

MULCH CORNER

SOME OF THE OTHER TYPES OF ORGANIC MULCHES

By John Ferguson

Last week we talked about a few other types of mulch that are available. This time we are going to continue our discussion on some of the other types of organic mulches a gardener may want encounter and want to use.

Biodegradable Weed Barriers - New biodegradable weed barrier mulches are entering the market that are made from recycled paper and cardboard. Better ones contain holes for air and water penetration and will last about one growing season. A few examples are:

Paper + Poultry Manure - This is a medium quality mulch that should be applied 3-4" layer thick. It is easy and quick to apply, breaks down easily, provides some nutrients, is made from recycled materials, is a good soil amendment, and it has been reported that the waste paper has some herbicidal effects on weeds. It may be expensive, and it does not support the variety of beneficial microbes as other organic mulches. Products from some producers may contain a high salt content. If supplemental nitrogen is not added, it may cause a temporary nitrogen tie-up in the soil. If used 1" thick as suggested by some advertising literature, it will not provide needed thermal protection against excessive heat or cold that would be the case with other mulches. High water absorption properties may prevent water from reaching root zones and result in too much water being held in the mulch layer increasing the possibility of diseases.

Note: This mulch is relatively new to market, it only lasts one season, is made from recycled telephone books, newspaper and poultry manure (one product is produced by Tascon, Inc. of Houston using techniques developed by the Agricultural Research arm of the USDA called Enviroguard). Paper fiber is mixed with poultry manure and heat dried at 160 degrees Fahrenheit to kill pathogens, then extruded into pellets 3/16" thick by 1" long. Pellets will fluff up upon wetting and will hold 4-5 times their weight in water. This product is still in the early stages of testing and development and is designed for agricultural use. It has the potential to be a very useful product for agriculture as experience is gained in usage.

Note: Research at Auburn University has found that recycled paper mulches often contain toxic forms of Aluminum that was used in the manufacturing of the paper (newspaper, magazines, yellow pages,

etc.). As the paper decomposes the Aluminum leaches into the soil and prevents plants from absorbing phosphorus, hence greatly reducing the plants growth. This problem is worse in acidic soils and with shallow rooted plants.

Note: Some of these type mulches are reported being used with ammonium sulfate as a fire retardant and with copper (Cu) compounds to slow down the decomposition rates.

Note: Poultry manure (unless organic) has high levels of arsenic in it along with lots of salts which often cause problems in clay rich soils.

Occasional usage should not be a problem. However, frequent use can lead to soil problems and eventually insect and diseases in our plants.

Pelletized Recycled Paper - A special purpose mulch of medium to poor quality depending on the source materials it is made from. Generally requires a 3-4" thick layer. It is easy and quick to apply, is available in bags, breaks down easily, provides some nutrients, is made from recycled materials, makes a good soil amendment, and it has been reported that the waste paper has some weed suppression effects as it has a very high C: N ratio. Early studies indicate that one of the best uses is in the nursery industry for weed control in container grown plants as it naturally suppress weeds without the need for dangerous herbicides (outperforms crumbled paper and is easier to use). It does not support the variety of beneficial microbes as the better organic mulches do. Products from some producers may contain a high salt content. Due to the high C:N ratio, if supplemental nitrogen is not added, it may cause a temporary nitrogen tie-up in the soil. If only used 1" thick as suggested by some advertising literature, then it will not provide needed thermal benefits against heat or cold or the weed suppression of other types of mulch. Also the high water absorption properties may prevent water from reaching root zone and cause too much water to be held in the mulch layer increasing the possibility of diseases. Repeated use can cause soil chemical balance problems.

Paper (Other) -Colored paper, coated paper, etc. are being researched as specialty mulches for use in agriculture. By coloring or coating the paper the reflectance, light transmissibility, biodegradability and other physical properties can be altered. These properties may be varied depending on the need of the crop. More on how these types of colored mulches affect plant growth in future issues. Mainly used in commercial agriculture.

Hydraulic Mulches: These are a group of special purpose mulches often used commercially for hydro seeding and vegetation establishment. These are often used in a water based slurry and mixed with tackifiers (works like a glue) to help hold seed and fertilizer pellets to the soil for vegetation



establishment. They can be applied with spraying equipment to cover large areas quickly. These mulches are often used to prevent erosion while vegetation is being established. There are dozens of brands and variations produced by many companies. Often seen as the blue-green product after road construction. These mulches are commonly used as they are relatively cheap, but they are not the most effective choice.

Wood Cellulose Fiber - This mulch is derived from trees and sometimes recycled newspaper or cardboard. Sometimes polyester or other synthetic fibers may be added for greater strength. This mulch is also used in combination with straw, hay or other organic mulch. For many years this was the accepted way of stabilizing soil and planting grass to prevent erosion. Many new studies from Texas A&M and others have found that recycled native mulches and/or compost work better and at lower total cost.

Corn Stover fibers - Derived from corn stalks, the ground up stalks often gives longer fibers which may hold better for erosion control.

Erosion Control Blankets: These are special purpose mulches made from various types of organic material (fibers) held in place by a mesh (often plastic or polyester fiber). They are used commercially to prevent erosion on steep slopes and disturbed soils. The fiber may be straw, shredded wood, coir, cotton, hemp, or other organic material. These are made into blankets that are shipped in rolls. To apply, the blanket is unrolled at the bottom of a slope and is pinned to the soil. The second roll is applied above the first with a small overlap of the material like shingles on a house. Sometimes the blankets will also contain seed and fertilizer to prevent nutrient tie-up.

Other: Depending on where you live, other types of mulches may be available at little or no charge. Spent brewery hops, apple pumice, blueberry husks, pole peelings from lumber mill, old carpet (cotton or wool will also biodegrade), etc. Each offers benefits and problems, best to contact a local agriculture extension office for use on one's soils.