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NeSmith

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(54) **SOUTHERN HIGHBUSH BLUEBERRY PLANT NAMED 'TH-921'**

(50) Latin Name: ***Vaccinium corymbosum***
Varietal Denomination: **TH-921**

(71) Applicant: **University of Georgia Research Foundation, Inc.**, Athens, GA (US)

(72) Inventor: **D. Scott NeSmith**, Molena, GA (US)

(73) Assignee: **University of Georgia Research Foundation, Inc.**, Atlanta, GA (US)

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Primary Examiner — Annette Para
(74) *Attorney, Agent, or Firm* — Klarquist Sparkman, LLP

(57) **ABSTRACT**

The new variety 'TH-921' is provided. The new and distinct variety ripens around early May in southern Georgia and late May in middle Georgia. The fruit of the new variety 'TH-921' are firm with good flavor and scar. The new variety 'TH-921' is vigorous with an estimated chilling requirement of about 500 to 550 hours at or below approximately 7° C. The asexually reproduced variety is reliably propagated vegetatively.

5 Drawing Sheets

STATEMENT REGARDING FEDERALLY-SPONSORED RESEARCH

This invention was made, in part, with U.S. Government support on behalf of U.S. Department of Agriculture, Hatch Act Grant No. GEO 01663. The U.S. Government has certain rights in this invention.

Latin name of the genus and species of the plant claimed: 'TH-921' is a southern highbush blueberry plant that is a *Vaccinium corymbosum.*

Variety denomination: The new southern highbush blueberry plant claimed is of the variety denominated 'TH-921'.

BACKGROUND OF THE INVENTION

The present invention relates to the discovery of a new and distinct cultivar of southern highbush blueberry plant botanically known as a *Vaccinium corymbosum* and herein referred to as 'TH-921', as herein described and illustrated.

The new blueberry plant variety 'TH-921' was selected in Griffin, Ga., in 2005. The new variety 'TH-921' ripens around early May in southern Georgia and late May in middle Georgia. The fruit of the new variety 'TH-921' have excellent firmness, scar and flavor. The new variety 'TH-921' has good yield and plant vigor, with an estimated chilling requirement of about 500-550 hours at or below 7° C.

Pedigree and history: 'TH-921' was selected in 2005 at the Georgia Experiment Station in Griffin, Ga., originating from a cross of 'TH-647' X 'Windsor' made by Dr. D. Scott NeSmith in 2002. The maternal parent ('TH-647') is a non-patented UGA breeding line derived from a cross of 'Reveille' (not patented) X 'Palmetto' (U.S. Plant Pat. No. 16,756). The paternal parent, 'Windsor', is the subject of U.S. Plant Pat. No. 12,783. The selection has been tested in

asexually propagated (by vegetative cuttings) plantings at UGA Blueberry Research Farms in Alapaha and Griffin, Ga. since 2007.

SUMMARY OF THE INVENTION

The new blueberry plant variety 'TH-921' has not been observed under all possible environmental conditions. The phenotype may vary somewhat with variations in environment and cultural practices such as temperature and light intensity without, however, any variance in genotype.

The following traits have been repeatedly observed in asexually propagated plants of the new cultivar 'TH-921' growing in Alapaha and Griffin, Ga., and are determined to be unique firmly fixed characteristics of the new blueberry plant variety 'TH-921':

1. Excellent fruit firmness;
2. Excellent berry flavor;
3. Favorable scar.

The new variety 'TH-921' can be compared to the southern highbush blueberry variety 'Star' (the subject of U.S. Plant Pat. No. 10,675).

Comparison: The selection flowers five to seven days later than 'Star', but displays a shorter fruit development period, ripening with 'Star' in the early Georgia southern highbush season. 'TH-921' has firm berries with good flavor and scar as compared to standards 'Star' and 'Camellia' in Alapaha and Griffin, Ga. over a 5-year period (Tables 1 and 2). Table 3 describes yield and berry weight, firmness, and Brix for 'TH-921' as compared to the 'Star' and 'Camellia' (the subject of U.S. Plant Pat. No. 18,151) southern highbush blueberry cultivars, for the years 2010-2013. 'TH-921' had greater Brix than both cultivar standards 'Star' and 'Camellia', had a greater firmness than 'Camellia' and comparable berry firmness to 'Star'. 'TH-921' is more vigorous than 'Star' with comparable or greater yields. Major attractions of

'TH-921' are high fruit quality, shorter fruit development period, and the ability to replace 'Star' in producing high quality fruit during the early southern Georgia highbush season. Preliminary studies suggest that 'TH-921' has good storage quality and can be used as fresh fruit for shipping.

TABLE 1

5-year average ratings of some fruit and plant characteristics of 'TH-921' and southern highbush standard cultivars 'Star' and 'Camellia' from 2009-2013 in field test plots at Alapaha, GA. Rating scales are based on a 1 to 10 score, with 1 being the least desirable and 10 being the most desirable. A value of 6-7 is generally considered to be the minimum acceptable rating or a commercial cultivar. These plants were established in Fall 2007.

Berry and plant attributes[1/]	Alapaha location 'Star'	'Camellia'	'TH-921'
Berry size	7.6 ± 0.2	8.9 ± 0.2	7.4 ± 0.3
Berry scar	7.0 ± 0.1	7.2 ± 0.2	7.9 1 0.3
Berry color	7.1 ± 0.1	8.7 ± 0.2	7.6 ± 0.1
Berry firmness	7.2 ± 0.1	7.2 ± 0.1	7.6 ± 0.1
Berry flavor	7.0 ± 0.1	7.8 ± 0.1	7.9 ± 0.3
Cropping	4.7 ± 1.7	5.4 ± 0.3	5.9 ± 1.4
Plant vigor	6.3 ± 0.2	9.8 ± 0.2	8.4 ± 0.5
Date of 50% flowering	March 3	March 11	March 8
Date of 50% ripening	May 8	May 15	May 8
Fruit development period (days)	66.3 ± 6.1	65.3 ± 4.9	61.0 ± 6.5

[1/]Values are means ± the standard error with n = 5.

TABLE 2

5-year average ratings of some fruit and plant characteristics of 'TH-921' and southern highbush standard cultivars 'Star' and'Camellia' (2009-2013) in field test plots at Griffin, GA. Rating scales are based on a 1 to 10 score, with 1 being the least desirable and 10 being the most desirable. A value of 6-7 is generally considered to be the minimum acceptable rating for a commercial cultivar. These plants were established in Fall 2007.

Berry and plant attributes[1]	Griffin location 'Star'	'Camellia'	'TH-921'
Berry size	7.4 ± 0.2	8.6 ± 0.2	7.8 ± 0.3
Berry scar	6.9 ± 0.1	7.0 ± 0.1	7.5 ± 0.1
Berry color	7.1 ± 0.1	7.9 ± 0.2	7.8 ± 0.2
Berry firmness	7.2 ± 0.1	7.2 ± 0.1	7.4 ± 0.3
Berry flavor	7.1 ± 0.1	7.4 ± 0.2	7.9 ± 0.2
Cropping	6.8 ± 1.1	7.9 ± 0.2	6.6 ± 0.5
Plant vigor	8.5 ± 0.3	9.8 ± 0.1	8.7 ± 0.3
Date of 50% flowering	March 13	March 25	March 21
Date of 50% ripening	May 25	May 31	May 26
Fruit development period (days)	73.3 ± 10.4	67.3 ± 4.8	66.0 ± 4.8

[1/]Values are means ± the standard error with n = 5.

TABLE 3

Yield and berry weight, firmness, and Brix for 'Star' and 'Camellia' cultivars and 'TH-921' grown in Griffin, GA during 2010-2013.

Year	'Star'	'Camellia'	'TH-921'
	Yield (lbs/bush)[1/]		
2011	12.7 ± 3.6	9.7 ± 0.9	10.4 ± 0.7
2012	11.7 ± 2.3	10.5 ± 0.8	9.1 ± 1.0
2013	3.9 ± 0.6	15.9 ± 1.0	14.3 ± 2.4
Avg	9.4	12.0	11.3

TABLE 3-continued

Yield and berry weight, firmness, and Brix for 'Star' and 'Camellia' cultivars and 'TH-921' grown in Griffin, GA during 2010-2013.

Year	'Star'	'Camellia'	'TH-921'
	Berry wt. (g/berry)[2/]		
2010	1.53 ± 0.09	2.94 ± 0.12	2.07 ± 0.09
2011	1.20 ± 0.04	1.97 ± 0.11	1.47 ± 0.04
2012	1.80 ± 0.07	1.60 ± 0.09	1.75 ± 0.06
2013	1.79 ± 0.06	2.56 ± 0.10	2.00 ± 0.04
Avg	1.58	2.28	1.82
	Firmness (g/mm)[2/]		
2010	196 ± 4	150 ± 2	208 ± 2
2011	206 ± 6	166 ± 3	190 ± 2
2012	190 ± 5	164 ± 4	182 ± 4
2013	191 ± 5	150 ± 2	208 ± 3
Avg	196	157	197
	Brix (%)[3/]		
2012	13.9 ± 0.6	14.5 ± 0.4	15.3 ± 0.9
2013	13.5 ± 0.5	13.3 ± 0.3	14.0 ± 1.2
Avg	13.7	13.9	14.7

[1/]Values are means ± the standard error with n = 3.

[2/]Values are means ± the standard error with n = 3 (each sample derived from 25 berry avg).

[3/]Values are means ± the standard error with n = 3 (each sample derived from 5 berry composite).

BRIEF DESCRIPTION OF THE FIGURES

The accompanying photographic illustrations show typical specimens in full color of the foliage, flowering, and fruit of the new variety 'TH-921'. The colors are as nearly true as is reasonably possible in a color representation of this type.

FIG. **1** is a photograph of the new variety 'TH-921' during flowering in Griffin, Ga.

FIG. **2** is a close up photograph of the new variety 'TH-921' during flowering in Griffin, Ga.

FIG. **3** is a photograph of new variety 'TH-921' during fruit ripening in Griffin, Ga.

FIG. **4** is a close up photograph of the new variety 'TH-921' fruit clusters.

FIG. **5** is a close up photograph of typical fruit of the new variety. 'TH-921'.

BOTANICAL DESCRIPTION

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, 5th edition published by The Royal Horticultural Society, London, England.

The following is a detailed description of the botanical and pomological characteristics of the new variety 'TH-921'. Where dimensions, sizes, colors, and other characteristics are given, it is to be understood that such characteristics are approximations and averages set forth as accurately as practicable. The descriptions reported herein are largely from specimen plants grown in Alapaha and Griffin, Ga., with supplemental irrigation. Plants were about 3 to about 6 years old.

PLANT

Size.—1.3 to 1.6 m tall by about 4 years of age. Plants grown under highly productive soil and fertility

conditions have exceeded 1.6 m tall in 4 years. The plant crown, or base, is narrow, typically 10 to 20 cm in diameter. Upper portion of plant canopy exceeds 1.1 to 1.3 m in diameter by 3 to 4 years.

Growth habit.—Semi-upright, with 1 to 3 main canes arising from the crown, and multiple branching of shoots (2 to 3 per cane) from those canes at 5 to 10 cm above the soil surface.

Growth.—Highly vigorous.

Productivity.—Very good crop and yield, averaging 10 to 15 lbs of fruit per plant each year for plants 4 years and older grown under well fertilized and irrigated field conditions.

Hardiness.—Similar to other southern highbush cultivars such as 'Star' (U.S. Plant Pat. No. 10,675) and 'Camellia' (U.S. Plant Pat. No. 18,151).

Chilling requirement.—500-550 hours of temperatures at or below 7° C. (about 45° F.) to induce normal leafing and flowering during the spring under conventional production systems. The chill requirement is more than the male parent 'Windsor' (U.S. Plant Pat. No. 12,783; 300 hours of chilling required) but more similar to the female parent 'TH-647' (non-patented breeding selection; estimated 500-600 hours of chilling required).

Leafing.—Plants tend to break sufficient leaf buds simultaneously with, or shortly after, anthesis.

Canes.—Diameter: 30 to 50 mm for base of main canes that are about 4 years old and older. 10 to 15 mm in about 2 year old wood. 4 to 8 mm in current season wood. Color: Greyed-Green RHS 197B for base of canes that are about 4 years old and older. Yellow-Green RHS 145A transitioning to Greyed-Brown RHS 199B in about 2 year old wood. Yellow-Green RHS 145B in current season wood.

Fruiting wood.—Moderate number of twigs 10 to 15 cm in length, with internode lengths of 15 to 20 mm common.

Disease resistance.—No exceptional disease resistance or susceptibility observed; typical for southern highbush 'Star' and 'Camellia' cultivars.

FOLIAGE

Leaf color.—Healthy mature leaves. Top side: Green RHS 137B to N137A. Under side: Green RHS 138B to 138C.

Leaf arrangement.—Alternate, simple.

Leaf shape.—Elliptic.

Leaf surface.—Glaucous.

Leaf margins.—Nearly entire, smooth.

Leaf venation.—Pinnate with slight netting.

Leaf apices.—Broadly acuminate to broadly acute.

Leaf bases.—Cuneate to acute.

Leaf dimensions.—Length: 60.0 to 70.0 mm. Width: 25.0 to 30.0 mm.

Petioles.—Small. Length: 2.0 to 4.0 mm. Width: 1.5 to 2.0 mm. Color: Yellow-Green RHS 145A.

FLOWERS

Date of 50% *anthesis*.—March 8 in southern Georgia and March 21 in middle Georgia (5 year average).

Flower shape.—Urceolate.

Flower bud number.—High, averaging 5 to 8 buds per fruiting shoot.

Flowers per cluster.—6 to 8 common.

Flower fragrance.—None.

Corolla.—Color: White RHS 155C to White NN155B (open flower). Some Red Purple 63B corolla coloring often observed under cooler weather prior to flower opening. Length: 8.5 to 10.0 mm. Width: 7.5 to 9.0 mm. Aperture width: 4.0 to 5.0 mm.

Flower peduncle.—Length: 8.0 to 10.0 mm. Color: Green RHS 139D.

Flower pedicle.—Length: 6.0 to 7.0 mm. Color: Green RHS 139D.

Calyx (*with sepals*).—Diameter: 8.5 to 9.0 mm. Color: Green RHS 138B.

Stamen.—Length: 7.5 to 8.0 mm. Number per flower: 10. Filament color: Yellow-Green RHS 145D.

Style.—Length: 9.0 to 10.0 mm. Color: Yellow-Green RHS 146D.

Pistil.—Length: 12.0 to 13.0 mm. Ovary color (exterior): Green RHS 138C.

Anther.—Length: 4.5 to 5.0 mm. Number: 10. Color: Greyed-Orange RHS 164A.

Pollen.—Abundance: Medium to high. Color: Yellow-White RHS 158A.

Self-compatibility.—The cultivar has a moderate degree of self-compatibility.

FRUIT

Date of 50% *maturity*.—May 8 in southern Georgia and May 26 in middle Georgia (5 year average).

Fruit development period.—60 to 68 days.

Berry color.—With wax: Violet-Blue RHS 95D. With wax removed: Black RHS 202A.

Berry surface wax abundance.—Medium to high.

Berry flesh color.—Green-White RHS 157B.

Berry weight.—First harvest: 1.6 g to 2.0 g. Second harvest: 1.4 g to 1.7 g.

Berry size.—Height from calyx to scar: 13.0 to 15.0 mm. Diameter: 16.0 to 19.0 mm.

Berry shape.—Semi-spherical.

Fruit stem scar.—Small to medium, medium-dry, with little or no tearing at harvest.

Calyx.—Depth 1.5 to 2.5 mm; width 5.0 to 6.0 mm; sepals slightly showing and most often erect when present.

Berry firmness.—Good to very good firmness.

Berry flavor and texture.—Very good flavor; smooth texture.

Storage quality.—Good.

Suitability for mechanical harvesting.—Likely not suitable.

Uses.—Primarily to be used as fresh fruit for shipping.

SEED

Seed abundance in fruit.—Medium, with 10 to 20 fully developed seeds per berry.

Seed color.—Greyed-Orange RHS 165B.

Seed dry weight.—46.0 mg per 100 seeds.

Seed size.—1.2 to 1.8 mm long; 0.4 to 0.6 mm wide for fully developed seeds.

What is claimed is:

1. A new and distinct variety of southern highbush blueberry plant named 'TH-921', substantially as illustrated and described herein.

* * * * *

FIG. 1

FIG. 2

FIG. 3

FIG. 4

FIG. 5