



Mulches for Landscape Beds

By James Altland

Mulches provide a tailored and uniform appearance in ornamental landscape beds. While mulches provide other benefits such as water conservation, their primary utilitarian function is to control weeds. There are several factors to consider when selecting a mulch for weed control.

Properties of effective mulch

Mulches form barriers that prevent light from reaching the soil surface, which in turn dramatically limits weed seed germination. Most types of mulch are adequate for covering the soil surface and reducing light penetration. However, many types of mulch fail because the mulch itself becomes a substrate for weed germination. That is, weed seeds introduced after the mulch has been applied (blown in by wind, for example) germinate in the mulch.

When selecting mulch for weed control, the product should provide no available nutrients for weed seed germination, hold little water, and resist decomposition.

Mulches should contain little or no available nutrients. Weeds germinate and establish poorly in low nutrient (especially nitrogen) environments. Many commercial composts are abundant in available nutrients, and thus are not desirable for use as a mulch. Composts high in available nutrients will *encourage* weed germination. While compost is great for amending soil prior to planting, it should never be used as a topical mulch.



Mulches should not retain water. While it is desirable for the mulch to conserve water in the soil, the mulch itself should not retain water. Seeds germinate after imbibing water and then establish by growing in a substrate with adequate available moisture. Little or no moisture holding capacity in the mulch will create an environment inhospitable for weed establishment. Use mulches with coarse grades or large particles. For example, large bark nuggets (> 1 inch) retain very little water compared to bark dust.

Mulches should be resistant to decomposition; they should be stable for many months in a landscape environment. As mulches decompose, they release nutrients which are then available to germinating weeds. As mulches decompose, they also diminish the physical barrier that prevents light from reaching the soil surface. Products with large particle size

decompose more slowly than the same product with a smaller particle size. For example, wood chips decompose more slowly than sawdust.

Use of weed fabrics

Fabric materials, generically called 'weed fabrics', are often placed on top of the soil and beneath the mulch to further improve weed control. Weed fabrics should be placed beneath stone mulches to prevent the stone and soil from mixing. When used with organic mulches (bark, woodchips, hazelnut shells, etc.) these products offer very few benefits to weed control, but cause many additional problems.

Weed fabrics work very well to control perennial weeds regenerating from beneath the soil surface. However, most weeds in the garden are not perennial, but instead annual weeds germinating from seed that was either wind-dispersed or deposited by birds or insects. Regardless what mulch is used on top of the weed fabric, weed seeds deposited on top of the mulch will ultimately germinate *within* the mulch material. So instead of being a protective barrier that covers the soil surface, the mulch itself becomes the growing substrate for weeds. Using large, coarse, hydrophobic mulches will slow this process, however, weeds will ultimately grow in any mulch. Weed fabrics placed beneath organic mulch may be initially helpful in preventing regeneration of perennial weeds (assuming there are any) but provide no meaningful long-term weed control.

Use weed fabrics beneath stone mulches. Do not spend time or money installing these products beneath organic mulches.

Mulch products for the Willamette Valley

Douglas fir bark

Medium to coarse grade Douglas fir bark provides excellent weed control. It is currently the most commonly used mulch in Oregon landscapes. Douglas fir bark has virtually no available nitrogen, it is hydrophobic, and very resistant to decomposition. Coarse grade products are superior to fine dust-like grades.

Woodchips and sawdust

Large wood chips (1/4 to 1 inch particle size) would make an effective and inexpensive mulch, however, they may not be aesthetically appealing. Again, woodchips would provide more effective weed control than fine sawdust.

Hazelnut shells

Hazelnut shells are inexpensive and would work well, however, their availability is seasonal (when hazelnuts are harvested October through November). There are lots of shells available each year for nursery and landscape use. However, they are only available during the time of year nuts are being processed.



Stones

Large pebbles or stones make an attractive mulch. They release no nutrients to promote weed growth, they do not retain water, and they do not decompose. Stone products can be expensive due to shipping and freight costs.

Stone mulches should be placed over a fabric barrier that separates the soil from the stones, which will also add to overall cost. Contrary to popular belief, stone mulches do not provide maintenance-free weed control. Debris from blowing leaves, senesced flowers, and other airborne contaminants will eventually lead to buildup of organic matter in between the stones. Weeds will germinate in these small accumulations of organic matter. Some regular weed control will have to be performed. Nonetheless, stone mulches are the most durable and long lasting mulch products and ultimately result in the least amount of effort.



The biggest drawback to using stone mulches is that they are permanent, or at least very expensive and difficult to remove once they are in place.

Summary

There are many potential mulch products, most of which would come from some sort of agricultural by-product. Among those with aesthetic qualities suitable for landscape situations, choose products that contain little or no available nutrients, do not retain water, and resist decomposition.

About the Author

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