



Blueberry Cultivars for the Southeastern US

**Bill Cline, Entomology and Plant Pathology
North Carolina State University**



Blueberries

- *Vaccinium* species
- Heath family (Ericaceae)
- Native to North America
- Related to azaleas, cranberries
- Acid-loving plants that require low soil pH
- Multi-trunked bush, deciduous woody perennial
- Requires winter chilling
- Pollinated by insects
- Hand- or Machine-harvested for fresh or processed (frozen, canned)



Culture and Management

Pollination

- An insect must visit each flower or a berry will not form
- For cross-pollination, plant more than one cultivar

Pruning

- Annual task, usually in dormant season
- Removal of old or weak canes; shaping & thinning

Irrigation

- Drought relief (drip, micro-sprinklers, overhead)
- Freeze protection (overhead only)

Fertilizer/Organic matter

- Fertilizer use is based on soil testing
- Must maintain low pH for the life of the planting
- Pine bark, aged sawdust

Blueberry flowers must be visited by a pollinating insect in order to form a berry.

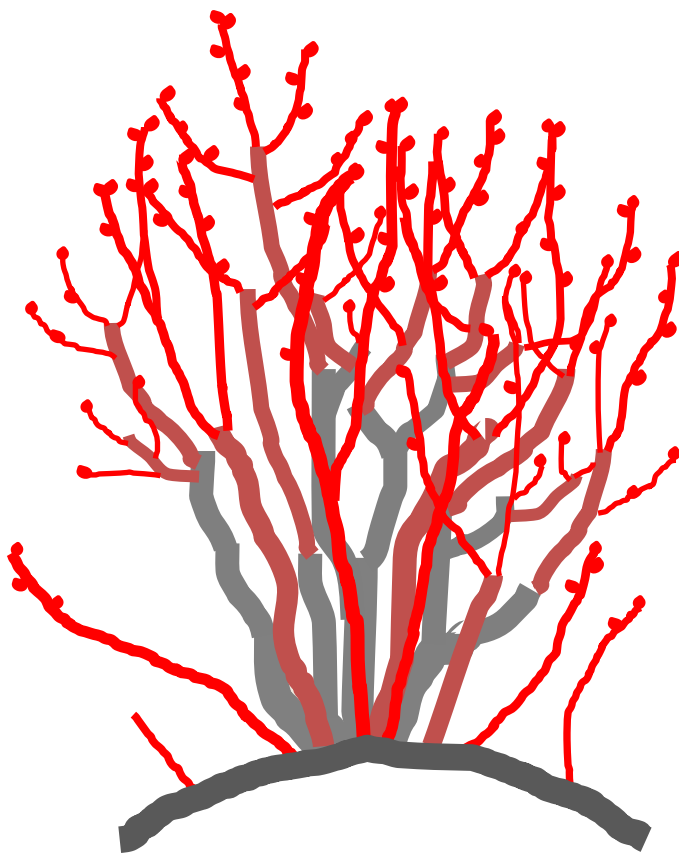
The Southeastern Blueberry Bee (shown) is a very effective wild, native pollinator.



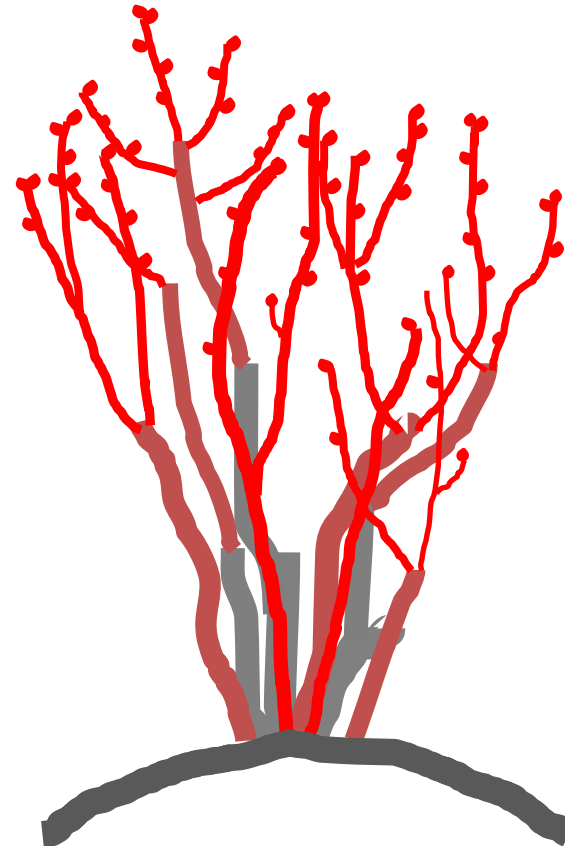
Unpollenated berries do not size, turn red and fall off 2-3 weeks after bloom



Blueberry bushes are pruned each winter to shape, thin and manage height



Before Pruning



After Pruning

Overhead vs Drip Irrigation

Overhead can be used for freeze protection in Spring; high volume



Drip conserves water, avoids wetting bush



The best native NC blueberry soils are organic sands (>3% organic matter) with a water table within 12-24" of the surface; fields are bedded to improve root aeration.



**ON UPLAND SITES, Bark mulch is added to provide an organic substrate, lower pH and improve drainage.
Note raised beds!**



Site evaluation and soil type helps determine what cultivars you can grow



Raised beds amended with pine bark, then surface mulched, with sod middles



SPECIES OF CULTIVATED BLUEBERRY GROWN IN THE SOUTHEASTERN US

- **Rabbiteye** (*Vaccinium virgatum* syn. *V. ashei*) native to deep South, hexaploid 6X
- **Highbush** (*Vaccinium corymbosum*) “Northern highbush” domesticated in NJ, but also native into the South; tetraploid 4X
- **Southern highbush** (*Vaccinium corymbosum* X ?) complex tetraploid 4x interspecific hybrids with lower chill requirement, greater soil adaptability
- **Pentaploids** (5x) hybrids between rabbiteye & highbush (rare, not widely grown or widely recommended)

LOCATION DRIVES CULTIVAR SELECTION

- **Chill hours = hours below 45°F required to leaf and flower normally (Oct to Feb in NC)**
- **Soil type and % humic matter**
- **USDA Hardiness Zone**

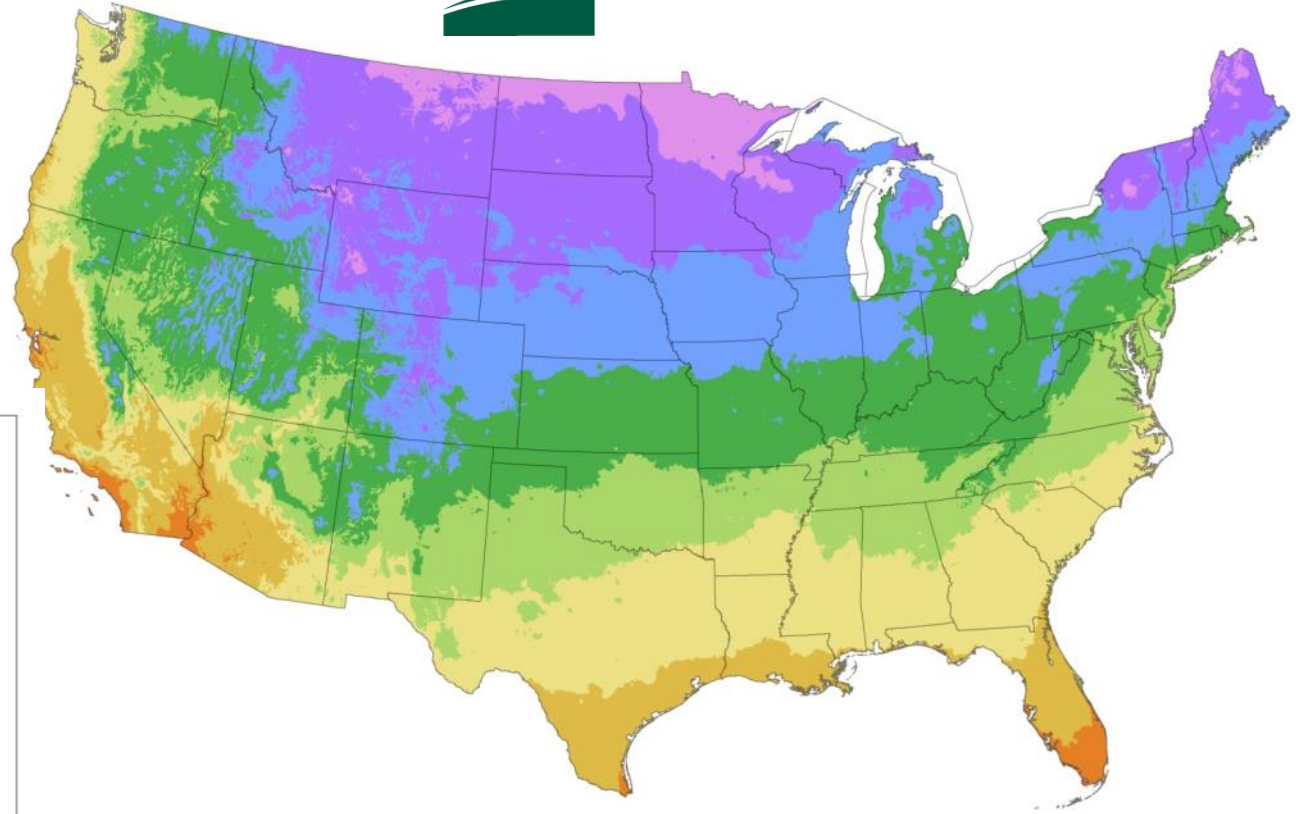


Poor leafing due to lack of winter chilling (hrs < 45° F)

Chill Hour requirements vary by species and also by cultivar within species

SPECIES/TYPE	CHILL HOUR RANGE	USDA HARDINESS ZONE
HIGHBUSH	800 TO 1200+	3-7
RABBITEYE	400 TO 800+	7-8
S. Highbush	150 TO 900+	7-10

USDA Plant Hardiness Zone Map



Average Annual Extreme Minimum Temperature 1976-2005

Temp (F)	Zone	Temp (C)
-40 to -30	3	-40 to -34.4
-30 to -20	4	-34.4 to -28.9
-20 to -10	5	-28.9 to -23.3
-10 to 0	6	-23.3 to -17.8
0 to 10	7	-17.8 to -12.2
10 to 20	8	-12.2 to -6.7
20 to 30	9	-6.7 to -1.1
30 to 40	10	-1.1 to 4.4
40 to 50	11	4.4 to 10

NORTH CAROLINA AS AN EXAMPLE:

- **Highbush** is preferred for NC mountains above ~2,500 ft (too cold for other types)
- **Rabbiteye** in foothills, piedmont and drier areas of the coastal plain (soil adaptability, drought tolerance)
- **Southern highbush and selected highbush** main coastal production areas on amended or native sites (early ripening)

Research your choices, ask specialists, agents, growers -- “I wouldn’t grow that one because...”

- Stems don’t detach
- Cracking
- Wet stem scar
- Too soft
- Poor flavor (esp. tart)
- Disease
- Color (too dark)
- Size
- Poor bush survival
- Market prejudice (species, size, color)
- Ripens too late
- Yield not consistent
- Yield too low
- Won’t machine pick

Fruit color comparison – 'Onslow' (Left) vs 'Columbus' (right)



Blueberry harvest timing by cultivar in southeastern NC

	MAY	JUNE	JULY	AUGUST	SEP
CROATAN					
REBEL					
O'NEAL					
SUZIBLUE					
STAR					
FARTHING					
ABUNDANCE					
DUKE					
NEW HANOVER					
CAMELLIA					
LEGACY					
PREMIER					
COLUMBUS					
TIFBLUE					
POWDERBLUE					

BLACK =HIGHBUSH GREEN = SOUTHERN HIGHBUSH RED = RABBITEYE

Highbush Cultivars for zones 3-7, well-drained amended soils with irrigation. Most cold tolerant, for mtns

- STANDARDS:
Earliblue, Patriot,
Bluecrop, Berkeley,
Jersey, Elliott
- NEWER: Duke,
Aurora, Liberty,
Draper



'DUKE'

Rabbiteye Cultivars (Zones 7-8) most common backyard and Pick-Your-Own in the South, mostly on irrigated, amended upland sites

- STANDARDS: Premier, Climax, Brightwell, Tifblue, Powderblue
- NEWER: Vernon, Krewer, Alapaha, Columbus, Ira, Ochlockonee, Onslow



'IRA'

Southern Highbush Cultivars -- SE Coastal Plain areas, Zones 7-10, optimal “native” sites or well-drained, irrigated and amended uplands

- STANDARDS: O’Neal, Star, New Hanover, Legacy
- NEWER: Rebel, Suziblue, Farthing, Camellia, Gupton



‘LEGACY’

QUESTIONS?

