



Three Year VSU Blueberry Variety Trial Results

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Introduction

Blueberries (*Vaccinium* spp.)

- Requires acidic soils (pH ~4.5)
- Currently at Virginia State University three types of blueberry varieties are being tested for yield and fruit quality
 - Northern Highbush (*Vaccinium corymbosum*)
 - Southern Highbush (*Vaccinium corymbosum* X *Vaccinium darrowi*)
 - Rabbiteye (*Vaccinium ashei*)

Introduction (cont.)

Northern Highbush (*Vaccinium corymbosum*)

- The most commonly grown blueberry
- Cold hardy & vigorous
- Have a preference for cooler climate

Introduction (cont.)

Southern Highbush

- Has the fruit quality and yield similar to the Northern Highbush, however, unlike the Northern Highbush, the Southern Highbush blueberry can be grown in warmer regions such as in Florida, Georgia, North Carolina and even in Virginia
- The challenge with Southern Highbush type blueberry is that most varieties are low chill, and they bloom early in the season, when late season freezes may kill blooms and reduce production potential.

Introduction (cont.)

Rabbiteye (*Vaccinium ashei*)

- Native to the Southeastern United States
- Prefer a soil pH of 4.0 to 5.5
- Aside from low soil pH requirements, Rabbiteye type blueberry is easy to grow
- Lower nutritional requirements than Northern and Southern Highbush
- Preferred in organic blueberry production and for you-pick operations
- Can be grown from Virginia/ Tennessee to as south as Florida and as west as Arkansas

Virginia State University Blueberry Variety Trial

The VSU Blueberry Variety Trial Includes Two Plots

- First plot containing mostly Rabbiteye type varieties, was established in 2009
 - 10 varieties
 - 2 rows per cultivar
- Second plot was established between 2013 – 2015
 - 33 varieties
 - Row size varied on a per cultivar basis

Selected Blueberry Varieties Planted at Randolph Farm and their Characteristics

Variety	Type	Chill hours needed to bloom ¹	Ripening Season
Reka	Northern Highbush	800-1000	Early
Bluegold	Northern Highbush	800-1000	Mid
Draper	Northern Highbush	800-1000	Mid
Blue Jay	Northern Highbush	800-1000	Earl-Mid
Toro	Northern Highbush	800-1000	Mid
Elliot	Northern Highbush	800-1000	Very Late
Hardy blue	Northern Highbush	800-1000	Mid
Clockwork	Northern Highbush	800-1000	Mid
Reka	Northern Highbush	800-1000	Early
Blueribbon	Northern Highbush	400-800	Early-Mid
Calypso	Northern Highbush	800-1000	Very early
Cargo	Northern Highbush	800-1000	Late
Top Shell	Northern Highbush	800-1000	Mid
Blue crop	Northern Highbush	800-1000	Mid
Patriot	Northern Highbush	800-1000	Early
North blue	Northern Highbush	800-1000	Early
Darrow	Northern Highbush	800-1000	Late
Brigitta	Northern Highbush	800-1000	Late
Early Blue	Northern Highbush	800-1000	Early
Chandler	Northern Highbush	800-1000	Mid
Duke	Northern Highbush	800-1000	Very early
Elizabeth	Northern Highbush	800-1000	Mid
Legacy	Northern Highbush	400-800	Mid-Late
Titan	Rabbiteye	400-800	Mid
Ocklockonee	Rabbiteye	400-800	Very late
Vernon	Rabbiteye	400-800	Early
Onslow	Rabbiteye	400-800	Late
Poweder blue	Rabbiteye	400-800	Very early
Brightwell	Rabbiteye	400-800	Mid
Primier	Rabbiteye	400-800	Early
Tifblue	Rabbiteye	400-800	Mid-late
Star	Southern Highbush	150-300	Early
Camellia	Southern Highbush	400-800	Mid-Late
Misty	Southern Highbush	150-300	Early
San Joaquin	Southern Highbush	150-300	Mid-late
Spring high	Southern Highbush	150-300	Very early
Scintilla	Southern Highbush	150-300	Early
Emerald	Southern Highbush	150-300	Mid
Sweet crisp	Southern Highbush	150-300	Early
Suzieblue	Southern Highbush	150-300	Very early
Spring high	Southern Highbush	150-300	Very early
Ventura	Southern Highbush	150-300	Very early
Rebel	Southern Highbush	150-300	Early
Farthing	Southern Highbush	150-300	Early
Jewel	Southern Highbush	150-300	Early-Mid
O'Neal	Southern Highbush	400-800	Early

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Selected Blueberry Cultivars Planted at Randolph Farm and their Characteristics

- Twenty three Northern Highbush
- Eight Rabbiteye
- Fifteen Southern Highbush

Crop Management

- **Pruning**
 - Starts in February and continues on to the month of March, weather affects rate and completion time required, we do not prun when it rains
- Pine bark- Every two year, two inches of pin bark is added as mulch to all blueberry beds
- Fields are fertilized with Quickstart 3 – 4 – 3 during March and again after harvest in late July
- Lime Sulfur is applied each year before bud break for disease control

Pest Control

- The pest control methods were done by scouting and in accordance to the most recent edition of “Southern Region Small Fruit Growers Guide”
- Birds are a considerable pressure particularly during mid to late season growth (Mid July to September)
- To reduce bird pressure the following were used
 - “Fly Away Birdies” – A humming line that repels away birds without causing them any bodily harm
 - Used in 2017
 - <http://www.birdstoppers.com/fly-away-birdies>
 - “Bird Gard” – Device that imitates predatory sounds so as to deter the presence of said birds
 - Used in 2018
 - <https://www.birdgard.com/>
 - In 2019 nets were used for selected plants

Trial Setup

- Each year, from each variety, three different typical plants are selected, and the following information is collected:
 - Date when 50% of the bloom is open
 - Harvest date (multiple harvest/varieity)
 - Yield/per plant/harvest date
 - Weight of 10 fruits is collected at the beginning, mid, and last harvest

Results for 2017

Top 10 Varieties, Marketable Yields

Variety	Marketable Yield (lb./plant)
Rebel	4.2
San Joaquin	3.6
Farthing	3.5
O'Neal	3.3
Duke	3.2
Clockwork	1.9
Suzieblue	1.4
Patriot	1.3
Misty	1.2
Legacy	0.9

Top 10 Varieties, Fruit Size

Variety	Weight of 10 Fruits (grams)
San Joaquin	24.6
Suzieblue	24.4
Top Shelf	24
Rebel	22.8
Farthing	22.7
Misty	20.7
Patriot	19.8
O'Neal	17.3
Legacy	16.9
Duke	16.1

Results for 2018

Top 10 Varieties, Marketable Yields

Variety	Marketable Yield (lb./plant)
Rebel	9.9
Farthing	6.5
Suzieblue	6.2
Patriot	5.9
Brigitta	3.9
San Joachim	3.9
Clockwork	3.9
Spring High	3.6
Top Shelf	2.8
Jewel	1.9

Top 10 Varieties, Fruit Size

Variety	Weight of 10 Fruits (grams)
Suzieblue	29.5
Spring High	27.3
San Joachim	25.8
Farthing	25.3
Rebel	24.8
Patriot	22.3
Brigitta	20
Top Shelf	19.8
Jewel	19
Clockwork	13

Results for 2019

Top 10 Varieties Marketable Yields

Variety	Marketable Yield (lb./plant)
Suzieblue	7.3
Rebel	5.5
Premier	5.2
Brigitta	5.0
Patriot	4.7
San Joachim	4.7
Cargo	4.4
Farthing	4.2
Elizabeth	3.9
Spring High	3.8

Top 10 Blueberry Varieties, Fruit Size

Variety	Weight of 10 Fruits (grams)
Spring High	22
Farthing	21
Scintilla	20
Legacy	20
O'Neal	18
Suzieblue	18
San Joachim	18
Duke	18
Patriot	18
Cargo	16

Yield/plant (lbs.) for 2017, 2018, and 2019 growing season, and overall three years average yield/plant

Cultivar	2017	2018	2019	3 Years Average Marketable Yield
Rebel	4.2	9.9	5.5	6.5
Suzieblue	1.4	6.2	7.3	5.0
Farthing	3.5	6.5	4.2	4.7
San Joachim	3.6	3.9	4.7	4.2
Patriot	1.3	5.9	4.7	4.0

Weight of 10 fruits (Fruit size) for 2017, 2018, and 2019 growing season, and overall three years average

Cultivar	2017	2018	2019	Three years average fruit size
Suzieblue	24.4	29.5	18	24.0
Farthing	22.7	25.3	21.1	23.1
San Joachim	24.6	25.8	17.7	22.7
Patriot	19.8	22.3	17.6	20.00