

Mulching Your Landscape

Gary Forrester

Environmental Horticulturalist/Master Gardener Coordinator

Clemson University Cooperative Extension Service

Horry County

Conway, SC — April 9, 2008 — Trees and shrubs growing in a natural setting, undisturbed by human influences, benefit from falling leaves and needles covering the root system providing for a naturally mulched area. This naturally falling mulch will provide a protective layer over the plants root system. Mulches will benefit plants in many different ways including the moderation of soil temperatures, reducing soil crusting, help prevent the spread of soil borne diseases, reduce the number of weeds, adding nutrients as the mulch decomposes and reduce erosion.

Within our landscapes, we generally reduce or even eliminate this natural mulch layer through our daily gardening activities. When we grow grass under our trees for instance we are constantly removing the natural mulch layer by mowing. Without this protective mulch layer our plants are left vulnerable to several problems. Mowers and weed-eaters operated next to trees can damage the trunk system and compact the soil in the root zone, herbicides applied through weed and feed products can be damaging to trees and moisture can be lost due to the uptake by the turf or through evaporation. A well mulched landscape will also be more attractive than one not properly mulched.

There are many different materials that can be used as mulch. How you decide which particular product is right for your landscape will depend on your personal preferences as well as the different characteristics of each mulching product. Before choosing a mulch, decide how it will be used in the landscape.

- Summer mulches: these mulches are applied in the spring and summer of the year to provide moisture retention, weed suppression and temperature moderation for the plant.
- Winter mulches: these mulches are placed in the landscape to protect flowering bulbs and tender annuals from winter freezes. They are placed on overwintering plants to act as insulation.
- Permanent mulches: these mulches are placed in areas that generally will not be disturbed during normal gardening activities such as playground, patios, paths and walkways.

Once the decision has been made to properly mulch your landscape, you need to decide what kind of mulch to use. Naturally, mulch found on the forest floor is made of twigs and leaves that have fallen from the tree canopy and undergrowth. These plant parts will decompose over a few months. Therefore, the most natural mulch to use would be composted leaves and woody material. Undecomposed plant material can be used but should be placed on top of the soil and not incorporated as it will use up nitrogen during the decomposition process.

There are numerous varieties of mulch available locally ranging from rock to newspaper to pine straw to bark. What type and color of mulch you use is a personal choice. However, be sure to pick a mulch that is coarse enough to remain loose allowing air and moisture to move through easily.

Sawdust and fresh leaves can pack down inhibiting water movement and cause rooting problems. You may also want to consider the flammability of the mulch you choose and not use highly flammable products near any structure.

Mulches made from plant material are considered organic mulches. Organic mulches will decompose over time enriching our soils. However, organic mulches will need to be replenished over time. Several organic you may want to consider are:

- **Bark:** bark mulches are usually made from the by-products of pine, cypress and other hardwood logs during the processing of lumber. Most common are shredded bark and bark chunks. The advantages to using bark mulches is they resist compaction, will not blow or wash away, can be attractive and is readily available. Some bark material, such as cypress, will decompose slowly increasing the longevity of the mulch.
- **Wood chips:** wood chips are derived from many different types of trees. They make excellent mulches since they also resist compaction, will not blow or wash away and weathers to an attractive silver color. Wood chips are readily available from many municipalities and tree companies at little to no cost. However, be cautious when using fresh wood chips as a mulch. The decomposition process can lead to toxic compounds being released possibly causing damage to tender plants. It is best to allow wood chip[s] to age before using them.
- **Sawdust:** sawdust is readily available from many wood working facilities but is usually not recommended for mulching plants. Sawdust can compact to a point where water will not penetrate. Weed seed will also readily germinate and grow in sawdust. Sawdust is also very low in nitrogen and will rob your plants of needed nutrients as microbes break it down.
- **Straw:** straw will make a good winter mulch for vegetable gardens or to protect cold sensitive bulbs and plant crowns. Straw is not very attractive and may contain weed seed. Straw is also very flammable and should not be used close to any structure. If you find a need for using straw as a mulch, be sure you get 'straw' and not 'hay'. Hay can contain many weed seed.
- **Pine Straw:** pine needles will make for an attractive mulch for your beds. They decompose slowly, resist compaction, readily available and easy to work with. However, pine straw will discolor over time.
- **Shredded leaves:** leaves that have been shredded are often used as a mulch. They are readily available in most landscapes containing trees. However, they tend to move easily in the landscape from wind and water, tend to mat inhibiting water movement and will decompose quickly.
- **Newspaper:** Several layers of newspaper place over your beds can also be used as a mulch, especially in vegetable gardens. The paper can be laid in sheets or can be shredded. Be sure the paper you are using is from a newspaper using soy based ink rather than petroleum-based ink.

Inorganic mulches are often made of stone, plastics or rubber. The advantages to inorganic mulches are they tend to stay in place, will not rob your soil of nutrients and generally will not harbor weed seed. However, inorganic mulches do have several disadvantages. Stone mulches can move down into the soil over time making future digging difficult and can affect the pH of your soil. Light colored mulches can reflect heat to your plants causing damage. Stones can also find their way into a mowed area causing a hazardous situation when mowing. Another disadvantage is the fact that inorganic mulches will not contribute to the organic matter content of your soil. Several types of inorganic mulches include:

- **Crushed stone, gravel, volcanic rock:** you can find these types of mulches in a variety of textures and colors. They are mainly used in walkways, driveways and rock gardens. Be careful when using rock as a mulch. They can affect the pH of your soil and can cause

problems especially around acid loving plants. When using stone, you should place a fabric barrier under them to avoid the rock from moving into the soil. Another disadvantage to using rock or gravel is aesthetics. When sticks and leaves fall into the rock, it can be difficult to remove reducing its attractiveness.

- **Plastics:** plastics will work well for keeping weeds down and retaining moisture. However, plastics can allow the soil to remain too wet causing root problems. They can also hamper water movement into the soil. Plastics should be reserved for use in vegetable gardens where the irrigation system can be placed under the mulch.
- **Geotextiles:** these are fabrics made from polypropylene or polyester. They work much like plastic mulches by will allow water and fertilizer to penetrate. For the best weed suppression, choose a geotextile with a close weave. Remove weeds as soon as you see them as they will root into the fabric making the weed removal difficult. These fabrics are mainly used under some type of organic mulch.
- **Rubber mulches:** the newest mulch on the market is ground rubber tires. These rubber mulches come in a variety of colors and can provide a long lasting mulch with the same properties as rock.

The final question to your mulching project is how much do I apply and where? Poorly drained soils should have no more than a one to two inch depth of mulch placed on top. In these soils, we are trying to get rid of excess moisture so a lite application will not hinder evaporation. Sandy soils that are well drained should have no more than three inches of mulch applied. Be careful to not over mulch as this can cause plant problems. Mulch as wide an area as possible but do not place any mulch within six inches of the plant trunk. Piling mulch around trunks will cause rots, insect and disease problems. Even a narrow ring of mulch will help keep string trimmers and mowers away from the plant, but a mulched bed out to the drip line is preferred.