



## DIRT WORKS WYOMING

DR. CAITLIN YOUNGQUIST

# WHAT MAKES QUALITY COMPOST?

Not all compost is created equal - so how can you tell if what you have will help or harm the soil? There are a few simple ways to assess compost quality based on how it smells and looks. Beyond sight and smell, laboratory tests and bioassays are helpful to assess for heavy metals or persistent herbicides.

## SIGNS OF QUALITY COMPOST

Quality compost is **mature** and no longer warm to the touch, or steaming when you dig into the pile. If the compost is still actively decomposing it likely contains phytotoxic [toxic to plants] organic acids that will harm plants or seeds. If you are concerned about immature compost, let it sit and cure until it cools (and smells better), or spread it on the soil a few weeks before planting to let the soil microbes start to work and break down any phytotoxic compounds.

Quality compost also **smells good**. If the compost smells “earthy” and mild it is likely mature and ready to use. If it smells like ammonia, it needs more time to mature. Immature compost is often called “hot” even though it might not be hot in terms of temperature. After the active phase of decomposition is over, the compost still needs to go through a curing phase. During this time, the temperature is no longer elevated, different microbes move in to do the work, and ammonia is converted to nitrate.

The ammonia in immature compost can cause the plants to wilt or look scorched on the edges of leaves - leading to the expression that “hot” compost can “burn” plants.

Quality compost should be **uniform and dark in color**. The raw materials (food scraps, manure, leaves, etc.) should be unrecognizable. The dark color indicates that the raw materials have been thoroughly broken down and *humified* [converted to humus] by the microbes in the compost pile.

## WHAT IS ORGANIC COMPOST?

All compost is organic because it comes from living organisms (plants and animals). Compost cannot be Certified Organic by the USDA. Farms that grow Certified Organic produce can use compost that meets certain quality and process standards and does not contain biosolids. There is no requirement that the compost is made from Certified Organic crops or manure from Certified Organic livestock.



The Organic Materials Review Institute (OMRI) provides an independent review of products that are intended for use in USDA Certified Organic production and processing. In order to be listed with OMRI, compost manufacturers must: 1) declare the composting method and the type and source of feedstocks; 2) submit compost logs that document daily temperature readings and frequency of turnings; 3) provide lab analyses that report certain heavy metal and pathogen levels; and 4) describe how foreign contaminants are removed.

## THIRD-PARTY CERTIFICATION

The US Composting Council provides independent analysis of compost labs through their Seal of Testing Assurance program. Compost manufacturers participating in the STA Certified Compost program are held to high standards for using quality labs, testing frequently, and disclosing specific information about their product.

At Dirt Works we choose to participate in the USCC STA program to ensure that the product we share with our customers is high quality, stable, and safe.



STA Certified™  
COMPOST  
A program of the US Composting Council

# CHOOSING QUALITY COMPOST

## SALTS IN COMPOST AND MANURE

You may have been told that compost and manure are high in salts and will “burn” your plants. Salts are actually plant nutrients and essential for life in the soil. The problem is that when they are too concentrated in the compost, or the soil, they cause plant stress.

Excess salts cause a condition called physiological drought, and scorching of the leaf margins on sensitive plants (leading to the term “burning”). Compost that is higher in nutrients (ie. higher in salts) is best used as a soil amendment and not for direct planting or as part of a seed starting mix.

## PERSISTENT HERBICIDES

It is uncommon to get compost that is contaminated with persistent herbicides. However, on the rare occasion this does happen, the results can be devastating!

Most herbicides break down relatively quickly in compost (within a few weeks). However, there are a few that will persist in soil and compost for several years.

The active ingredients in these persistent herbicides mimic natural plant growth hormones that control plant cell growth and elongation. They will only affect broadleaf plants (vegetables) and not grasses (corn or lawns). Plants that have been exposed to low rates of these chemicals will have mutated leaves. Plants exposed to higher rates will die. You can learn more about these persistent herbicides [here](#).

If you are concerned that your compost is contaminated with herbicides the easiest way to test it is by growing sensitive plants in a combination of compost and soil to see how they look. Peas and beans are very sensitive to herbicides, germinate relatively quickly, and are easy to handle. For detailed instructions on conducting your own bioassay [click here](#).

Here at Dirt Works Wyoming we test our compost and garden soil for nutrients, maturity, and persistent herbicides. Due to the seasonality of the compost business and the variety of raw materials we use, there is some variation between batches and seasons. We do test each batch before it goes out.

Our compost is made from cattle and horse manure, leftover cattle feed, and beet chips from the local sugar factory.

## SALT IN YOUR SOIL?

Salts are positive and negative ions that dissociate in water. With the exception of sodium, all of these ions are also plant nutrients.

For example  $MgSO_4$  (Epsom salts) becomes  $Mg^{++}$  and  $SO_4^{--}$  in water.  $KNO_3$  (potassium nitrate) becomes  $K^+$  and  $NO_3^-$ .

For more information about saline soils [click here](#).

## EXAMPLES OF PLANTS EFFECTED BY PERSISTENT HERBICIDES



Squash with malformed, cupped leaves



Notice the “bulbs” on the leaf of this bean plant



The leaves on this tomato are stunted and misshapen



Located in  
Worland, WY  
307-622-4284  
[dirtworkswy.com](http://dirtworkswy.com)

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