The Right Tree in the Right Place

A guide to appropriate tree selection & planting
**With their dense foliage and majestic height, trees represent the best of what nature has to offer.**

Trees not only make parks and neighborhoods picturesque, but they are also vital to our survival. During photosynthesis, trees clean the air we breathe by absorbing carbon dioxide and producing oxygen as a by-product. For example, it takes an acre of trees to produce enough oxygen for 18 people every day.

Trees also enhance the environment by helping to moderate climate, conserve water and harbor wildlife. Trees are so versatile that they are used to manufacture everyday products you buy at the grocery store, like shampoo, toilet paper and toothpaste.

At New Holstein Utilities, we are committed to improving life in the community we serve. That’s why we are offering this guide to help you make informed decisions about appropriate tree selection and planting. Proper selection of trees and shrubs will minimize their long-term maintenance, increase property value, enhance the environment and help ensure reliable electric service. With adequate preparation, you will find that you can plant the right tree in the right place.

**Plan before you plant**

Haphazardly planting trees and shrubs will increase the time you spend working in the yard and could directly endanger your home and its utilities in the future.

Planting the wrong tree in the wrong place can cause property damage, create a nuisance to neighbors or even become a safety hazard.

Don’t be impatient. It may seem ideal to plant trees that grow faster and provide instant shade. These fast-growing trees, however, also have undesirable features, like shallow root systems or weak wood that breaks easily. In the long run, it’s better to buy native trees or genetically improved tree varieties that require less maintenance for property owners, less attention from municipalities and easier to protect from disease and insects.

Think of your yard as your outdoor living room. Use the grid on the inside back cover of this guide to draw a plan of your property and indicate where you want sun, shade, work and recreation areas, flowers and gardens. Then visit a nursery and pick your trees accordingly.

Before buying a tree, evaluate the following questions and discuss them with a professional at your local nursery.

**What are your reasons for planting a tree?**

- To screen an undesirable view? For its fruit? To accent or frame your house?
- To attract birds or other wildlife? To add more greenery to your yard? For spring flowers? (Remember that as beautiful as spring blossoms or fall colors are, they last only a short time. Pick trees that look good the other 50 weeks of the year, as well.)
How large will the tree ultimately become? Once it grows to its full height and width, will it still fit into your landscape scheme?

What shape will mature trees have – upright, round or spreading? How will this fit into your landscape scheme?

What maintenance will the tree require? Will you need to clean up messy fruit or seeds? Will it need to be sprayed often?

Will the tree be able to survive in the local climate and soil? Is it suitable for a sunny or shady, wet or dry spot?

Is the wood of the tree strong enough to bear snow accumulation and strong winds without breaking? Does the tree have a deep or shallow root system?

Is the tree susceptible to insects and disease?

Will the tree add to the value of your property now and at maturity?

Consider your neighbors — will the tree shade their roses or vegetable garden, or overhang their property?

Are there any local ordinances controlling what you can plant in the parking strip or forbidding the planting of certain trees?

Search high and low for right tree size

Trees grow in all shapes and sizes. Any tree or shrub requires adequate space to grow and develop into a mature, attractive plant. So how do you decide which tree is best for planting? First determine available growing space, factoring in adequate clearance around overhead and underground lines and, lastly, reflect on the additional benefits you would like the tree to provide.

Shrubs seldom reach 15 feet at maturity and can be planted within 15 feet, but not directly under, utility lines. They are ideal for visual screen and privacy barriers, windbreak, noise abatement and wildlife benefits.

Small trees that reach less than 30 feet at maturity can be planted 20 feet or more from lines if adequate space is allowed for future growth. Ideal for visual screen, windbreak, wildlife benefits, and street side, park and district locations.

If planting medium trees that reach 30 to 70 feet at maturity, avoid locations under or within 35 feet of overhead lines. Provides same benefits as small trees.

For large trees that typically grow 70 feet to maturity, don’t plant within 45 feet of overhead lines. Ideal for shading large areas, park and open space settings, background and framing of multi-story buildings.

Location, location, location

As in real estate, location is everything when it comes to planting a tree. Here are some important tips to consider before selecting your tree’s location.

Don’t plant:

A large tree too close to a house; limbs can loosen roofing and mar paint, leaves can clog gutters, roots can heave foundations and sidewalks. If shallow rooted and weak, the tree could fall onto the house, causing major damage.

Trees or shrubs directly under overhead lines.

A large shade tree with overhanging limbs. It can obscure street signs and traffic lights, creating hazards for motorists and pedestrians. It’s also dangerous to screen your own driveway so that you cannot see approaching traffic.

Shallow rooted trees, they could clog sewer lines, cause property damage and require costly repairs. They also can entangle underground power lines, creating a safety hazard and a potential for outages.

What to plant:

Well-proportioned trees that are not too close to the house will provide shade and privacy without harming the roof and paint. The proper selection of shape and color will add to the appearance of the home.

“Clean” trees near the patio that will not litter the area with fruits, limbs or leaves. Fruit and seed trees are often beautiful, but their droppings can be messy and slippery, attract insects, create strong odors, and clog screens, gutters and air conditioners.

Trees to frame the house and add beauty to the overall landscape.

Shrubs and certain evergreens that make the property line look neat, add privacy and are small enough to manage. Keep in mind that future electric or other utility construction, if required, is likely to be done along property lines.

Deciduous trees on the west and southwest sides of the house to provide cooling shade in the summer. In the winter, the bare branches will let most of the sunshine through to warm the house.

Evergreen trees and shrubs along the north and west sides of the home and foundation to block the harsh winter winds.

Tips for landscaping around transformers

If your home is located in a newer subdivision or development, chances are your electric service is underground. You’ll know it’s underground if there are no overhead lines to be found, and if you have a green transformer box pictured below along your front or rear lot line.
Although the initial instinct is to cover it with shrubs or fences, New Holstein Utilities must have safe, easy access to perform regular maintenance or to restore power. When our choice is between protecting your service or your plantings, your service comes first. We may have to remove or damage shrubs or fencing.

Before you plant any shrub, consider its size at maturity. Make sure it won’t grow within five feet of the transformer’s sides or within 10 feet of the front. Do the same with fencing. You’ll ensure your landscape’s security and beauty for years to come.

## Plant for energy efficiency

Another important factor to consider when planning is planting for energy efficiency. Carefully positioned trees can save up to 25 percent of a typical household’s energy consumption for heating and cooling.

Planting deciduous trees (those that lose their leaves in fall) on the west and southwest side of your home can shade roof and wall surfaces in summer, serving as a natural aid to your air conditioning.

A wind break of evergreens planted to the north and west of your home can help save energy during the winter. Correct foundation plantings around the base of your home can create a dead air space that will help insulate against cold.

### How to plant your tree

Now that you know what qualities to look for in a tree, it’s time to learn how to properly plant it.

Before you excavate or dig, call 811 toll-free to get your underground utility marked for free. You can also call these statewide one-call services: (800)242-8511 / (877)500-9592 (emergency only). Contact with underground electrical lines can be deadly and interrupt service to your home and others. New Holstein Utilities can help you locate underground service lines before starting your project. Locating all of your services is absolutely free, but can take up to three working days to complete.

1. To determine ideal dimensions of the planting hole, dig a hole twice as large as and slightly shallower than the root ball. Loosen the sides and bottom of the planting hole with a pick or shovel, so root tips can penetrate the native soil.

Don’t add soil amendments directly to planting hole. Some planting sites might require modification if existing soil is compacted.

### Typical tree stock types

#### Ball and burlap tree

A ball and burlap tree, referred to as a B&B, comes wrapped in burlap around its root ball. Until you are ready to plant, keep tree in a cool place, cover the burlap ball with mulch and keep roots moist. The burlap and wire basket should be removed after the tree is in the planting hole.

#### Container

If your tree comes in a container, remove it and gently cut and spread out the young fibrous roots before planting.

#### Bare-root tree

If you are planting a bare-root tree, plant the sapling quickly to keep roots from drying out. If weather or soil conditions don’t allow immediate planting, store in a cool place and keep roots moist.
Nutrients found in fertilizer are divided into macronutrients and micronutrients. Macronutrients — required by plants in larger quantities — include nitrogen, phosphorus, potassium, calcium, magnesium and sulfur. Micronutrients that are required in small amounts include iron, manganese, zinc, copper, boron, chloride and molybdenum.

Iron is the most commonly deficient micronutrient in soils, especially in alkaline soil regions. When iron becomes insoluble, the plant cannot extract sufficient amounts from the soil for good growth. A sign of iron deficiency is pale green to yellow leaves with darker green veins. Iron deficiency is common in certain plant species, such as some red oaks, maples and hollies.

A way to determine fertilizer recommendations is through a leaf and soil nutrient analysis, a tool that provides valuable information on fertilizer amounts and ratios that minimize nutrient waste and pollution. Contact your local county extension office to get instructions on taking a nutrient analysis. Proper timing of fertilizer applications has a marked effect on the growth of woody plants. The best time to apply fertilizer is in the spring before growth begins. A factor that can affect timing is soil type. For sandy or loam soils, apply fertilizer as soil temperatures begin to rise and before growth occurs. However, with heavy clay soils, apply during late fall after leaves have fallen or plant is completely dormant.

The maximum growth response to fertilizer is achieved if it is available in the root zone at or slightly before the start of spring growth. With sandy soils, fertilizer moves rapidly into the root zone, but takes longer to penetrate with heavy clay soils.

Do not apply fertilizers from August 1 until late fall, usually around the time of the first killing frost. Late summer fertilizing can stimulate an excessive amount of new growth, making plants more susceptible to winter injury.

### Picking the right fertilizer

A nitrogen deficiency limits tree growth more often than a lack of phosphorus or potassium. For this reason, it is recommended that you use a fertilizer grade with a 2-1-1 or 3-1-1 ratio. The ratios correlate to the percentage of nitrogen, phosphorus and potassium, respectively, contained in the fertilizer. These three nutrients are needed in the largest amount for optimum growth. Fertilizers with these ratios are readily available, including 10-8-6 and 12-6-6. If the desired ratio is unavailable, a 3-1-1 fertilizer can be approximated by mixing 12 ounces of ammonium nitrate (33-0-0) to each pound of a 12-12-12 fertilizer. The same type of fertilizer can be used on shrubs and vines.

#### Maintenance level

<table>
<thead>
<tr>
<th>Soil organic matter level</th>
<th>Pounds of nitrogen (N) to apply per 100 sq. feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>0.1</td>
</tr>
<tr>
<td>Medium to high</td>
<td>0.07</td>
</tr>
<tr>
<td>Organic soils</td>
<td>0.1</td>
</tr>
</tbody>
</table>

*Soil organic matter level is obtained through a soil analysis*
Whether you use organic or synthetic fertilizers try to find one with a high percentage of water-insoluble nitrogen — a slow-release form that becomes available as the plant can use it — that doesn’t wash off or leach through the soil into groundwater.

**Fertilization rates**

Apply root stimulator only to newly planted trees. When rapid growth is desired on young, established, landscape trees and shrubs use the high application rate listed in the table above. The nitrogen rate should be 0.2 to 0.4 pounds for every 100 square feet per year. The low application rate listed should be used in situations that restrict growth, such as slow growing and dwarf species, dry or compacted soils or where plant has a restricted root zone.

Because the growth rate is slowed as trees and shrubs mature, the need for nitrogen decreases. The low application rate should be used for established trees and shrubs. This low maintenance level keeps landscape plants in a healthy condition without excessive vegetative growth.

When it comes to fertilizer, more is not necessarily better. Fertilizer applied in excess of a plant’s needs or with improper timing often goes to waste. Excess nitrogen can quickly leach into the subsoil and runoffs can lead to pollution of groundwater.

Watering frequency depends on the type of soil and amount of rainfall in your particular area. The best time to water trees is in the morning. Don’t let water accumulate and runoff because it can be detrimental to root growth.

**Keeping trees healthy**

A key to fostering the growth and development of a tree is by regularly trimming dead, diseased or insect-infested branches. But removing too much foliage can reduce photosynthesis and stunt a tree’s overall growth, so it’s important to prune sparingly.

During the life of your tree, pruning will be necessary for various reasons, such as to direct growth away from power lines, remove broken branches or improve visibility of signs and intersections.

You should start pruning a tree early in its development and continue throughout the tree’s life. For most trees, winter and early spring is the ideal time to prune. Trimming during this time gives the plant time to replenish energy resources before it starts to grow in the spring, allows wounds to close more quickly and reduces likelihood of disease and insect infestation.

There are different kinds of pruning methods and cuts used for tree maintenance. Never prune or trim trees near power lines. Call 920-898-5776 to report limbs down or limbs contacting lines. Pruning practices that can cause irreparable harm to a tree are topping and tipping.

**Topping** — (top right) indiscriminate cuts in mature trees, leaving open wounds that are subject to disease and decay. This practice also robs a tree of its food producing capacity, and causes immediate injury and long-term maintenance requirements to the tree.

**Tipping** — (bottom) involves cutting off the ends of branches. This method causes excessive sprouting, making re-trimming an annual event.

**The impact of overhead lines**

When you experience momentary service interruptions or power outages during storms, trees may be the root of the problem.

Tree limbs that come into contact with power lines have the potential to disrupt service and create a public safety hazard. Keeping power lines clear of limbs and brush provides New Holstein Utilities personnel unfettered access so they can quickly restore power to homes during adverse weather conditions, like tornadoes and ice storms.

As your locally owned municipal utility, we have established a long-standing reputation for providing reliable service. To help prevent the danger and inconvenience of outages, and comply with the National Electric Safety Code, New Holstein Utilities is responsible for trimming or removing trees that threaten service reliability. New Holstein Utilities is monitored by state and federal regulatory agencies for its vegetation management efforts. Although the trained and certified tree trimmers at New Holstein Utilities try to preserve as much of a tree’s beauty as possible, their primary duty is to provide enough clearance between limbs and lines to assure safe and reliable electric service.

In cases when a tree within New Holstein Utilities easement poses a long-term safety or reliability hazard, we may find it necessary to remove a tree on your property. The crew also may trim dead, dying or split trees that are endangering a line. If you have a question about an easement on your property, contact us at 1-920-898-5776.

On occasion, property owners ask New Holstein Utilities to help them remove trees near lines off the utility’s easements. We evaluate each request for the potential hazard the tree poses to electrical service. As a general rule, our assistance is limited to those actions necessary for tree professionals hired by the owner to safely remove the tree.

**Transmission vs. distribution lines**

You may have seen transmission and distribution lines around your neighborhood. But do you know the difference? Transmission lines carry extra high voltage from a power plant to a New Holstein Utilities substation. These lines are connected to a grid creating a pool of power that can be “wheeled” across the nation during periods of high demand. Because of their high voltage, these lines are typically on taller poles and require greater tree clearances than distribution lines.
Methods and cuts

Side trimming
Cuts back branches on one side of the tree.

Crown reduction
Reduces percentage of overall height of tree. This technique, which is used when a tree has grown too large for its space, is preferred to topping because it results in a more natural appearance, increases the time before pruning is needed again and minimizes stress. (Blue shaded portion to be removed).

V-trimming
Removes entire branches from the center of the tree, while side branches are allowed to grow.

3-Cut method
Shortens branches larger than three-fourths inch or 2 cm in diameter before removal and prevents the branch from damaging the trunk as it falls to the ground.

Collar cuts
Leave a raised collar of tissue at the branch junction. This method promotes rapid wound covering of tree tissue, reducing external dieback and disease infection.

3:1 Lateral ratio
Makes a pruning cut back to a lateral branch that is at least one-third the diameter of the branch being removed.

Distribution lines carry lower, but still potentially fatal, voltages from the substation to the electric meter on your property. These lines can either be overhead on wood poles or buried underground and are commonly seen in residential neighborhoods.

Leave it to the professionals
In the age of do-it-yourself projects, it’s always important to know when to leave work to the professionals. Pruning or removing trees, especially large trees, can be dangerous work and has the potential to cause bodily injury or property damage. If your tree is diseased or has pest control problems, consider hiring an arborist, a professional that specializes in tree care, who is trained and equipped to work safely in trees.

There are many factors to consider before selecting an arborist. Remember the following points when hiring or contracting with a tree professional:
- Look for an arborist who has a professional certificate or license.
- Ask for proof of insurance, including proof of liability for personal and property damage.
- Ask for local references.
- If possible, obtain several estimates (should be free of charge).
- Never pay for services up front.

For more detailed information, visit the International Society of Arboriculture at www.isa-arbor.com.

Planting around distribution lines

<table>
<thead>
<tr>
<th>Size of tree</th>
<th>Planting distance from distribution pole</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small trees and shrubs</td>
<td>At least 20 ft</td>
</tr>
<tr>
<td>Medium trees</td>
<td>At least 35 ft</td>
</tr>
<tr>
<td>Large trees</td>
<td>At least 45 ft</td>
</tr>
</tbody>
</table>

Planting around transmission lines

Appropriate planting distance for vegetation near transmission lines will vary based on easements. To check the easement in your area, please contact us at 920-898-5776 or at www.nhutilities.org.
Types of utility poles: distribution

- Wood distribution pole

Types of utility poles: transmission

- H-frame transmission tower
- Steel transmission tower
- Lattice transmission tower
Energy Efficient Tree Planting Tips

Proper placement of shade trees can reduce air conditioner use and lead to significant cash savings. Large, deciduous trees planted on the south and west sides of your home will provide cooling shade in the summer, and won’t obstruct the low winter sun.

Tree species with round, horizontal oval and vase-shaped crowns when mature offer the best shading potential. High, wide-crowned deciduous trees provide the best shade.

### Relative shade value of deciduous trees

<table>
<thead>
<tr>
<th>High</th>
<th>Medium</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maples</td>
<td>European Birch</td>
<td>Hickories</td>
</tr>
<tr>
<td>Horse-chestnut</td>
<td>Crabapple</td>
<td>Catalpa</td>
</tr>
<tr>
<td>Hackberry</td>
<td>Sweetgum</td>
<td>Ginkgo</td>
</tr>
<tr>
<td>Beech</td>
<td>Oaks</td>
<td>Locusts</td>
</tr>
<tr>
<td>Green Ash</td>
<td>Littleleaf Linden</td>
<td>Goldenraintree</td>
</tr>
<tr>
<td>Walnut</td>
<td>Kentucky Coffeetree</td>
<td>Quaking Aspen</td>
</tr>
<tr>
<td>Yellow Poplar</td>
<td>Cottonwoods</td>
<td>Pears</td>
</tr>
<tr>
<td>Sycamores</td>
<td>Elms</td>
<td>Washington Hawthorn</td>
</tr>
</tbody>
</table>

Always consider the ultimate size of the tree when choosing the type of tree to plant. Trees should be planted 25 to 35 feet from the area to be shaded.

Before digging, always remember to call a locating service. Trees should not be planted near underground pipelines or wires, septic tanks or overhead utility lines. Do not plant a large tree closer than 5 feet from a driveway or sidewalk; it could eventually push up the concrete.

The figure to the left illustrates the shade patterns of a 25-foot tree. Observation is the best way to determine where to plant to maximize shade. You should plant a tree to shade roofs, windows, porches, air conditioning units or other areas of heat gain. Remember, just shading an air conditioning unit can increase its efficiency by 10 percent.

Trees cool better than man-made structures because not only are the rays of the sun blocked, but water is added to the air through transpiration.

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**New Holstein City Tree List**

### Trees for 8 foot or wider terraces with no overhead wires

- Norway Maple
- Cleveland Norway Maple
- Deborah Norway Maple
- Emerald Queen Norway Maple
- Autumn Blaze Maple
- Red Maple
- Green Ash
- White Ash
- Gingko
- Honey Locust
- American Linden
- American Elm (Disease Resistant)
New Holstein City Tree List (cont’d)

**Trees for 5 foot or wider terraces with no overhead wires**

<table>
<thead>
<tr>
<th>Tree Type</th>
<th>Tree Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Columnar Norway Maple</td>
<td>American Hornbeam</td>
</tr>
<tr>
<td>Hedge Maple</td>
<td>Amur Corktree</td>
</tr>
<tr>
<td>Littleleaf Linden</td>
<td>Bauman Hornbeam</td>
</tr>
<tr>
<td>Serviceberry</td>
<td>Turkish Filbert</td>
</tr>
<tr>
<td>American Hornbeam</td>
<td>Karusura</td>
</tr>
<tr>
<td>Kentucky Coffeetree</td>
<td>State Street Maple</td>
</tr>
</tbody>
</table>

**Trees for 3 foot or wider terraces with no overhead wires**

<table>
<thead>
<tr>
<th>Tree Type</th>
<th>Tree Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amur Maple</td>
<td>Leprechaun Green Ash</td>
</tr>
<tr>
<td>Tatarian Maple</td>
<td>Flowering Crab Apple (scab resistant)</td>
</tr>
<tr>
<td>Common Hackberry</td>
<td>Sargent Flowering Cherry</td>
</tr>
<tr>
<td>Eastern Redbud</td>
<td>Callery Pear</td>
</tr>
<tr>
<td>Hawthorn (thornless)</td>
<td>Prairie Gem</td>
</tr>
</tbody>
</table>

**Conifers (Do not plant on terraces or near overhead wires)**

<table>
<thead>
<tr>
<th>Tree Type</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Colorado Blue Spruce</td>
<td>Emerald Arborvitae</td>
</tr>
<tr>
<td>Black Hills Spruce</td>
<td>Pyramidal Arborvitae</td>
</tr>
<tr>
<td>Norway Spruce</td>
<td>Eastern White Pine</td>
</tr>
<tr>
<td>White Fir</td>
<td>Scotch Pine</td>
</tr>
<tr>
<td>Douglas Fir</td>
<td>Austrian Pine</td>
</tr>
<tr>
<td>White Cedar</td>
<td>Upright Juniper</td>
</tr>
<tr>
<td>Techny Arborvitae</td>
<td></td>
</tr>
</tbody>
</table>
Tree species to avoid

If you are tempted to select a fast-growing tree, think about the damage to overhead lines or constant maintenance problems they may cause. Below are trees that are problematic to homeowners and communities.

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Image</th>
<th>Bark</th>
<th>Foilage</th>
<th>Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silver Maple</td>
<td><img src="image1" alt="Image" /></td>
<td><img src="image2" alt="Image" /></td>
<td><img src="image3" alt="Image" /></td>
<td><img src="image4" alt="Image" /></td>
</tr>
<tr>
<td><em>Acer saccharinum</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This fast growing tree quickly engulfs overhead lines and requires frequent trimming. It is prone to damage by wind and ice storms, causing damage to homes and utility lines alike. Insect infestation and surface roots are common.</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

| Lombardy Poplar and hybrid poplars   | ![Image](image5) | ![Image](image6) | ![Image](image7) | ![Image](image8) |
| *Populus nigra 'Italica'*            |       |      |         |          |
| This fast growing, short-lived poplar is prone to early death by disease. There are many species that will make a better visual screen and sound barrier than this tree. |

| Weeping Willow                       | ![Image](image9) | ![Image](image10) | ![Image](image11) | ![Image](image12) |
| *Salix babylonica*                   |       |      |         |          |
| One of the most damaging trees to plant in the vicinity of overhead lines. The rapid growth and weak, brittle wood will require constant homeowner maintenance. |

| Cottonwood                           | ![Image](image13) | ![Image](image14) | ![Image](image15) | ![Image](image16) |
| *Populus fremontii*                  |       |      |         |          |
| This tree grows quickly into overhead lines. Cottonwoods can mature to 75 feet. Some local ordinances prohibit planting them because their seeds are a nuisance. |

| Boxelder                             | ![Image](image17) | ![Image](image18) | ![Image](image19) | ![Image](image20) |
| *Acer negundo*                       |       |      |         |          |
| The fast growth and weak wood of this tree commonly endanger utility service. Large quantities of seeds can be a problem. Boxelder bugs are a common nuisance. |

| Elm, Siberian                        | ![Image](image21) | ![Image](image22) | ![Image](image23) | ![Image](image24) |
| *Ulmus pumila*                       |       |      |         |          |
| It tends to split and drop limbs when loaded down with ice. Abundant sucker growth would require planting away from overhead lines. |

| Sycamore                             | ![Image](image25) | ![Image](image26) | ![Image](image27) | ![Image](image28) |
| *Platanus*                           |       |      |         |          |
| This messy, shallow-rooted tree litters the area with abundant seed balls and peeling bark. It’s susceptible to stem and leaf disease, and insect infestations. |

*continued*
<table>
<thead>
<tr>
<th>Common Name</th>
<th>Image</th>
<th>Bark</th>
<th>Foliage</th>
<th>Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Osage Orange</td>
<td><img src="image1.jpg" alt="Image" /></td>
<td><img src="image2.jpg" alt="Image" /></td>
<td><img src="image3.jpg" alt="Image" /></td>
<td><img src="image4.jpg" alt="Image" /></td>
</tr>
<tr>
<td>Madura pomifera (Raf.) Schneid.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A thorny tree, where the female produces an abundance of troublesome, softball-sized fruit and re-sprouts prolifically.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tree of Heaven</td>
<td><img src="image5.jpg" alt="Image" /></td>
<td><img src="image6.jpg" alt="Image" /></td>
<td><img src="image7.jpg" alt="Image" /></td>
<td><img src="image8.jpg" alt="Image" /></td>
</tr>
<tr>
<td>Ailanthus altissima</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This fast-growing tree is a poor selection for landscaping. It will quickly take over a yard with multiple trees from root “suckering.” It is short-lived with very soft, weak wood that splits when exposed to ice or high winds.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black Locust</td>
<td><img src="image9.jpg" alt="Image" /></td>
<td><img src="image10.jpg" alt="Image" /></td>
<td><img src="image11.jpg" alt="Image" /></td>
<td><img src="image12.jpg" alt="Image" /></td>
</tr>
<tr>
<td>Robinia pseudoacacia</td>
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<tr>
<td>A fast growing tree with clusters of needle-like toxic thorns that quickly repopulate open areas though seed production.</td>
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</tbody>
</table>

**Conclusion**

To fully develop our outdoor surroundings requires proper tree selection and planting. Planting the right tree in the right place can increase the property value and energy efficiency of your home, and minimize property damage and power outages caused when trees come into contact with power lines. We hope this guide helped you make informed decisions about tree purchases and plantings that will benefit everyone in the long run.

**Acknowledgements**

The authors of *The Right Tree in the Right Place* guide used several sources for background material.

About Forestry: [http://forestry.about.com/od/silviculture/p/fertilizing.htm](http://forestry.about.com/od/silviculture/p/fertilizing.htm)

Habitat Revival: [www.habitatrevival.com](http://www.habitatrevival.com)

Heartland Tree Alliance: [www.heartlandtreealliance.org](http://www.heartlandtreealliance.org)

International Society of Arboriculture: [www.treesaregood.com](http://www.treesaregood.com)

Kansas Forest Service: [www.kansasforests.org](http://www.kansasforests.org)

Missouri Department of Conservation: [http://www.mdc.mo.gov/](http://www.mdc.mo.gov/)

National Arbor Day Foundation: [www.arborday.org/index.cfm](http://www.arborday.org/index.cfm)

Tree Care Industry Association: [www.treecareindustry.org/index.aspx](http://www.treecareindustry.org/index.aspx)

United States Forest Service: [www.fs.fed.us/spfo/pubs/howtos/hp_prune/prun001.htm](http://www.fs.fed.us/spfo/pubs/howtos/hp_prune/prun001.htm)

**Photo credits**

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G.A. Cooper @ USDA-NRCS PLANTS Database

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