

MULCH

Mulch is a layer of material added to the surface of the soil helping to suppress weeds, conserve moisture, prevent erosion, and improve soil structure and fertility.

During winter, mulching protects plants from the dangers of freezing and heaving. It acts as an insulating blanket reducing heat radiation from the soil and protecting the roots of the plants from sudden freezes and thaws in winter. Mulching also lowers the soil temperature in the summer and reduces the rate of evaporation by wind and sun.

Organic mulches can be turned into the soil in fall, adding important organic matter that enhances the health and structure of your garden soil. Some mulches, such as alfalfa hay, contain minerals that work their way into the soil as the mulch decomposes, feeding the roots of plants.

Although some time must be spent applying a good layer of mulch, many tiring and backbreaking hours of weeding will be eliminated during the growing season. Mulched plants will endure long dry periods with little watering because soil beneath the mulch remains cool and damp.

Another advantage of mulching is evident at harvest time when melons, tomatoes, cucumbers, and other vegetables that sprawl on the ground can become mildewed or moldy. Mulching prevents this damage by keeping the vegetables clean and dry.

Despite the many advantages offered by mulching, there are a few potential problems that occur mainly when mulches are used incorrectly or used in areas not suited for them. Seedlings planted in moist soil encourages damping-off. Damping-off is a disease caused by a fungus which inhabits moist, poorly ventilated soil and is almost always fatal to seedlings. Allow seedlings to become established before mulching.

Crown rot is a fungal disease that enters a plant through its roots and travels up the stem and into the crown, eventually killing the entire plant. There is no cure for crown rot. Avoid mulching perennials after heavy rains or when soil is waterlogged because these conditions will encourage crown rot.

Wet, low lying areas should not be mulched with materials that mat down such as leaves. If you must mulch in wet areas, use only light, dry type materials such as hay.

There are many materials that can be used for mulching, both organic and inorganic, and usually they can be obtained for free or for next to nothing.

Organic mulches include:

Alfalfa hay - high nitrogen content; easier to handle when green and freshly cut. Seeds in hay can become a problem.

Cocoa beans shells - they absorb 2 ½ times their weight in water.

Corn cobs (ground up into small pieces) - their sugar content helps increase soil microorganism. Apply a nitrogenous material such as grass clippings to soil before using corn cobs.

Grass clippings - commonly used and available, inexpensive. Be careful not to use grass clipping from lawns treated with herbicides. Mat down, smells. High nitrogen content can burn seedlings.

Leaves - shredded leaves don't mat down and they enrich the soil more than whole leaves. If unshredded, mix with straw or other light materials so they don't become a soggy mass.

Peat moss - excellent water retention, but break up the surface; it may form a crust over beds.

Straw - easy to find and use; less weed seeds than hay and looks good.

Newspaper is a good mulch although you should not use the coated paper of glossy sections as they contain agents harmful

to soil organisms. Laying down newspaper (you can also use brown grocery bags) and covering with straw makes an excellent mulch. The paper and straw can be tilled into soil in the fall and the newspaper degrades well leaving barely a trace. Recent studies have found no accumulation of heavy metals from the use of newspapers.

Mulches

Save water...reduce weeds...promote growth

Material	Advantages	Disadvantages	Comments
Aluminum foil backed paper WND one layer	Increases light around plants, aphids, other insects avoid. Reusable.	Can tear if handled roughly. Expensive. Artificial-looking.	Keeps ground very cool. Apply only after ground has warmed up.
Bark chip BIO 2-3 inches	Attractive, good for permanent mulch. Reusable.	May hinder water penetration.	Decomposes slowly unless composted first Redwood composes slowest; may repel insects.
Brick chips WND 2-3 inches	Cheaper than stone mulch. Non-flammable.	Not readily available; high moisture retention. No organic matter added.	Decorative, made from brick over burns.
Compost BIO 1-2 inches	Contributes nutrients: turns quickly to humus.	Needs heating period to kill weed seeds, disease; may have unpleasant odor.	Plant and start ahead so compost will be ready.
Corn cobs & corn stalks BIO 3-4 inches	Readily available in most areas. Good weed control	Water doesn't penetrate well; may generate heat.	Add nitrogen to aid decomposition. Avoid diseased stalks, cobs. Best chopped.
Cottonseed Hulls BIO 3-4 inches	Fertilizing value similar to cottonseed meal.	Very light. Wind scatters.	Keeps down weeds between rows. Top layer with another mulch prevents scattering.
Grass Clippings (dry) 2-3 inches	Improves soil by adding organic matter.	Absorbent; may carry weed seeds.	Mix with other materials to prevent packing. Bottom layer decomposes rapidly; add more.
Hay BIO 4-6 inches	Legumes hays (alfalfa) add nitrogen.	First cut hay full of weed seeds. Poor weed control.	Fewer weed seeds in 2 nd or 3 rd cut. Fluff up during season.
Leaves BIO 2-3 inches	Contains many trace minerals; best food for earthworms.	May become soggy and pack, hindering water penetration.	Chip or mix with another mulch to prevent matting.

Paper BIO 5-6 pages or 4-6 inches, shredded	May add trace minerals. Decomposes readily. Newspaper or scrap paper.	May pack and hinder water penetration. Scatters. Lead in colored pages; use black & white only.	Hold edges with rocks or dirt. Frost protection. Slightly alkaline.
Peanut hulls BIO 2-3 inches	Adds nitrogen, phosphorus, and potassium; decomposed rapidly.	Not readily available in North.	Attractive to rodents if not completely free of peanuts.
Peat moss BIO 2-2 inches	Clean and free of weed seeds. Improves water retention when tilled into sandy soil.	Extremely absorbent, water penetration hindered; expensive. Adds little or no nutrients.	Good soil conditioner to loosen heavy soils and acidic. Decomposes slowly.
Pine needles BIO 3-4 inches	Light; usually free of weeds seeds; absorbs little moisture. Does not pack; reusable.	Decomposes very slowly.	Add nitrogen for faster decomposition. Slightly acidic.
Polyethelene, Black or Clear WND one layer	Retains, but absorbs no moisture. Black is effective weed control.	Weeds grow under clear plastic. Rain can't get through easily. Adds no nutrients.	Warms soil: effective with tropical crops (melon, tomato). Ground must be moist before applying.
Rock, crushed gravel or marble chips. WND 1-2 inches	Relatively inexpensive, not absorbent. Water penetrates, non-flammable.	Poor weed control. Adds no organic matter to the soil.	Should be considered permanent mulch.
Salt marsh hay BIO 4-6 inches	Usually weed-free in marshy areas and along coast. Long lasting	Not available to everyone. Expensive when purchased.	Till under at end of season. Chopping may make more attractive.
Straw BIO 4-6 inches	Adds nutrients, lightens soil when tilled under	Can be a fire hazard.	Add nitrogen to aid decomposition unless aged.
Vermiculite or Perlite WND 1-2 inches	Totally sterile, so will not carry disease. No weed seeds.	Expensive; every light scatters, hinders water penetration.	Good for greenhouses.

BIO= biodegradable

WND= will not decompose

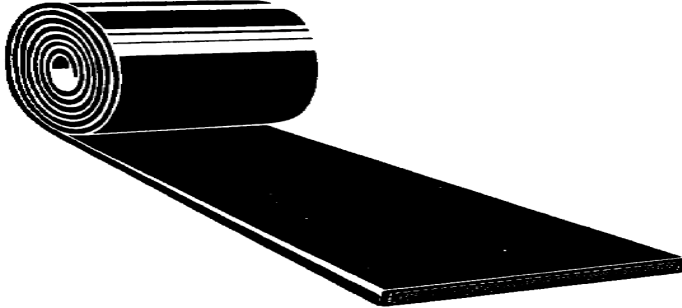
Inorganic mulches include:

The main disadvantage of using inorganic mulch is they will not degrade and do not enhance soil fertility and structure.

However, inorganic materials do offer the advantage of a long useful life. Gardeners have used many household items as mulches including aluminum foil, cloth or wool and plastic items.

Aluminum foil can be used for several years and then recycled. Additionally, the foil reflects light back up to the leaves of the plants.

Black plastic is used extensively because it's a very effective deterrent to annual and perennial weeds. It absorbs more heat than other mulches and radiates that heat back faster at night. By laying black plastic early in the season, it warms the soil and hastens the maturity of plants and increases the yield of early planted crops. You should water the soil well before putting down the black plastic and poke holes in the plastic where water puddles collect after rain to allow water to get underneath. Clear and white plastic are not recommended because they promote weed growth by allowing light to pass through.



For More Information on Capital District Community Gardens' programs or to make a tax-deductible donation contact:



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