

Indiana Department of Natural Resources  
Volunteer Script with PowerPoint Presentation

**Tree Care**

This presentation developed by the IDNR, Community & Urban Forestry Office and has been made available to interested residents of Indiana through and urban forestry grant provided to the state by the USDA Forest Service, Northeastern Area.

---



Slide 1:

Introduce yourself and explain how you became involved in urban forestry.



Slide 2:

These are the topics that will be discussed.



Slide 3:

There are many benefits to mulching trees. Overall survival is increased due to these benefits.

- Mulch holds moisture in the soil longer than an un-mulched area.
- Organic mulch breaks down and adds to the soil structure, and also returns nutrients to the soil. Researchers and experts agree that organic mulch provides trees with just about everything it needs.
- Mulch decreases the amount of soil erosion and runoff.
- Having trees mulched decreased the amount of mower and weed whip damage to the tree trunk.
- Having the correct amount of mulch applied will greatly decrease the prevalence of weeds, and those that do appear are easily pulled because they are probably growing in the mulch, not the soil.
- Mulch moderates the soil temperature, so that the roots are not heating and cooling to the extremes of the day.



Slide 4:

There are basically 2 types of mulch, organic and inorganic. (How many bullets are discussed depends on much time is available)

- Wood chips are aesthetically pleasing and provide all the great benefits that one would expect. Try to use product that is somewhat aged, and place it on top of the soil and not mixed into the soil.
- Pine needles are long lasting and look nice.
- Grass clippings can be used, but let them to dry out before using as mulch. Don't use a thick layer because it begins to mat, which doesn't allow water or oxygen to pass through. Don't use any grass clippings from a lawn that has herbicides used on it.
- Leaves work better if they are partially ground or decomposed. If they aren't partially ground, depending on the leaf type they can begin to mat.
- Bark comes in different forms, shredded, nuggets, and chunks. It is attractive and the nuggets and chunks are long lasting. Bark is also a good weed preventative.
- Compost can be used as mulch, although since it is a nutrient rich medium, it is also a good place for weeds to grow.
- Rubber mulch won't add anything to the soil, but it still has all the other benefits, and it's long lasting. It is a little more costly, but since it doesn't break down, it shouldn't need to be re-applied.
- Rock or stone is long lasting, but light colors can reflect heat up towards the plant, and if any pieces happen to get in the lawn, it can be a mowing hazard.



Slide 5:

Two to four inches of mulch, extended out 3-6 feet is all that is needed. This is about equivalent to 1 (2 cu.ft.) bag of mulch. To prevent the bark from rotting, be sure to pull the mulch away from the trunk of the tree.



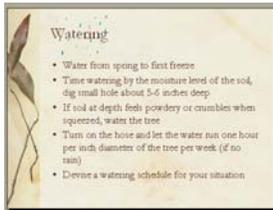
Slide 6:

Contrary to popular belief, more is not better! Do not become a volcano mulcher! Volcano mulching is detrimental to the trees health. It's the equivalent as planting the tree too deep. Too much mulch actually begins to suffocate the roots, and creates a nice, safe spot for rodents to get to the tender bark of a tree and munch away. The bark of the tree will start to rot if the mulch is piled up against it. This creates an opening for insects and disease.



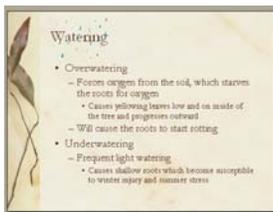
Slide 7:

With new trees, water them at planting time, and then supplement natural rainfall for the first few years.



Slide 8:

The time frame for watering trees is from spring to the time the ground freezes. To determine if the trees need water, dig a small hole down 5-6 inches. If the soil there feels dry and crumbly, it's time to water. When watering, it is best to turn on the hose to a slow trickle and let it run for a couple hours so that the water has a chance to soak down into the soil. It is best to water infrequently and deeply.



Slide 9:

Underwater and over watering each has its own set of problems, but by digging down into the soil and checking the moisture there, these problems can be avoided.



Slide 10:

Watering bags are a way to water trees slowly without having to leave the hose out or the water running. Fill up the bag with water and it drips out tiny holes in the bottom of the bag. They can be purchased at some garden centers and online.



Slide 11:

Wind movement helps to develop longer stems, increased trunk diameter, and it enhances root development. These create a stronger tree, which is why it's important to provide lateral movement when staking. The stake should only be in place until root growth is adequate to hold the tree in place, about 1 year. Trees that are planted in very open or windy areas or sandy soils may need staking. Very tall trees with small root balls or like the picture shows, weak trees, may also need to be staked.



Slide 12:

If staking is necessary, make sure the tree is supported in the direction of the prevailing wind. There are several different options for staking, using one, 2 or 3 stakes. Use a somewhat elastic, smooth material so that it doesn't tear up the trees bark. Give the tree 2-3 inches of lateral movement. This movement is necessary to create a strong tree! If a tree is staked, and movement isn't allowed for, it will still be weak when the stakes come off.



Slide 13:

Here are some pictures of staking problems. The problem with staking is that people forget to take the staking materials off the tree after a year. Stake the tree only if it's needed.



Slide 14

Just like staking, wrapping is something that should only be done if the tree needs it. It's usually not necessary, but it can help to prevent sunscald on thin barked trees. Begin wrapping at the bottom of the trunk and work your way up when using traditional wrapping material. This helps to prevent the wrap from holding water, which can lead to fungal problems and create an environment for insects. There is the white polypropylene material that has holes in it which allows for air movement. Remember to take the wrap off after one year! Looking at the picture on the bottom right, wrap was left on that tree for more than a year, and there are now wounds on that thin-barked tree.



Slide 15:

Before starting any fertilization regime on any trees, it is recommended that a soil test be done to see if there are specific nutrients that are lacking, or if the nutrients are there, but the pH is too high or low. Some nutrients can't be absorbed if the pH is out of range. By having a soil test done, time or money won't be spent on fertilizer that the tree may not need or can't absorb. There is no reason to fertilize a tree unless there is an issue. Don't waste money or time fertilizing a healthy tree. (There is soil sampling information included on the CD) There are many nutrients that trees need, more than what is listed on the screen, and many are naturally in our soil. Nitrogen is not held by the soil, so if plants don't take it up, it can be leached through the soil, which can make it a limiting element.

- N – nitrogen
- P – phosphorous
- K – potassium

Ca – calcium  
Mg – magnesium  
S – sulfur  
Fe – iron  
Mn – manganese  
B – boron  
Cu – copper  
Zn – zinc  
Mo - molybdenum



Slide 16:

Organic or inorganic, it comes down to preference, and what might be readily available. Also take into consideration any lawn fertilization regime that the tree may be benefiting from. Over fertilizing can be detrimental to a tree and lawn. When looking at a bag of fertilizer, note the analysis, which consist of 3 numbers. It represents the percentage of nitrogen, phosphorous and potassium, in that order. If a soil test shows that the soil needs nitrogen, buy a fertilizer that contains only nitrogen, rather than purchasing a bag that contains a large percentage of nutrients that aren't needed. Always follow the label directions to avoid over fertilizing.



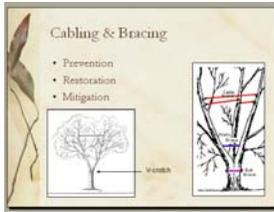
Slide 17:

Fall and spring are good times to fertilize. Fertilizing can be done when a nutrient deficiency is noticed. Avoid fertilizing newly planted trees, trees that have been recently damaged and avoid fertilizing in the late summer. Fertilizing in the late summer will give the tree a lot of new growth that will not harden off before the first frost, so it can end up with tissue damage.



Slide 18:

There are different methods to fertilizing. Surface application is quick and easy, be careful not to over fertilize. There are tree spikes that can be used, but that can cause spotting in the lawn, which means the grass around the spike location can become greener than the rest of the lawn. Subsurface applications require specific equipment, and would normally be hired out through an arborist. Tree implants and injections also need specific equipment and expertise, which does increase the cost. Tree implants and injection are very effective in treating specific deficiencies.



Slide 19:

The next few topics are going to be covered lightly, and in very general terms. These are practices that would be used on a specimen tree or a tree that is important to the owner. They are costly practices that have required future maintenance.

Cabling and bracing are commonly used to provide structural support for trees. This involves installing cables and rods to reduce the chance of failure in weak unions. They may be installed as a prevention technique, such as when a specimen tree is in good condition, but it has large limbs with V-crotches. They could also be used as restoration, to prolong the life of a tree that has been damaged. Mitigation is when the tree has hazard potential and by using cables and braces, the hazard potential decreases.



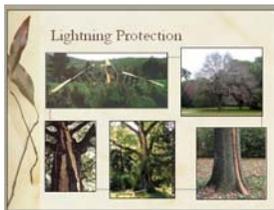
Slide 20:

Pictures.



Slide 21:

Even cabled trees can fail. Not all trees can be cabled and braced. There may be a point when the tree has too much decay within it for cabling and bracing to help. Once the tree is cabled and braced, it still needs maintenance. It should be inspected from the ground every year, and every 5 years, it should have a climbing inspection. The cables and rods may also need to be replaced in time.



Slide 22:

Lightning seeks the path of least resistance to the ground. Trees, because of their height, are natural lightning rods. A lightning strike can damage a tree minimally or it could literally blow the tree apart. A tree that has been struck by lightning can die quickly or it could live for many years. To prevent lightning damage to special trees consider having a lightning protection system installed.



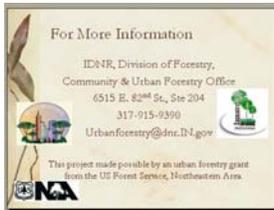
Slide 23:

Installation involves the placement of copper conductors into the highest portions of the tree, down the main branches and trunk, then out beyond the drip line where they are grounded. Just as with cabling and bracing, there is continued maintenance with lightning protection systems. Inspections every year from the ground, climbing inspections every 5 years, and the air terminals will need to be replaced when the tree branches grow to far past them.



Slide 24

For more concise information, hire an ISA Certified Arborist or a reputable tree care company.



Slide 25:

CUF offers assistance and grant dollars to cities, towns, and non-profits throughout Indiana. Contact CUF at 317-915-9390 or email [urbanforestry@dnr.in.gov](mailto:urbanforestry@dnr.in.gov). This project made possible by an urban forestry grant from the US Forest Service, Northeastern Area.