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MULCHES

Why mulch? A mulch is any material used to cover the surface of the soil to protect plant roots from heat, cold, or drought, to keep fruit clean, or to control weeds. Mulch will improve plant growth and produce higher yields. By reducing the loss of soil moisture, mulches reduce the frequency of watering. Mulches also prevent the splattering of soil on lower vegetable leaves and fruit during rains, thus reducing losses to soil-borne diseases. When applying any mulch, the soil surface should be weed-free and contain abundant moisture.

Organic mulches. There are two types of mulching materials: organic and synthetic. Organic mulches include partially decomposed hay, straw, leaves, compost, and grass clippings. Organic mulches are summer mulches, since most of their advantages are realized in hot weather. Organic mulches cool the soil and should be applied to warm-season vegetables after the soil has warmed and when plants are well-established. The mulch should be applied 4-6 inches deep after the plants are at least 8 inches tall. Organic mulches also benefit cool-season vegetables, such as broccoli and cabbage. Applied in the early spring, they can extend the growing and harvest period by delaying warming of the soil.

Most organic mulches have some fertilizer value and are good soil conditioners when worked into the soil. They improve both the physical and chemical properties of soil. Organic matter incorporated into the soil improves water-holding capacity, nutrient availability, and aeration of the soil.

Newspaper. Although newspaper is an organic material, it is a manufactured product and thought of differently than other organic mulches. Newspaper makes a good mulch when used at a thickness of several sheets. Newspaper mulch is applied after plants are established. Newspaper can be held to the soil surface with a layer of partially decomposed leaves or compost. Like other organic mulches, newspaper decomposes rapidly and adds organic matter to the soil. Lead in printers' ink is no longer an environmental concern to gardeners desiring to use newspaper. Printers no longer use lead compounds in ink for black and white newsprint, though colored inks in some advertising supplements may contain lead.

Synthetic mulches. Synthetic mulches are plastics and high density papers. Plastic mulches raise the soil temperature to a depth of 3 inches an average 6-12°F compared to organic mulches which lower the soil temperature 10-18°F. Plastic mulches are preferable to organic mulches for crops that prefer warm soil temperatures. Plastic mulches are more effective in spring as they warm the soil to allow early planting. They also promote rapid growth and provide an earlier harvest. Plastic mulches reduce loss of soil moisture and protect fruit and leaves from soil-borne diseases.

Black plastic is the most commonly used synthetic mulch. Clear plastic warms the soil more rapidly than black plastic, but weed seeds germinate under clear plastic.

Warm-season vegetables like tomatoes, eggplant, peppers, melons, and squash grow faster and produce greater yields when grown on black plastic mulch compared to bare soil.

Applying plastic mulch. Before applying plastic mulch, incorporate all fertilizer and lime in the soil, remove all weeds, and break up all large clods. Rake the soil as smooth as possible. Select a time to lay the plastic when there is little or no wind. Because water stress on plants may develop if the plastic is laid on dry soil, plastic should be laid after a rain or irrigation. Holes can also be punched in the plastic after a rain to drain puddles on the plastic and to allow water to penetrate the soil beneath the plastic.

To lay plastic mulch, bury one end and unroll it down the row. Get the plastic as straight as possible and in contact with the soil surface. Cover all edges with soil to prevent the wind from blowing it away. Alternatively, make a shallow trench around the perimeter with a hoe. The distance between the lateral trenches should be 4-6 inches less than the width of the plastic. After placing the edge of the plastic in the bottom of the trench, it can then be refilled with soil. Cut planting holes into the plastic at the desired spacing. Weeds that appear in the planting holes can be pulled by hand. At the end of the season, remove black plastic because it will not decompose.

What's next? To keep your garden healthy throughout the growing season and to get optimum yields of your vegetables, see Station fact sheet on maintaining your garden.