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Tree Selection -- The Right Tree in the Right Place

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Tree selection is one of the most important investment decisions a homeowner makes when landscaping a new home or replacing trees. Most trees outlive the people who plant them. Consequently, it is important to match the tree to the planting site.

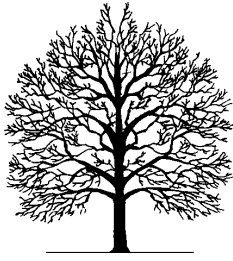
The question most frequently asked is "What tree should I plant?" Before this question can be answered, you must answer the following questions: Why is the tree being planted? Do you want the tree to provide shade, fruit, or seasonal color, or act as a windbreak or screen? What is the size and location of the planting site? Does the space lend itself to a large, medium, or small tree? Are there overhead or below ground wires or utilities in the vicinity? Do you need to consider clearance for sidewalks, patios, or driveways? Are there other trees in the area? What type of soil conditions exists? Is the soil deep, fertile, and well drained or is it shallow, compacted, and infertile? What type of maintenance are you willing to provide? Do you have time to water, fertilize, and prune the newly planted tree? If not, will you be relying on a professional tree business for assistance?

Tree Function

Properly placed and cared for trees increase the value of our real estate. A large shade tree provides relief from summer's heat, and, when properly placed, can reduce summer cooling costs. An ornamental tree provides beautiful flowers, leaves, bark, or fruit. Evergreens with dense, persistent leaves can provide a windbreak or a screen for privacy. A tree that drops its leaves in the fall allows the sun to warm a house in the winter. A tree or shrub that produces fruit can provide food for the owner and/or attract birds and wildlife. Trees reduce the glare from pavement, reduce run off, filter out pollutants, and add oxygen to the air we breathe. Trees also improve the quality of life on our property.

Form and Size

Frank Lloyd Wright, the famous architect, once made the comment "form follows function." This is a good rule to remember when selecting a tree. Selecting the right form (shape) to complement the desired function (what you want the tree to do) can reduce maintenance costs and increase the tree's value in the landscape.



When selecting a tree, consider its mature size. Trees grow in a variety of sizes and shapes that will fit the planting space available. Depending on your site restrictions, there are hundreds of combinations of form and size to choose from. You may choose a small spreading tree in a location with overhead utility lines. You may select a narrow columnar form to provide a screen between two buildings. You may choose large vase-shaped trees to create an arbor over a driveway. You may even determine that the site does not have enough space for a tree of any kind.

Site Conditions

Selecting a tree that will thrive on the site is the key to long-term tree survival. Site conditions include soil conditions, exposure (sun and wind), human activity, surface and internal soil drainage, space constraints, and hardiness zone.

Soil Conditions: The amount and quality of soil on your site can limit planting success. On many building sites, the topsoil is frequently shallow and/or compacted. These conditions cause trees to be under stress.

You can locate your property on a map in the Soil Survey for your county. The survey contains descriptions of the kind of soil on your site. Soil Surveys are available at your local library, county ISU Extension office, and the USDA NRCS office.

Your local ISU Extension office and many garden centers will (for about \$10) conduct a soil test for your soil. Samples are tested for fertility and pH (alkalinity or acidity). The tests will be returned with recommendations on ways to improve poor soil conditions with fertilizers or soil amendments (sand, peat moss, compost, or manure).

Exposure: The amount of sunlight available will affect tree selection. Most woody plants require full

sunlight for proper growth and flowering. Some do well in light shade, but few tree species perform well in dense shade. Exposure to wind is also a consideration. Special maintenance, such as staking or more frequent watering, may be needed to establish young trees on windy sites.

Human Activity: People account for the top five reasons for tree death. Soil compaction, under watering, over watering, vandalism, and the number one cause, planting the wrong tree, accounts for more tree deaths than all insect and disease related tree deaths combined.

Drainage: Tree roots require oxygen to develop and thrive. Poor drainage and/or compacted soil can prevent oxygen from getting to the roots. This can injure or kill the tree. Before planting, dig some test holes 6 to 12 inches wide and 12 inches deep in the areas you are considering planting trees. Fill the holes with water and time how long it takes the water to drain away. If it takes more than 6 hours, you may have a drainage problem. If this is true, ask your local garden center, nursery, or ISU Extension office for recommendations on how to correct the problem, or choose a different site.

Space Constraints: Factors that can limit the space available to the tree include overhead or underground utilities, pavement, buildings, other trees, and visibility. Make sure there is adequate room for the tree you select to grow to maturity, both above and below ground.

Hardiness: Trees you select must have the ability to survive in the extreme temperatures in your area of the state. Most tree reference books and publications will include the USDA plant hardiness zone map. Check with your local garden center or your local ISU Extension office for the hardiness information for your part of the state. Before you make your final decision, make sure the plant you have selected is “hardy” in your area.

Pest Problems

Every tree has its particular pest problems and the severity varies geographically. These may or may

not be life threatening to the plant. Select trees that tolerate pest problems in your area. Your local nursery, garden center, or ISU Extension office can direct you to information relevant to problem tree species.

Species Selection

Personal preferences play a major role in the selection process. Make sure you use the information you have gathered about your site conditions, and

balance them with the aesthetic decisions you make related to your personal preferences.

If you are having difficulty answering any of these questions on your own, contact your local garden center, nursery, or county ISU Extension office for assistance. It is better to get them involved early and make the right decision, to avoid having to call them later and find out that you made the wrong decision.

Mud Dauber Wasps

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Mud daubers are solitary wasps that construct small nests of mud in or around homes, sheds, and barns and under open structures, bridges, and similar sites. Several species exist in Iowa. These wasps are long and slender with a narrow, threadlike waist. Some are a solid steel blue or black but others have additional yellow markings.

This wasp group is named for the nests that are made from mud collected by the females. Mud is rolled into a ball, carried to the nest and molded into place with the wasp's mandibles. There are three different wasps that practice this behavior. The black and yellow mud dauber builds a series of cylindrical cells that are eventually plastered over with mud to form a smooth mud nest about the size of a fist. The organ-pipe mud dauber, a more robust, black species, builds cylindrical tubes resembling pipe-organ pipes. The third species is a beautiful metallic-blue wasp with blue wings. This one does not build its own mud nest but instead uses the abandoned nests of the black and yellow mud dauber.

After completing the mud nest the female captures several insects or spiders to provision the cells. Prey are stung and paralyzed before being placed in the nest. A single egg is deposited on the prey within each cell, and the cell sealed with mud. After the wasp has finished a series of cells, she departs and

does not return. The larvae that hatch from the eggs feed on the prey items left by the adult wasp. New adult wasps emerge to start the process over again.

Wasps usually evoke a great deal of anxiety or fear. However, solitary wasps such as the mud daubers do not defend their nest the way social wasps such as hornets and yellowjackets do. Mud daubers are very unlikely to sting, even when thoroughly aroused. They may sting if mishandled.

Control of these insects is not warranted since they normally pose little threat. Rather, mud daubers should be regarded as beneficial since they remove and use as prey many species of spiders which most people find disagreeable. The mud nests can be scraped off and discarded at night if they are objectionable, or wasp and hornet aerosol sprays can be used to treat nests if desired. There is no proven method that is effective in discouraging wasps from building nests in sheltered or protected areas. Prompt and frequent removal of nests is suggested in areas favored by the wasps.

Pictures of the nests can be viewed here: <http://www.ent.iastate.edu/imagegal/hymenoptera/sphecidae/sphecinae/>

Note: this information is valid for Iowa. It may or may not apply in your area.

Foot and Mouth Disease Notice from Iowa Secretary of Agriculture

Iowa Secretary of Agriculture Patty Judge urges all Iowans to be aware of the seriousness of Foot and Mouth Disease.

Iowa's ag chief stated, "Whether they live and work on a farm, in a town, or travel, all Iowans should recognize the seriousness of Foot and Mouth Disease. While there is no human risk involved, this is a highly communicable viral disease which could devastate the livestock industry and impact all of Iowa." Judge continued, "Iowa is the number one producer of hogs and number six in cattle production in the nation. We in Iowa have a heightened responsibility to prevent this disease from gaining a foothold here."

Secretary Judge called upon Iowa's farmers to take special precautions. "I would like to urge our farmers to be vigilant and cautious, including closing farm gates to animals of unknown origin and visitors from countries where Foot and Mouth Disease has been diagnosed, unless proper precautions have been taken. It is extremely important that livestock owners watch for the warning signs of Foot and Mouth Disease in their livestock." Iowa's Ag Chief continued, "Symptoms may include blisters in the animal's mouth, muzzle, teats, or feet, eventually causing raw patches or ulcers. Signs also include, drooling, lameness, reduced milk production, fever, and weight loss."

The Iowa Department of Agriculture and Land Stewardship has taken the lead in developing a state emergency plan for a Foot and Mouth outbreak with

focus now on prevention. Secretary of Agriculture Judge has formed a Foot and Mouth Disease (FMD) Emergency Preparedness Task Force, which is holding a series of meetings to update the existing animal disease emergency plan. Secretary Judge commented, "We are developing an updated animal disease emergency plan especially to respond to Foot and Mouth Disease (FMD). That old proverb "An ounce of prevention is worth a pound of cure" has never been more true, and we here in Iowa plan to be proactive to prevent this devastating disease."

For more information, contact Mabelle Shaffer at 515-281-7808

For more details on FMD, visit the Iowa Beef Center web page at <http://www.iowabeefcenter.org/> and follow the link under "Hot Topics" to Foot and Mouth Disease.

Lingo Lexicon:

(brief definitions of current environmental jargon)
Carbon Sequestration: The act of sequestering (capturing) carbon, usually used in reference to capturing carbon dioxide from the air and storing it back in plants or soil organic matter. Carbon sequestration is seen as a way to counteract releases of carbon from burning fossil fuels, clearing forests, and tilling soil.

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