

Mulch

Define

Benefits

Comparing Mulches

Criteria

Organic

Inorganic

Alternatives

Using Mulches in
the Landscape

Applying

Maintaining

Landscape Mulches

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What is mulch?

- Mulch is a layer of material placed on the soil surface



Types of Mulch

- **Organic materials**
 - bark, wood chips, leaves, pine needles, grass clippings
- **Inorganic materials**
 - gravel, pebbles, polyethylene film or woven ground cloth.



Benefits of Mulch

Overview:

- Improves Soil
- Eases Maintenance
- Improves Plant Performance
- Adds beauty to the Landscape
- Suppresses weeds



Mulch Improves Soil

- Organic materials improve soil structure and fertility
- Buffers soil temperature
- Prevents soil compaction
- Minimizes erosion



Mulch helps prevent stormwater runoff.



Mulch Eases Maintenance

- Improves water infiltration
- Prevents water loss by evaporation
- Inhibits weed seed germination
- Suppresses weed growth



Improves Plant Performance

- Additional roots form in the mulch layer, yielding more roots than an unmulched plant

Spread mulch around the base of *newly* planted trees and shrubs to help plants establish.



Adds Beauty to the Landscape

- Uniformity
- Contrast
- Variety of colors
- Interesting textures
- Gives landscape a finished appearance





Allelopathy

Chemicals that inhibit plant growth

- *Fresh* mulches have these chemical properties
- Eucalyptus, Melaleuca and Pine straw may exhibit long term allelopathic properties
- Both positive and negative effects
 - Can inhibit weed growth
 - Can inhibit seed germination and growth of young bedding plants

Comparing Mulches

Overview:

- Criteria for Selection
- Common Landscape Mulches
- Alternative Mulch Materials
- Quality Assurance





Criteria For Selecting A Mulch

- Sources, availability, and price
- Color, scent, and texture
- Durability
- Decomposition rates
- Susceptibility to termites
- Changes to soil chemistry

Cypress Mulch

- Mostly harvested from natural areas, unsustainably
 - Purchase only from reputable sources, who do not harvest from the wild
- Pleasant odor
- Maintains color
- Slow decomposition
- Eaten by termites
- Low in nutrients



When dry, cypress mulch repels water, making it difficult to rewet.

Pine Bark Mulch

- By-Product of the timber industry
 - Readily available
- Retains color
- Slow decomposition
- Eaten by termites
- Low nutrient content
- Slightly acidic



Melaleuca Mulch

- Harvested from invasive plant stands
- Retains color
- Slow decomposition
- Not attractive to termites
- Low in nutrients
- Allelopathic properties



Eucalyptus Mulch

- Harvested from plantations
- Good color retention
- Low durability
- Settles, decreasing in volume
- Low in nutrients
- Good allelopathic properties



Pine Straw

- By-Product of the timber industry
 - Readily available
- Poor color retention
- Rapid decomposition
- High in nutrients
- Lowers soil pH
- Highest allelopathic effect





Comparing Mulches

Summary:

- Pine straw has the most effect on soil pH, followed by pine bark, then cypress
- Termites eat all mulches except Melaleuca
- Cypress, Pine bark and Melaleuca demonstrated the best color retention

Alternative Mulches

Shells can be used as mulch or porous material for walks and driveways

- Raise soil pH
- Dissolve over time



Dyed Mulch

- Typically made from recycled pallets
- Buy from a reputable source to ensure:
 - Dyes are nontoxic, such as soybean-based inks
 - Wood is not pressure treated



Rubber Mulch

- Made from recycled tires
- Available in a variety of colors
- Do not decompose
- Do not add organic matter to the soil



Gravel, Pebbles, Crushed Stone

- Available in a variety of colors
- Permanent
- Fireproof
- Can increase soil moisture
- Lawn mowers can pick up and throw the stones
- Reflect solar radiation, generating heat



Recycled Yard Waste

- Did you know? Florida law prohibits disposal of yard waste in lined landfills
- Retain the nutrients in your landscape
- Save money on fertilizer, mulch, and waste disposal

Many municipalities offer utility mulch, free! Be aware of variable quality and consistency.



Grass Clippings

- Grass clippings can be left on the lawn to reclaim nitrogen equivalent to one fertilizer application per year!
- Apply grass clippings as mulch sparingly...
 - Thick layer can inhibit infiltration of water
 - Easily transported via stormwater runoff
 - Rapid decomposition requires frequent replenishment





Leaves can remain
under trees for a
“self mulching”
area.

Woody Materials

- Shred palm fronds, twigs & small branches
- When using woody (carbon-rich) materials as mulch, it is important to maintain soil fertility...





Fertilize Appropriately

- Microorganisms use nitrogen to digest the carbon in woody materials
 - This N will not be available to plants until microbes complete the decomposition
 - “Nitrogen robbing” occurs near tree stumps too
- Select fertilizers with 30% or more nitrogen in slow release form
- Or, apply well-rotted compost, created from recycled kitchen and yard wastes ...

Compost

- Finished compost improves soil structure and fertility. Use as:
 - Mulch
 - Amend soil in plant beds



A layer of compost underneath mulch will help to reduce the effects of nitrogen robbing.



Ensuring Quality

- Avoid using recycled materials that contain pesticide residues
- Mulch should be free from weeds, seeds, ants, and other pests. This is accomplished by:
 - Partially composting - pile heats and inactivates most weed seeds
 - Steam pasteurization
 - Sterilization

Using Mulch in the Landscape





- Spread mulch in borders, beds and around the base of landscape plants and trees

- Save money on more expensive mulches by layering 2" compost under 1" premium mulch

Mulching Tips

- Mulch driveways and walkways to direct traffic and avoid soil compaction in planted areas
- Mulch can replace turf or ground covers in shady, wet or difficult to mow areas





When properly applied, mulch can help prevent common problems in the landscape such as mechanical injuries.

How Much?

- Maintain 3-4 inches of mulch
BUT...
- Allow 1-2 inches of space between mulch and plant base
 - Contact with the plant can result in wood rot due to fungal and bacterial pathogens
 - Citrus trees are particularly sensitive to this





Calculating Volume

- Measure the square footage of the area (Length x Width)
- Multiply area by .25 (Depth) to determine cubic feet of mulch needed (to apply a 3" layer of mulch)
- Divide cubic feet needed by cubic feet of bags to determine how many bags you need to buy



Further Reading

[Http://edis.ifas.ufl.edu](http://edis.ifas.ufl.edu)

ENH 103 Mulches for the Landscape

ENH 127 Pests Associated with
Mulch and Moisture

FOR 80 Landscape Mulches: What Are
The Choices in Florida?



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