



# Delaware Gardening: Challenge to Newcomers

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## Introduction

Gardening in Delaware can be challenging. While the state of Delaware is small, it is comprised of two different growing environments—the piedmont and coastal plain. The piedmont covers about 5% of the land area of Delaware and exists on only the northern most corner of the state. The piedmont is characterized by low rolling hills and steeply incised stream valleys. Soils in the valleys are rich and loamy and steep slopes are eroded and stony. The coastal plain, covering the other 95% of Delaware is characterized by little topographic relief, slow-moving streams, and extensive tidal estuaries. The soil is sandy but has a wide drainage range from excessively drained beach sands to poorly drained tidal marsh and swamp muck. While most of Delaware is considered a coastal plain, in actuality, soils range dramatically from heavy clays in New Castle County and Northern Kent County to sandy soils in southern Delaware. However, pockets of clay soils can be found in Sussex and Kent Counties.



## Soils

Soil is comprised of mineral components, organic matter and pore spaces. Pore spaces can be filled with water or air. Pore spaces are affected by soil texture—the relative size of soil particles. Clay soils have very small particles and small pore spaces. They hold more water and have less pore space available for air. Thus, clay soils are sometimes waterlogged. But, clay particles are capable of holding more nutrients. Sandy soils have larger particles. They are well drained and have poor nutrient holding capacity. Loam soils have moderately-sized soil particles with characteristics in between clayey and sandy soils. Loam soils usually have a good balance between water and air in their pore spaces.

Soil structure is the percentage of various sized particles in a soil and the aggregation of soil particles. It is impossible to change the texture of a soil, but soil structure can be improved by adding organic matter, tilling or a combination of the two. When gardening in the sandy soils of Sussex County, add organic matter to fill in pore spaces and hold water and nutrients. Organic matter has the opposite but also beneficial effect for clayey soils of northern Delaware by helping to bind individual clay particles into aggregates, creating larger pore spaces for better drainage.

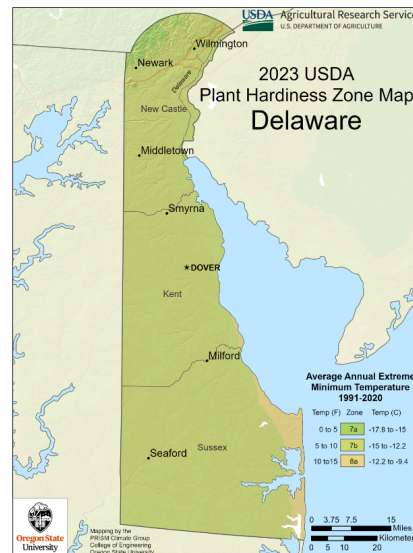
## Hardiness Zones

Delaware is in hardiness zone 7. Northern Delaware is zone 7a (0 to 5 °F/-17.8 to -15 °C) and the coastal area of Sussex County is zone 7b (5 to 10 °F/-15 to -12.2 °C) and zone 8a (10-15 °F / -12.2 to -9.4°C) .

Plants like camellia or pampas grass can grow quite successfully in southern Delaware, but would only survive in a protected spot in northern Delaware. The reverse is also true. Sugar maples like a cool climate and do fairly well in northern Delaware but rarely survive in Sussex County. European birch do not do well anywhere in Delaware. While frequently planted, they rarely survive past 5-10 years before succumbing to bronze birch borer or birch leaf miner, brought on by repeated summer heat stress.

As a mid-Atlantic state, Delaware often has periods of warm weather in the winter and early spring, followed by periods of extreme cold. It is not unusual to have a gorgeous day in February and a snowstorm in March. This weather variation can wreak havoc on landscape plants. Saucer magnolia often blooms early due to a warm spell only to be hit with a spring bloom-ruining frost. Select later blooming magnolia varieties to ensure consistent and effective bloom. It is also possible to have inconsistency problems in the fall. Sometimes Delaware's weather turns very cold before landscape plants have had a chance to harden off properly. We may get winter injury on plants that are normally hardy in Delaware when those conditions occur. In the spring, the frost-free date (date after which there is only a 10% chance of a frost) is May 10 for Sussex County and May 15 for New Castle County. Most people plant tender annuals before that date, but you need to be prepared to cover tender plants if we get a late frost.

Figure 1: 2023 USDA Plant Hardiness Zone Map - <https://planthardiness.ars.usda.gov/>



## Salt Damage

Salt spray is a potential problem for plants in Delaware. Delaware winters are not usually characterized by many feet of snowfall, but we often get modest amounts of snow and ice with a few big storms. Many roads are salted for safe travel. So, any landscaping adjacent to a major road is subject to salt contamination in the soil and salt spray. Most plants are not actively growing in the winter, so salt contamination of the soil is not a huge problem. Regular spring rainfall will usually wash salts out of the soil before spring growth begins. But, a late winter/early spring storm or a poorly drained location can result in toxic salt buildup that causes leaf burn to landscape plants. Even more common is the injury from salt spray. Evergreens planted adjacent to roadways can be burned by salt that is made airborne by vehicular traffic. A salt wildcard in Delaware is a significant northeaster. Storms that travel up the coast can carry significant salt in the wind and rain, causing foliage burn that extends far beyond the roadside. Finally, some Delawareans live very close to the coast and may contend with salt spray from the ocean or bay on a regular basis. Those conditions dictate a very specific plant palette of salt tolerant plants such as groundsel bush (*Baccharis halmifolia*), bayberry

(*Myrica pennsylvanica* or *Myrica cerifera*) or beach plum (*Prunus cistensa*) to name a few.

Soils in the mid-Atlantic region of the country tend toward a slightly acidic pH. That means that lawns and vegetable gardens often require regular applications of lime for good plant growth. It is still a good idea to get a soil test when you move into a new property since you don't know how the land has been managed by the previous owner. But, in urban areas you can't assume the soil will be acidic. In fact, weathering of building materials often contributes to soil with a high pH (basic soil) that requires sulfur to reduce pH for proper plant growth. Landscape plants growing in a high pH soil may lack important micronutrients. The classic example is a pin oak planted in the city suffering from an iron deficiency. There may be plenty of iron in the soil, but if the pH is too high the iron is bound tightly and not available to the plant. The only solution, other than expensive iron injection, is to lower the pH with elemental sulfur.

Another urban condition that can affect plant growth is the urban heat island effect. Cities can be significantly warmer than surrounding suburban areas. Plant selection in Wilmington and to some extent Dover may not follow the hardiness zones previously specified.

## Lawns

Growing a lawn in Delaware is not always an easy proposition. Delaware is located in the northern end of the turf transition zone. That means warm season turfgrasses (with the exception of zoysiagrass) do not tolerate Delaware's cold winters, but cool-season turfgrasses suffer and often go dormant during our warm and sometimes dry summers. Typically, lawn grass in Delaware will go dormant during the dry, hot portion of the summer. There is no need to water grass during these periods, though. They will come out of dormancy and green up as soon as consistent rains return in the fall. Since drought is the most common turf problem we face, the best lawn grass for Delaware is turf type tall fescue—a fairly drought

resistant variety. Of course, Delaware's weather is anything but consistent and it is possible to have a rainy summer with no dormant period at all (lawn mowers keep running all summer long!).

### **Other publications with plant selection information available from your County Extension Office include:**

Trees for Delaware

Plants for a Livable Delaware

Dealing with Drought in the Landscape

University of Delaware Extension Horticulture Specialist

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