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**Zaiger et al.**

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(54) **NECTARINE TREE NAMED ‘ARCTIC ZEE’**

(52) **U.S. Cl.**  
USPC ..... **Plt./188**

(50) Latin Name: *Prunus persica* var. *nucipersica*  
Varietal Denomination: **Arctic Zee**

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

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(57) **ABSTRACT**

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

A new and distinct variety of nectarine tree (*Prunus persica* var. *nucipersica*). The following features of the tree and its fruit are characterized with the tree budded on ‘Nemaguard’ Rootstock (non-patented), grown on Handford sandy loam soil with Storie Index rating 95, in USDA Hardiness Zone 9, near Modesto, Calif., with standard commercial fruit growing practices, such as pruning, thinning, spraying, irrigation and fertilization. Its novelty consist of the following combination of desirable features:

1. Tree having a vigorous, upright growth habit.
2. Tree being a regular and productive bearer of large size fruit.
3. Fruit with an attractive, red skin color.
4. Fruit with very good flavor and eating quality.
5. Clingstone fruit with firm, white flesh.

(21) Appl. No.: **15/330,588**

**1 Drawing Sheet**

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**A01H 5/08** (2006.01)

**1**

**2**

Botanical designation: *Prunus persica* var. *nucipersica*.  
Variety denomination: ‘Arctic Zee’.

**BACKGROUND OF THE VARIETY**

**Field of the Invention**

In the field of plant genetics, we conduct an extensive and continuing plant-breeding program including the organization and asexual reproduction of orchard trees, and of which plums, peaches, nectarines, apricots, cherries, almonds and interspecifics are exemplary. It was against this background of our activities that the present variety of nectarine tree was originated and asexually reproduced by us in our experimental orchard located near Modesto, Stanislaus County, Calif.

**PRIOR VARIETIES**

Among the existing varieties of nectarine trees, which are known to us, and mentioned herein, ‘Arctic Jay’ Nectarine (U.S. Plant Pat. No. 9,908) and our proprietary non-patented nectarine seedling selections ‘385LU140’, ‘14LL559’ and ‘56ZA289’.

**STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH AND DEVELOPMENT**

Not applicable.

**ORIGIN OF THE VARIETY**

The new and distinct variety of nectarine tree (*Prunus persica* var. *nucipersica*) was developed by us in our experi-

mental orchard located near Modesto, Calif. from open pollinated seed collected from our proprietary non-patented nectarine seedling selection with the field identification number ‘385LU140’. The seed parent (385LU140) originated as a first generation cross between our proprietary non-patented nectarine seedling selections ‘14LL559’ and ‘56ZA289’. A large number of these open pollinated seedlings were planted and grown on their own root system, during which time we recognized the desirable fruit and tree characteristics of the present seedling and selected it in 2007 for additional asexual propagation and commercialization.

**ASEXUAL REPRODUCTION OF THE VARIETY**

In 2007 asexual reproduction of the new and distinct variety of nectarine tree was by budding to ‘Nemaguard’ Rootstock (non-patented), as performed by us in our experimental orchard located near Modesto, Calif., and shows that reproductions run true to the original tree and all characteristics of the tree and its fruit are established and transmitted through succeeding asexual propagations.

**SUMMARY OF THE NEW VARIETY**

The present new variety of nectarine tree (*Prunus persica* var. *nucipersica*) is of large size, vigorous, upright growth and a regular and productive bearer of large size, white flesh, clingstone fruit with very good flavor and eating quality. The fruit is further characterized by having firm flesh and an attractive red skin color. In comparison to its proprietary non-patented nectarine seed parent ‘385LU140’ the fruit of the new variety is approximately 34 days later in maturity. In comparison to the commercial variety ‘Arctic Jay’ Nec-

tarine (U.S. Plant Pat. No. 9,908) the fruit of the new variety is clingstone compared to freestone and is approximately 22 days later in maturity.

#### DESCRIPTION OF THE PHOTOGRAPH

The accompanying color photographic illustration shows typical specimens of the foliage and fruit of the present new nectarine variety. The illustration shows the upper and lower surface of the leaves, an exterior and sectional view of a single fruit divided in 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) from a 9 year old tree and the colors are as nearly true as is reasonably possible in a color representation of this type.

#### DESCRIPTION OF THE VARIETY

The following is a detailed botanical description of the new variety of nectarine tree, its flowers, foliage and fruit, as based on observations of 9 year old specimens grown near Modesto, Calif., with color in accordance with Munsell Book of Color published in 1958.

##### Tree:

*Size.*—Large, usually pruned to 3 to 3.5 meters in height and width for economical harvesting of fruit. Size varies with different cultural practices.

*Vigor.*—Vigorous, growth of 1.5 to 2 meters in height the first growing season. Varies slightly with type and fertility of soil, climatic conditions and cultural practices.

*Form.*—Upright, usually pruned to vase shape.

*Branching habit.*—Upright, crotch angle approximately 35°, increases with heavy crop load.

*Productivity.*—Productive, thinning and spacing of fruit necessary for desired market size fruit. Number of fruit set varies with climatic conditions during blooming period.

*Bearer.*—Regular, has had adequate fruit set 7 consecutive years. No alternate bearing observed.

*Fertility.*—Self fertile.

*Density.*—Medium dense, usually pruned to vase shape to increase air movement and sunlight to enhance fruit color and health of fruit wood.

*Hardiness.*—Hardy in all stone fruit growing areas of California. Tree grown in USDA Hardiness Zone 9. Winter chilling requirement approximately 800 hours at or below 45° F.

##### Trunk:

*Size.*—Large, average circumference 55.9 cm at 27.9 cm above ground on a 9 year old tree.

*Stocky.*—Medium stocky.

*Texture.*—Medium shaggy, roughness increases with age.

*Color.*—Varies from 10Y 4/6 to 10R 2/2.

##### Branches:

*Size.*—Medium. Average circumference 14.0 cm at 1.2 meters above ground. Crotch angle approximately 35°, increases with heavy crop load.

*Surface texture.*—New growth relatively smooth. Mature growth medium rough, roughness increases with age.

*Lenticels.*—Average number 20 in a 25.8 square cm area. Average length 5.0 mm. Average width 2.8 mm. Color varies from 7.5YR 6/14 to 7.5YR 5/10.

*Color.*—New growth varies from 5GY 7/6 to 7.5GY 7/6. Mature growth varies from 10YR 3/6 to 7.5YR 3/6, varies with age of growth.

##### Leaves:

*Size.*—Large. Average length 91.8 mm. Average width 28.1 mm.

*Form.*—Lanceolate.

*Apex.*—Acuminate.

*Base.*—Cuneate.

*Margin.*—Crenate.

*Thickness.*—Medium.

*Surface texture.*—Upper surface relatively smooth, slight indentations over midrib and leaf veins. Lower surface relatively smooth, except for small ridges created by midrib and pinnate venation. Both upper and lower surfaces glabrous.

*Petiole.*—Average length 8.7 mm. Average width 1.4 mm. Longitudinally grooved. Surface — glabrous. Color varies from 2.5GY 8/6 to 5GY 6/8.

*Glands.*—Type — reniform. Size — medium. Average length 1.6 mm. Average diameter 1.0 mm. Number varies from 1 to 3, average number 2. Located primarily on the upper portion of petiole and base of leaf blade. Color varies from 5GY 5/6 to 7.5YR 4/6.

*Stipules.*—Average number 2. Average length 8.7 mm. Edges — pectinate. Color varies from 7.5YR 3/6 to 5YR 3/4.

*Color.*—Upper surface varies from 5GY 3/6 to 7.5GY 3/4. Lower surface varies from 7.5GY 4/4 to 7.5GY 5/4. Midvein color varies from 2.5GY 7/4 to 5GY 7/4.

##### Flower buds:

*Size.*—Large. Average length 19.9 mm. Average diameter 10.3 mm.

*Hardiness.*—Hardy with respect to California winters.

*Density.*—Medium dense.

*Form.*—Conical, becoming elongated just before opening.

*Pedicel.*—Average length 4.3 mm. Average width 1.4 mm. Surface — glabrous. Color varies from 5GY 6/8 to 7.5GY 7/6.

*Color.*—Varies from 5RP 7/8 to 5RP 8/4.

##### Flowers:

*Blooming period.*—Date of First Bloom Feb. 20, 2016. Date of Petal Fall Mar. 1, 2016, varies slightly with climatic conditions.

*Size.*—Large, showy. Average height 19.6 mm. Average diameter 52.4 mm.

*Petals.*—Normally 5, alternately arranged to sepals. Size — large. Average length 26.4 mm. Average width 18.9 mm. Form — elliptical. Petal apex rounded. Petal base — truncate. Margin — sinuate. Arrangement — free. Both upper and lower surfaces glabrous. Color varies from 5RP 8/4 to 5RP 9/2, color fades with age.

*Sepals.*—Normally 5, alternately arranged to petals. Size — large. Average length 7.3 mm. Average width 5.6 mm. Shape — ovate, apex rounded to triangular. Margin — entire. Color — upper surface varies from 5GY 5/6 to 7.5GY 6/8 with 7.5R 3/6. Lower surface varies from 7.5R 3/4 to 7.5R 2/4. Surface — upper surface glabrous, lower surface pubescent.

*Stamens.*—Average number per flower 49. Average filament length 14.5 mm. On average, the stamens are above the height of the petals. Filament color

varies from N 9.5/(white) to 5RP 8/4. Anther color varies from 7.5R 4/14 to 7.5Y 8/8.

*Pollen*.—Self fertile. Color varies from 2.5Y 7/12 to 5Y 7/12.

*Pistil*.—Number — normally one. Average length 20.2 mm. Position of stigma an average of 0.8 mm above anthers. Surface — glabrous. Color varies from 10Y 8.5/6 to 10Y 8/6.

*Fragrance*.—Moderate.

*Color*.—Varies from 5RP 4/2 to 5RP 9/2.

*Pedicel*.—Average length 4.0 mm. Average width 1.3 mm. Surface — glabrous. Color varies from 2.5GY 7/8 to 5GY 7/8.

*Number flowers per flower bud*.—Normally one.

**Fruit:**

*Maturity when described*.—Firm ripe and ready for consumption.

*Date of first picking*.—Jul. 29, 2016.

*Date of last picking*.—Aug. 10, 2016, varies slightly with climatic conditions.

*Size*.—Large. Average diameter axially 73.2 mm. Average transversely in suture plane 80.1 mm. Average weight 278.3 grams varies slightly with fertility of the soil, amount of thinning and climatic conditions.

*Form*.—Globose.

*Suture*.—Smooth to slightly lipped.

*Ventral surface*.—Smooth to slightly lipped.

*Apex*.—Slightly retuse.

*Base*.—Flat.

*Stem cavity*.—Rounded to slightly elongated in suture plane. Average depth 14.4 mm. Average diameter 7.8 mm.

**Stem:**

*Size*.—Small to medium. Average length 8.0 mm. Average diameter 3.4 mm.

*Color*.—Varies from 5GY 6/6 to 5GY 5/8.

**Flesh:**

*Ripens*.—Evenly.

*Texture*.—Firm, meaty, crisp.

*Fibers*.—Few, small, tender.

*Firmness*.—Good, comparable to other commercial nectarine varieties.

*Aroma*.—Moderate.

*Amygdalin*.—Undetected.

*Eating quality*.—Very good.

*Flavor*.—Very good, good balance between acid and sugar.

*Juice*.—Moderate amount, enhances flavor.

*Acidity*.—Not available.

*Brix*.—Average Brix 13.0°, varies slightly with amount of fruit per tree and climatic conditions.

*Color*.—Varies from N 9.5/(white) to 10Y 9/1 with 7.5R 3/4 anthocyanin color bleeding from pit cavity.

*Pit cavity*.—Average length 43.0 mm. Average width 28.8 mm. Average depth 11.3 mm. Color varies from 7.5R 3/10 to 7.5R 3/12.

**Skin:**

*Thickness*.—Medium.

*Surface*.—Smooth.

*Pubescence*.—Wanting.

*Tendency to crack*.—None.

*Color*.—Ground color varies from 2.5Y 9/2 to 5Y 9/2. Overspread with 7.5R 3/10 to 7.5R 3/12.

*Tenacity*.—Tenacious to the flesh.

*Astringency*.—Slight to none.

**Stone:**

*Type*.—Clingstone, strong adherence to flesh.

*Size*.—Large. Average length 42.0 mm. Average width 27.7 mm. Average thickness 20.5 mm.

*Form*.—Obovoid.

*Base*.—Flat.

*Apex*.—Pointed. Average length 1.5 mm.

*Surface*.—Pitted throughout, pits vary from round to elongated.

*Sides*.—Unequal, one side extending further from suture plane.

*Ridges*.—Relatively smooth, extending from base to apex.

*Tendency to split*.—None.

*Color*.—Varies from 5R 2/4 to 7.5R 2/6 when dry.

**Kernel:**

*Size*.—Large. Average length 19.5 mm. Average width 12.6 mm. Average depth 6.2 mm.

*Form*.—Ovoid.

*Viability*.—Viable, complete embryo development.

*Skin color*.—Varies from 5Y 9/4 to 7.5Y 9/4.

**Use:**

*Dessert*.—Market — local and long distance.

**Keeping quality:** Good, held firm in cold storage 3 weeks at 38° to 42° F. without shriveling, internal breakdown of flesh or appreciable loss of flavor.

**Shipping quality:** Good, showed minimal skin scarring or flesh bruising during picking, packing and shipping trials.

**Plant/fruit disease resistance/susceptibility:** No specific testing for relative plant/fruit disease resistance/susceptibility has been designed. Under close observation during planting, growing, and harvesting of fruit, under normal cultural and growing conditions near Modesto, Calif., no particular plant/fruit disease resistance or susceptibility has been observed. Any variety or selection observed during indexing of plant characteristics with abnormal fungus, bacterial, virus or insect susceptibility is destroyed and eliminated from our breeding program. No atypical resistances/susceptibilities have been noted under normal cultural practices.

The present new variety of nectarine tree, its flowers, foliage and fruit herein described may vary in slight detail due to climate, soil conditions and cultural practices under which the variety may be grown. The present description is that of the variety grown under the ecological conditions prevailing near Modesto, Calif.

The invention claimed is:

1. A new and distinct variety of nectarine tree, substantially as illustrated and described.

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