

# Notes on Growing Blueberries in North Carolina

Bill Cline & Benny Bloodworth, Entomology and Plant Pathology Department, NCSU

Revised 29 Jan 2019



## What makes a good blueberry site?

- **Low pH** – Acid soil with pH of 5.0 or less for highbush blueberry, 5.3 or less for rabbiteye.
- **Drainage** – Plant only on well-drained sites in raised beds – avoid clay soils or low, saturated areas.
- **Water** – One to two inches every week of the growing season, either from rain or by irrigation.
- **Organic matter** – 3% or greater from either naturally-occurring humic matter, or by soil amendments added prior to planting.



## Twelve steps to establish a new blueberry planting:

1. Select a well-drained site in full sun with an open, porous soil – avoid heavy clay soils and low, frost-prone areas.
2. Adjust pH to between 4.0 and 5.0.
3. Take a soil sample and adjust fertility levels (N-P-K) for blueberry.
4. Select the correct blueberry species and cultivar(s) for your soil type and location.
5. Add acidifying organic matter (peat moss, pine bark, or aged sawdust) to the soil.
6. Mix and mound the amended soil to form raised beds or raised rows before planting.
7. Plant dormant bushes in raised beds or rows, usually in late winter (Feb-Mar).
8. Prune at planting time to keep only 3-4 upright shoots, and to reduce bush height by one-half to two-thirds.
9. At planting, remove all flower buds to prevent fruit production in the first year.
10. Provide water -- irrigation is essential for establishment and survival.
11. Maintain a weed- and grass-free zone around each plant.
12. Apply a 3-4-inch deep surface mulch (pine bark, pine needles, wood chips or sawdust). Weed barrier fabrics have also been used successfully.



## 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**-- Most pruning is done in winter for thinning of canes and flower buds, and removal of low, crowded, old or weak canes and cross-overs.
- **Irrigation** -- Drip emitters or soaker hoses are best for home use. Specialized overhead sprinklers may be used for freeze protection (see references).
- **Sulfur** – Sulfur can be used to lower pH (1 lb/100 sq ft on sandy soils to lower 1 pH unit). Apply once, then every few years as needed; do not over-apply.
- **Fertilizer** --Blueberries do not require much fertilizer; apply according to soil test results, in split applications beginning at leaf-out in spring. For young bushes, apply small amounts every 4-6 wks, rather than all at once. Lime is generally NOT used. To avoid winter injury, do not fertilize in the fall.



## Pruning tips:

**Setting out new plants** -- Always prune or rub off all flower buds and cut back 1/2 to 2/3 of the height at the time of planting. For potted plants, gently separate and spread out the roots so that the root mass is no longer in the shape of a pot.

**Young bushes** -- In year two, remove weak shoots and keep 3-4 large upright canes. Some flower buds may be allowed to produce fruit in year two if the bush grew vigorously in year one. Bushes may be allowed to produce a full crop in year three.

**Mature bushes** – do the following, in order:

- 1) Remove low-angled side shoots and outlying canes.
- 2) If there are too many new basal shoots, keep 3-4 of the strongest and remove the rest.
- 3) Remove crossovers and old, weak canes (oldest canes are lichen-covered and gray, with weak, thin twigs).
- 4) Make 1-3 large cuts to open the center of the bush.
- 5) Head back any overly vigorous shoots.

6) Thin remaining shoots to reduce flower buds if needed.

**Renewal pruning** -- Bushes over 10 yrs old may require severe cuts that reduce bush height and remove large canes.



## Harvest timing and handling

- Highbush and southern highbush blueberries –pick all ripe berries every 5-7 days or less.
- Rabbiteye blueberries – pick every 7-10 days to allow fruit to fully ripen.
- Pick all ripe fruit on the bush at each visit.
- To avoid decay, do not handle fruit when it is wet.
- Refrigerate berries to extend their shelf life.



## Selecting the right species and cultivars for your area

**Rabbiteye blueberries** are the easiest type to grow, will survive in some soils where highbush blueberries will not, and are usually the best choice statewide for homeowners, pick-your-own operations, and for local markets. Early rabbiteyes (Climax, Premier) begin ripening in mid-June in the coastal plain, and 2-3 weeks later in the western piedmont and foothills.

Note for mountain growers: At many high-elevation sites in western NC, rabbiteye blueberries may be winter injured, resulting in inconsistent cropping. For this reason, rabbiteyes are not recommended above 2,500 ft in elevation, or in areas where winter temperatures routinely go below 10°F.

**Highbush and southern highbush blueberries** are limited to certain sand-based, high-organic sites in eastern NC, **OR** may be grown in well-drained soils elsewhere with extensive site modification, including raised beds, addition of organic matter, acidification, and irrigation. They are more difficult to grow, but ripen earlier than rabbiteye – and for this reason are grown commercially in southeastern NC for fresh shipping in the early summer market window (May-June). Early-blooming southern highbush cultivars like Legacy, O’Neal and Star are prone to crop loss due to late spring freezes and may require freeze protection irrigation.

**HIGHBUSH for Western Mountains--** Only highbush will consistently produce a crop above 2,500 ft elevation or with extended periods of low winter temperatures below 10 °F. Listed in order of ripening:

Duke (earliest ripening)	Berkeley
Sunrise	Jersey
Draper*	Patriot
Bluecrop	Liberty*
Echota	Elliot
Blueray	Aurora* (latest ripening)
Toro	

**RABBITEYE statewide** – For most coastal plain, piedmont and foothills sites below 2,500 ft, with minimum winter temperatures usually above 10 °F. Listed in order of ripening:

Robeson* (early pentaploid)	Ira
Climax	Tifblue
Premier	Powderblue
Columbus* (mid-season)	Onslow* (latest ripening)

**HIGHBUSH AND SOUTHERN Highbush** for sand-based, high-organic soils in the coastal plain, and on a TRIAL BASIS ONLY for well-drained, amended, mulched and irrigated sites in the piedmont and foothills.

O’Neal (earliest, begins May 15 in the coastal plain)  
Star\*  
Duke  
New Hanover\*  
Legacy (latest, begins June 1 in the coastal plain)

\*Trial basis only



## For More Information:

- Contact the Cooperative Extension Service Center in your county
- Horticulture Information Leaflets [www.ces.ncsu.edu/depts/hort/hil/](http://www.ces.ncsu.edu/depts/hort/hil/)
- Small fruit information for the southeastern US [www.smallfruits.org](http://www.smallfruits.org)
- NC Blueberry Information Portal <http://blueberries.ces.ncsu.edu/>
- NC Small Fruit & Specialty Crop IPM <http://ncsmallfruitsipm.blogspot.com/>
- NC Blueberry Journal <http://ncblueberryjournal.blogspot.com/>