

Deciduous Chipped Wood Mulch for Orchards and Berries

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Chilkat Valley Orchard Project

A USDA funded program of the Chilkat Valley Historical Society

Start composting and enrich the biosphere. Soil enrichment takes numerous forms, but always involves putting carbon and nutrients back into the soil. Where rural folk use a composting outhouse, well-aged, non-pathogenic “humanure” can be used to enrich orchard and berry soils. Haines beaches are seasonally awash in seaweed and grassy beach wrack—superb mulch from the sea. Spoiled hay from poultry or livestock is great. Of course, livestock manure is wonderful. Another source is small-diameter, deciduous branches and stems, ideally run through a wood chipper.

White Rot, Brown Rot and Soluble Lignin

Lignin is a strengthening agent in vascular plants that works in concert with the structural xylem tissue. Lignin compounds, collectively, are the source of some 30% of the organic carbon found in the terrestrial biosphere. **In a tree, about 75% of the nutritional goodies—the minerals, amino acids, proteins (nitrogen), enzymes, hormones and fatty acids—are found in lignin-rich small diameter wood: stems, leaves, small branches, cambium layer and buds.**

Fungi begin harvesting nutrient from woody tissue soon after it hits the forest/orchard floor. Some produce BROWN ROT and some produce WHITE ROT. Brown rot producing fungi do their business mostly on softwood species; look for their cubical, dark-hued remnants. White rot fungi do their business mostly on lignin-rich hardwood species, like **Sitka Alder, Birch and Cottonwood.**

*KEY CONCEPT #1: Nutrients in mulch only become plant-available (mineralized) **after** they pass through a microbe, a fungi, or a multicellular critter (bear, chicken, human). That takes time (years) particularly w/ cold temperatures! When nutrient rich, soluble lignin compounds are consumed by the white-rot mycorrhizal fungi, these goodies become plant-available/ absorbable nutrient. BOTH the fungi and your crops benefit. (Mycorrhizae defined: “root fungi”)*

*KEY CONCEPT #2: Mycorrhizal fungi are symbiotic partners to **all** trees and perennials. They are never visible on the soil surface and are not photosynthetic, but they directly transport —and store—goodies for fruit trees and berry plants. In turn, they receive photosynthetic sugars from their plant partners. Lignin-rich mulches boost mycorrhizal activity directly and build soil humus. “Humus” in forest or garden—the sticky, clumpy, binding nature of good soil—results from the seasonal growth and senescence of mycorrhizal fungi (see: glomalin).*

Ramial Chipped Wood as Compost and Mulch

The French term “ramial” refers to small stems, as the early research on wood chip compost was completed in Quebec. ALL small-stem **deciduous** materials are good, directly enriching the mycorrhizal community (provided that they are not diseased). **Clip, snip, clip—pruned branches need not go far.** A wood chipper gets to the project much faster, creating vastly more surface area so that mycorrhizae can start feasting right away.

Ramial chipped wood (**RCW**) from stems under about 2.5-inches in diameter are loaded with goodies and have an admirable Carbon:Nitrogen ratio ranging from around 30:1 to 40:1. Compost it (best) or top-mulch directly (A-OK). When RCW is simply piled on the ground, white-rot mycorrhizae will get right with it. Irrespective of what’s available, mulch! Top-dressing annually under the dripline and beyond. Jump-start what the late Michael Phillips calls the “fungal duff,” so crucial to the holistic cultivation of fruit tree and berries.



Jump-Starting the Fungal Duff: the cardboard blocks grasses and buttercup and RCW establishes a mycorrhizal-dominant fungal duff community at the surface that feeds fruit trees for years. Amend annually.

Sources: 1) *Mycorrhizal Planet*. Author Michael Phillips--Pages 72 – 75. Chelsea Green Pub.; 2) *Fungal Duff Management*, with Michael Phillips—pre-recorded program #6 @ cvorchardproject.org/resources