



MULCH

Mulching is an essential cultural technique that can reduce the amount of work inherent in gardening, helping to produce healthier plants and potentially increasing vegetable yields. Mulch is often defined as any material applied to the soil surface as cover. It can be divided into two general groups—organic and inorganic. Organic mulches such as bark are usually a bi-product of other industries and decompose readily over time. Inorganic mulches such as plastic sheeting do not decompose quickly and may actually remain in the environment for an indefinite period of time. Both types have been used for aesthetic reasons, to create an attractive background for plants; however, the benefits provided by organic mulch may outweigh the use of inorganic types.

Most types of mulch are available by the bag or cubic yard. It's best to apply organic mulch shortly after purchase or delivery. If it is not convenient to do so, cover the mulch with a tarp or plastic to keep the material dry. Before selecting mulch consider how it will be used. Consider availability, cost, appearance, quality, and durability. Understanding the characteristics of different mulches and their appropriate uses will help you select the right mulch for your needs.

Organic mulch

Organic mulch has a number of positive attributes. It conserves soil moisture by reducing water lost through evaporation, minimizes soil erosion, moderates soil temperatures, inhibits weed growth, encourages the growth of beneficial soil microorganisms, and reduces the spread of soil-borne pathogens by preventing soil from splashing onto plants during rainstorms and watering. Mulch can also eliminate mowing around trees and shrubs, preventing mechanical injury to trunks. When used as winter protection, mulch prevents heaving (plant roots pushed upward out of soil) during periods of freeze and thaw. It can also be used to stabilize eroded areas, preventing erosion from wind and water. Organic mulches decompose over time, improving soil structure and quality, and returning nutrients to the soil.

Inorganic mulch

Inorganic mulches are generally used to create barriers to weeds. They are also used for decorative purposes. Inorganic mulch, such as rocks or gravel, does not readily decompose. Rocks absorb and reflect heat which can be detrimental during hot, dry weather. Because they do not decompose quickly, inorganic mulches do not improve soil quality.

TYPES OF ORGANIC MULCH

Bark (hardwood)

Shredded hardwood is a by-product of the lumber and paper industries and varies in size from shredded chips to larger nuggets. This type of mulch is generally used around trees and shrubs as well as in perennial beds. Shredded bark is available in natural or dyed varieties. Dyed varieties are often a mix of hardwood or recycled wood waste containing artificial dyes.

Bark (softwood)

Softwood bark is also a byproduct of the lumber and paper industries. Pine bark is a common example and is frequently used under large trees and shrubs. Pine bark is slightly acidic in nature, takes time to decompose, and does not need replacing as often as other types of organic mulch.

Municipal tree waste

City or village arborists and utility companies often make mulch available to homeowners at no charge. Normally this mulch is made up of larger chunks of wood and is not aged. The fresh material will utilize larger amounts of nitrogen in the soil as it decomposes. This type of mulch is especially useful for creating pathways.

Cocoa bean hulls/cocoa bean mulch

Cocoa hulls are a byproduct of the chocolate industry. The hulls are lightweight, easy to handle, appropriate for all planting areas, and smell pleasantly. Hulls should be applied no more than 1" deep and should be lightly watered to hold them in place. They decompose quickly and require annual application. Consider choosing another mulch if pets frequent the area as chocolate byproducts may be lethal to animals if consumed.

Leaf mulch

Leaf mulch can be created at home by composting shredded leaves. Leaf mulch can be used in all garden beds. Leaves that may be infected with scab, leaf spot, or anthracnose should be disposed of instead of composted for mulch.

Grass clippings

Grass clippings may be spread in thin layers across vegetable and perennial beds and turned in at the end of the growing season. Allow each layer to dry before adding additional layers. Do not apply in thick layers as clippings will mat. Do not use clippings from lawns that have been treated with herbicides or insecticides. Also, do not apply grass clippings that have turned to seed to prevent undesirable turf grass from growing in garden beds.

Composted animal manure

Well composted animal manure can be used as a mulch or soil amendment. Composted animal manure is an excellent choice for new planting beds as it improves soil quality and adds nutrients. Fresh manure should not be used in garden beds because it can burn plant roots.

Caution should be used when using animal manure in vegetable gardens. Manure should be well composted prior to using as mulch at temperatures reaching 130 to 140 degrees F. for at least one week and composted for four to six months longer to eliminate most potential disease organisms. Dog, cat, and pig manure should never be added to vegetable gardens.

Newspaper

Layers of black and white newspaper can be used to suppress weeds. Apply two to three layers at a time and cover with an organic material such as leaf mulch or grass clippings to hold it in place. Newsprint will eventually decompose and can be incorporated into the soil.

TYPES OF INORGANIC MULCH

Plastic film (polyethylene)

Plastic film is impermeable – water and nutrients cannot pass through. Plastic is best used along rows of vegetables to warm the soil in spring. It is not the best choice for long-term use. Plastic film deteriorates with exposure to sunlight and is usually used for only one season.

Landscape fabric

Landscape fabric is a better choice for long-term use to suppress weeds because it allows air and water to pass through. It can be used in conjunction with organic mulches and will decompose more quickly than most other inorganic mulches.

Stone

Examples include volcanic rock, crushed gravel, and marble chips. Stones do not retain moisture and can cause heat stress on plants through reflection and ground heating which can burn roots. They are best used away from trees, shrubs, and other plants.

Rubber

Rubber mulch is composed of recycled or ground tires. This product continues to be researched; however, initial studies indicate possible toxicity levels as well as the risk of flammability. In addition, rubber mulch can remain in the soil indefinitely. It is not recommended for use in the home landscape.

APPLICATION

Growing season

Apply mulch to planting beds and around the root zone of plants in midspring after garden soil has warmed. Mulching around newly installed plants is particularly beneficial, especially for fall plantings as it protects roots over the winter. It is not necessary to replace all mulches each year. New mulch should be added only as needed to the original depth of the first application to avoid over-mulching. Aged mulch can be plowed into the garden later to amend the soil.

Winter protection

A common misconception is that a layer of mulch prevents soil from freezing. It actually lessens the possibility of plants being heaved out of the ground by freeze/thaw cycles. Mulch allows soil to warm up gradually in spring, preventing damage to plants that emerge early before temperatures are warm enough to sustain them. Roses and tender perennials in particular benefit from an application of winter mulch. Winter mulch should be removed from the base of protected plants in the spring when new growth is observed.

Trees and shrubs

Apply no more than a 2 – 3” layer of mulch around the base of trees and shrubs to avoid soil compaction and root suffocation leading to early decline.

Avoid piling mulch against trunks and stems. Constantly moist conditions created by over-mulching may also promote the growth of pathogens and provide a habitat for unwanted insect and animal pests.

Roses

Create a mound of shredded leaves or horse bedding over the base of roses at least 4 – 6” deep for winter protection. For details see the *Growing Roses* Fact Sheet.

Perennials

Apply no more than 2 – 3” of mulch around established plants during the growing season. Avoid burying the crowns or heavy mounding around stems. In the fall after the ground freezes, apply 4 – 6” of finely shredded leaves over the crowns of recently transplanted or marginally hardy perennials to provide winter protection.

Annuals

Use ground or shredded hardwood or cocoa hulls to suppress weeds in annual beds and to add a finished look. Larger wood chips can be used to create pathways.

Vegetables

Mulching the vegetable garden reduces competition from weeds, conserves moisture, and protects fruits and vegetables from being splashed by soil. It also lessens the spread of disease pathogens. Apply mulch after planting when the soil has warmed. Small to medium texture or composted material works best. Mulch can also be used in the vegetable garden to create pathways between rows for easy cultivating and harvesting.

Newly seeded lawns

Lightly mulching newly seeded lawns keeps seed from washing away, deters feeding birds and rodents, and conserves moisture needed for good germination. Clean wheat, barley, or oat straw is recommended instead as it is usually free from seeds. Hay is not recommended as it often contains weed seed. Commercially available mulches made from recycled paper work very well in protecting spot renovations.

Troubleshooting

Mulch does not attract pests, however, more decomposing insects may be observed if mulch is kept too wet. Mulch may also provide habitat for unwanted animals such as voles, so it is important to keep it from touching plant trunks and stems as well as foundations of homes and other buildings.

Occasionally some mulch may develop mold or an odd looking fungus during periods of wet weather or if irrigation systems run too frequently. Rake off unsightly molds or fungus that develop and turn the mulch to promote drying and to improve air circulation.

Please contact Plant Information Service at (847) 835-0972 or plantinfo@chicagobotanic.org for additional information on mulches.



CHICAGO BOTANIC GARDEN

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One of the treasures of the Forest Preserve District of Cook County