

Home Grounds Fact Sheet

Mulches

A mulch is a covering applied to the soil surface to increase crop yield, prevent weed growth, retain soil moisture and lessen the chance of lawn mower damage to tree trunks. There is a great variety of mulch materials used by gardeners with varying success.

Choosing A Mulch

Which mulch material you use depends on appearance, uniformity, cost, availability, ease of handling, rate of breakdown and resistance to movement once applied. The mulch material used in a landscape planting should not attract much attention and compete with the plants. Dull, dark materials are most desirable, although light colored stones are attractive with dark plant stems and dark green grass. Useful mulches should be available in quantity to ensure a supply once a gardener becomes accustomed to using one particular material. Availability and cost are very important. The thickness of the mulch layer and unit cost determine the overall expense.

Mulches should be easy to apply. Plastic films are easy to lay before planting, but difficult to apply among established plants - especially if the wind is blowing. Granular or lumpy materials are easy to spread from a bag, while stringy materials in bales may be hard to separate and apply evenly. The best use of mulches is secured by even application.

Mulches should last for the desired period, which may be only one season in the annual flower garden. After this one season, rapid disintegration after incorporating into the soil is desirable. In landscape plantings, a more durable cover is needed. Organic mulches that break down rapidly need supplemental applications of nitrogen to compensate for decay.

Rain, wind and children can displace a mulch. Light materials can be easily blown away, so it is helpful to water down immediately after application. Where flooding or surface erosion is likely, use a mulch that will allow moisture to go into the soil and not readily float away. Coarse materials such as stones are always inviting children to pick them up and throw them on the lawn, driveway or even at windows, so do not use these mulches where children can easily get at them. Be aware of using light mulches in beds around a pool. Rain/irrigation can cause them to flood into the pool.

Reasons for Applying a Mulch

1. Mulches can control weeds by their smothering action. The larger the weeds, the thicker or more resistant to penetration the mulch layer must be. Some perennial weeds are very difficult to control once they are established.
2. More even soil moisture is another benefit of mulches. Mulch reduces water loss by evaporation from the soil surface. The advantage of thin layers of mulch is that rain or irrigation water penetrates the soil easier, replenishing the soil moisture lost by evaporation or plant use.
3. Mulches act as an insulating layer and reduce fluctuations in soil temperature. A mulch can keep soil cooler during the summer and warmer during the winter. This would be especially valuable for certain fall plantings where root growth is desired. However, mulches can increase danger from early frost damage in the fall by reducing the radiation of heat from soil to leaves.
4. Mulches used around trunks of trees and shrubs help prevent damage from lawn mowers. Continual injury to the bark of trees can eventually cause the tree to die.
5. As organic mulches decompose they improve the soil structure and add nutrients to the surrounding soil.
6. For the above reasons, crop yields have been greatly increased in some instances by the use of mulches.

Problems of Mulches

There are several problems that can result from the use of mulches.

1. A nitrogen deficiency may develop because of rapid breakdown of certain fresh organic mulches, i.e. unseasoned wood chips, that results in light green color of foliage. This can be corrected by adding extra nitrogen when applying the mulch.

D-1-23 KG reviewed RT 7/00

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Problems of Mulches - continued

2. Frost damage may increase with a sudden early fall frost because of soft plant growth and reduction of radiation from the soil.
3. Some animals may make their home in a mulch that is too deep. Mice like to eat tulip bulbs under a mulch, so mulch these well after the ground freezes.
4. Mulch materials like straw may contain weed seeds and cause more of a weed problem.
5. Peat moss should **never** be used as a mulch. It becomes compacted and water cannot penetrate it when it's dry. When it's wet, it acts as a wick, drawing moisture out of the soil.
6. Mulches stored outdoors in uncovered piles can begin to decompose anerobically. In such cases, if spread in the landscape, they can exude toxic properties to the surrounding plants.

Non-organic Mulching Materials

- **Black polyethylene film** will keep weeds down, retain moisture and is easily applied before planting. Before laying down the plastic be sure the underlying soil has ample moisture. A sharp tool is necessary to cut the holes through which seeds or young plants are inserted into the soil. Black polyethylene is often used under stones for weed control in landscape plantings. If desired, the appearance of the black plastic can be camouflaged by a light covering of one of the other mulching materials.
- **Small stones, marble chips or gravel** make a good mulch because they are not moved by wind or water. They are easy to apply but heavy. These mulches don't break down nor do they provide beneficial organic matter.
- **Geotextile mulches** have recently become popular in the landscape industry. They're similar to permanent plastic mulches except that water and gases can move through them.

Organic Mulching Materials

- **Layers of newspapers** can be used as a mulch. They are difficult to apply and keep in place unless kept moist all the time or covered with grass clippings. Newspaper mulch lacks a good appearance.
- **Sawdust** is a good mulch but if too fine and powdery, water penetrates it with great difficulty. It breaks down and requires supplementary nitrogen.
- **Woodchips** do not break down as fast as sawdust and allow better air movement into the soil. Where available they are one of our best mulches.
- **Shredded bark or nuggets** are also very useful because they break down slowly, look good and are easy to apply.
- **Pine needles** are used as a mulch for ericaceous (acid-loving) plants in Europe and in this country
- **Salt Hay** is a much better mulch material as it breaks down slowly, does not blow away easily and does not contain weed seeds that germinate in normal garden soil.
- **Buckwheat hulls, peanut hulls and cocoa hulls** are good mulch materials, but they can be blown by the wind if allowed to dry out. They are easy to apply and have a good appearance, but generally are the priciest of mulches.
- **Leaves** that do not pack down (like oak) can be used as a mulch.
- **Straw and hay** are poor mulches because they break down too easily and have weed seeds.
- **Peat moss** should **never** be used as a mulch, only as a soil additive. Make sure that it is completely incorporated into the existing soil. Once it becomes dry, it is impossible to re-wet and when it dries out does not allow the soil underneath to absorb water.