

# Mulch/Sheet Composting/Sheet Mulching Guide

The sheet compost/mulch system applies layers over soil, with woody mulch on top.

1. **The soil must be wet before you start –all layers must be wet**, or the layers will not bond with the soil, and you will not get the desired results.
2. **If the area has a few weeds or thick grass, cut down or mow grass to flatten weeds and leave in place.** (Remove the cut grass if it has a lot of weed seeds.)
3. **Apply Weed Barrier – Newspaper and Cardboard (not weed cloth or landscape cloth)**
  - **Apply a layer of wet whole newspapers or newspaper sections** **Soak in water until limp**, in 5-gallon or larger bucket and apply 1” thick over lawn/soil. Overlap pieces by 3”-4”. Layer the newspaper over the whole area. **Keep wet.**
  - **Apply a layer of soaked cardboard on top of the newspapers**, following the same overlapping method – overlap by 4”-6”. Soak in large containers until limp. If use a roll of corrugated cardboard, cut to fit into an oversized garbage can for soaking. **Keep wet.**
  - **Optional: Apply 1/2 to one inch of compost or worm castings on top of the newspaper/cardboard layer**, or you may apply it below these layers, especially if the soil was unhealthy to start with. Compost can provide biology/microorganisms or soil life to speed up the composting of the layers. **Wet this layer.**
  - **Apply 4”-6” of Wood Chip Mulch, Shredded Wood Chip Mulch, or Arborist Wood Chip Mulch** (arborist wood chips include leaves and varying sizes of material, which can enhance the decomposition of the layers) **Wet this layer.**
  - **Keep the whole area moist, so the layers do not separate**, which interferes with the sheet mulching system. Check that the top layer does not dry out.

## IMPORTANT INFORMATION:

### Newspaper and Cardboard (biodegradable)

**Soak newspapers in buckets and cardboard in large containers until it becomes limp.**

**Do NOT apply layers dry** and believe that you can wet them enough with a hose – they have to be soaked.

**Do NOT use** the shiny ad part of the newspaper, but the colored funnies, etc. are fine. Remove tape and staples from cardboard.

**If the weeds are invasive/hard to remove varieties**, the cardboard on top of the newspaper is especially helpful.

### Why Saturate the Soil?

The reason for saturating the soil, then the newspaper and cardboard, as well as the compost and mulch is **to make one contiguous layer of material**, so the microorganisms can begin to breakdown the weeds adding nutrients to the soil.

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If for example, the newspapers were not presoaked before placing onto the soil, then this could cause **air pockets which would allow the weeds to continue to grow instead of breaking down**. Soaking all ingredients is the key to developing a healthy new landscape area. This **one contiguous layer of material** allows your plants to grow deep roots and supports healthy Soil Life, which of course makes for **healthy plants**.

**The top mulch layer** will need to be replenished in 6-12 months, depending on materials used, etc.

**In the hot Central Valley**, putting down cardboard without the newspaper layer first will usually result in it (the cardboard) not bonding with the soil due to our extreme temperatures.

**In wet, humid climates**, if the area is mostly weed free the newspaper layer can be skipped.

## When do I install Irrigation?

Install the irrigation system “infrastructure” **before applying sheet mulching**. This means to install in-ground pipes and uplines, that the low-volume drip irrigation system will later be connected to when plants are being installed.

## Planting

Push aside the **mulch and cut holes or openings in the newspaper/cardboard layers** to install plants in the soil. A small amount of compost may need to be added around rootballs if the compost layer was not included before the top woody mulch layer. After planting, replace newspaper/cardboard layers and spread mulch back around new plants, keeping it a few inches away from stems/trunks. Smaller plants can often be planted right into the top compost/mulch layer.

## Why should mulch never be applied to dry ground?

Often, dry mulch can become an impervious barrier and shed water instead of allowing it to soak into the soil, resulting in the mulch not providing its wonderful benefits to the layers below.

## Why shouldn't mulch be dug into the soil?

Woody materials used as mulch need to be left on the soil surface as Mother Nature intended. There it can insulate the soil from temperature and weather extremes, reduces erosion and soil compaction, suppresses weeds, reduces evaporation and retains soil moisture. Slowly microorganisms will break down that woody material adding nutrients to the soil.

When woody materials (items with a high carbon content) are mixed into the soil the beneficial soil biology (soil life) will do one of their major jobs and responsibilities, breaking down woody organic matter. They are very efficient at their job, but to do their work of breaking down woody materials they require a lot of nitrogen. They will work diligently and use up all of the available nitrogen in the soil. The result is that there will not be any nitrogen available for the plants. The plants will suffer from nitrogen deficiencies until that woody material is almost completely broken down. Without nitrogen, plants will

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turn yellow and become weak and susceptible to pests and diseases. Adding nitrogen (or iron) will not help. The cause of the problem was the incorporation of woody materials into the soil. Don't do it!

## Why add compost/worm casings?

If you want to **add active living material on top** of your existing soil or on top the newspaper/cardboard layer, add a layer (about 1/2 to 1 inch) of **compost or worm castings**. Do not dig it into the soil. A high quality compost or worm castings can help **change the biology of the soil** and in time you should have **healthy soil** that will support and nurture your plants. Even **hard compacted soil can be improved** over time, **as long as the next step, which is to add woody mulch is also followed.**

## Why not use weed barrier cloth instead of paper/cardboard?

Weed barrier cloth restricts water, air and nutrients from entering the soil. These barriers also make fertilizing and irrigation difficult. When airflow is restricted, conditions that are favorable to plant pests and diseases are created, discourage healthy soil biology (soil life) that provides nutrients and moisture to plants and helps them to be pest and disease resistant.

Synthetic weed cloth also makes it difficult, if not impossible to check the soil for moisture, the health of the root system and pests and diseases, resulting in improper irrigation and plant health problems, making management more difficult. Synthetic weed cloth will start to break down into small pieces after a few years that will never totally decompose.

## What is Mulch?

Not all compost has to be made in a bin or even by piling the makings up somewhere. Leaves are the major source of mulch used by Mother Nature. Why do you think they call them leaves? Because you are supposed to "leave: them where they fall as mulch as intended by Mother Nature. Those green things on our plants are not called "till in" but are called leaves for a reason.

When woody materials are left on the soil surface as mulch, the microbes living in that mulch will slowly break that material down. By the time that woody material enters the soil, it will be broken down. Soil microbes will not need vast quantities of nitrogen, leaving this important nutrient available for your plants so they can remain green and healthy. This is, after all, how Mother Nature works, mostly because she is unable to gather waste into neat piles without human help.

## Sheet Composting or Sheet Mulching

Some of the best and most nutritious composts are those made right where they are going to be used by the method known as sheet composting or sheet mulching -- the use of biodegradable newspaper and cardboard with an organic mulch on top. It creates a barrier to prevent the most stubborn weeds from making it through that first critical year. It will slowly decompose, adding nutrients to the soil and feeding the soil biology that nurtures the plants. After the first year adding a little more mulch will keep those future weeds under control.

## What Does Mulch Do for the Soil and Environment?

### 16 important benefits/reasons for use:

- Enhances soil structure and overall health
- Increases water infiltration into the soil
- Improves nutrient and water retention
- Saves water: Saves up to 73% of water loss through evaporation
- Suppresses weed growth
- Suppresses pathogens and pests
- Prevents soil compaction
- Provides a source of organic matter for the microorganisms/soil biology - the Soil Life
- Increases healthy Soil Life: Soil microbial activity and worms
- Improves plant vigor and health, which improves resistance to pests and diseases
- Turns the soil into a living filter, which removes pollutants from water, protecting our waterways
- Helps moderate and maintain balanced soil temperatures: Cooler in summer and helps protect from freezes
- Controls erosion
- Reduces need for pesticides, herbicides, and fertilizers
- Reduces waste: Composting and mulching green waste results in less being transported to the landfill, which reduces greenhouse gases and air pollution.
- Reduces labor and maintenance costs: Weeds are composted in place and the repeated use of chemicals is not needed.