

To Amend, or Not to Amend?

By Rebecca Miller Cripps

We all “know” that to help our plants grow we need to amend poor soil, right? Well, maybe not... In a recent article from the University of California Agriculture and Natural Resources (UCANR) Green Blog, <https://ucanr.edu/blogs/green/>, author Jeannette Warnert quotes UC advisors who recommend against it. So, do we amend soil when planting or do we not? As we were taught during Master Gardener training classes, the process of gardening is rarely straightforward and the answer is often “it depends.” That is the case with soil amendments.

According to the newly updated (March 2021) UC publication, “Organic Amendments for Landscape Soils,” amending is the act of incorporating (digging, rototilling) materials into the top several inches of native soil to correct soil deficiencies and to “modify soil in the zone where roots will grow” (<https://anrcatalog.ucanr.edu/pdf/8711.pdf>). Mulches, on the other hand, are materials applied to the surface of the soil and left there (not incorporated).

DON'T AMEND SINGLE PLANTING HOLES. Citing research done from the early 1990s to 2016, UC is specifically referring to the practice of amending SINGLE holes dug to plant a single tree, shrub or vine. Research has not demonstrated any benefit to the perennial whose soil is amended. In fact, native soils provide enough nutrients to support sufficient perennial growth.

The reasons for lack of benefit including the following: Perennial roots do not remain in their planting hole for long, so any benefit is short-term at best. And, in fact, amended soil in the planting hole creates a “pot effect” that causes stress to the roots that are trying to adapt to more than one kind of soil. If done incorrectly, single-hole amending can cause harm to plants.

Amending requires disturbing the soil. Microscopic soil organisms, such as beneficial nematodes, are sensitive to disturbance. Breaking up the soil structure can kill sensitive organisms and disrupt the entire soil food web. And soil structure that has been destroyed can take years to rebuild!

Woody materials—redwood compost, wood chips, municipally-ground yard waste—incorporated into the soil can actually tie up nitrogen (as microscopic organisms try to digest all that carbon) making it unavailable for perennials and causing your newly-planted shrub or tree to be malnourished. In addition, municipal yard waste may contain herbicides applied by other property owners, weed seeds from someone else's yard, or plastic or trash.

AMEND ENTIRE ANNUAL BEDS. Is there ever a time when amending soils is appropriate? According to UC Advisors, amendments can be beneficial for an entire bed of annual plants—those fast-growing, high-producing flowers and vegetables that flourish, set seed and fruit, and then die in one season. The other situation when amendments may help is when the soil is mostly sandy (not a common occurrence in the Mother Lode).

If you do decide to amend your entire annual bed, apply a three-inch layer of good quality amendment (see the chart in “Organic Amendments of Landscape Soils” (<https://anrcatalog.ucanr.edu/pdf/8711.pdf>)) and work it in to a depth of six inches. This creates a

50/50 mix of amendment and native soil. Six inches is also the approximate depth that a rototiller will work.

MULCHES ARE YOUR GARDEN'S FRIENDS. If you are planting a single tree or shrub, you now have “official” UC permission to dispense with all that lugging of heavy amendment bags, shoveling and mixing, and backfilling with amended soil. However, a layer of organic mulch—including wood chips or shredded woody cuttings—is highly beneficial. The layer of material reduces weed growth; helps reduce moisture evaporation; and is slowly, bite by microscopic bite, carried into the soil as it is needed for food by the microscopic carbon-devourers below the surface.

THE TAKE-AWAY: For a simple rule of thumb regarding soil amendments, try the following. If you're planting a single perennial in a single hole, don't bother amending. Annual beds can be amended in a ratio of half amendment, half native soil. And the easiest way to avoid doing damage to that delicate soil web is to put your amendment material on the surface of the soil and leave it alone. Happy gardening!

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*UCCE Central Sierra Master Gardeners can answer home gardening questions. Call 209-533-5912 in Tuolumne County, 209-754-2880 in Calaveras County or fill out our easy to use problem questionnaire: <http://ucanr.edu/survey/survey.cfm?surveynumber=7269>
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