[Composting Toilet]

Composting toilets are, among other things, a great way to conserve water; lots of water. They are also known as waterless toilets and biological toilets. It is estimated that a typical America family of four flushes 100,000 (one hundred thousand) liters of water down the toilet in one year. That is ONLY the water flushed down the toilet. On top of that comes showering, bathing, washing machines, dish washers, etc. All of these things that we have grown accustomed to are wildly inefficient and wasteful. Enter the composting toilet.

Composting toilets have been around for thousands of years (what do you think humans did before the flush toilet?) and they are enormously efficient and useful. You may be surprised to learn that there are many composting toilets on the market in North America. They come in many different sizes, shapes colors, and prices. The great variety in composting toilets is to accommodate different customs, cultures and climates. There are even composting toilet models built especially for RVs, boats and cabins.

Now, I know what you are thinking, you want me to do the deed and then leave it there like a port-a-poty? Yes, that is exactly what you do. You should know that, if set up properly, composting toilets do not smell, are very clean and very hygienic. It will take a little getting used to, but we humans have knack for adapting.

Composting toilets are generally built to contain two separate chambers. The two chambers are filled separately. One chamber is used until it is full and it is the sealed and allowed to compost in peace while you use the other chamber. There are two openings in each container, one on the top for filling and one on the bottom for removal of humus (mature compost). The humus does not have an odor and it can be used immediately for your organic gardening projects. Once one of the compost toilets chambers is emptied it is ready to be filled up again.

During the composting process (aerobic decomposition) the human waste in the composting toilet is reduced to about 10% of its original volume. The reason for the large reduction in volume is water loss. Ninety percent of the water is evaporated through a venting system while microbes decompose the solid matter. The result humus (soil) rather than sewage. The humus is a stable, soil-like organic matter. Whether or not you are able to use humus in your garden depends on the laws in your state. You may have bury it or have a licensed seepage hauler remove it. In many countries the humus is used to fertilize the soil for edible crops.

The composting toilet is ideal for a family home, but it can also be used for larger applications. For example, in public buildings (such as schools) the composting toilets can be set up in large clusters to serve the high traffic.

In communities that use composting toilet systems the public must be educated and trained on the proper use of composting toilets. If they are not used properly they can cause all sorts of problems.

During the middle ages many diseases were caused by poor sanitation; the same conditions prevail even today in poor countries. So, composting toilets are given the responsibility to sanitize human excrement. They immobilize and destroy any pathogens (micro-organisms that can cause disease) and they are very good at it. The massive sewer systems in western society also deal with pathogens. However, our sewer systems waste a lot of water and they often contaminate the soil and ground water. Whereas composting toilets, when used properly, kill pathogens without the possibility of ground water and soil contamination. A composting toilet may be just what the doctor ordered.

The main components of a composting toilet:

<ul>

<li>a screened exhaust system – this minimizes release of water vapours, odors and CO2</li>

<li>a drainage system – this diverts excess liquid (leachate) away from the composting organic matter</li>

<li>a composting reactor – this is attached to one or more micro-flush or dry toilets</li>

<li>an access door – this access will facilitate the removal of the end product (humus)</li>

</ul>

There is another version of composting toilets and they are called environmentally friendly toilets, or eco-toilets. They are portable and you can take them with for camping trips, hunting trips or stash them somewhere for disaster preparedness. They are very clean and hygienic when used properly. You place a biodegradable bag inside of them and then do your deed. This bag and its contents will take about 40 days to degrade in your compost heap. This way, when you are out in the woods, you don’t have to dig a hole in the ground to relieve yourself. Toilet paper is not included, so you may still be using leaves that are unfortunate enough to be within grabbing distance.

[Worm Composting]

Worm composting, scientifically known as vermicomposting or vermiculture, is easy as Sunday morning. Not only that, but it’s fun and educational too. The theory of worm composting could not be simpler; set up a bin for your organic kitchen waste and add worms. The worms eat the waste and discharge the processed waste as castings (nutrient-rich worm excrement) which can be used to fertilize your garden.

Sadly, such simplicity is not meant to be. Theories are too often simpler than practical use of the ideas. The efficiency of your composting depends on the type of bin and you can use only specific species of worms. Further, only certain types of organic waste are good for worm composting; for example, meat is definitely not allowed.

In essence, what you are creating is a worm farm; you have a place for them to live (the composter), you feed them what they like to eat (organic kitchen waste, such as coffee grounds, egg shells and lettuce leaves), and they multiply like bunny rabbits.

The redworm is most often used for worm composting: <i>Eisenia foetida</i>(common names: manure worm, brandling, and red wiggler) and <i>Lumbricus rubellus</i>. These earthworms prefer to live in compost heaps and aged manure. Make sure that you do not use the big worms you find in soil (dew-worms) because they will probably not survive.

Since the worms multiply so quickly and your friends who have composting bins would probably be happy to supply with some worms to get started. You can also find a large piles of manure and fill a plastic bag full of manure and worms. Not sure where to find large piles of manure? Farmers, ranchers and horse stables would be great places to start your search.

Mary Applhof who wrote “Worms Eat My Garbage” says that the ideal number of worms in your compost pile depends on how much organic waste you put in the compost each day. For every pound of compost you had you should have two pounds of worms (roughly 2000 red wigglers). Should you have problems getting that many worms to start with you can reduce the amount of waste you put into the composter while your worm population increases. Once you have more worms in your composter you can ramp up your composting efforts.

What DO the composting worms eat?

<ol>

<li>vegetable and fruit peels</li>

<li>egg shells (pulverized)</li>

<li> coffee grounds and tea bags</li>

</ol>

What should I NOT put in the composter?

<ol>

<li>dairy products</li>

<li>meat</li>

<li>oily foods</li>

<li>grains</li>

</ol>

The reason you should exclude this items is because they attract rodents and flies and create unfriendly odors. To further avoid odors, when you have a load for the compost, bury it under the top layers of the compost pile. Do not just throw it on top of the pile. Every new load of organic waste to be composted should be buried in a different part of the compost pile, in bedding.

The damp bedding is where the worms live. You can easily make the bedding yourself. You can make it out of shredded cardboard and newspaper. Shredded fallen leaves, dead plants, seaweed, aged manure and sawdust are also great additions to the bedding. Do not add oak trees or magnolia trees because they are acidic and their acids may harm the worms. Make sure that the bedding is moist (about the moisture level of a wrung-out sponge) and it should be about a foot deep. Once you have bedding and the worms are thriving you can bury your compost on it.

What should I NEVER put in a compost bin?

<ol>

<li>glass</li>

<li>plastic</li>

<li>tin foil</li>

<li>other non-biodegradable materials</li>

</ol>

Placing your worm bin in the right place is easy, as long as you know what to look out for you. If you live in a climate that is mild year round and the temperature is always between 40-80 degrees Fahrenheit then you can leave the worm composting bin outside year round. Just make sure it is not in the hot sun or heavy rain. For people living in the harsher climates the composting bin can be outside during the mild months and then inside during the harsh months. A dark, warm and dry basement is ideal. If you insist on keep in the composting big outside no matter what then make sure that you have a well insulated place to put it so that the temperature doesn’t drop below 40 degrees Fahrenheit. People even have compost bins right in their kitchens, year round.

Once you have the worm castings (humus) that results from worm compost you may be at a loss over what do with it. My Aunt is heavy into gardening and I decided to do a little experiment. Last year, she wanted to plant peppers, tomatoes, green onions, and raspberries. So, with her help I split the seeds she wanted to plant into two equal batches (test groups). Both batches had the same amounts of each type of seed. We used seed starter mix from the store on the first group of seeds and for the second set we used seed starter mix with 20% (of weight) worm castings. After a week and half there was a noticeable difference in the amount of seeds that had germinated and in their vitality (they looked more alive). I continued to observe the two groups of seedlings and found that the seedlings with the worm castings continued to grow bigger and stronger than the seedlings without. Once it became time to harvest, the plants that had access to the worm castings provided more vegetables (or fruits) and the colors were much more vibrant. And the taste was amazing.

I have done a little research and I found that many others have done similar tests with similar results. It is theorized that the seeds germinate better and the plants grow stronger because of the bio-available nutrients in the worm castings and a plant hormone called Auxin found in worm castings. Auxin helps with the germination and continued growth of the plant. You should seriously consider worm composting both to reduce your carbon foot print by keeping lots of organic kitchen waste out of the landfill and to help your garden reach its full potential. Another way plants benefit from worm castings is from the efforts of microbes in the compost which:

<ol>

<li>create an agent that controls Verticillium, a disease of tomato plants</li>

<li>produce chitinase which behaves as an insecticide for your plants</li>

</ol>

Worm composting is a great way to start your adventures in composting.

[What is Composting]

Put simply, composting describes the process of breaking down organic materials into nutrient rich fertilizer for soil. In a regular household, the organic materials are various kitchen wastes and even human waste if you are looking to use <a href= title= >composting toilets</a>. The fertilizer that is created through composting can be used in your own garden to grow flavorful produce while helping you reduce your grocery bill. There is a lot to know about composting, but rather than read a bunch of books and do years of research, you should find a basic plan of how to start and get started. You will learn much more by doing and if you run into problems, look the solution up in a book. Easy as pie right? Right!

The organic matter in a compost pile is broken down in various ways. First, if you are using the method of worm composting (or vermicomposting or vermiculture) then it is the worms that eat the organic matter. Their excrement comes in the form of black castings, which can be used to enrich your soil. Worms are not required for composting, but they speed up the process. The other work horses of the compost pile are bacteria which use aerobic respiration to break organic matter down. Aerobic means that the bacteria use oxygen in their processing (I am glossing over the subtleties of aerobic respiration because you are here to read about composting, not microbiology).

Once your composting bin is set up and running it is basically free as far as money is concerned, but it will cost you a bit of your time and effort. The initial costs are the building or buying of the composting bin and buy composting worms. If you have friends who composting with worms you may be able to get some from them to get your composting started. Applehof (who has written a great book about the how to’s of composting called Worms Eat My Garbage) says that for every pound of organic matter you bury in your compost pill you should have two pounds of worms (about 2000 worms). Luckily, you’re your compost system is operating the worms multiply rapidly so you don’t have keep buy more worms, which can get expensive.

There are so many benefits to having your own composting system, here are just a few:

<ol>

<li>You are keeping your kitchen scraps out of the land fill where they would rot (probably through anaerobic respiration which creates unhealthy acids which the seep into the soil and ground water).</li>

<li>You are creating your own garden fertilizer so you don’t have to buy commercial chemical fertilizer. Let me explain why that is a powerful way to help our environment</li>

<ul>

<li>For the most part fertilizer’s are nasty chemicals that cause all sorts of problems including illness in humans, so you might be saving lives or at least reducing the chance of genetic mutation in your family by avoiding potent fertilizers</li>

<li>The process of making fertilizers is bad for the environment</li>

<li>The transport of fertilizer with trucks, trains or cargo ships further contributes to CO2 in the atmosphere. Such transportation, which if you believe it like I do, is a major culprit of the global warming trend</li>

</ul>

<li>You save money because you’re not buy commercial fertilizer while still having a productive and successful garden. </li>

<li>Knowing how positively compost affects vegetable and fruit growth may encourage you to plant more produce in your garden which will reduce your grocery bill</li>

<li>Peace of mind knowing that your making an effort to reduce your carbon footprint and make our planet a better place for your children and grandchildren</li>

</ol>

There are many more benefits, but I think you get the idea. Now, let’s get into how you can start composting. I’m going to assume that you want to use worm composting, so let’s go from there.

First things first, drill 8 to 12 holes (about ¼ to ½ inches in diameter) in the bottom of your compost bin so that excess fluid can drain and for aeration. I recommend that you set your compost bin on bricks and put a tray underneath to collect the drained fluid (it can be used as liquid plant fertilizer). If the contents of your compost bin are still too wet then drill more holes.

The second thing you have to do is creating bedding for your worms to live in. The bedding is basically a thick layer of biodegradable material that the worms will live in. Then you bury the things you want to compost (we’ll get into what you should and should not compost a little further down) and worms eat it. Easy street.

The bedding has to have the dampness of a wrung-out sponge for the worms to feel comfortable. To create the bedding you can use shredded fallen leaves, shredded cardboard, shredded newspaper, mature compost, dead plants, and/or aged manure. Add a few handfuls of sand to aid the worms in their digestion. The bedding should fill your compost bit about three-quarters full. Make sure that you have a cover for you compost bin to keep it dark and conserve moisture for the worms. Once you have the bedding installed and your worms are squirming around, you are ready to add compost.

When you add compost, bury it somewhere in the pile. This will help to control flies and odors. Bury the next load of compost in another part of the pile. Keep burying the added compost in another part of the pile until you have buried something everywhere, then start burying in random locations again.

What can you safely compost? Glad you asked.  
<ul>

<li>Scraps and peels of fruit and vegetables</li>

<li>Ground egg shells</li>

<li>Coffee grounds and tea bags</li>

</ul>

What should I NOT compost? Another great question.

<ul>

<li>Meats</li>

<li>Dairy products</li>

<li>Oily Foods</li>

<li>Grains</li>

</ul>

Although all of these can be composted you should not add them to your composter because they generate unwanted odors and attracted flies and rodents.

Basically, if you follow those few steps you will be making your own fertilizer in no time. Then when your friend asks you, “What is composting” you can go on for hours. To keep things fresh and exciting (and to compost faster) you can loosen up the bedding every few weeks to allow more space to move and more air for the worms. Every few months you may also want to turn the compost pie and remove any mature compost to fertilize your garden with.

To recap:

<ol>

<li>Build or buy a compost bin</li>

<li>Drill holes in the bottom and collect seepage</li>

<li>Install bedding for the worms</li>

<li>Bury worms in the bedding</li>

<li>Bury compost in random parts of the bedding</li>

<li>Loosen and turn the compost pile</li>

<li>Remove mature compost and incorporate it into your garden</li>

</ol>

Now you know the basics and you can get started right away, but wait, where should you place the compost bin?

This part is key; composting depends on warmth, air and moisture. If you live in a cool climate you will want to put the bin where it gets the most sun and perhaps even take it inside for the winter (ideal temperatures for composting are between 40 and 70 degrees Fahrenheit). If you live in a hot climate you may want to keep your compost bin undercover if the sun is too hot and you will likely have to add water to keep the compost moist.

[Composting Tips]

Here is a short list of composting tips that you should keep in mind. After a while these tips and strategies will become second nature.

<ol>

<li>If you are using manure in your composting pile, always be careful. Make sure that the manure you use is full composted. If it is not it may contain pathogens that could make you sick.</li>

<li>The inside of compost piles can become very hot and on rare occasions they spontaneously combust. Make sure you place your compost pile away from dry trees or dry grassy areas</li>

<li>When compost paper or using paper for bedding be sure to use it sparingly. Avoid composting paper with colored inks and high gloss finishes. Whenever you can, shred the paper so that it is easier to compost.</li>

<li>Bury any materials you want to compost under a layer of soil in the pile</li>

<li>Aerate the pile four to 5 times per season. Use a pitchfork, shovel or garden hoe to turn and loosen the pile to allow air in</li>

<li>If you are vermicomposting (worm composting) make sure that you have 2 pounds of worms (about 2000 worms) for every pound of compost you add per day</li>

<li>Keep the moisture in your pile at the level of a wrung out sponge</li>

<li>Try to cut anything you add to the compost pile into small pieces before you add it. This will increase the surface area exposed to decomposition and thereby increase the rate of composting</li>

<li>Put any organic kitchen waste that you want to compost into the freezer for a day before adding to the pile. The freezing and thawing process breaks the material down at the cellular level making composting faster</li>

<li>If have built or bought an enclosed composter make sure there are holes in the bottom (drill them in if you have to ¼ - ½ inch in diameter). This excess liquid to be removed from the compost. If you put your composter on blocks you can use a pan to collected the excess liquid and then use it as liquid fertilizer on your plants</li>

<li>If your compost pile starts to smell of ammonia you have aerate it immediately</li>

<li>Keep the ratio of carbon-based (also called “Brown”) versus nitrogen-based (also called “Green”) at around 25:1. Carbon-based organic materials are usually dry (straw, dry clippings, newspaper) and nitrogen-based organics are generally wet (lawn clippings, vegetable scraps). <a href>Carbon and Nitrogen Balance in Compost Piles</a></li>

<li>If you add lots of a lawn clippings you will want to mix them into the pile thoroughly or spread them out on the lawn for a few days to drive before composting them. If you pile them on wet, the grass clippings will clump together and remove oxygen, decomposition will become anaerobic which leads to an unhealthy compost pile</li>

<li>Position your compost pile over soil rather than concrete. This way worms can access your compost.</li>

<li>If you live in a warm climate keep your pile in a shady area. If you live in a cool climate keep your compost in a sunny area. If you have harsh winters move your compost pile inside during the harsh months</li>

<li>Keep a lid on your compost pile to reduce evaporation</li>

<li>When you dig a small hole into your compost pile you should notice that it is warmer than the air temperature. If the compost pile is cold you have to add more green organics.</li>

<li>Your compost pile should always have the moisture level of a wrung out sponge. If it is wet you will have raise it somehow so that the excess liquid can drain from the bottom. If the pile is dry you will have to spray water onto it.</li>

</ol>

What Can I Compost?

<p>People who have been composting for many years know that organic materials for compost fall into the three basic categories: carbon-based, nitrogen-based, and DO NOT COMPOST. I wrote that last one in all caps because it is important. The Carbon-based materials are also referred to as "Greens" and the Nitrogen-based materials are also known as Browns. The greens are usually dry materials such as newspapers, saw dust, dry clippings and straw. While wet organic materials fall under the browns category: fresh lawn clippings, vegetable and fruit scraps, etc.</p>

<p>Anything that is organic can be composted, but that does not mean you want to put any organic material into your pile. The items that fall into the Do Not Compost column are ones that may cause unwelcome odors as well as attract rodents and flies to your compost pile. Rather than memorizing what you cannot put into the pile there is an easy rule of thumb: do not compost meats, dairy products, grease, fats or oils.</p>

<p>The list that you see below is a good starting resource, but it is by no means all-encompassing. You will learn a lot along the way and you may even develop your own list that you can post on your fridge for your family to follow.</p>

<p>If you find you are having some problems with your compost pile and you are not sure what to do, check out our Compost Pile Troubleshooting Page.</p>

<table width="500" border="1" cellpadding="2" cellspacing="0" align="center">

<tr valign="TOP">

<td align="CENTER" colspan="3">

<h4>What Can I Compost?</h4>

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<tr valign="TOP">

<td align="CENTER"><b>Carbon-Based (Greens)</b></td>

<td align="CENTER"><b>Nitrogen-Based (Browns)</b></td>

<td align="CENTER"><b><p></p>Do Not Compost</b></td>

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<tr valign="TOP">

<td>Bread (no butter)</td>

<td>Dryer lint</td>

<td>Barbecue charcoal</td>

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<tr valign="TOP">

<td>Coffee grounds &amp; filters</td>

<td>Grass clippings (dried)</td>

<td>Fish</td>

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<tr valign="TOP">

<td>Egg shells (crushed)</td>

<td>Leaves (dry)</td>

<td>Coal ash</td>

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<tr valign="TOP">

<td>Feathers</td>

<td>Woodchips (small amounts)</td>

<td>Meats</td>

</tr>

<tr valign="TOP">

<td>Flowers</td>

<td>Hardwood ash (thin layers)</td>

<td>Dairy products</td>

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<tr valign="TOP">

<td>Fruit scraps</td>

<td>Sawdust (thin layers)</td>

<td>Bones</td>

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<tr valign="TOP">

<td>House plants</td>

<td>Straw</td>

<td>Oils</td>

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<tr valign="TOP">

<td>Vegetable scraps</td>

<td>&nbsp;</td>

<td>Peanut butter</td>

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<tr valign="TOP">

<td>Leaves</td>

<td>&nbsp;</td>

<td>Fats</td>

</tr>

<tr valign="TOP">

<td>Green plant trimmings</td>

<td>&nbsp;</td>

<td>Diseased or insect-infested plants</td>

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<tr valign="TOP">

<td>Tea leaves and tea bags</td>

<td>&nbsp;</td>

<td>Feces (animal or human)</td>

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<tr valign="TOP">

<td>Hair (animal and human)</td>

<td>&nbsp;</td>

<td>Weeds with mature seeds</td>

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<td>Grass (small amounts)</td>

<td>&nbsp;</td>

<td>Wood ash or dust that is treated</td>

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<tr valign="TOP">

<td>&nbsp;</td>

<td>&nbsp;</td>

<td>Weeds

that damage (i.e. crab grass, wild morning glory)</td>

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Compost Pile TroubleShooting

<p>After putting in many hours of time and countless amounts of sweat and tears your composting bin is finally ready for operation. After having your organic materials composting for a few months you begin to notice some strange smells and all kinds of field rodents scurrying around your pile. You are right in thinking that these are not normal, in fact, if you compost pile is operating properly you should not even notice it. Below is a short list of solutions to possible problems that you may be experiencing with your compost pile. This list is not the "end all and be all", but it is a good place to start.</p>

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<tr valign="TOP">

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<h4>Compost TroubleShooting</h4>

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<tr valign="TOP">

<td align="CENTER"><b>Problem</b></td>

<td align="CENTER"><b>Possible Causes</b></td>

<td align="CENTER"><b>Solution</b></td>

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<tr valign="TOP">

<td>Bad odour</td>

<td>Too many greens</td>

<td>Add browns and mix.

<p>Turn pile and top with soil

</td>

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<tr valign="TOP">

<td>Smells like rotten eggs</td>

<td>Not enough air</td>

<td>Turn pile for several days until odor

is gone.

<p></p>

<p>Top with soil

</td>

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<tr valign="TOP">

<td>Pile is not composting</td>

<td>Too dry</td>

<td>Moisten with water until damp</td>

</tr>

<tr valign="TOP">

<td>Flies around pile</td>

<td>Exposed food</td>

<td>Bury food or cover with a layer of

soil</td>

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<tr valign="TOP">

<td>Unwelcome animal visitors (raccoons,

dogs, rodents, etc.)</td>

<td>Exposed food or wrong items added</td>

<td>Remove any meat, fats, or dairy products.

<p></p>

<p>Bury food scraps and cover with soil

</td>

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Herbal Compost Activators

Many people love the idea of composting, especially organic gardeners. There is no better fertilizer for your garden; your fruits, veggies and flowers will love you for giving them composter. The alternative is using harsh chemicals or growth hormones to make your garden more productive, but they are not required. Humans have been using agriculture to grow crops for 1000’s of years without the help of manufactured chemicals. The chemicals do allow farmers to grow crops at higher densities which is important in a world where we are having problems feeding everyone, but you do not need those chemicals in your back yard where you, your pets and children or grandchildren play.

Composting is not as easy as a lot of people make it out to be. A pile of compost is the home of many organisms and those organisms are the ones that digest the organic material to make humus that you can use in your garden. You have to take care of those organisms otherwise your pile will not be as productive as it could be. It might even look the same as it did six months ago, if that is the case then your compost heap needs something that it is not getting. Below are some ways to jumpstart your compost pile so that it can churn out the natural fertilizer for your garden.

<ol>

<li>Shred the organic matter that you add. Try to make the pieces as small as you can so that there is more surface area for the worms and bacteria to work on.</li>

<li>Try adding nitrogen-rich ingredients such as washed sea-weed, fishmeal, clover, manure laden straws or herbal activators (see below).</li>

<li>A pile that is too large can take a long time to mature. If your pile is larger than 3 feet by 3 feet by 3 feet and you have extra space you may want to split the pile up.</li>

<li>Aerate your compost pile 4 to 5 times a season to keep the worms and bacteria “breathing”.</li>

</ol>

You may want to look into using herbal compost activators to increase the productivity of your compost heap. These are herbs that are known to speed up the maturation of compost piles.

<b>Comfrey</b> (<i>Symphytum officinale</i>) is a herb that is rich in calcium, potassium, phosphates and nitrogen. Its hairy leaves break down rapidly bringing an influx of nutrients for the inhabitants of your compost pile.

<b>Valerian</b> (<i>Valeriana officinalis</i>), for some reason, attracts earthworms. Earthworms eat the organic matter leaving their nutrient-rich castings in the compost pile. The leaves of Valerian are also very nutrient rich.

<b>Dandelions</b> (<i>Taraxacum sp</i>) are rich in potash, iron and copper. These are great of keeping your compost pile healthy and you probably have some dandelions in your backyard!

<b>Yarrow</b> (<i>Achillea sp</i>) generally has the most impact on your composting efforts, even in small amounts. Yarrow provides potash, copper, nitrates, phosphares.

<b>Tansy</b> (<i>Tanacetum vulgare</i>)takes a lot of potassium out of the soil where it grows and by adding Tansy to your pile you are adding lots and lots of potassium.

Adding all these different things may not make much sense and you do it just because you are told that it helps, but it begins to make more sense if you think of the bacteria and worms in a compost pile as pets. I know, strange right? But stick with me on this. For example, if you do not feed your puppy properly then it will not be as healthy as it could be. Its teeth may get lots of cavities, it might have diarrhea a lot or get sick frequently. Your puppy might be lethargic or have weak bones. All sorts of things can go wrong if your puppy does not get the vitamins and minerals that it needs. Same goes for your pets, worms and bacteria, in the compost pile. They need the right vitamins and minerals to survive and the herbal compost activators above have high concentrations of vitamins and minerals. The same nutrients are probably in the organic matter that you add to the pile, but they may not be as bio-available as the nutrients in the herbal activators. Remember, if the worms and bacteria not healthy they will not be efficiently digesting your compost.