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Maillard et al.

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(54) **NECTARINE TREE NAMED 'NECTARLIGHT'**
(50) Latin Name: ***Prunus persica* var. *nucipersica***
Varietal Denomination: **Nectarlight**

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(57) **ABSTRACT**

A new and distinct variety of nectarine tree, denominated 'Nectarlight', has fruits of very long shelf life without alteration before and after harvesting, a semi-sweet white flesh of high eating quality and an attractive red skin. Fruits can be consumed crunchy or melting.

3 Drawing Sheets

Botanical classification: *Prunus persica* var. *nucipersica.*
Variety denomination: 'Nectarlight'.

BACKGROUND OF THE NEW VARIETY

The present invention relates to a new and distinct variety of nectarine tree, *Prunus persica* var. *nucipersica,* which has been given the variety denomination 'Nectarlight'. This new tree produces fruit with a long shelf life without alteration both on the tree after growth completion and after harvesting, very good eating quality, clingstone white flesh fruit for fresh market in August in the Pyrénées-Orientales departement, France. Contrast is made to 'Nectarjewel' (U.S. Plant Pat. No. 19,380), a standard white nectarine variety, and to its seed parent 'Nectareine' (U.S. Plant Pat. No. 17,480), a yellow nectarine tree, for reliable description. 'Nectarlight' is a promising candidate for commercial success in that it has very attractive fruits with very long shelf life without alteration before and after harvesting.

ORIGIN OF THE VARIETY

The 'Nectarlight' white nectarine tree originated in a cultivated area of the south of France, in the Pyrénées-Orientales departement, where it was tested. The 'Nectarlight' variety resulted from a free pollination of the 'Nectareine' (U.S. Plant Pat. No. 17,480) yellow nectarine tree, which was the seed parent. The pollen parent is unknown. 'Nectarlight' was provisionally designated, tested and genetically identified by a genetic profile, under number 03.05.67 NB and was registered at the Official Catalogue of the Agriculture Ministry of the French Republic on Nov. 14, 2007 under number 1024467. It was obtained by seedling and propagated by grafting on a 'Franc Inra Montclar®' (non-patented) rootstock tree. It has been determined to have unique tree and fruit characteristics making it worthy for commercial fresh fruit production. There are no known effects of the standard 'Franc Inra Montclar®' (non-patented) rootstock on the scion cultivar. Asexually propagated plants remained true to the original tree and all characteristics of the tree and the fruit were transmitted. The plant was reproduced asexually by us in Elne, Pyrénées-Orientales departement, France.

SUMMARY OF THE VARIETY

The new and distinct variety of nectarine tree blooms in March at Perpignan in the Pyrénées-Orientales departement, France. More particularly, it generally blooms between the 8^{th} and the 17^{th} of March under normal climatic conditions, five days after 'Nectarjewel' (U.S. Plant Pat. No. 19,380).

The first fruit of 'Nectarlight' nectarine tree ripens in August, two weeks after 'Nectarjewel' (U.S. Plant Pat. No. 19,380). More particularly, it approximately ripens between August 10^{th} and 22^{th} under normal climatic conditions. The date of maturity varies slightly with the prevailing climatic conditions.

DESCRIPTION OF THE DRAWINGS

In the accompanying drawing, which are as nearly true as it is reasonably possible to make in a color illustration of this type:

FIG. **1** is a color photograph which shows a twig bearing typical fruit specimens of the new variety, and leaves of the new variety.

FIG. **2** is a color photograph which shows two fruit specimens of the new variety, leaves of the new variety and and a third fruit cut in half for depicting the fruit flesh, the pit cavity and the stone of the new variety.

FIG. **3** is a color photograph with reverse and size views of flowers of the new variety, and, with petals removed, reproductive organs of the new variety.

Due to chemical development, processing and printing, the leaves and fruit depicted in these photographs may or may not be accurate when compared to the actual botanical specimen.

DETAILED BOTANICAL DESCRIPTION

The tree, flowers, and fruits may vary in slight detail due to variations in soil type, cultural practices, and climatic condi-

tion. The potential for commercial production of fresh fruit by 'Nectarlight' is high, due to fruit very long shelf life without alteration before and after harvesting.

Trees are vigorous and large stature half-standing in a semi-spread to semi-upright out aspect. The anthocyanic coloration of the flowering shoot is present excluding brushwood side away from sun. Flowering begins semi-lately in springtime. The type of flower is showy with medium petal size. Petals are light pink. Leaf glands are present and reniform. Time of maturity for consumption is semi-late. The fruit flesh is white and its skin is very thick, featuring a luminous pink-washed red color. The stone is medium size. Fruit taste is semi-sweet.

Compared to its seed parent 'Nectareine' (U.S. Plant Pat. No. 17,480), which produces yellow nectarines, 'Nectarlight' produces white nectarines. 'Nectareine' blooms earlier than 'Nectarlight', between March 3rd and 14th under normal climatic conditions, and also ripens earlier, between July 22th and 30th under normal climatic conditions.

'Nectarlight' variety blooms 5 days after and ripens 2 weeks later than the 'Nectarjewel' (U.S. Plant Pat. No. 19,380) variety. 'Nectarlight' also produces only 30 flowers per meter, instead of 35 and more flowers per meter for 'Nectarjewel'. 'Nectarjewel' flowers are bigger. 'Nectarlight' fruit color is a luminous pink-washed red, whereas 'Nectarjewel' fruit color is darker. However, fruit shapes and tastes are very similar between both varieties, and their respective times of maturity allow 'Nectarlight' fruits to enter the market right after 'Nectarjewel' fruits.

DETAILED DESCRIPTION

Referring more specifically to the pomological details of this new and distinct variety of nectarine tree, the following was observed during the 2007 and 2008 growing seasons under the ecological conditions prevailing at the orchards located near the town of Elne, Pyrénées-Orientales departement, France. All observations have been done on rootstock cultivar. The rootstock was a 'Franc Inra Montclar®' (non-patented) tree. More particularly, observations relative to tree, trunk, branches, leaves and fruit were done in August 2007 and August 2008 on trees in their fourth and fifth growing season. Observations relative to flowers were done in March 2007 and March 2008 on trees in their fourth and fifth growing season. All major color code designations are by reference to The R.H.S. Colour Chart (Fourth Edition) provided by The Royal Horticultural Society of Great Britain.

Tree:

Size:

Generally.—Considered large as compared to other common commercial nectarine cultivars. The tree size the first year was approximately 280 cm. The tree was pruned during each following dormant season to a height of approximately 250 cm. Current seasons shoots growth could reach 80 cm. So the tree size from the second year (second and next years) reached a final height of 330 cm with current seasons shots length comprised.

Spread: Approximately 1.5 to 2.0 meters with a cylindrical shape. The whole orchard was oriented to a central leader organisation, with tree lines spaced of 4.0 meters and trees spaced of 1 meter in a same tree line.

Vigor: Considered vigorous. The present variety grew from about 200 cm to 280 cm in height during the first growing season. For second and following seasons, the variety was pruned to an approximate height of 250 cm.

Productivity: Productive to very productive. Fruit set is spaced by thinning to develop the remaining fruit into the desired market sized fruit. The number of the fruit set varies with the prevailing climatic conditions and cultural practices employed during the bloom period, and is therefore not distinctive of the present variety.

Bearer: Very regular. Thinning of 1 fruit out of 3 was necessary for the tree valorisation. Thinning must be light because of the high magnifying potential of fruits. Thinning was necessary every year during the years of observation.

Form: The 'Nectarlight' variety has naturally a semi-spread to semi-upright shape.

Density: Considered medium dense.

Hardiness: The present tree was grown and evaluated in France. The variety appears to be hardy under the central Pyrénées-Orientales departement typical climatic conditions. Experimentations on different sites with winter chilling requirement comprised between 350 hours and 1200 hours showed a good behaviour of the tree in all cases. No damages were caused by ascertained temperatures as low as −12 degrees Celsius. The tree was also very resistant to frosty springtime weather.

Trunk:

Diameter.—Approximately between 10.0 cm and 11.0 cm in diameter when measured at a distance of approximately 30 cm above the soil level, on trees of the fifth growing season. The branching begins at 50 cm above the soil level.

Bark texture.—Considered slightly rough, with folds of papery scarfskin being present.

Lenticels.—Numerous lenticels are present on trees of the fourth growing season. The lenticels range in size from approximately 5.0 millimeters to 8.0 millimeters in width, and are about 2.0 millimeters in height.

Lenticel color.—The outside of lenticels has a silver-grey color (RHS Grey 201 D to RHS Black 202 D), whereas the inside is considered brown (R.H.S. Greyed Orange 166B).

Bark coloration.—The bark has a silver-grey color a little more pronounced than lenticels outside color (RHS Grey 201 C to RHS Black 202 C).

Branches:

Size.—Mature branches and current season shoots are considered medium to thick for the variety.

Diameter.—Average as compared to other nectarine varieties. The current season shoots have a diameter from 6.0 to 8.0 millimeters, and branches of trees of the fourth growing season have a diameter comprised between 26.0 and 38.0 millimeters.

Surface texture.—Average, wood which is several years old has no furrowed appearance.

Crotch angles.—Primary branches are considered variable, but the crotch angles are generally between 50 degrees and 60 degrees from the horizontal axis. This particular characteristic is not considered distinctive of the variety, however.

Current season shoots:

Surface texture.—Substantially glabrous.

Internode length: Generally 25.0 millimeters to 40.0 millimeters.

Color of mature branches: Medium brown (RHS Grey Brown 199 A).

Current seasons shoots:

Color.—The color of new shoot tips is considered a light green (RHS Green 143 C to D) on lower part of new shoot tips, whereas the upper part is colored in more or less brown-red (varying from RHS Greyed Red 182 B to C).

Leaves:

Size.—Considered medium for the species. Leaf measurements have been taken from vigorous, upright, current-season growth at approximately mid-shoot. The ratio leaf length/leaf width is around 3,8.

Leaf length.—Approximately 176.0 to 190.0 millimeters with leaf petiole.

Leaf width.—Approximately 38.0 to 50.0 millimeters.

Leaf base shape.—Concave.

Leaf form.—Lanceolate.

Leaf tip form.—Acuminate.

Leaf color:

Upper leaf surface.—Dark Green (RHS Green 137 A).

Lower surface.—Medium Green (RHS Green 137 B to 137 C).

Leaf texture: Smooth and glabrous.

Leaf venation: Pinnately veined.

Mid-vein:

Color.—Light green with a cream touch (RHS Yellow Green 145 D).

Leaf margins: Slightly undulating.

Form: Considered slightly dentate.

Uniformity: Leaves are isolated or grouped by 2 or 3. In this last case, it is found one leaf of normal size with one or two smaller leaves (size-reduction of 50% and more).

Leaf petioles:

Size.—Considered medium.

Length.—About 8.0 to about 10.0 mm.

Diameter.—About 1.6 to about 2.0 mm.

Color.—Light green shading to white (RHS Yellow Green 145 B to C).

Leaf glands:

Size.—Considered small. Their length is about 1.0 millimeters.

Number.—Generally 4 glands per leaf.

Type.—Reniform.

Color.—On young leaves, leaf glands color is considered a pale green (RHS Green 145 B). On older leaves, leaf glands color turn to a dark brown (RHS Grey Brown 199 A to 199 B).

Leaf stipules:

Generally.—No leaf stipules were observed. But as seen in the characteristic relative to the leaves uniformity, it is possible to find leaves by groups of 2 or 3, with a normal-size leaf and smaller ones.

Flowers:

Flower buds:

Generally.—At pre-floral stage of development, the floral buds are conic in form with a round tip. Their form is evolving until blooming, with variables dimensions. Just before blooming, floral buds are approximately 10.0 millimeters wide and approximately 18.0 millimeters long.

Flower buds:

Color.—This characteristic is dependent upon the proximity to bloom. At pre-floral stage of development, the bottom of the flowers buds, formed by the sepals, is of purple-brown color (RHS Greyed Purple 183 A to B); the corolla, formed by the petals, is generally of pink (RHS Red Purple 65 B to 69 C). Petals color shows an evolution until the end of flowering. The buds are considered hardy under typical central Pyrénées-Orientales departement climatic conditions.

Hardiness: No winter injury was noted during the last several years of evaluation in the central Pyrénées-Orientales departement, with winter temperatures as low as −10 degrees Celsius in January. The current variety has not been intentionally subjected to drought or heat stress, but the variety showed a very good resistance in orchard to temperatures up to 42 degrees Celsius with an average temperature between 28 and 30 degrees Celsius during 3 weeks in summer.

Date of bloom: Generally March. The first bloom was observed on Mar. 4, 2004.

Blooming time: Considered of semi-late season in relative comparison to other commercial nectarine cultivars grown in the Pyrénées-Orientales departement, France. The date of full bloom is observed on March. The date of bloom varies slightly with climatic conditions and cultural practices. Thus the first full bloom was observed approximately on Mar. 8, 2003.

Duration of bloom: Approximately 10 days. This characteristic varies slightly with the prevailing climatic conditions.

Flower type: The variety is considered to have a showy type flower.

Flower size: Considered medium. Flower diameter at full bloom is approximately 30.0 to 35.0 millimeters.

Bloom quantity: Considered abundant, approximately 30 flowers per meter.

Flower bud frequency: Generally 2 flower buds appear per node, occasionally 1.

Petal size:

Generally.—Considered medium for the species.

Length: Generally about 17.0 millimeters.

Width: Generally about 17.0 millimeters.

Petal form: Round-shaped.

Petal count: Nearly always 5.

Petal texture: Smooth and glabrous.

Petal color: Light Pink (RHS Red Purple 69 B to C) when young, slightly darkening with advancing senescence.

Fragrance: Pronounced.

Petal claw:

Form.—The claw is considered to have a conic form with a slighty rounded extremity.

Length.—Approximately 6.0 to 8.0 millimeters.

Width.—Approximately 4.0 to 5.0 millimeters.

Petal margins: Generally moderately undulated.

Petal apex:

Generally.—The petal apices are generally dome-shaped.

Flower pedicel:

Length.—Considered medium to long and having an average length of approximately 2.0 millimeters.

Diameter.—Considered average, approximately 2.0 millimeters.

Color.—A medium brown (RHS Grey Brown N199 C to D).

Floral nectaries:

Color.—A green yellow (varying from RHS Yellow 13 A to B to RHS Yellow Green 150 A to B).

Calyx:

Internal surface texture.—Glabrous.

Color.—The outer surface of the calyx is considered of Purple-brown (RHS Greyed Purple 183 A to B) color.

Sepals:

Surface texture.—The outer surface has a short, fine pubescent texture.

Size.—Medium.

Color.—Purple-brown (RHS Greyed Purple 183 A to B).

Average number of stamens per flower: Approximately 40 stamens per flower.

Anthers:

Generally.—Small in length.

Color.—Red to orange-red color (approximately RHS Greyed Purple 178 A Group). Anthers are becoming yellow at maturity.

Pollen production: Pollen is abundant, and has a yellow color (Approximately RHS Yellow Orange 17 B to C). The present variety is considered self fruitful (self-pollinating).

Filaments:

Size.—Variable in length, approximately 6.0 to 15.0 millimeters in length. Filaments length is generally superior or equal to the pistil's length.

Color: Considered light pink (approximately RHS Red Purple 62 C to D) to pink (RHS Red Purple 73 A to B).

Pistil:

Number.—Usually 1.

Generally.—Average in size.

Length.—Approximately 15.0 to 18.0 millimeters including the ovary; Generally smaller or equal to filaments length.

Color.—Considered a very pale green (varying from RHS Yellow Green 150 D to RHS Yellow Green 151 D).

Surface texture.—Glabrous.

Fruit:

Maturity when described.—Very firm ripe condition (shipping ripe).

Date of first picking.—Aug. 20, 2004.

Date of last picking.—Aug. 31, 2004. The date of harvest varies slightly with the prevailing climatic conditions. The 'Nectarlight' variety has a semi-late date of picking, and a grouped maturity: only 2 harvests in 10 days were necessary.

Size:

Generally.—Considered large to very large, and very homogeneous in size.

Average cheek diameter: Approximately 78.0 to 80.0 millimeters.

Average axial diameter: Approximately 69.0 to 72.0 millimeters.

Typical weight: Approximately 250.0 grams. This characteristic is high dependent upon the prevailing cultural practices, and therefore is not particularly distinctive of the variety.

Fruit form:

Generally.—Round. The fruit is generally uniform in symmetry, viewed from pistil end.

Fruit suture: Wide-mouthed and marked, extending from the base to the apex. No apparent callousing or stitching exists along the suture line.

Suture:

Color.—The suture has generally a color similar to the whole fruit color, a luminous pink-washed red (varying from RHS Red Purple 59 A to B to RHS Red Purple 60 A to B).

Ventral surface:

Form.—Smooth.

Apex: Non-prominent, depressed, very small.

Base: Wide-mouthed, shallow.

Stem cavity: Average depth of the stem cavity is about 0.9 cm. Average width is about 1.9 cm.

Fruit skin:

Thickness.—Considered very thick and strong, and tenacious to moderately tenacious to the flesh depending on stage of maturity.

Texture.—Glabrous.

Taste.—Semi-sweet.

Tendency to crack.—None observed.

Color:

Blush color.—The whole fruit color is a luminous pink-washed red (varying from RHS Red Purple 59 A to B to RHS Red Purple 60 A to B) covering 100% of the fruit skin surface.

Ground color.—The whole fruit color is a luminous pink-washed red (varying from RHS Red Purple 59 A to B to RHS Red Purple 60 A to B) covering 100% of the fruit skin surface.

Fruit stem: Medium in length, approximately 7.0 millimeters.

Diameter: Approximately 4.0 millimeters.

Color: Pale green (RHS Yellow Green 145A to 145 B).

Flesh:

Ripens.—Very evenly, homogenously, slowly.

Texture.—Very firm, very dense, juicy at harvest maturity stage.

Fibers.—Not fibrous.

Aroma.—Pronounced.

Eating quality.—Considered very good and aromatic.

Flavor.—Considered semi-sweet. The Brix is superior to 13 and acidity comprised between 6 and 9 meq/100 ml. The flavor is considered aromatic.

Juice.—Very juicy at complete maturity.

Brix.—Generally superior to 13.0 degrees. This characteristic varies slightly with the number of fruit per tree; prevailing cultural practices; and the surrounding climatic conditions.

Flesh color.—White flesh (RHS White Group N155A) with a star-shaped red pigmentation into and around the stone cavity (RHS Greyed Purple 185 A to B).

Stone:

Type.—Clingstone.

Size.—Considered medium for the variety. The stone size varies significantly depending upon the tree vigor, crop load and prevailing growing conditions.

Length.—Approximately 30.0 millimeters.

Width.—Approximately 22.0 millimeters.

Diameter.—Approximately 18.0 millimeters.

Form.—Elliptic.

Base.—Straight.

Apex:

Shape.—The stone apex is short, with a small prominent tip.

Stone cavity: Considered medium size, with an elliptic-form and dimensions corresponding to the stone's dimensions.

Stone surface:

Surface texture.—The pit is transversely furrowed on its entire surface. Furrows are more pronounced toward the apex. The stone is pitted toward the base. Relief is prominent generally and present basally.

Ridges.—The surface texture is generally characterized by more prominent ridges along the ventral edges and is more prominent at the apical tip.

Ventral edge:

Width.—Considered small to medium, and having a dimension of approximately 2.0 millimeters at mid-suture.

Dorsal edge:

Shape.—Grooved.

Stone color.—The color of the dry stone is generally considered an orange to red-brown (RHS Greyed Orange 173 C to D).

Tendency to split.—Splitting is absent or very low, depending on climatic conditions between blooming period and stone hardening.

Kernel:

Size.—The kernel is considered medium.

Length.—Approximately 18.0 to 20.0 millimeters.

Width.—Approximately 12.0 to 14.0 millimeters.

Thickness.—Approximately 5.0 to 6.0 millimeters.

Form.—Considered oblate and elliptic.

Pellicle.—Pubescent.

Color.—The kernel skin is a light orange-yellow (RHS Greyed Orange 166 C) with darker streaks (RHS Greyed Orange 166 B). The almond is cream-white (RHS Orange White 159 D). The kernel and its embryo are mature at the time of fruit maturity.

Use: The subject variety 'Nectarlight' is considered to be a nectarine tree of the semi-late season of maturity, and which produces fruits that are considered firm, attractively colored. Fruits have a semi-sweet taste and are excellent for uncooked consumption, crunchy or melting when at full maturity. Due to their flesh quality, firmness and density, they can also be commercialized as 4^{th} range product (packed fruit or fruit in bags for example). And they are also useful for both local and very long distance shipping.

Keeping quality: Excellent. Fruit stayed a little more than one week on tree before harvest and then, has stored well more than 4 weeks after harvest at 2.0 degree Celsius. They have a slow maturation and a long shelf life both on the tree after growth completion and after harvesting without alteration.

Shipping quality: Considered very good. The fruit of the new nectarine variety showed minimal bruising of the flesh or skin damage after being subjected to normal harvesting and packing procedures. Its resistance to handling during harvest and packing and its long shelf life without alteration after harvest easily permit 3 weeks to 4 weeks-shipping at 2 degrees Celsius.

Resistance to insects and disease: No particular susceptibilities were noted. The present variety is not very sensitive to powdery mildew, or conservation diseases and decay due to its thick and strong skin.

Although the new variety of nectarine tree possesses the described characteristics when grown under the ecological conditions prevailing near Elne, Pyrénées-Orientales departement, France, it should be understood that variations of the usual magnitude and characteristics incident to changes in growing conditions, fertilization, pruning, pest control and horticultural management are to be expected.

We claim:

1. A new and distinct variety of nectarine tree as illustrated and described, characterized by fruits of very long shelf life without alteration before and after harvesting, and with a semi-sweet white flesh of high eating quality and an attractive red skin.

* * * * *

FIG. 1

FIG. 2

FIG. 3