

Mulching Herbs, Vegetables and Fruit Trees in the Florida-Friendly Edible Landscape¹

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Introduction

Mulching is the practice of spreading material around the base of a plant to protect the plant, conserving moisture or suppressing weeds. Applying mulch is Florida-Friendly Landscaping™ Principle #4. This publication serves as a guide for homeowners and professionals to reference best practices on mulching and discusses mulch sources, application techniques, and management practices. It will clarify the mulch needs of fruit trees, shrubs, herbs, and vegetables to promote plant health. This information builds on the *Edible Landscaping Using the Nine Florida-Friendly Landscaping™ Principles* publication, <https://edis.ifas.ufl.edu/publication/ep594>, specifically building on recycling yard waste. For more info, see *Recycling Organic Materials to Improve Your Florida-Friendly Edible Landscape*: <https://edis.ifas.ufl.edu/publication/EP599>.

What is mulch?

Mulch is a layer of material applied to the surface of soil (Figure 1). Within that broad category there are an array of various materials to choose from. Mulch can be categorized as either organic or inorganic. Organic mulch is derived from living matter, is made of carbon and comes from renewable, biotic (living) resources. It includes wood chips, leaves, hay, and straw, as well as other yard waste such as cut branches and twigs or grass clippings. Leaf mulch is made

up of whole or ground-up leaves. You can use any leaves from your yard or neighborhood (Figure 2). Pine straw/needles are sustainable and can be found at most local nurseries. Inorganic mulch is not made of living matter and is abiotic (nonliving). Examples include rocks, gravel, and crushed shell, or manufactured materials like rubber, artificial turf, or weed barrier. These inorganic mulches do not break down, can heat up the landscape and do not provide nutrition back to the soil like organic mulches do. Additionally, crushed shell, gravel and rocks do not prevent weeds, and they reflect heat, which prevents soil moisture loss. Recycled tires and rubber mulch should be avoided (Table 1) because chemicals are often leached into local water sources, float, and tend to wash away and end up in our waterways (Edil 2008).

Organic and inorganic mulch have their role; however, inorganic mulch does not break down or decompose into organic matter that enhances soil quality. There are a few places where rocks are appropriate. For example, rocks belong in places like under a gutter, around a pool, or in landscapes as accents and on footpaths. Rocks and pavers can be used around a landscape bed to delineate it from the rest of the landscape, but the Florida-Friendly Landscaping™ program always recommends an organic-based mulch for herbs, vegetables, shrubs, and fruit trees.

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Figure 1. Vegetable gardens can be mulched with 2"–3" of straw.
Credits: Tia Silvasy, UF/IFAS



Figure 2. Fruit trees such as a loquat tree (left) and star fruit (right) are mulched with 2"–3" of oak leaves.
Credits: Rachel Gutner, UF/IFAS (left); Tina McIntyre, UF/IFAS (right)

Mulch Application and Management

When using mulch in established landscapes, apply to a depth of 2–3 inches around the plant. After the mulch settles fully, the frequency of replenishment varies depending on the kind of mulch selected and environmental factors. When mulching seedlings or small vegetables or herbs, however, apply mulch at a depth of 1 inch or less, so as not to cause growth problems for the plants. Do not apply mulch against the stem or trunk of the plant; this is called volcano mulching. Volcano mulching damages plants because the excess moisture can cause rot around the trunk and insect infestations. The base of the plant should be left bare so that the roots and trunk can still breathe. For large plants and trees, leave approximately one foot, and for smaller plants leave a couple inches.

Digging out old mulch is not necessary, because it will break down in the soil. Do not use wood mulch against your house. Termites can consume mulch, but they typically have other woods they prefer over mulch. However, UF/IFAS research (Oi and Wheeler 2019) indicates that termites may be present in mulched areas more frequently than in areas where mulch is nonexistent. We recommend gravel around the perimeter of the home. Other practices to help deter termites include leaving space between plants and walls and applying no more than 1 inch of water when you irrigate and removing any stumps from dead trees.

Some gardeners think fungus, mushrooms and mycorrhizae are harming their turfgrass, trees or landscape. Fungal growth on plant leaves is usually not good, but ground fungus, which includes mushrooms and mycorrhizae, is a natural part of the environment and symbiotic or beneficial to trees. Fungi are decomposers, so they naturally break down wood or other organic material in the soil. If you are concerned about fungus, reduce or stop irrigation. Water and rain encourage fungal growth, so if you reduce watering, fungal growth should decline.

Mulching for Specific Needs of Edible Species

There are a wide variety of edible species, and general mulching principles can apply, but choosing the right mulch for your food crops can improve plant health. Some trees that require good drainage can be inhibited by a thick layer of mulch, and therefore a coarser mulch that will not rapidly break down should be selected. Species that need good drainage should not be mulched with finely ground mulches, because they can inhibit good drainage in our sandy soils. For example, blueberries are often mulched with pine bark because they like well-drained acidic conditions. Plants like citrus trees have shallow roots and are susceptible to root rot and damage due to excessive wetness, so they require an open base around their trunk. For these trees and shrubs, select an organic mulch, apply at a depth no deeper than three inches, and leave at least one foot from the base of the tree. Pineapples, avocados, and citrus trees benefit from good drainage, so this practice is recommended for those species (Figure 3).

Conversely, bananas should be mulched 2–6 inches deep using their leaves or wood chips because they require significant moisture (Figure 4). Lighter mulches like leaves, straw, dried grass clippings, or compost are better for saplings and small plants like herbs and vegetables (Figure 5, 6, 7).



Figure 3. Pineapple plants with oak leaf mulch.
Credits: Tina McIntyre, UF/IFAS



Figure 5. A large cabbage plant is mulched with hay, leaving 3–5 inches of space around the base of the plant.
Credits: Tia Silvasy, UF/IFAS



Figure 4. Banana trunks and leaves are a good source of organic matter and readily decompose, so they can be used for mulch on banana trees (self-mulching).
Credits: Tia Silvasy, UF/IFAS

Benefits of Mulch

Benefits of mulch for your edible plants:

- Conserves and retains soil moisture; reduces evaporation
- Buffers soil temperatures
- Inhibits weed growth
- Protects plant roots
- Adds uniformity and a beautiful aesthetic
- Reduces soil erosion



Figure 6. A raised bed of mixed vegetables is covered with a thin layer of pine straw.
Credits: Rachel Mathes, UF/IFAS

- Adds organic material to the soil
- Provides an increased area for root growth
- Protects plants from lawnmowers and weed eaters
- Enhances microbiome



Figure 7. Rows of mounded strawberry plants are mulched with a thin layer of pine straw.
Credits: Tina McIntyre, UF/IFAS



Figure 8. Oak leaves can be used as a mulch for vegetable and herb seedlings.
Credits: Tia Silvasy, UF/IFAS

Types of Mulch

Leaves are an excellent mulch to use in your landscape (Figure 8). They naturally fall from trees and are a renewable, sustainable resource that can be used for mulching garden and landscape beds. Leaves that fall in your neighborhood are sourced locally, so you can ensure that you are not introducing new pests or diseases where you live. Fallen leaves create a “self-mulching” area under the tree. If the amount of fallen leaves is excessive, gather some and spread them onto garden and landscape beds. Leaves can be placed into a trash can and broken down with a string trimmer or by hand. If the look of leaves is bothersome or concern exists that they will blow around the landscape again, apply the leaves to the bed and add a small layer of wood mulch over the top so they will be weighted down and integrated into the soil. Types of wood mulch are displayed in Figure 9. For more information on recycling yard waste to use as mulch, read *The Florida Yards & Neighborhoods Handbook*, “#7: Recycle”: https://ffl.ifas.ufl.edu/media/fflifasufledu/docs/FYN_Handbook_2015_web.pdf#page=39.

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Figure 9. A display of a few types of mulch in the UF/IFAS Pasco County Extension office.
Credits: Frank Galdo, UF/IFAS

Table 1. This table describes types of mulch and if they are recommended for Florida-Friendly Landscaping™.

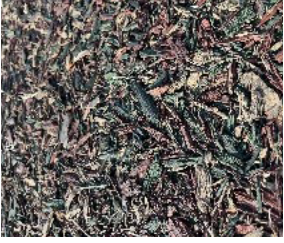




Photo	Type of Mulch	Recommended?	Why?
Credit: UF/IFAS FFL Program 	Rubber mulch and weed cloth	No	Rubber mulch and weed cloth do not break down and can heat up the landscape. They do not provide nutrition back to the soil. Rubber mulch can also be costly, as well as possibly harm plants due to toxic leachate.
Credit: Tiare Silvasy, UF/IFAS 	Crushed shell Gravel Rocks	No	Crushed shell, gravel, and rocks reflect heat, do not prevent soil moisture loss or effectively prevent weeds, and can affect soil pH.
Credit: UF/IFAS FFL Program 	Cypress mulch	No	Cypress mulch is not recommended because it may not be harvested sustainably. Cypress stands are an essential Florida wetland and contribute to flood mitigation; harvesting for mulch contributes to the loss of these trees and stabilization. These trees are habitats for native wildlife and birds.
Credit: Tiare Silvasy, UF/IFAS 	Pine bark	Yes	Pine bark is the by-product of the paper industry. It retains color in the first year. Larger pieces tend to float away, so do not use on a sloped area. This type of mulch is available in multiple sizes from large to mini nuggets. Mini pine bark is good for vegetable garden beds and can be tilled into the soil.
Credit: Tiare Silvasy, UF/IFAS 	Pine straw	Yes	Pine straw, or pine needles, settle quickly and are a very sustainable and renewable option. Pine needles are known to “knit,” which is good for sloped and erosion-prone areas, or mounded vegetables.

Photo	Type of Mulch	Recommended?	Why?
Credit: Tiare Silvasy, UF/IFAS 	Hay Straw	Yes	Hay or straw is dried grass and a good choice for herbs and vegetables. Available in feed stores.
Credit: Frank Galdo, UF/IFAS 	Melaleuca	Yes	Melaleuca mulch has a light, reddish-brown color and average settling in the first year. This species is aromatic in nature. Melaleuca is a category 1 invasive but is heat treated to avoid seed spread. Selecting this mulch promotes wetland restoration by eradicating invasive species from our ecosystem.
Credit: Tiare Silvasy, UF/IFAS 	Utility mulch	Yes	Utility mulch is available in many areas where county or city solid waste departments allow drop-off of landscape materials. Contact your local solid waste department for details. Be sure to ask if invasive species are avoided; if not, you might be inviting problematic plants.
Credit: Tina McIntyre, UF/IFAS 	Leaves	Yes	Leaves are an excellent source of free mulch. They create "self-mulching" areas under trees and can be collected and applied on other parts of your garden and landscape.
Credit: Tiare Silvasy, UF/IFAS 	Compost	Yes	Compost can be used as mulch, but a thin layer of wood, straw or leaf mulch should be applied over any compost applied to the existing soil. Soil bacteria may begin to decompose the wood mulch and take nutrients from the soil to decompose the mulch, creating the opposite of the desired effect.
Credit: UF/IFAS FFL Program 	Green (fresh) grass clippings	Maybe	Grass clippings can mat down and prevent oxygenation of the soil. It is best to compost them prior to applying to the edible landscape. Be sure to avoid grass clippings as mulch if your lawn was recently treated with herbicides or other chemicals.

References

- Bauer, S., and J. Weisenhorn. 2018. "What to Do with Lawn Clippings." UMN Extension. <https://extension.umn.edu/lawncare/what-do-lawn-clippings>
- Crane, J. H., and C. F. Balerdi. 2019. "Banana Growing in the Florida Home Landscape." *EDIS* 2006 (15). <https://doi.org/10.32473/edis-mg040-2005>
- Freeman, T., T. Silvasy, L. Barber, T. Wichman, E. Momol, T. McIntyre, J. Rivas, and J. Marvin. 2021. "Recycling Organic Materials to Improve Your Florida-Friendly Edible Landscape." *EDIS* 2021 (1). <https://doi.org/10.32473/edis-ep599-2021>
- Liu, G. D., E. H. Simonne, K. T. Morgan, and G. J. Hochmuth. 2018. "Soil and Fertilizer Management for Vegetable Production in Florida." *EDIS* 2018 (6). <https://edis.ifas.ufl.edu/publication/cv101>
- Marble, C., and A. Koeser. 2022. "Improving Weed Control in Landscape Planting Beds." *EDIS* 2015 (6):6. <https://doi.org/10.32473/edis-ep523-2015>
- McLaughlin, J., and C. Yurgalevitch. n.d. *Mulching Practices for South Florida*. UF/IFAS Extension Miami-Dade County. <https://sfyl.ifas.ufl.edu/media/sfylifasufledu/miami-dade/documents/landscapes-amp-gardening/mulch-practices.pdf>
- Oi, F. M., and M. Wheeler. 2019. "The Facts about Termites and Mulch." *EDIS* 2006 (6). <https://doi.org/10.32473/edis-in651-2006>
- Shober, A. L., and R. Mylavaparuru. 2018. "Soil Sampling and Testing for the Home Landscape and Vegetable Garden." *EDIS* 2009 (2). <https://doi.org/10.32473/edis-ss494-2009>
- Toor, G. S., A. L. Shober, and A. J. Reisinger. 2018. "Soils and Fertilizers for Master Gardeners: Soil Organic Matter and Organic Amendments." *EDIS* 2018 (3). <https://edis.ifas.ufl.edu/publication/mg454>
- Treadwell, D. D., S. P. Brown, J. Stephens, and S. Webb. 2013. "Organic Vegetable Gardening in Florida." *EDIS* 2013 (6). <https://doi.org/10.32473/edis-hs1215-2013>
- UF/IFAS. 2021a. "Principle 7: Recycle Yard Waste." <https://ffl.ifas.ufl.edu/about-ffl/9-principles/principle-7-recycle-waste/>
- UF/IFAS. 2021b. "The 9 Principles of Florida-Friendly Landscaping™." Retrieved from <https://ffl.ifas.ufl.edu/about-ffl/9-principles/>
- Zhang, S., Y. Wang, L. Sun, C. Qiu, Y. Ding, H. Gu, L. Wang, Z. Wang, and Z. Ding. 2020. "Organic Mulching Positively Regulates the Soil Microbial Communities and Ecosystem Functions in Tea Plantation." *BMC Microbiology* 20:103. <https://doi.org/10.1186/s12866-020-01794-8>