

# Mulch Basics and Beyond

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Most gardeners are aware of the benefits of mulching their flowers and shrubs. The choices of material used as mulch vary with final selection influenced by cost, availability, type of plant, adaptability to environment, appearance, longevity, and perhaps other factors. Mulches are materials spread or laid on the surface of soil near plants. A frequently used form is for individual plants, but the use of mulching materials in large areas is considered landscape mulching.

The mulch that one would use in a flower garden with annuals and perennials will differ from that used for shrubs and trees. Additionally, mulch materials used in a vegetable garden will vary from those used in locations that are more permanent. Mulch can provide a buffer for plants, since mulch helps soil retain moisture and provides a softer texture. It also helps lower temperatures of the soils it covers and helps control weed growth. The use of mulch can also be of value in winter gardens in cooler climates. It will help protect plants from extreme cold conditions. In addition to its cultural benefits, it can add form and beautify garden plantings. The types of materials used for mulch are in one of two classes.



A shredded wood mulch that has been dyed red. This photo was taken at a commercial establishment. The use of colored mulches has grown in recent years. The colored mulch enables good contrast with plants. Photo: Ken Gohring

## Organic Mulches

Organic mulch will decompose, requiring periodic replacement. Its decomposition can result in an improvement in the soil where it is used. The organic mulch materials that are mostly wood will take longer to decompose and generally do

not provide as many nutrients as other organic mulches. Some organic mulches contain seeds or chemicals, so care must be taken when they are used because they can result in undesirable weeds or contaminated soil. Wood attracts termites so mulches with wood content should be used away from buildings.

In recent years, the use of dyed mulch has become popular. Most of these mulches are wood that has been ground into small pieces. These wooden particles are then dyed. The most common colors are brown, black, and red.

The types of organic mulches that one can acquire from gardening-oriented sources such as garden centers or large commercial home improvement stores are usually wood in various forms. In the South, pine bark has wide usage as mulch. The bark from other trees is also used for mulching.

## Wood Chips

When trees are removed to clear construction sites, have fallen due to climatic conditions, or are pruned to improve appearance, the small portions of the trees such as limbs or ends of logs are ground up by most tree processing firms. Such material has limited usage, and the concerns processing the trees usually take the materials to companies that use composting techniques to convert the material into a usable form suitable for amending soil. They have to pay these companies to take the material. Many of these tree-cutting firms will give these materials to those wanting them if they have a place where the materials can be dumped. These materials are mostly wood but also contain leaves. These wood chips can be used for mulching shrubs and trees. Fresh cut wood, when mixed into the soil, does lower nitrogen content, and it is best to add nitrogen fertilizer. If used as mulch, the chips will age over time and will not affect the soils adversely, other than making the soil more acidic.

In some locations, municipalities process wooden waste material. The resulting material is usually processed to produce material that can be used for mulch. In many cases, the material is piled in areas with public access, and the material is available at no charge in most cases. The equip-

ment used to grind wood varies in the size of their output. Some machines produce larger pieces of material, which may be less desirable than smaller ones. Some gardeners have their own shredders. These devices, which are much smaller than those used by professional tree cutting firms, enable gardeners to make their own mulch. Available wood chips are usually larger than most of the bark used as mulch, and they tend to last longer.



Pine straw in the yard of Karl and Lisa Betz. Photo: Ken Gohring.

### **Pine Straw**

Pine needles are widely used in the South, both as mulch around shrubs and as a blanket covering for pine islands and open areas near shrubs. The use of pine straw in open areas is an example of landscape mulching. Landscape mulching, where pine straw is spread over open areas, provides an accent to adjacent shrubs and trees. These pine-straw-covered areas are used extensively under and near trees where it is difficult to grow grass. Since pine straw is not as thick as other types of mulch, a layer of landscape fabric is frequently laid down before the pine straw is spread. Landscape fabric is used rather than plastic sheets because it allows water to pass into the earth beneath. Plastic will cause moisture to run off to lower areas, sometimes allowing the pine straw to wash. Two grades of pine needles are generally available commercially. The shorter pine straw needles average 9 inches in length. Long needle pine straw needles average 14 inches in length. Various species of pines are used for pine straw.

### **Bark Chips**

In the South, bark chips are usually pine bark chips. Generally, three sizes are available commercially. The large grade consists of chips that can be up to 3 or 4 inches in length. The medium size grade has chips that are up to 2 inches long while the small size has chips that typically up to an inch in size. The large-size chips are more likely to be washed away by rainfall. The smaller sizes present a more uniform appearance. Small-size pine bark, known as pine bark fines, is avail-

able, but its use is primarily as a soil amendment. These fines are used by many propagators in the mix in which cuttings are struck and by gardeners who add the fines to soil to obtain a more acidic, porous soil.

### **Straw or Hay**

These mulches are usually available by the bale. They are not considered as attractive mulches, and their use in ornamental settings is limited. They are used frequently in vegetable gardens. Straw is used extensively in strawberry beds. The material is compressed when baled, and it retains this characteristic when spread. Hay will harbor weed seed, and care must be taken to prevent contamination. Neutral in pH, these materials will decompose over time and enrich soils.

### **Newspaper and Cardboard**

While paper that has passed through a paper shredder machine has a suitable size for mulching purposes, its light weight limits its use as mulch. However, some use shredded paper as mulch. Paper is used as an underlayment for other mulches like wood chips or bark. Paper used as an underlayment is effective in preventing weeds from growing. It helps the mulch laid over it retain moisture. Its use also reduces the amount of over-layment mulch required. While its use is effective, it adds additional effort. Its application can be difficult if there is wind present when applied. Pre-soaking helps increase the weight, making application easier in windy weather. Most uses of paper in this manner are in vegetable gardens, but it can be used in flower beds and around shrubs. The usage is limited in time, as the newspaper deteriorates and usually lasts only one season in vegetable gardens. This deterioration means that essentially no effort is required in disposing of the newspapers as spent plants are removed. Cardboard can be more difficult because of its stiffness and likely requirement of cutting to fit.

### **Commercial Organic Mulch**

Large home improvement stores like Home Depot and Lowes, as well as discount stores like Wal-Mart, sell numerous types of mulch in manageable bag sizes. Most of these are wood in various forms. In addition to the aforementioned dyed mulches, similar mulches not dyed, are available. The various woods used are pine, cypress, and cedar. Cypress mulch, while providing a natural color like pine, is usually less expensive than pine products. Cedar is usually more expensive, but

it does last longer than other wooden mulches. Cedar and cypress have oils and chemicals in their makeup that deter insects.

### Leaves

Perhaps one of the most natural mulches is tree leaves, which are common and inexpensive. Most gardeners have access to leaves, from either their own trees or their neighbors, in the fall of the year. The best use of leaves for mulch requires them being processed with a leaf mulcher or by lawn mowers equipped with mulching blades. Lawnmowers have to have leaf or grass catchers to capture the processed leaves as they are ejected from the mower. Leaves are not as attractive as other mulches but availability and low cost make them worthy of consideration.

### Grass

Freshly cut grass is not suitable for mulching purposes. It should be dried or composted. It is not as attractive as other mulches, but it is inexpensive and contains nitrogen, which can enrich soil when it decomposes. Many gardeners use grass cuttings and leaves in their compost.

### Compost

Compost can be used as mulch. Many gardeners make their own compost, which is usually mixed with soil to enrich it. It can be used as mulch and as it decays, it enriches the soil. When used as a mulch, some recommend that the compost be only partially decomposed.

### Other Mulches

Other materials such as sawdust, peat moss, animal manure, plant hulls, nutshells, and other vegetative waste materials, if available, can be used to mulch plants.

### Inorganic Mulches

Inorganic materials can be used to hold moisture and block weeds. They do not add nutrients to the soil as do organic mulches. They are used because they do not decompose rapidly nor require replacement as often as organic mulches. For appearance purposes, small layers of organic mulch can be placed over inorganic mulches.

### Plastic and Landscape Fabric

These materials can be used under organic materials such as pine straw and wooden mulches. Such materials are frequently used around foundation plantings. The primary use is to control weeds. It is suggested that holes be cut in the material to al-

low water to flow to soil below. Landscape fabric is porous and does not require drainage holes. These plastic materials are not recommended for herbaceous plants.

### Stone and Gravel

Pea gravel is used in many plantings. It is attractive and does a good job of mulching plants, especially in areas requiring good drainage. Larger stone is also used but the pea gravel is more aesthetic. It is available in various colors and sizes. River gravel contains significant amounts of sand, which is more subject to washing than pea gravel.

Stone mulches provide better weed suppression than organic materials, but they do retain more heat, which can be harmful to plants. Since stone is hard to remove, it can be a problem if the area where used is changed or redesigned. In some areas, a stone material known as lava rock or pumice rock is popular. It is said to give extra aeration to the soil, prevent mold, and is unsuitable for harmful insects.



Rubber mulch. Photo source: Phasmatisnox, Wikipedia.

### Rubber Mulch

One of the uses for automobile tires that have reached the end of their utility is as mulch. Such tires are ground up into small pieces. Usable applications include sport fields, playgrounds, and other large areas. It is more expensive than other mulches, but it does last a long time. They are said to repel termites and carpenter ants. There is controversy about its use because it is probably toxic and can harm the soil and kill organisms in streams and ponds. Rubber mulch is expensive, costing up to 20 cents per cubic foot.

### Using Mulch

Mulch is used because it is effective in promoting growth and protecting plants. Some guidelines using mulch include:

## 1. Selection

If cost is no objective, the likely best mulch is that obtained from commercial establishments. If cost is a factor, wood chips obtained from tree cutters or municipal distribution sources are a good alternative. Leaves and grass are good low-cost, mulching materials. Another selection criterion is appearance. Selection of mulch can be determined by the physical appearance desired.

## 2. Application

Not all plants require mulch. In flower gardens where annuals and perennials are closely planted, mulch may not be required. Such plantings will have shade protection once the plants set leaves. Well-established plants, cold-hardy plants, and plants growing areas not subject to wide ranges of temperature will survive well without mulch. Mulch should not be placed close to plant stems. If located close to the plant's stem, the mulch can trap moisture, causing disease problems and providing attractions for pests. Enough mulch should be applied to help soil retain moisture. A thickness of 2 to 3 inches is recommended for organic mulch applied around trees and shrubs. Too much mulch can kill a plant by suffocating it. The amount should be determined from the nature of the mulch material. Stone mulch 3 inches in height would be too much for most plants. Landscape mulch is usually much thinner than mulch around plants.

## 3. Maintenance

In some applications, where synthetic mulch like rubber or stone is used, annual maintenance may not be required. Landscape areas where pine straw is used require annual maintenance primarily because of leaf fall. In applications with lighter material and areas with frequent rainfall, periodic maintenance is suggested. In such areas, mulch should be examined every few months to ensure proper conditions for healthy plant growth. Mulched plants can be fertilized. Granular and liquid fertilizer can be spread on the top of mulch. Granular fertilizer applications should be followed by watering.

## Mulching Azaleas

Azaleas and rhododendrons are members of the Heath family of plants, which includes blueberries (*Vaccinium sp.*) and mountain laurel (*Kalmia sp.*). The root structure of Heath plants is different from many plants. Their roots are thread-like and don't



An azalea with dyed wood chip mulch. Photo: Ken Gohring.

extend far from the plant's trunk. They do not grow into hard soil usually found below the topsoil, resulting in their roots being shallow growers. Because of their structure and growth characteristics, Heath plants must grow in moist soils.

Good culture practices with mulch help protect azaleas and rhododendrons from the elements. Mulch helps in keeping the soil in a moist condition, conducive to good growth conditions. An added benefit for the gardener is that less watering will be required. All newly planted azaleas and rhododendrons should receive a good layer of mulch. This practice should continue, allowing the plants' roots to become established. Older, established plants do not require mulch like newly planted ones, but they will profit from good mulching practices.

Wood based mulches are a good choice, but other less dense materials such as pine straw can be used. There should be 2 to 3 inches of wood mulch around azaleas and 3 to 5 inches of lighter materials. The mulch should be spread completely around the plant, expanded out at least to a point equal to the extent of the plant's upper structure. Deciduous azaleas have shallow feeder roots that often in older plants run well beyond the drip line of the plant.

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