four year old vines pruned to six canes per vine, the plant produces approximately 20–25 bunches per vine.
- *Root stock.*—Own roots.

Trunk:

- *Shape.*—Irregular flat elliptic to broadly elliptic.
- *Surface texture.*—Medium.
- *Inner bark color.*—About Greyed-orange 177B.
- *Outer bark color.*—About Greyed-orange 165C (with some areas being about Grey 201B under open canopy).
- *Diameter* (*at 20 cm above soil line*).—Approximately 50 mm.

SHOOTS

Young shoot:

- *Form of tip.*—Half-open.
- *Distribution of anthocyanin coloration of tip.*—Absent.
- *Intensity of anthocyanin coloration of tip.*—Absent.
- *Density of prostrate hairs on tip.*—Very sparse.
- *Density of erect hairs on tip.*—Absent.
- *Color.*—About Yellow-green 144B.

Woody shoot (mature canes):

- *Shape of cross section.*—Circular.
- *Internode length.*—Long — approximately 35.7 mm.
- *Width at node.*—Approximately 14.83 mm.
- *Surface.*—Ribbed.
- *Main color.*—Light brown.
- *Lenticels.*—Absent.

- *Density of erect hairs on nodes.*—None or very sparse.
- *Density of erect hairs on internodes.*—None or very sparse.
- *Growth of axillary shoots.*—Weak; approximately 17.9 cm.
- *Color.*—About Greyed-orange 165B to Greyed-orange 166D.

Flowering shoot:

- *Vigor during flowering.*—Strong.
- *Attitude during flowering on shoots which are not tied.*—Semi-erect.
- *Color of dorsal side of internodes.*—About Yellow-green 144A.
- *Color of ventral side of internodes.*—About Yellow-green 144A.
- *Color of dorsal side of nodes.*—About Yellow-green 144A.
- *Color of ventral side of nodes.*—About Yellow-green 144A.
- *Density of erect hairs on nodes.*—Absent.
- *Erect hairs on internode.*—Absent.
- *Density of prostrate hairs on nodes.*—Absent.
- *Density of prostrate hairs on internodes.*—Absent.
- *Anthocyanin coloration of buds.*—Absent.

Tendrils:

- *Distribution on the shoot at full flowering.*—Discontinuous.
- *Thickness.*—Thick.
- *Color.*—About Yellow-green 151A.
- *Form.*—Bifurcated.
- *Number of consecutive tendrils.*—Up to two.
- *Length of tendril.*—Medium; approximately 19 cm.

LEAVES

Young leaves:

- *Color of upper surface of first 4 distal unfolded leaves.*—About Green 141A.
- *Average intensity of anthocyanin coloration of six distal leaves prior to flowering.*—Absent.
- *Density of prostrate hairs between veins at lower surface of 4th distal unfolded leaf.*—Absent.
- *Density of erect hairs between veins at lower surface of 4th distal unfolded leaf.*—Absent.
- *Density of prostrate hairs on veins at lower surface of 4th distal unfolded leaf.*—Absent.
- *Density of erect hairs on veins at lower surface of 4th distal unfolded leaf.*—Absent.

Mature leaves:

- *Average length.*—Approximately 103 mm.
- *Average width.*—Approximately 164 mm.
- *Size of blade.*—Medium.
- *Shape of blade.*—Pentagonal.
- *Number of lobes.*—Three.
- *Anthocyanin coloration of main veins on the upper side of the blade.*—Absent.
- *Mature leaf profile.*—Flat.
- *Blistering surface of blade upper surface.*—Absent.
- *Leaf blade tip.*—Curved downwardly.
- *Undulation of margin.*—Slight.
- *Apex.*—Cuspidate.
- *Thickness.*—Medium.
- *Undulation of blade between main and lateral veins.*—Absent.
- *Shape of teeth.*—Mixture of both sides straight and both sides convex.
- *Length of teeth.*—Short.

Ratio length/width of teeth.—Small.
General shape of petiole sinus.—Half-open.
Tooth at petiole sinus.—Absent.
Petiole sinus limited by veins.—Absent.
Shape of upper lateral sinus.—Open.
Depth of upper lateral sinus.—Shallow.
Density of prostrate hairs between veins on lower surface of blade.—Absent.
Density of erect hairs between veins on lower surface of blade.—Absent.
Density of prostrate hairs on main veins on lower surface of blade.—None or very sparse.
Density of erect hairs on main veins on lower surface of blade.—None or very sparse.
Density of prostrate hairs on main veins on upper surface of blade.—Absent.
Autumn coloration of leaves.—About Yellow-green 153B.

Upper surface:
Color.—About Yellow-green 147A.
Surface texture.—Smooth.
Surface appearance.—Semi-glossy.
Goffering of blade.—Absent.

Lower surface:
Color.—About Yellow-green 146A.
Anthocyanin coloration of main veins on lower leaf surface.—Absent.
Glossiness.—Weak.
Pubescence.—Absent.
Surface texture.—Wrinkled.
Surface appearance.—Dull.

Petiole:
Length of petiole.—Medium; approximately 9.5 cm.
Length of petiole compared to middle vein.—Slightly shorter.
Density of prostrate hairs on petiole.—Absent.
Density of erect hairs on petiole.—Absent.
Shape of base of petiole sinus.—U-shaped.

Buds:
Shape.—Slightly pointed.
Size.—Medium; approximately 4 by 6 mm.
Position.—Slightly held out.
Cane bud fruitfulness.—Basal most fruitful.
Time of bud burst.—Early — Mar. 18, 2002.

FLOWERS

General:
Flower sex.—Hermaphrodite.
Length of first inflorescence.—Medium.
Position of first flowering node.—Second node.
Number of inflorescences per shoot.—Approximately 1.1 to 2.
Date of full bloom.—May 11, 2002.
Time of bloom.—Early (as compared to similar varieties growing in the same region.).
Size (*diameter of fully open flower*).—Approximately 4.5 mm.
Color.—About Yellow-green 145B.

FRUIT

General:
Ripening period.—Medium — approximately 0 days ahead of Thompson Seedless variety.
Use.—Fresh market.

Storage quality.—Medium — berry stays firm and crunchy but tends to develop brown rubbing marks; slight drying of stem and rachis, no shatter, some reduction in flavor, no shriveling, no rot.
Resistance.—Neither resistance nor susceptibility to diseases or pests has been observed in this variety.
Shipping quality.—Medium — some sensitivity to bruising and rubbing.
Date of first harvest.—Jul. 15, 2002.
Solids-sugar.—Medium — approximately 18%.
Refractometer test.—Approximately 18.0.
Acid.—Medium — approximately 5.04 g/liter.
Juice pH.—Approximately 3.9.

Cluster:
Bunch size (*peduncle excluded*).—Medium.
Bunch length (*peduncle excluded*).—Intermediate — approximately 19.4 cm.
Bunch width.—Approximately 16.1 cm.
Bunch weight.—Low — approximately 561 g.
Bunch density.—Loose.
Number of berries.—Approximately 152.
Form.—Cylindrical.

Peduncle:
Length of peduncle.—Short — approximately 4.07 cm.
Lignification of peduncle.—Weak.
Color.—About Yellow-green 146B.

Berry:
Size.—Medium.
Uniformity of size.—Variable.
Berry weight.—Low — approximately 3.68 g.
Shape.—Round.
Presence of seeds.—Rudimentary — approximately 0.6 mg.
Cross section.—Circular.
Dimensions.—Approximately 198 mm longitudinal axis by approximately 168 mm horizontal axis.
Skin color (*without bloom*).—About Greyed-yellow 160A.
Coloration of flesh.—Transparent greenish.
Juiciness of flesh.—Slightly juicy.
Flesh color.—About Greyed-yellow 161A.
Berry firmness.—Medium.
Particular flavor.—Muscat.
Bloom (*cuticular wax*).—Very weak.
Pedicel length.—Approximately 7.80 mm.
Berry separation from pedicel.—Easy.
Visibility of hilum.—Slightly clear.

Skin:
Thickness.—Medium.
Texture.—Smooth and moderately tough.
Reticulation.—Absent.
Roughness.—Absent.
Tenacity.—Free.

What is claimed is:

1. A new and distinct variety of grapevine as herein illustrated and described.

* * * * *

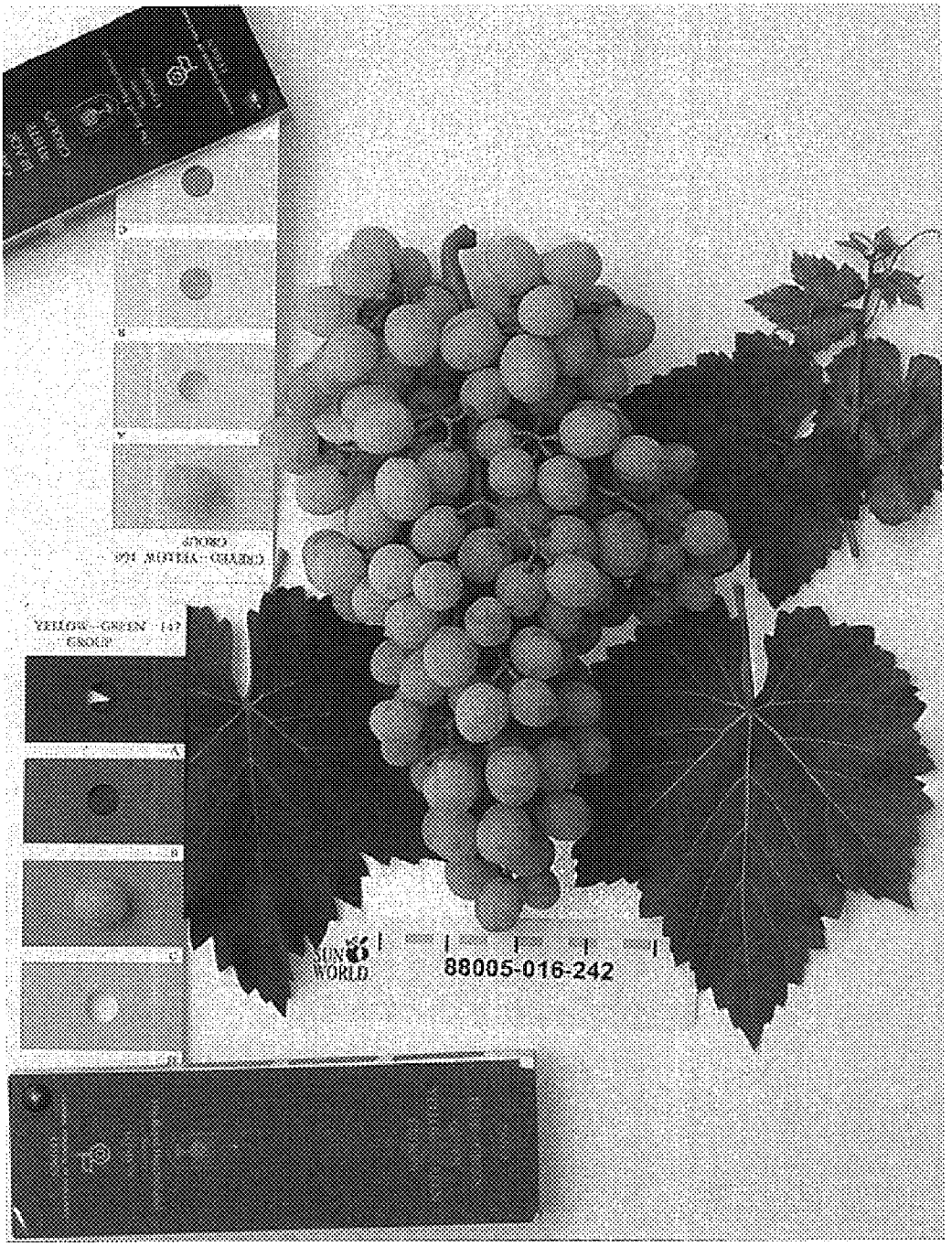

FIG. 1

US00PP19065P3

(12) United States Plant Patent

Cain et al.

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(54) **GRAPEVINE PLANT NAMED 'SUGRATHIRTYONE'**

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

(75) Inventors: **David W. Cain**, Bakersfield, CA (US); **Michael J. Striem**, Bakersfield, CA (US)

(73) Assignee: **Sun World International, LLC**, Bakersfield, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 318 days.

(21) Appl. No.: **11/329,195**

(22) Filed: **Jan. 10, 2006**

(65) **Prior Publication Data**

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

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

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

(56) **References Cited**

U.S. PATENT DOCUMENTS

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(57) **ABSTRACT**

A new and distinct grapevine variety characterized by possessing elliptic shaped, medium sized green-yellowish seedless grapes having a crisp flesh texture. The grapes have a mild neutral flavor, medium sugar content, and excellent eating quality. The new variety possesses exceptional late-ripening characteristics. Additionally, the bunches have the ability to stay on the vine for a month or more, while maintaining commercial harvest quality.

1 Drawing Sheet

Latin name of the genus and species claimed: *Vitis vinifera.*

Variety denomination: 'Sugrathirtyone'.

BACKGROUND AND SUMMARY OF THE INVENTION

This invention relates to the discovery and asexual propagation of a new variety of grapevine as herein described and illustrated. The new variety was first hybridized by David. W. Cain and Michael J. Striem in Wasco, Kern County, Calif., the variety being originated by controlled hybridization and subsequent culture of seed traces and embryo rescue procedures.

The new variety 'Sugrathirtyone' is characterized by possessing medium sized green-yellowish seedless grapes having a mild neutral flavor. The grapes have an elliptic shape, a crisp flesh texture, medium sugar content and excellent eating quality. The new variety 'Sugrathirtyone' is exceptional with its late ripening, as the grapes ripen after any other seedless grape cultivars grown and marketed commercially in California. Further, the bunches are able to stay on the vine for a month or more, while still maintaining commercial harvest quality.

The new variety 'Sugrathirtyone' was created by hybridization of two "seedless" grapes possessing small, abortive, vestigial ovules. From the initial population of hybrid ovules, embryo rescue methods were used to produce a population from which the present variety was selected. The seed parent is '92147-050-238' (unpatented) and the pollen parent is '92187-055-030' (unpatented). The parent varieties were first crossed in May 1999, with the date of first sowing

being August 1999, and the date first flowering being May 2001.

The new 'Sugrathirtyone' variety was first asexually propagated by Dr. Michael Striem in December 2001 in Wasco, Kern County, Calif. using hardwood cuttings.

The new variety 'Sugrathirtyone' resembles its seed parent '92147-050-238' in berry color and shape. However, 'Sugrathirtyone' has a much larger natural berry size of approximately 4.55 grams, compared to the seed parent's natural berry size of approximately 3.35 grams. Additionally, the seed parent has a noticeable, dark and hard seed-trace while the seed-trace of 'Sugrathirtyone' is very small and soft.

The new variety 'Sugrathirtyone' resembles its pollen parent '92187-055-030' in berry color and shape. However, 'Sugrathirtyone' has a much larger natural berry size of 4.55 grams, compared to the pollen parent's natural berry size of 4.26 grams. Further, while the berries of the pollen parent turn brown when exposed to direct sunshine, the berries of the new variety 'Sugrathirtyone' stay light-green with a milky-creamy/opaque look, turning slightly yellowish at the end of the harvest season.

The new variety 'Sugrathirtyone' is similar to the comparable variety 'Sugraone' (U.S. Pat. No. 3,106) in its appearance, bunch structure and berry shape. However, the new variety ripens about 6–8 weeks later than 'Sugraone.' The new variety 'Sugrathirtyone' also develops higher sugar levels than 'Sugraone' at harvest.

It is to be understood that variations of the usual magnitude from the described above may occur with changes in growing conditions, irrigation, fertilization, pruning, management and climatic variations.

The new 'Sugrathirtyone' variety has been shown to maintain its distinguishing characteristics through successive asexual propagations by, for example, cuttings.

BRIEF DESCRIPTION OF THE FIGURE

The accompanying drawing in FIG. **1** illustrates in full color a typical cluster of berries, a young shoot, and a mature leaf blade of the new grapevine at 5 years of age. The colors are as nearly true as is reasonably possible in a color representation of this type.

DETAILED BOTANICAL DESCRIPTION OF THE INVENTION

Throughout this specification, color names beginning with a small letter signify that the name of that color, as used in common speech, is aptly descriptive. Color names beginning with a capital letter designate values based upon the R.H.S. Colour Chart, published by The Royal Horticultural Society, London, England.

Many of the description values in this specification are based on and conform to those set forth by the International Board for Plant Genetic Resources Institute Grape Descriptors (Vitis spp.) of 1983 and/or 1997 which was developed in collaboration with the Office International de la Vigne et du Vin (OIV) and the International Union for the Protection of New Varieties of Plants (UPOV).

The descriptive matter which follows pertains to 'Sugrathirtyone' plants grown in the vicinity of Wasco, Kern County, Calif., during 2002, 2003, and 2004, and is believed to apply to plants of the variety grown under similar conditions of soil and climate elsewhere:

VINE

General:

- *Planting.*—Trained on 'Cross-Arm'/T trellis, planted in a 7 ft.×12 ft. spacing.
- *Practices.*—Gene-pool-vine: Cane pruned to approximately 6 canes per vine and trimmed once in the early summer. Test-vines: Spur pruned to approximately 12 to 18 two-bud-spurs per vine.
- *Size.*—Medium. Height: Approximately 1.80 to 2.10 m. Width: Approximately 1.70 to 2.00 m.
- *Vigor.*—Medium-weak.
- *Fresh pruning weight.*—Approximately 1.9 kg per vine.
- *Density of foliage.*—Medium.
- *Productivity.*—Very productive — approximately 95 clusters per vine.
- *Yield.*—Approximately 11.73 kg per vine, thinned to approximately 32 clusters per vine.
- *Crop load.*—Approximately 6.17 kg per vine (kg fruit per kg fresh-pruning-weight).
- *Root stock.*—Not applicable.
- *Own root.*—Yes.

Trunk:

- *Cross section shape.*—Irregular flat elliptic to broadly elliptic.
- *Diameter (at 20 cm above soil level).*—*Approximately* 52 mm.
- *Straps.*—Split.
- *Surface texture.*—Shaggy.
- *Inner back color.*—Near Greyed-orange 177A.
- *Outer bark color.*—Near Brown 200A with near Grey 201B.

SHOOTS

Young shoot:

- *Form of tip.*—Slightly open.
- *Distribution of anthocyanin coloration of tip.*—Absent.
- *Intensity of anthocyanin coloration of tip.*—Absent.
- *Density of prostrate hairs on tip.*—Very sparse.
- *Density of erect hairs on tip.*—Absent.

Woody shoot:

- *Shape.*—Slender.
- *Internode length.*—Approximately 36.8 mm.
- *Width at node.*—Approximately 10.8 mm.
- *Cross section.*—Circular.
- *Surface.*—Smooth.
- *Main color.*—Near Greyed-orange 165B.
- *Lenticels.*—Absent.
- *Density of erect hairs on nodes.*—None or very sparse.
- *Density of erect hairs on internodes.*—None or very sparse.
- *Growth of axillary shoots.*—Medium, approximately 21.72 cm.

Flowering shoot:

- *Vigor during flowering.*—Weak.
- *Attitude during flowering on shoots which are not tied.*—Semi-erect.
- *Color of dorsal side of internodes.*—Near Yellow-green 144A with near Greyed-purple 183C stripes.
- *Color of ventral side of internodes.*—Near Yellow-green 144A with near Greyed-purple 183C stripes.
- *Color of dorsal side of nodes.*—Near Yellow-green 144A near Greyed-purple 183C stripes.
- *Color of ventral side of nodes.*—Near Yellow-green 144A with near Greyed-purple 183C stripes.
- *Density of erect hairs on nodes.*—None.
- *Erect hairs on internode.*—Absent.
- *Density of prostrate hairs on nodes.*—None.
- *Density of prostrate hairs on internodes.*—Absent.
- *Anthocyanin coloration of buds.*—Weak.

Tendrils:

- *Distribution of the shoot at full flowering.*—Discontinuous.
- *Thickness.*—Medium.
- *Color.*—Near Yellow-green 145A.
- *Form.*—Bifurcated.
- *Number of consecutive tendrils.*—Up to 2.
- *Length of tendril.*—Short, approximately 8.24 cm.

LEAVES

Young leaves:

- *Color of upper surface of first 4 distal unfolded leaves.*—Near Yellow-green 144A.
- *Average intensity of anthocyanin coloration of six distal leaves prior to flowering.*—Absent or very weak.
- *Density of prostrate hairs between veins at lower surface of 4th distal unfolded leaf.*—Absent.
- *Density of erect hairs between veins at lower surface of 4th distal unfolded leaf.*—Absent.
- *Density of prostrate hairs on veins at lower surface of 4th distal unfolded leaf.*—Absent.
- *Density of erect hairs on veins at lower surface of 4th distal unfolded leaf.*—Absent.

Mature leaves:

- *Average length.*—Approximately 114.6 mm.
- *Average width.*—Approximately 156.6 mm.
- *Size of blade.*—Medium.
- *Shape of blade.*—Circular.

Number of lobes.—Approximately 3.
Anthocyanin coloration of main veins on the upper side of the blade.—Absent.
Mature leaf profile.—Flat.
Blistering surface of blade upper surface.—Absent.
Leaf blade tip.—In the plane of the leaf.
Undulation of margin.—Slight.
Thickness.—Medium.
Undulation of blade between main and lateral veins.—Absent.
Shape of teeth.—Both sides convex.
Length of teeth.—Medium.
Ratio length/width of teeth.—Medium.
General shape of petiole sinus.—Half open.
Tooth at petiole sinus.—Absent.
Petiole sinus limited by veins.—Absent.
Shape of upper lateral sinus.—Open.
Depth of upper lateral sinus.—Very shallow.
Density of prostrate hairs between veins on lower surface of blade.—Absent.
Density of erect hairs between veins on lower surface of blade.—Absent.
Density of prostrate hairs on main veins on lower surface of blade.—Absent.
Density of erect hairs on main veins on lower surface of blade.—Absent.
Density of prostrate hairs on main veins on upper surface of blade.—Absent.
Autumn coloration of leaves.—Near Greyed-yellow 162A. Slow to develop. Normally frost kills leaves before extensive color change.

Upper surface:
Color.—Near Green 137A.
Surface texture.—Smooth.
Surface appearance.—Dull.

Lower surface:
Color.—Near Yellow-green 147B.
Anthocyanin coloration of main veins on lower leaf surface.—Absent.
Glossiness.—Weak.
Pubescence.—Absent.
Surface texture.—Smooth.
Surface appearance.—Dull.

Petiole:
Length of petiole.—Medium, approximately 11.22 cm.
Length of petiole compared to middle vein.—Slightly shorter.
Diameter.—Approximately 3.5 mm.
Density of prostrate hairs on petiole.—None.
Density of erect hairs on petiole.—None.
Shape of base of petiole sinus.—V-shaped.
Color.—Near Yellow-green 145B.

Buds:
Shape.—Slightly pointed.
Size.—Large, approximately 6 mm×7 mm.
Position.—Slightly held out, approximately 45° angle.
Cane bud fruitfulness.—Basal most fruitful.
Time of bud burst.—Medium, Mar. 15, 2004.

FLOWERS

General:
Flower sex.—Hermaphrodite.
Length of first inflorescence.—Long, approximately 29.5 cm.
Position of first flowering node.—Fourth.

Number of inflorescences per shoot.—Approximately 1.1 to 2.
Date of full bloom.—Approximately May 18, 2004.
Time of bloom.—Medium.
Size (diameter of fully open flower).—Medium, approximately 5 mm.

FRUIT

General:
Ripening period.—Late, approximately 22 days after 'Thompson Seedless' (unpatented) variety.
Use.—Fresh market.
Keeping quality.—Good.
Shipping quality.—Good.
Date of first harvest.—Approximately Sep. 5, 2004.
Solids-sugar.—Medium (≈18%). Refractometer test: Approximately 18.4. Acid: Medium, approximately 4.24 gr./L tartaric acid.
Juice pH.—Approximately 3.7.
Tendency to crack.—Absent.
Sensitivity to sunburn.—Absent.
Fruit shrivel after ripe.—Absent.
Secondary clusters.—Many.
Resistance.—Neither resistance nor susceptibility to diseases or pests has been observed in this variety.

Cluster:
Bunch size (peduncle excluded).—Small.
Bunch length (peduncle excluded).—Intermediate, approximately 22.8 cm.
Bunch width.—Approximately 11.32 cm.
Bunch weight.—Low, approximately 367 g.
Bunch density.—Medium.
Number of berries.—Approximately 109.2.
Form.—Conical.

Peduncle:
Length of peduncle.—Medium, approximately 44.78 mm.
Lignification of peduncle.—Medium.
Color.—Near Yellow-green 144A.

Berry:
Size.—Medium.
Uniformity of size.—Variable.
Berry weight.—Natural: Medium, approximately 4.55 g. Gibberellic acid treated: High, approximately 7.26 to 8.74 g.
Shape.—Broad elliptic.
Presence of seeds.—Rudimentary.
Cross section.—Circular.
Dimensions.—Longitudinal axis: Approximately 18.96 mm. Horizontal axis: Approximately 17.14 mm.
Skin color (without bloom).—Near Yellow-green 151A.
Coloration of flesh.—Near Greyed-yellow 161A.
Juiciness of flesh.—Slightly juicy.
Berry firmness.—Firm.
Particular flavor.—None.
Bloom (cuticular wax).—Very weak.
Pedicel length.—Intermediate, approximately 7.6 mm.
Berry separation from pedicel.—Medium.
Visibility of hilum.—Unclear.

Skin:
Thickness.—Medium.
Texture.—Medium.
Reticulation.—Absent.
Roughness.—Absent.
Tenacity.—Tenacious to flesh.

Seed:

Number of seeds per berry.—Approximately 1.1.

Size.—Small.

Color.—Ranges between green to yellow. Seed color changes dramatically with environmental conditions and maturity.

Texture.—Soft.

Endosperm.—Absent.

Fresh weight of seed-traces/berry.—Approximately 50.6 mg.

Room-dry weight of seed-traces/berry.—Approximately 0.48 mg.

What is claimed is:

1. A new and distinct variety of grapevine as herein illustrated and described.

* * * * *

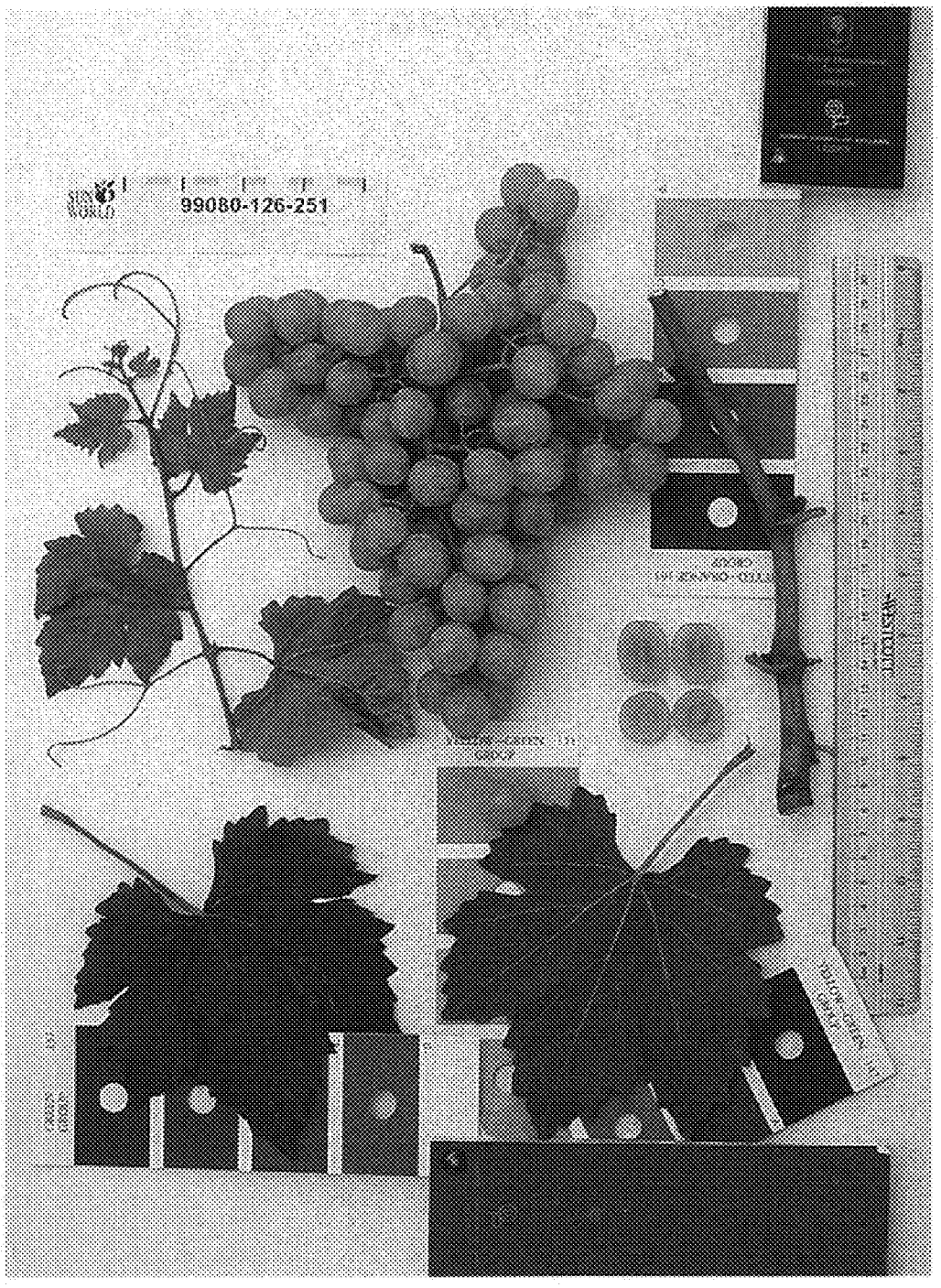

FIG. 1