

Elaine Mills, presenter of Best Bets: Native Plants for Shade

Several questions were posed about gardens that are mostly shady but exposed to **afternoon sun**.

- Some parts of the garden can be difficult to plant, such as areas on the west side of a house. These areas will be in deep shade during the morning and then receive the full strength of blazing sun in the afternoon. The intensity of sun at that time can be hard on plants, causing them to wither and die.
- For this situation, it is best to choose plants that will tolerate part sun because they will experience a range of sun exposure.
- It can be very helpful to make a sun map to determine exactly how many hours of sun you have as well as its intensity. See this helpful [discussion on making a sun study](#) from University of Georgia Extension.

In response to questions about **planting shrubs underneath trees**:

- Care should be taken when incorporating plants under a tree to avoid causing long-term damage, keeping these tips in mind:
 - It is best to install the smallest plants possible and add them in phases over several growing seasons. If you are planting a bed of mixed shrubs and perennials, consider placing perennials closest to the tree trunk, then gradually integrating shrubs as you get further away from the tree's major roots, maybe 5 feet or so.
 - Seedlings with small rootballs can usually be squeezed in between tree roots without digging too wide or deep. If necessary, move a planting hole to a different location if you hit a major tree root.
 - Think about the mature size of the plants in order to site appropriately. Trees should be spaced based on their expected height when fully grown. So, for example, a 15-foot-tall dogwood should be spaced 15 feet from other landscape elements. For shrubs, allow half of their expected width between one shrub and another. That means a shrub expected to be 5 feet wide can be planted 2 ½ feet from its neighbor.



- Small plants will adapt more quickly than larger ones to their new location, as long as they are well-watered initially. Remember that it's best to choose plants that won't require a lot of supplemental water during dry spells when the tree's roots will soak up the available moisture.

Regarding questions on the **depth, clumping, or mold formation of leaf litter:**

- Deciduous ground covers and herbaceous plants can generally come back through leaf litter that is not too deep (no more than 6 inches). Leaf litter should not be allowed to smother evergreen ground covers or the overwintering low basal leaves of plants such as Great Blue Lobelia.
- Some folks reduce overly abundant or clumping leaves by shredding them with a lawnmower, letting them blow out the chute into the garden. Some leaf blowers have a reverse vacuum feature with an internal blade that chops up the leaves which are then collected into a bag suspended from a shoulder strap. They can then be distributed in greatly reduced quantities.
- If you have the room, you can use excess leaves as the carbon or "brown" component of compost, or, if necessary, bag them for recycling of organic matter by the local city or county.
- It is normal for leaf litter to rot when it is damp, and various naturally occurring fungi and other microorganisms play a role in the decomposition process. Allergic symptoms from those who are susceptible to fungus spores are most common from July to early fall. Mold season ends once the ground frosts over and mold dies off.



In response to questions on the use of **pine needles as mulch**:

- Pine needles, also known as pine straw, make a fine mulch for flower beds. They are easy to spread and are light and fluffy, so they don't compact too much as they decompose.
- Although the needles have a pH between 3.2 and 3.8, they will not have an effect on the acidity of the soil when used as a mulch.
- The main concern with sap on pine needles has to do with the sticky substance landing on cars or clogging gutters. The needles of pine trees that are affected by aphids may be covered with "honeydew" excreted by the insects, making them less desirable for use in the garden.
- Pine needles are available from multiple sources online, and you can certainly gather pine needles from your own trees and use them fresh.

To answer question on the **definition of "native" plants and "cultivars**:

- **Native** plants are those found naturally growing in a particular region without having been introduced. They have reproduced genetically and evolved over many thousands of years, adapting to soil and climate conditions of a particular area in relationship with wildlife and other plants.
- Sometimes certain native plants are referred to as "**local ecotype**." This is a subset of a species that has adapted to a specific geographic environment and as a result has evolved to be genetically distinct from other members of the same species found in different environments.
- **Cultivars** are cultivated plants that growers have bred for desired traits (height, foliage or flower color, disease resistance). Some begin as naturally occurring variation in the species. There can be cultivars of either native or non-native plants. Cultivars of native plants are sometimes referred to as "nativars." (See ["Making Wise Plants Choices: Cultivars"](#) for more details.)



All of the **cultivars mentioned in the talk** are cultivars of the native shrubs.

- ‘Hummingbird’ and ‘Ruby Spice’ are cultivars of Sweet Pepperbush (*Clethra alnifolia*) which are modified for height and flower color.
- ‘Henry’s Garnet’ and ‘Little Henry’ are cultivars that are somewhat shorter than the straight species of Virginia Sweetspire (*Itea virginica*).

Regarding **dioecious plants**:

- To review information shared during the presentation, the sex of dioecious plants can be told in several ways:
- With **Winterberry** (*Ilex verticillata*) the sexes of the plants can be told from the named cultivars (E.g., females: ‘Winter Red,’ ‘Red Sprite,’ ‘Berry Poppins’ and males ‘Jim Dandy,’ ‘Southern Gentleman.’) With **Inkberry** (*Ilex glabra*), most of named cultivars are female (‘Shamrock,’ ‘Nigra,’ ‘Densa,’ ‘Compacta,’ ‘Cape Cod.’) The only male cultivar recognized by the Holly Society of America is ‘Pretty Boy.’ ‘Nordic’ is often listed as male, but it is actually female.
- I am lucky to have a straight species Inkberry male that I purchased from a native-only nursery which pollinates my female cultivars.
- You can try to purchase plants when they might be in flower. See my presentation on [“Caring for Your Native Plants Garden”](#) to see comparative photos of the male and female flowers of several native shrubs.
- In the fall, older female shrubs may display fruit, but unfortunately, a shrub that is not fruiting could either be a male or a female that is too young to bear fruit or whose flowers were not pollinated.
- Male and female plants of dioecious species should be planted within 40 feet of each other.
- For **winterberries**, check to make certain that you have male and females that bloom at the same time. (See [Winterberry bloom chart](#).)



Regarding **suckering shrubs**:

- As described in the presentation, you can trim suckers away from the base of shrubs to create new plants. Pot the shoots in soil and keep them watered until new roots have developed.
- Many native shrubs tend to “sucker” or create thickets. You can choose to either let them spread to form a hedge or screen, or you can trim them back as specimen plants.

Regarding **trees that are not blooming**:

- Producing flowers requires a great deal of energy, and trees need to mature and establish their root systems, protective bark, and enough leaves for photosynthesis before they become productive.
- Sun exposure and the amount of stress a tree faces in its new location can also have an impact on flowering. For example, use of high nitrogen fertilizer in surrounding lawn may cause trees to put all of their energy into producing leaves and delay flowering.

Regarding **toxicity or other hazards** of certain plants:

- **Mountain Laurel** (*Kalmia latifolia*) and **Great Rhododendron** (*Rhododendron maximum*) are considered to be highly poisonous to humans and animals through ingestion, although they does not cause contact dermatitis.
- **Solomon’s Seal** (*Polygonatum biflorum*) has a low poison severity rating. The toxic component Anthraquinone may cause vomiting and diarrhea, but it does not cause contact dermatitis.
- If you have concerns about the potential **toxicity of any native plant**, a helpful website to check is the [North Carolina Extension Gardener Plant Toolbox](#).



- Because of their long awns (bristle-like appendages), the seedheads of **Bottlebrush Grass** can cause mechanical injury to horses and livestock.

Regarding **care of ferns**:

- Deciduous ferns can be cut back at the end of the growing season. The fronds of evergreen ferns can be kept through the winter and cut back in early spring to make room for new fiddleheads.

Here are some suggestions for plants for **shady dry slopes**:

- University of Maryland Extension explains that planting on shady slopes is different than planting on a sunny slope because trees will intercept raindrops, preventing erosion, and tree root will also hold soil in place.
- The following shrubs, in addition to Mountain Laurel and Great Rhododendron, grow in rocky forests, cliffs, and outcrops:
 - Spicebush (*Lindera benzoin*)
 - Witch Hazel (*Hamamelis virginiana*)
 - Black Haw (*Viburnum prunifolium*)
 - Wild Hydrangea (*Hydrangea arborescens*)
- These herbaceous plants can be planted in the same dry conditions:
 - Bottlebrush Grass (*Elymus hystrix*)
 - White Wood Aster (*Eurybia divaricata*)
 - Christmas Fern (*Polystichum acrostichoides*)
 - Woodland Sunflower (*Helianthus divaricatus*)
 - Eastern Columbine (*Aquilegia canadensis*)



Here are some suggestions for plants to grow in **shady rock walls**:

- Ebony Spleenwort (*Asplenium platyneuron*)
- Barren Strawberry (*Geum fragarioides*)
- Creeping Phlox (*Phlox stolonifera*)
- Wild Pink (*Silene caroliniana*)
- Dwarf Crested Iris (*Iris cristata*)
- Wild Bleeding Heart (*Dicentra eximia*)
- Wild Stonecrop (*Sedum ternatum*)

There were a number of questions on **specific shade plants**.

- According to the Lady Bird Johnson Wildflower Center, **Redbud trees** may produce flowers on a consistent basis starting in their 4th year as they gain height and girth. They should be blooming within five years.
- If a **Dogwood tree** doesn't get enough water, it may not bloom. This is especially true if the tree dried out over the summer and didn't set flower buds. If taller canopy trees are absorbing more of the rainfall, you may need to provide supplemental (equivalent of 1 inch per week) with a deep watering from a hose, extending to the edges of the dripline.
- **Dogwoods** naturally grow on the edges of forests, spending part of their day in shade and part in sunlight (ideally not strong afternoon sunlight). If the tree is deep in the understory, it may not be receiving enough sun to bloom. Improper pruning may remove immature buds and cause the tree not to flower.
- **Sweetbay Magnolias** will naturally be leggy when grown in shade and dense when grown in full sun. Pruning won't really help the situation, and any cuttings planted in the same location will also tend to be leggier. I would recommend planting shade-loving, moisture-loving shrubs, such as Sweet Pepperbush (*Clethra alnifolia*) to help fill in the "bare" lower portion of the tree. As I mentioned in the talk, this shrub is unusual in that it can flower in fairly deep shade. (Be sure to install shrubs small.)



- One participant commented on growing a **Pinxterbloom Azalea** (*Rhododendron periclymenoides*) successfully in full sun; it does not sucker.
- **Strawberry-bush** (*Euonymus americanus*) reaches 4 to 6 feet tall as listed on the slide and fact sheet.
- If **Winterberries** don't have enough sunlight to flower or experience drought stress, they may not form fruit. *Ilex verticillata* is a species that prefers to grow in moist to wet soil, so make certain that shrubs are receiving enough water. You can use a 2- to 3-inch layer of mulch to help retain moisture. A cold, wet spring may also prevent pollinators from flying about enough to pollinate the female flowers.
- For concerns about **winterberries losing their leaves**, it may be helpful to see information on [holly diseases and insect pests](#) from Clemson Cooperative Extension. You can also send photos and any other details on growing conditions to our [Help Desk](#) for help with a diagnosis.
- **Virginia Bluebells** (*Mertensia virginica*) tend to become floppy after blooming. In optimum conditions, they spread quite rapidly either through self-seeding or underground rhizomes. Make sure they are planted part to full shade in moist to wet, rich, well-drained soil.
- **Pink Turtlehead** (*Chelone lyonii*) is native to the southern Appalachian Mountains in small parts of North and South Carolina, Tennessee, and northern Mississippi and Alabama. As with White Turtlehead, native bees will pry open the blossoms and disappear inside in search of nectar and pollen.
- **Pennsylvania Sedge** (*Carex pensylvanica*) cannot take a lot of foot traffic or use as a play area by children or dogs. To use it as a ground cover in dry shade where turfgrass won't grow, you may wish to install steppingstones as a means of transit through the area.



For help in determining the **nature of your soil**:

- See a presentation on [“Soil Health”](#) by our Extension Agent, Kirsten Conrad, in which she describes home tests you can do to determine soil type (clay, sand, loam) and drainage.
- You can also see clear step-by-step information from Rutgers University on [conducting a percolation test](#) to determine whether or not your soil is well-draining. Soil that is either draining too quickly or too slowly can be improved by addition of organic matter.
- See a [short video on how to conduct a soil test](#), which can be sent to a lab, to determine soil pH. This is critical to know should you wish to plant species such as blueberries, Mountain Laurel, Great Rhododendron, or native azaleas which require acidic soil. In Virginia, [soil test kits](#) can be mailed to VA Tech and Extension offices in other states can help in the same way.
- Since native plants do not require fertilization, you won’t be looking for information on adding nutrients as you would for a vegetable garden. You will be adding nutrients by retaining leaf litter and adding any other organic material to your shady planting areas. You can pay a bit extra to have the percentage of organic matter determined when submitting a soil test.

