MULCH CORNER

OTHER INORGANIC MULCHES Part 2

By John Ferguson

Rubber Tires:

Crushed Tires (loose tire chips) -

Rating: Extremely Poor quality

Application: Apply 3-6" deep

Pros: Tested in agriculture, decomposes very slowly, reduced weed growth of 86% in field tests when compared to unmulched soil. Available in several colors.

Cons: Limited availability and very expensive, increases heat index (gets so hot it can burn plants), can cause extremes of wet and dry conditions, some studies show possible higher disease problems, USDA tests show excessive leaching of Zinc causing severe phytotoxicity in acid soils and will contaminate soils with other tire components. Other tests around the world have confirmed USDA research and have shown that as little as 5% ground tire rubber in potting media is toxic to petunias and Impatiens ["Communications in Soil Science and Plant Analysis, 27 (13 & 14), 1996]. Tests at Colorado State University found that growth of geraniums grown in media with tire chips were lower than with traditional media [HortScience 32(4):674-676, 1997]. Additional research at Iowa State and Mississippi State has also found decreased growth and other problems when used in a potting mix with Geraniums and Poinsettia plants [HortScience, Vol 32(5), August 1997]. Some of the dyes used to color tire chips may be toxic. Several reports of spontaneous combustion when applied too thickly. Often sinks into the soil due to its higher density when compared to organic mulches. Note: Works best on poor, unhealthy alkaline soil. Can cause permanent damage to your soil.

Try to avoid, for very special cases only.

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Crushed Tires (pressed and glued tire chips) - Several gardening magazines are advertising weed block mats made from old tire chips. These are mulch mats made from tire chips that have been glued together by heating or by use of a chemical binder. The chips are pressed into 1-2" thick mats and cut into a variety of shapes and sizes such as circles to place around shrubs and trees. These mats are laid down as a mulch and

weed block. They are advertised as allowing air and water to pass through the mat but prevent weeds from penetrating. The black color of the tire chips will increase the heat index and the tire chip mats will most likely suffer from the problems of plastic mulches. Also the same type of chemical leaching and phytotoxic effects are to be expected as from chipped tires since they are made from the same feedstock material.

Landscape Fabric - (sometimes sold as weed block fabric):

Rating: Bad, do not use

Application: Flowerbeds with perennials and shrubs

Pros: Fast and easy to apply, doesn't rot, better than plastic as air and water can penetrate soil to some degree, reduces light reaching soil reducing weed seed germination, prevents some weeds by preventing them from penetrating the fabric.

Cons: Expensive, does not work very well, ugly, prevents earthworms from reaching soil surface to feed effectively killing them off. This results in reduced aeration (low oxygen) which favors pathogen growth in the soil. Hence, it is sometimes associated with increased occurrence of plant diseases and pests.

Note: Most types do not stop nut grass from penetrating and growing. Works and looks best when covered by some form of organic mulch. They are some newer types entering the market that use biodegradable plastic and last about one season but no test results published to date.

Best used under pathways and other limited use applications.

Aluminum Foil:

Rating: Generally bad, do not use

Application: Vegetables and flowerbeds with succulents.

Pros: Same as plastic, the reflective nature tends to interfere with aphid movement reducing the spread of disease, keeps soil cooler than plastic, promotes a longer growing season and increases time over which a plant will yield. New research has found that the reflective nature of white or foil mulches reduces damage from thrips and whiteflies on garden plants in addition to aphids.

Cons: Expensive, ugly, labor intensive, over time repeated use can cause Aluminum toxicity in soil. Best use is in limited special purpose applications or applied loosely over a good organic mulch to allow air and water to penetrate into the soil (it helps to punch holes into the aluminum foil), remove after the growing season.

Old carpet:

Rating: Fair to good but for special purpose use only.

Application: Old carpet (or new carpet scraps) is sometimes used as a weed block for pathways and play areas. Apply with pile side facing down and backing facing upwards for best results. Overlap edges by at least 1' when applying and secure corners and edges with 8-12" long metal stakes. Cover with a coarse organic mulch for appearance.

Pros: Many people believe that old carpet works better than weed block fabrics for weed control. Lets air and water penetrate easily but stops most weeds. Usually free or inexpensive, can be cut to desired width and length, often found in wider sizes than landscape weed control fabrics.

Cons: Does not decompose, blocks earthworm movement in soil profile, ugly if not covered with another type of mulch for appearance, difficult to remove once it has been on the ground a while.

Snow:

Not applicable in our area but prevents heaving and freeze/thawing during temperature changes, and its use is critical to many species of plants. It also contains small amounts of nutrients (nitrogen, calcium, sulfur and potassium) picked up from dust and atmospheric gases. Experiments at the Siberian Botanical Gardens have found that plants watered with melted snow grew twice as quickly. They found that snow contains 40% less

"heavy water" or deuterium oxide than normal water. Heavy water molecules slow down some chemical and biological processes.

Other:

Crushed concrete - very poor (possible chemicals contamination problems).

Pottery shards - special purpose mulch that may look good in special application, see previous article on gravel.