

# Right Plant, Right Place

Identifying practices that will assist you in choosing the right plant for the right place is the best place to start, as many issues that veer us off course in having a sustainable landscape can be avoided with a little planning. Additionally, choosing the right plant for the right place in your landscape can save you time and money in the long run.

We've all probably gone through the following scenario at some point: You buy a truly stunning plant at the nursery or garden center only to have it die soon after planting it. Or maybe it just never looks as nice as it did when you first brought it home no matter what you try — even moving it half a dozen times. What went wrong? Chances are it wasn't the right plant in the right place. For example, you wouldn't expect a cactus to thrive in a swamp.

The following information outlines some things you should consider when choosing plants for your property. You'll be a step closer to having a sustainable landscape.

## Get to Know Your Property

One of the first steps in choosing the right plant for the right place is getting to know your property.

- Where is it sunny or shady during different times of the seasons or day?
- What are your soils like (ex. clay, sand, both)?
- Are there spots that never seem to dry out or are dry all the time?
- Look around — are there plants with problems?
- Where do you want play areas, vegetables, color, views, or privacy?
- How much lawn do you need or want to maintain?
- What kind of plantings would fit your property?

## Determine the Exposure

Light can vary greatly depending on the time of day, the season, and whether it is filtered or completely blocked.

- Sunny areas get six or more hours of full sun, resulting in warm, dry soil. If plants are also exposed to wind, they will lose even more moisture.
- Shady areas are under trees or eaves or against north-facing walls. Moreover, these areas can be especially dry if tree roots are competing for moisture or when eaves block rainfall year round.

## Test Your Drainage

Understanding how your soil drains is critical to choosing the right plants and knowing how to water them. If your soil drains too quickly, plants may not have a chance to absorb enough moisture, so you will need to water more often. If the soil drains too slowly, the plant's roots can suffocate from being submerged in water, resulting in rotten roots or even plant death. Test your soil drainage by digging a hole six inches wide and one foot deep (see image at right). If you have one, a posthole digger works well for this job. Then fill the hole to the top with water and let it drain. When the water has drained completely, fill the hole again. This time keep track of how long it takes for the water to drain completely from the hole.

- If the water drains in less than three hours, you probably have sandy soil.
- If water is still standing in the hole after eight hours, you probably have clay soil. It will be important to choose plants that don't need good drainage.
- If the water drains within four to six hours, you have good drainage and can choose a variety of plants.

You can amend your soil to help improve drainage, but this will take a little more time and money.



Image courtesy of Joe Mazza.

## Know Your Soil

Pick up a handful of moist soil and squeeze. You may have to moisten it with a bit of water. Rub it between your fingers. How does it feel?

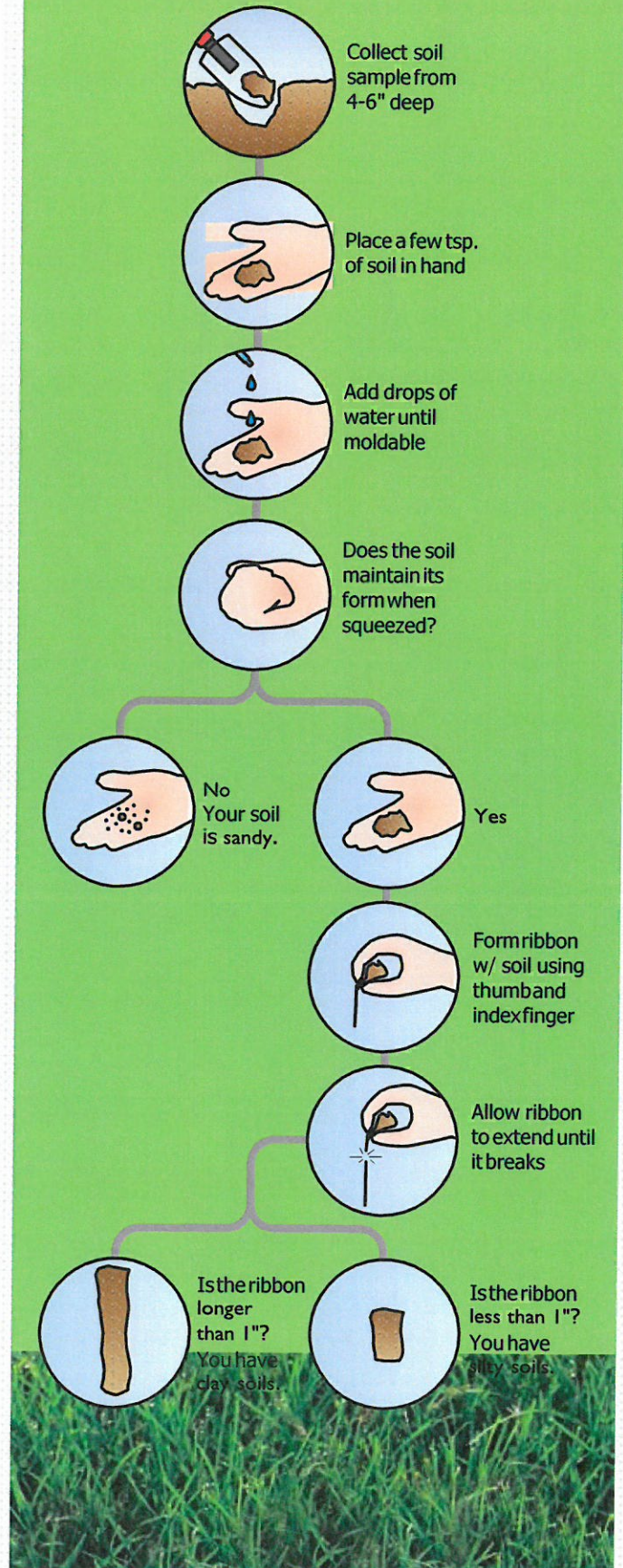
- Sandy soil has the largest particles and feels gritty. This soil is loose, drains easily, and dries out fast.
- Clay soil has the smallest particles. It feels smooth like flour and holds together like Silly Putty. When wet, this soil is heavy, sticky, and often soggy. In winter, it can get waterlogged, causing some plants to rot. In summer, it can be hard to dig into. Clay soil holds onto nutrients and water better than sandy soil.
- Loamy soil is a mix of sand, silt, clay, and organic matter (decomposed plants, compost, or manure). This soil is usually loose, drains well, and holds onto moisture and nutrients.

Alternatively, you can use the simple flow chart on the right to determine what type of soil you have.



Image courtesy of Joe Mazza.

Figure 4. Soil type determination flow chart



## Group Plants by Their Needs

Once you know the sun, shade, soil, and drainage conditions of your property, you can choose the right plants. Check with your local nursery for what is available and for plant combination ideas. Be sure to group these new plants with plants that need the same conditions. This will greatly simplify your watering routine. That way you don't have to water the whole property to reach one thirsty plant!



## Native Plants

Native plants have evolved to the conditions of our region. Not only do they generally require less maintenance (water, fertilizer, and pesticide use), they also provide food and habitat for resident and migrating wildlife such as birds, butterflies, and bees, many of which are important pollinators. Native plants can also help reduce runoff by helping rain to soak into the ground with their deep root structure.

## Go for Diversity

Monocultures, large expanses of the same plant, can be prone to disease and insect infestation. Additionally, if you are planting for wildlife, a diverse selection of plants is very important. As an example, when planting to attract pollinators (ex. butterflies, bees, and hummingbirds), choose flowering plants that bloom at different times of the season. The overlapping bloom periods will help assure that there is a continued food source that draws them to your property.

## Avoid Invaders

A number of our region's invasive species were introduced because they looked attractive. Invasive plants have the ability to thrive and spread aggressively outside their natural range. An example is purple loosestrife. While the purple flowers are pleasing to the eye, purple loosestrife has overrun fragile wetland habitats, creating a dense monoculture with little, if any, wildlife value. Get to know what plants are or may be invasive to your area.

## Pick Plants That Resist Pests and Use Less Water

Many pest- and disease-resistant varieties are available now — ask at nurseries or Master Gardener clinics. Choose plants that are “low water use” or “drought tolerant.” After they're established (2-5 years) many will thrive just on our limited summer rainfall most years, saving you time and money on watering. Native plants are usually the best option.

## Made In the Shade

Consider strategically planting trees and shrubs around your home to help offset heating and cooling costs. Deciduous shade trees planted on the south, west, and east sides of your home will cast shade over your home during the hot summer months while also allowing warm sunlight to come in through the windows in the cold winter months. Be sure to account for how big the tree will be once it is mature, especially around power and phone lines. Never plant trees near a septic system if you have one. The tree roots can damage the system, leading to significant repair or replacement costs.

## Cope With a Slope

Use groundcover plants or deep rooted native plants and shrubs on steep slopes where turf grass may not thrive or be easy to maintain.

## Lawn Grass Species

What is the best lawn grass species? The answer depends on local environmental characteristics, such as amount of shade, type of soil, and climate, and how these interact with the innate characteristics of the plant. Since grasses vary in their characteristics, select grasses that are best suited to the specific characteristics of the lawn or landscape to which they are added.

The variation in turfgrass stems in part from the distinction between warm-season grasses and cool-season grasses. Most lawns in the upper Midwest region are made up of cool-season grasses that are better adjusted to the relatively cooler climate. Most lawns tend to use grass cultivars of species like Kentucky bluegrass, fine fescues, and perennial ryegrass, or a mix of such various cool-season grasses. However, cultivars of native grasses, including buffalograss, prairie junegrass, blue grama, and native-non-native hybrids, such as Texas x Kentucky bluegrass, are being developed for use as turf in the Midwestern region.<sup>39</sup> When planning a new lawn or redoing an old one, it is important to take into consideration which turfgrass or ornamental species are best adapted to regional water availability and the local environment.

## Overseed & Top Dress

Reseeding (a.k.a. overseeding) and top dressing your lawn at least once a year with compost can help maintain a dense turf to out compete weeds. Water your lawn daily for approximately two weeks so the new turf grass from seed can become established.<sup>40</sup> In general, spot seeding of bare soil patches can be done in mid-April. Whole lawn reseeding can be done in early summer or early fall.<sup>41</sup> Once it has become established, you can follow the recommendations on water conservation outlined later in this guidebook.

## New Sod Establishment

Establishing a new lawn is usually done by seed in our region. However, sod can provide both quick and reliable results in many instances. For the sod installation process to be successful, the site and soil must be properly prepared. You may want to consider doing a soil test before installing the sod to determine the condition of the soil and to see whether it needs any amendments. For instance, compost may be added to a soil lacking adequate organic content. There should be at least six inches of aerated soil for a healthy lawn to grow.<sup>42</sup> It is also important to ensure that perennial weeds are under control and the site has been graded properly.

Once the sod has been put in, the lawn should be watered every day in the morning for about 10-14 days. Use your soil test results to help determine how much fertilizer or other amendments may be needed. It's important to make sure there is enough phosphorus available to support the critical initial development of roots in the soil. Potassium is important for improving stress tolerance in high traffic areas and during drought conditions. Nitrogen is best applied after the sod has become established in about a month's time, followed up with another application in 30 to 60 days.<sup>43</sup> The general target rate for nitrogen fertilizer use is still one pound per 1,000 square feet, even for newly planted sod; however, using less than that amount is recommended for plantings that take place in the summer. Once the lawn is established, you can switch to infrequent watering and twice-yearly fertilizer applications or less, based on your soil testing results.

## Why It Matters

Ultimately, when you match the right plants to the right environment, your plants grow stronger roots and are healthier, which in turn requires less watering, reduces or eliminates the need for pesticides, and makes plants more resilient to disease and harsh weather.

39 Mintenko, A., S. Smith, and D. Cattani (2002). Turfgrass evaluation of native grasses for the northern Great Plains region. *Crop Science* 42(6), 2018-2024; Su, K. et al (2008). Rooting characteristics and canopy responses to turfgrasses including hybrid bluegrass. *Agronomy* 100, 949-956.

40 Safer Pest Control Project: Natural Lawn Care for Homeowners. [www.spcpweb.org/factsheets/NaturalLawnCareforHomeowners.pdf](http://www.spcpweb.org/factsheets/NaturalLawnCareforHomeowners.pdf).

41 Safer Pest Control Project: Municipal Toolkit. [www.spcpweb.org/factsheets/SPCPMunicipalToolkitFinal.pdf](http://www.spcpweb.org/factsheets/SPCPMunicipalToolkitFinal.pdf).

42 Missouri Extension. Sodding a home lawn. Retrieved from: [extension.missouri.edu/extensioninfo/article.asp?id=1051](http://extension.missouri.edu/extensioninfo/article.asp?id=1051).

43 Purdue Extension. Establishing a lawn from sod. Retrieved from: [www.extension.purdue.edu/extmedia/AY/AY-28-W.pdf](http://www.extension.purdue.edu/extmedia/AY/AY-28-W.pdf).