

## Inorganic Mulches—Advantages and Disadvantages

By Susan Camp

In the July 27<sup>th</sup> “Gardening Corner,” I wrote about several organic mulches and the advantages and disadvantages of each. Inorganic mulches also are available, and while useful in specific areas of a garden, may not present the appearance a homeowner would desire in flowerbeds and borders.

Inorganic mulches are composed of non-living materials and contain little or no carbon. They include crushed stone, plastics, rubber, and polypropylene or polyester fabrics called geotextiles. Inorganic materials will initially cost more than organic mulches, but the cost is offset by the fact that these products will last for several years. Inorganic mulches don’t contain weed seeds and won’t deplete nitrogen in the soil. Some inorganic products are good weed suppressors.

Stone, in particular, can be visually attractive in the landscape, and there are many choices, including gravel, smooth river stones, marble chips, granite, and volcanic rock. Gravel walkways and drives present a casual, inviting appearance, although the gravel won’t deter weeds and will need a layer of landscape fabric underneath to prevent the rocks from sinking into the ground. Rocks that become embedded in the soil are almost impossible to remove and can interfere with future planting. A 6-to-12-inch gravel barrier around a home’s foundation can help deter termites, roaches, and other pests.

Unfortunately, rock mulch won’t insulate your plants from the winter cold and in the summer can overheat plants and trees and kill their roots. Stone won’t add organic nutrients to your soil, and rock mulch that contains limestone can raise the soil pH enough to affect the health of the acid-loving plants that thrive in our normally acidic soil.

Polyester or polypropylene geotextiles are used as underlayment for gravel or stone and also under organic mulch. These products are helpful on slopes to help prevent or curb erosion. Geotextiles are not useful in annual or vegetable gardens that are frequently dug for replanting.

Black plastic will smother weeds and deter their regrowth, so it is useful for clearing an area of weeds or grass when planning a new vegetable or flower bed, but it does not make an attractive mulch. It will deteriorate from sunlight and animals and must be replaced about every two years. Black plastic will raise the soil temperature in the spring by about 8°F. It may also increase summer soil temperatures and damage plant roots unless it is covered by organic mulch or dense foliage. Newer products include black plastic with a reflective white undercoating that helps prevent overheating of the soil and porous plastic sheeting that permits air exchange and water penetration.

Other plastic mulches include a clear product that will raise the spring soil temperature by 10°F for early planting. This product does not deter weed growth, but actually encourages it. A red plastic mulch, available in garden supply catalogs, can control weed growth and conserve water.

It has also been shown to increase tomato crops by up to 20% and improve the flavor of strawberries by altering the plants' chemistry. The red plastic mulch might be worth a try.

The final inorganic mulch is made from shredded, recycled rubber tires. Proponents of this mulch material state that it helps the soil retain moisture, provides a layer of warmth in winter, suppresses weeds, and resists fungal and other diseases. It can be dyed to resemble pine bark mulch.

On the other hand, it is flammable and shouldn't be used near houses and other wooden structures. Zinc can leach from the rubber and cause toxicity in plants, and concerns have been raised about other pollutants that could contaminate vegetables and fruits. I would place rubber mulch in the same category as the red-dyed junk wood mulch. It's unattractive, and it could prove harmful to people and pets.

See VCE Publications 426-326 (SPES-256) "Mulches for the Home Vegetable Garden"; 430-019 "Selection and Uses of Mulches and Landscape Fabrics"; and 426-724 "Mulching for a Healthy Landscape" for more information on organic and inorganic mulches.

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