



**A Worm Composting, Food Recycling, & Worm Culturing
Starter Guide!**

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Worm Farming Revealed.com

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Chapter 1 - A Worm Farming Introduction

Your Worm Farming Journey Begins Here!

This is the first of several pages within this free guide to raising composting and fishing worms. I killed my first pound of worms I received in the mail and I don't want this to happen to you. That's why I created this free worm composting guide to help teach, inspire and empower you to become the best.

Food prices are rising and the thought of growing our own food seems only logical and choosing the right fertilizer that is healthy that won't burn the plants is paramount.

If you think raising worms is gross, smelly, and takes a lot of work, then you've never raised any (at least not properly).

Worms are the easiest pets in the world to take care of (other than a pet rock of course :-)

As a matter of fact, I think it's the other way around. They take care of you through the use of their nutrient rich poop...and the smell? If you've ever smelled fresh tilled dirt, then you've stuck your head deep inside the dark, moist bowels of a rotting worm bin.

As concerns about chemical fertilizers, pesticides, and global climate continues to escalate, **more and more people are turning back to healthier, natural, and organic methods of growing their own food.**

Even as the economy continues to be uncertain, people want to rely on something that's been stable for years and will be stable for years to come.

If you're like me, then you have a peaked interest in giving back to the land, while giving your body the nutrition it needs.

Chemical fertilizers strip the land of vital nutrients and healthy organisms that plants flourish from. The focus of **WFR** (Worm Farming Revealed/Revolution) is to

inform gardeners and plant growers about the alternatives of pesticides and chemical fertilizers. Raising worms can benefit you, the plant, and the land.

It's not rocket science

Worm farming can be done from kids to the avid gardener in several different ways. At the website, you'll see photos and watch videos on how to start up and maintain your very own worm farm for free.

It's broken down for you in the simplest form so you have all the tools necessary for starting your own worm farming bin. Other websites sometimes aren't very clear or don't go deep enough.

I want you to know everything I know about living a healthier life and getting the best out of the land by giving the best back to the land.

If you're using regular compost (decomposed grass, leaves, kitchen scraps etc..) **and not what worms can compost for you even faster, then you're missing out and your plants are too.**

If you were to ask anyone off the street, or even your next-door neighbor, what vermicomposting is, they'd most likely respond, "Vermi what?"



Vermicomposting is still relatively new.

You may be able to find it all over the internet, but compared to common fertilizers it still has not gained the attention it deserves even among organic gardeners but that is quickly changing.

It's hard to comprehend how such an easy and sustainable concept of growing worm castings (worm poop) is and how it has not been more scrutinized

in the past. However, it's pleasing to know that it's becoming more popular thanks to people like you and me.

There are rising concerns about pollution and toxic landfills which have sparked the desire in many to recycle and control waste.

A typical landfill will take years to reclaim waste, but worms can reduce it in a matter of months.

Now, I'm not saying to throw a bunch of worms into a landfill and start growing corn. It would certainly be too toxic to the worms, the corn and us. However, what if each of us were to feed the worms our kitchen scraps like corn, lettuce, coffee, cardboard, and newsprint?

It would be returning to the land in a reusable, rich organic form that we can all benefit from, instead of just sitting around and leaking toxins.

If we all play a tiny role in feeding worms our garbage, then together we all create a motion picture in restoring and reclaiming the land and living a healthier life.

Well, that's what worm farming is to me. So, the next time you decide to throw it in the trash or run it through the disposal, give it to the worms. Your plants will be glad, the worms will be glad, and you will be too.

Chapter 2 - Worm Farming Terms You Must Know

The Etymology

The Etymology

First, let's quickly go over the word **vermi**.
Merriam Webster's Tenth Edition says *vermis* (Latin)
= **Worm**

Well, that was pretty simple, but I got to pondering about how we got from **vermi** to **worm**.

In the 16th century there was sometimes a confusion with the letters **v** and **w**. So if you spell the word **vermi** then replace the **v** with the **w** you get **wermi**.

Then, remove the **i** from the Latin to fit into the English. You now have **werm**. According to Webster, it was also spelled **wyrm** in O.G. (serpent) and O.H.E. **wurm** and now spelled **worm**.

You're probably wondering what this has to do with raising worms.

Well, I'll tell you. Nothing and everything, depending on who you are. It's just a bit of [fun facts](#) that you and I will probably forget tomorrow.

Worm Farming Terms

Vermiculture

This is the artificial rearing or cultivation of worms for a specific purpose. Many worms in various worm species are raised for bait, food, pets, school projects, waste management, and my personal favorite, harnessing their excrement.

Vermicompost

In worm farming terms, vermicompost is the product or process of using earthworms, mainly red wigglers (*Eisenia Fetida*), to consume waste and turn it



into a rich soil amendment. Vermicompost contains not only the worms but the bedding materials, organic waste, microorganisms, and worm castings.

Vermicastings

Vermicastings (worm castings) is simply worm poop. It is the excreted substance that comes (or is cast) out of the back end of the worm. The many purposes of vermicastings are used in household plants, gardens, lawns, and commercial farming.

Its primary purpose is to rejuvenate, or reclaim the spent state of ordinary and chemically fertilized soil to a rich, vibrant and reusable substance. Often, people use this synonymously with vermicompost, but it has an entirely different meaning. This will become useful in the future should you ever have to make that distinction.

Worm Tea

A nutrient rich liquid teaming with beneficial microbes for the use of feeding and maintaining healthy plants, including their root systems.

The "worm tea" comes from a process in which the vermicastings are steeped in a highly oxygenated (aerobic) water supply in order to multiply the beneficial organisms which are essentially food for the plants.

There are several pages of terms (and abbreviations) in the glossary of

[The Worm Farming Revolution Book](#)

Chapter 3 - Worm Species, Which One Is Best?

Knowing which worm species to raise is very important.

If you found a handful of worms outside, placed them in a bin, and began to love and feed them. They would surely die.

On this page, I'll talk about the best specie for composting, but if you should decide to venture into another purpose for your worm ranching skills, then a little pointing in the right direction is always helpful.

Earthworms are invertebrates and there are thousands of species (currently over 4,000+) that are grouped into 3 categories.

1. Anecic Group

2. Endogeic Group

3. Epigeic Group

Anecic Group



Like the common Nightcrawler, Canadian Nightcrawlers (species *Lumbricus terrestris*) are the best fishing worms, (some would argue) and builds permanent vertical burrows that can extend 4-6 ft. in the soil.

They come up to feed on decaying matter, then retreat into their burrows.

They coat the walls of their burrows with mucous, stabilizing it, making it harder to collapse. They can even recognize their own burrow even in a high-traffic environment where others of the same species have dug holes.

L. terrestris have a spoon-shaped tail with little retractable hairs called “setae” which help it to grip the walls when being pulled out. These are very large worms and do not do well in a densely populated scenario. If you plan to culture these worms for fishing, this is your perfect bait.

Endogeic Group

Like the Alabama Jumper (Species *Pheretima hawayanus*, excellent garden worm), builds lateral burrows and rarely comes to the surface. They are pale, or have a pale pinkish tone.



These are the type of worms that eat soil AND decaying matter. These can be good worms to have in your garden since they have lateral burrows which help to aerate the soil. These are your medium-sized worms.

Epigeic Group



Species (*Eisenia fetida*) A.K.A. red wigglers, redworms, manure worms, tiger worms, brandling worms, red wrigglers, and composting worms.

These composting worms spend most of their time on the topsoil where rich decaying matter is found like leaves, grass, wood, manure, etc...

When roughly handled, they exude a pungent liquid, thus the specific name *fetida* meaning *fetid*-nauseating: having a rotten or offensive smell.

This is presumably a defense. In my experience with these little guys, you don't notice any smell unless they are in a squirm (a large mass of worms) and it's still only a mild odor at best.

So if you want to raise composting worms and harvest their castings (poop) then these are your little poopers.

---Sidenote---

Remember, not all worm species are suitable to raise in a bin. **Only the composting worms, like the red wiggler, should be raised in a worm farm.** Leave it to those that are skilled and have several years of experience in vermiculture.

Do not attempt to raise any other worm species not suitable for a shallow system such as the [Worm Factory](#), [Worm Inn](#), or a [homemade plastic container](#).

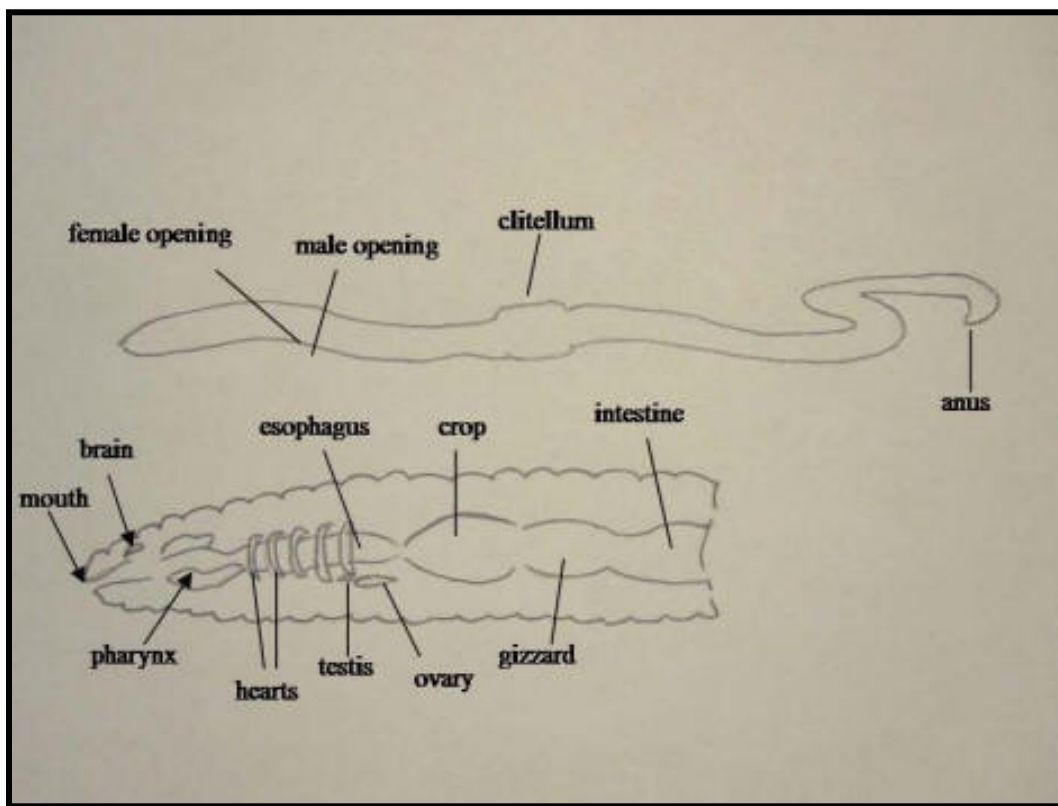
There are several more species discussed in

[The Worm Farming Revolution Book](#)

Chapter 4 - The Worm Anatomy

The worm anatomy might be boring to you and you're probably considering skipping this section. No problem! Go ahead, but once you're feeding your worms and harvesting your worm castings, it starts to eat at you a little bit and then more and more. So, I promise you'll be back just "squirming" to know what's going on inside those little worms.

Earthworm Anatomy Diagram



To understand a worm anatomy and physical functions, it's also a good idea to understand its purpose and function in nature. It truly plays a huge role in the creation and design of our ecosystem.

A worm has three major duties in life eat, poop, and mate.

Not necessarily in that order :) The worm has a pointed head and a slightly rounded body. The rings on its body are called segments.

Earthworms have no protruding body parts making the worm very contour which enable them to pass through the soil with ease and to also squeeze in between tiny cracks. Bristles called "setae" on the body move back and forth allowing the earthworms to crawl.

The Digestive Tract

Earthworms have a very long digestive tract that runs the whole length of their body. The food enters the mouth by means of its muscular pharynx and is passed through the esophagus.

The food then moves to the crop which stores the food before entering the gizzard. Once in the gizzard, it is pulverized by the aid of special bacteria and tiny stones the worm ingested through its mouth.

Did You Know?

Worms have a gizzard much like a chicken and it is important, when feeding your worms, that you add a little outside dirt to the mix. Ground minerals would be best. Ground eggshells or Agricultural lime is easy to come by. They don't need much, about a tablespoon at a time per 1 sq. ft. of bedding.

Like chickens, worms can't chew their food. They swallow their food whole, then completely depend upon the gizzard to chew/grind the food for them. If you have any eggs, you can also crush the eggshells to a powder with a rolling pin or hammer and throw it in with the food. Worms don't actually take bites out of their food.

They wait for bacteria to break down the decaying matter then slurp the bacteria and other microorganisms into their mouth. Think of it like ice cream in a bowl. As it slowly melts you can suck it through a straw.

If you like these fun-filled facts, then check out the rest of the [fun facts](#).

Did You Also Know?

Earthworms have mouths but do not breathe through them. Nor do they have gills like a fish. Instead they breathe through their skin.

The walls of their skin are thin allowing for the exchange of gasses to pass through them. This is one of the reasons worms must stay moist.

To prevent the worm from drying out it will feed underneath the decaying matter mainly at dark when the evaporating percentages in the air are lower.

It detects light using light-sensitive tissues mostly located near its head. In fact, when you see worms dead on the ground after a rainstorm it's not because they drowned, but rather had too much exposure to the sun's ultra violet rays.

This concludes the worm anatomy section.

There are up to 19 minerals discussed in

[The Worm Farming Revolution Book](#)

Chapter 5 - About Worms and Worm Reproduction

The worm reproduction is very unique within the animal kingdom. Unlike most living creatures, all earthworms are hermaphrodites (**possessing both male and female organs**).

As you seen in the illustration (on the worm anatomy chapter 4), they have both testis and ovarian organs. When two worms are ready to mate, they assume a head-to-tail position. They exchange sperm while covered in a layer of mucous.

Sperm is passed from one worm to the other. Once separated, another fluid is released which causes the mucous to harden. The eggs are fertilized at a later time. Mature eggs and sperm are deposited in a cocoon, which is located in the clitellum, the thick-ringed part of the worm located just a ways down from the mouth.

The sperm cell fertilizes the egg and the worm deposits the cocoon into the soil.

Egg Production

Worm eggs and cocoons will sometimes be referred to synonymously. However, they are two separate things considering the eggs are located within the cocoon.

The picture to the right is a worm cocoon. Many factors must be taken into consideration if you want prime output of egg production.



Hungry for a turkey leg?

This applies to their everyday well being. The happier your worms, the more production in castings and eggs you will have.

Moisture

They must remain moist at all times. The bedding should be wet but not too wet. It's too wet if it's dripping. If you can't squeeze any water out, then it's too dry. It should always remain the consistency of a damp sponge.

The sponge, when picked up will not drip, yet you can squeeze water out. It must feel wet to the touch.

Temperature

E. fetida species are among the most adaptable to a wide range of temperatures from 34°F - 95°F. This doesn't mean that worm reproduction will remain efficient in this wide fluctuation.

It just means (since they're a topsoil dweller) they're the most tolerable. The optimal temperature is somewhere in the neighborhood of 60°F - 70°F. Give or take a few degrees of course.

Food

I'll get into this a little deeper, but briefly touch on a few main points. Worms need a Carbon to Nitrogen (C:N) ratio of about 20:1 up to 40:1. If your C:N ratio is out of balance, your bin can become smelly, stagnate, and too hot for your worms. These are also anaerobic conditions, choking out oxygen levels and suffocating the worms.

Materials rich in carbon are wood, hay, straw, shredded paper, shredded cardboard, dead leaves, etc. Materials higher in nitrogen would be the fruit of the plants *i.e.* apples, tomatoes, beans, cucumbers, grains, and mainly all greens.

There have been those that have claimed these rich carbon foods are a stimulator for the increased production of eggs.

I've noticed myself the increase of cocoons when I lay a piece of damp newspaper over the top of the compost, or just fill it throughout with shredded paper material.

Here are a few statistics to remember about egg production.

*Keep in mind that these numbers are at optimal conditions, and even at optimal worm reproduction conditions you will have variations and variables.

Below is the rate of the Red wiggler.

Egg production:

3 cocoons per wk.

1-4 hatchlings per cocoon.

70%-80% hatch success rate.

9 hatchlings per adult per wk.

Growth Rate:

20-30 days to hatch from cocoon.

30-50 days to reach adulthood.

Total 50-80 days from egg to adulthood

[Watch my video of a live worm birth.](#) I actually had triplets and was three times as proud to be able to catch them in my hands (or fingers).

There are more reproductive statistics and Video links discussed in

[The Worm Farming Revolution Book](#)

Chapter 6 - Worm Castings: A Rich Soil Amendment

Through the use of worms and worm castings (vermicastings) is the best way to reclaim the soil. It is nature's pure unadulterated process. It has been proven to increase plant growth, health, and yields faster and better than many other types of soil amendments.

I have been using it for years and have personally seen the effects of it on my tomatoes, corn, watermelon, peppers, and everything that I grow in my garden.

So here's the "Dirt" on vermicastings

George W. Dickerson, Extension Horticulture Specialist from New Mexico State University said "Earthworm castings in the home garden often contain 5-11 times more nitrogen, phosphorous, and potassium than the surrounding soil".

He also went on to say, "Secretions in the intestinal tracts of earthworms, along with soil passing through the earthworms, make nutrients more concentrated and available for plant uptake, including micronutrients." You can view his table of chemical and mineral percentages by [clicking here](#).

It is widely shown, through many studies at universities and laboratories, that **worm castings is not only a soil replenisher and fertilizer, but in many ways, a pesticide and pathogenicide**, in the sense that it helps the plants build a strong immune system.

This is a quote from Clive A. Edwards, professor at Ohio State University Dept. of Entomology in his publication on [The utilization of vermicomposts in horticulture and agriculture](#) "Clearly, vermicomposts are very valuable tools in crop production and pest and disease management".

Worm castings Contains a host of microorganisms that is food for plants.



After the worms are finished eating your garbage, they leave their rich, black castings behind that microorganisms feed on even after you have transferred it to your garden.

The plants feed off the microorganisms that help create a strong immune system.

Due to this chain reaction of events, it is a time-release process to the plants. It's a no-brainer when it comes to spreading it on your plants. Unlike harmful chemicals, it will not burn plants no matter how much you use, but you will always have that fear with synthetic chemicals.

This immune system has been shown to be effective against such pests as cucumber beetles and sucking insects, like aphids, medley bugs, and scale insects. Clive A. Edwards also says that Vermicompost suppresses such pathogens as Pythium, Rhizocronia, Plectosporium, and Verticullium.

Due to the spongy nature of worm castings (vermicastings), it has a high water retention capacity and allows the soil to aerate properly.

The complexity of the microbial community (and of course, what you feed the worms) is what gives plants their broad diet. Many gardeners who compost their leaves and grass clippings (in compost tumblers or in the absence of worms) think their compost possesses this abundant broad community of microbes.

Some may, but what has been determined through testing is that the product has a relatively poor structure and is lacking in nutrients. Albeit, this is far better than chemicals, but the garden compost is missing that special bond between the plant and its food...**the worm.**

Since the beginning of time, earthworms had a specific purpose. They were designed to have a special interaction between waste and microorganisms.

The reason a worm's digestive tract runs the entire length of its body is to give bacteria ample time to aid the worm in breaking down the decaying matter. By strictly using a garden compost, you're bypassing this natural and vital process that all plant life depends on.



~Final thought

Have you ever walked through a lush forest and noticed the rich, green abundant life. It must be because someone is spending a lot of time and hard work at spreading synthetic fertilizer everywhere...right? **of course not!**

The floor of a forest is teeming with microbes feeding and cleaning up all the leftovers from last year. **It's pure unadulterated nature at its best.**

So why do we continue to spread dangerous chemicals on our crops and in our soil? Well, some of it is ignorance I guess, and the other is for the same reason a body builder would use steroids.

It makes them bigger and beefier faster. They even know the unhealthy risks they are taking, but do not care. They have their eye on the money and the prize. Agriculture has also become that body builder who competes for the money and the prize. However, it's not really a **prize** in the end, but sadly, a **price**.

If you would like to learn how to apply the vermicastings to your plants (with mixing percentages) then go to the [worm castings usage](#) page.

There's much more on castings discussed in

[The Worm Farming Revolution Book](#)

Chapter 7 - All About Worm Tea

I talk a great deal about worm tea on my website and in my books. In my opinion, it's almost just as important as worm castings. Below you'll learn why the "Tea" is so beneficial for plant nutrition and what the tea really is.

Are you using compost tea **or a mysterious liquid?**

Worm tea may not be what you think it is.

A.K.A. "Vermi tea" or "Vermicompost tea"

Is "worm tea" created by putting some worm castings in a bag and letting them steep in water for a few minutes, or even a whole day? Is it simply collecting the liquid run-off from the bottom of a compost bin? Well, if you answered, "Yes" to either of these, then you're absolutely wrong!



The picture to the right is **not** how you brew vermi tea, nor to say the least, are the pictures above.

Many people think that the tea-like liquid that's located at the bottom of the worm bin is vermi tea.



This is actually called **leachate** (*leech-ate*). Worm tea is made from a combination of highly oxygenated water and worm castings. Not the smelly run-off at the bottom of the bin.

The leachate itself is not as nutritious as some may think. It could actually be highly acidic, anaerobic (lack of oxygen), and lacking in the beneficial microbes

and nutrients that plants depend on. As a matter of fact, it also contains the unbeneficial microbes that can thrive and multiply in an anaerobic environment such as leachate. **It can even be caustic to plants.**

****Side Note****

If you're constantly having smelly run-off, your compost is too wet or you could be adding too much food.

Learn the difference between [Leachate & Worm Tea](#).

The tea consists of a very complex community of organisms such as:

- Bacteria
- Protozoa
- Fungi and
- Nematodes (not the bad ones that attack the roots)

The plant feeds on these microbes which gives it the ability to build a strong defense system. Some plants contain a hormone called Jasmonic acid. This hormone is used as defense against many insects and parasites.

Worm castings are wonderful, but the worm tea works a little bit different.

Unlike the worm castings time-release process, the "tea" is readily absorbed into the plant giving it, if you will, a "**power drink**" (without the crash, followed by a migraine). Much like, when we eat our food, our body slowly absorbs the nutrition. But if we liquefy it, it's readily absorbed into our body.

Worm tea is the opposite of chemical fertilizers.

[Chemical fertilizers](#) burn the soil and kill the beneficial microbes. When the good microbes are absent or low in numbers, the bad microbes populate and are absorbed into the plant. This kills or weakens the plant's immune system and its overall ability to thrive.

Therefore, scientists have to come up with genetically modified plants to resist the effects of these bad microbes and some parasites. It's sad to think that

when **we** want to change, **we** insist on changing nature, but it's completely opposite. When **we** change nature, **nature** insists on changing us (for the worse of course).

Nature always has a way of telling us what we're doing is wrong. Our bodies weren't designed to store synthetic chemicals. Albeit true, our bodies can filter out these harmful toxins, but the problem is, we keep filling our bodies with harmful toxins and we never get them out of our system.

The toxins or chemicals harm the beneficial organisms in our body. This enables the bad ones to take over.

You've heard it said many times, that cancer cannot survive in an oxygen-rich environment and when our body is deprived of the oxygen, the bad cancer cells will multiply and take over.

Worm tea helps to build the good microbial community within the soil, outnumbering the bad microbes. The more you put in, the more good microbes will multiply until the good microbes are in control through sheer numbers.

There are two ways worm tea can be applied

- A soil application
- A foliar spray

Soil application

As I already mentioned, the tea builds a community of good microbes through the aerobic process. It protects the roots, as well as nourishes and feeds the plant.

Studies have shown there are increased speeds of plant growth, increased size of plants & blooms, and increased yields. Root systems go deeper and wider as well.

Studies have also shown that using the tea not only improves the soil for short term affects but the year after as well. The reason being is, once you start the microbial community, then after just a few applications the community begins to grow exponentially, crowding out unbeneficial microbes.

Here is a link that demonstrates the outcomes of [vermicompost and vermicompost tea](#) performed by Clive A. Edwards, professor at Ohio State University.

Foliar Spray

When worm tea is sprayed on the plants, the microbes attach to the leaf and out compete the harmful disease causing microbes like black rot, mildew, early blight and also become food for the leaf.

So what's the spigot at the bottom of the worm bin for?

This is a great question that I'm often asked from time to time, and the answer is simple. It's for collecting the smelly run-off that leaches through to the bottom of the worm system.

In time, as you become a better worm farmer, you'll learn how to control the amount of food you feed the worms vs the amount of worms you have to consume the food. There should really never be any liquid at the bottom of the bin, but sometimes it can be unavoidable.

The spigot is great for beginners and also for those that get in a hurry or add juicy fruits such as melons, cucumbers and grapes. The worms should always have enough moisture from the regular foods you're feeding.

If you DO have any leachate at the bottom then simply throw it down the drain. If you'd like to know why to not use the leachate on your plants, then check out the link below.

Learn the difference between

[Leachate vs Worm-Tea](#)

Learn how to make

[Worm-Tea](#)

There's SO MUCH MORE on aerated worm tea discussed in

[The Worm Farming Revolution Book](#)

Chapter 8 - Worm Food

Knowing what foods to place in your worm system is as important as what food you feed your own pets. After all, worms are pets too! 😊

If you have 1 pound of worms, that can add up to a lot of worm castings. That's why red wigglers are called composting worms.

When it comes to being picky about eating, just about anything that grows from the ground is fair game for them. That's what they were created for, to eat the decaying matter and turn it into food for the next generation of plant life.

The most common and practical way of feeding your worms is by giving them kitchen scraps along with some kind of carbon-rich food. This is what most people start off doing who are just getting into vermicomposting.

Greens, like kitchen scraps, are a great source of worm food and should always be something that grows from the ground.



These are usually foods such as lettuce, corn, broccoli, grains, coffee with the bags, and so on.

Keep in mind, these foods are high in nitrogen and will need to be balanced with some carbon-based material. Be sure to put plenty of paper or wood based products into the bin.

Food you place in the bin will sometimes get warm or even hot. Therefore, it's a good idea to let it set for a week before introducing it to the worms. The last thing you need is for all your worms to crawl out searching for a new home or a new food source.

When feeding these foods to your worms, do it in moderation. If it's introduced in large amounts too fast, then the microbial community will begin to take over faster than what the worms can keep up with. This will cause the system to smell and become too wet and it will propel the bin into a thermophilic process.

You may also get some unwanted friends, like fruit flies. They won't hurt your worms, but can be a nuisance in your house when they fly out of the bin. We discuss [worm farming pests](#) in the book and website. Also, natural kitchen scraps contain a lot of moisture already, so be cautious. **When in doubt, keep it out!**

Composting worms are very resilient and can go a long time without food.

When food is scarce, they'll resort to eating their castings (refining it more and more) till there is no more nutrition left (for the worms). It's always best to underfeed than to overfeed.

But remember this! the happier the worm, the more productive they will be.

Never feed them more than they can keep up with. This means feeding them small handfuls at a time. When their food is almost finished, introduce more small handfuls until you get an idea of their eating habits.

One helpful hint is to freeze your kitchen scraps.

This will help break down the cells of the plant, turning it into mush. This makes it much easier for the bacteria to do its job so the worms can do their job. You'll have castings quicker. How much quicker though, can vary.



Now, there have been some who skip the whole process and just blend it. **STOP!** Leave this to those more experienced. This takes practice. Concentrate on getting good at feeding regular kitchen scraps first.

If you pour in a liquid slurry, the worms will have no room to wiggle around in. It will become anaerobic quickly. There must be adequate air space for the compost and worms to breathe. This is when it's beneficial to add carbon materials.

Keep in mind, carbon-based foods such as coconut coir, cardboard, newspaper, toilet paper (unused of course) etc... will break down faster than material like,

saw dust, mulch, sticks, and straw to name a few. I've added small sticks in before, and after months it seemed as if I put them in yesterday.

Other kitchen scraps that are NOT suitable for worms are:

1. Milk or any dairy products
2. Meat or fats
3. Oily substances
4. Citric, or highly acidic fruits. **Tomatoes are ok in moderation**
5. Spicy or hot peppers or plants. Mild and sweet peppers are okay (onions in moderation, but this will impede the process)
6. Salts

A good rule of thumb to remember about worm food is...**If it comes from the ground, make it brown** other than the ones listed above.

Caution:

Be careful when considering feeding worms things like sautéed mushrooms, leftover salads, twice baked potatoes, etc.. Many people don't realize that they've added butter, salt, oils, spices etc.

Using Manure as Worm Food

This substance, in my opinion, is the one of the best food sources for worm food if you are planning on using castings on your household plants, garden, or lawn. To get a better understanding consider this.

The more complex the microbial community, the more complex the soil. The more frequent matter is broken down, the more complex it becomes.

Plants thrive on this complexity of microorganisms. This is essentially what the plant is feeding on. Just like you and I eat a complex diet so must the worms and the plants.

So why manure...? Consider this:

1. Cow plucks grass
2. Teeth break down grass
3. Cow regurgitates grass and chews it again
4. Grass is further broken down 4 more times by its digestive compartments
5. Cow poops and manure is put into a compost pile where bacteria break it down even further
6. Compost is now fed to worms which break it down one last time
7. Vermicastings is now ready to feed to plants

Now you can see the potential manure has as worm food and a worm-to-plant food.

If you plan to use manure from any animal, you must be sure to compost it to rid the pile of any harmful bacteria or pathogens. You will also kill off the seeds from unwanted weeds and grasses the animal ate, therefore, eliminating any chance of getting them into your garden.

Remember, I said that what comes from the ground is ok to give to the worms. It's okay to feed manure to your worms because that animal only ate of what came from the ground as well. Bovine, goats, sheep, rabbits, poultry, and horses are all good examples of herbivores. I'll make an exception for the poultry. *(Caution: Definitely compost poultry a good while as this can be high in ammonia and salts)*

But what about pig, canine or even human manure (humanure).

There are some that successfully do this, but mainly used for ornamental plants. This is something that you definitely don't need to know how to do at this point. Also consider that it's a lot harder to kill off harmful diseases from these smelly poopers.

So when considering food for worms, it's just best to be safe. If you're interested in composting these wastes for environmental reasons, then you might be interested in Bokashi composting.

Worm Food Using Outside Sources

You can add any tree, plant, grass or shrub in as worm food as long as it's not poisonous (this may be for your safety). It generally won't hurt the worms as long as it's not in large quantities. However, like manure, it can contain seeds that you may not want in your garden. Like manure, if it's composted first, it will be more complex. Either way, you'll be happy with the outcome for your worm food.

Now, if you would like to feed the worms your lawn, leaves, trees, or plants from your garden, you need to be cautious. Be wary of any herbicides or pesticides that were sprayed on your lawn or maybe near your lawn.

When it rains, the water from your neighbor's lawn (that's been sprayed by chemicals) may run off onto your lawn or garden. Some of these chemicals can harm your composting worms and you don't want them ending up on your plate either. We have enough in our commercial food already.

Hopefully, if you're like me, one of the purposes for raising worms is to replace the many harmful and deadly chemicals that is degrading and killing our soil, depleting it of minerals and healthy organisms.

Other Thoughts

Always keep in mind that worms are like you and I. They need a variety on their plate. The more they have to choose from, the more nutrition the worms and eventually the plants will have to choose from, like a buffet. There may be some plants that are higher in protozoa than others. If you keep feeding your worms these high protozoan foods, that's all you'll have to put in your garden.

Some plants need more bacteria than protozoa and some need more fungi than bacteria. Some plants need everything on the menu. You would be quite unhealthy if all you had to eat was protein. You would succumb to protein poisoning. So mix your worm food up a little bit like a good salad and place a few inches under the bedding material. This is what worms eat and prefer.

There's loads of info on food, and hot & cold manure discussed in

[The Worm Farming Revolution Book](#)

Chapter 9 - Worm Bins

Vermicomposting bins can come in all shapes and sizes, and by the time you're done reading this guide, you just might have enough information to come up with some kind of bin of your own.

Although, I'm sure by now you're squirming to get started. You might want to consider a few options first so you'll know what best fits your needs.

It's always been said, that as easy as it is to start worm bins, these small-scale bins are actually the hardest.

In the event there's an imbalance, there's little room for worms to go. The compost bins, like the [DIY worm bin](#) made from plastic, (although cheap) cause your worms to be a little harder to take care of than a pet rock.

With that being said, I want to go over some basics that are important for ALL worm composting bins.

#1 - Bedding

Bedding, Bedding, and more bedding. This is probably the most important of all inside the worm composting bins.

Bedding can make or break the farm.



It increases air flow. It provides plenty of carbon rich supplements. It helps soak up nitrogen-rich acids and brings a good balance to the system. It also helps to hold in moisture, and last but not least, **increases your cocoon production.**

Remember, when adding the bedding to your composting bins think of materials that are spongy and porous like peat moss, straw, and corrugated cardboard (no glossy cardboard). I believe the browner (more organic) the cardboard is, the better it is for the worms.

Stay away from bleached/processed whites (only if you can) and don't forget that **you cannot add too much bedding**. This keeps it aerated and allows plenty of oxygen to flow throughout your worm composting bins.

We've already discussed worm food, but I want you to understand something extremely important that you may not think about when starting out. **Everything you place into a worm bin is food**. Carbon, Nitrogen, and minerals are all food to the worms.

So don't ever think that you're not incorporating enough kitchen scraps. **The #1 cause of worm death is overfeeding** from nitrogen-rich foods. **The worms will enjoy even 100% carbon**. It's more common to them in nature than fruits, vegetables, nuts, and grains etc. even if they go crazy over banana peels :)

#2 - Greens



Many, of what I consider "greens", is a good nitrogen source. Omit of course, the ones we discussed in the feeding section of the book. Always throw in your greens in moderate amounts to avoid high acidic or thermophilic conditions.

You shouldn't have to add very much (or any) water at all to the system, depending on how wet your greens are. I've told you that worm bins don't stink if properly taken care of.

Don't add too much broccoli or foods from the cabbage family as this normally has a strong odor. However, if you cover it pretty well and leave it alone for a while, then you can determine how much to put in each time.

#3 - Aeration, moisture, and drainage

These kind of go together and depend heavily on gravity, evaporation and the worm's ability to move around in the bedding.

If water isn't properly draining, the moisture percentage will rise. If oxygen can't get through, the bin will become too moist and anaerobic. On the other hand, if it becomes too dry, the food source may dry up along with your worms.

The worms may also go into a type of hibernation or in search of another food source. You'll find out that keeping it moist is much easier than allowing it to become too dry. Always have a spray bottle of water on hand to spritz if necessary.

Adequate ventilation is a must at all times. As gas is emitted from the top of the compost, oxygen is sucked in from the bottom. Be sure to put your holes in the right places. Worms themselves are great aerators and they'll help you out whenever possible. Keep in mind the damp sponge theory.

Watch my 10 min video on the [DIY plastic worm bin](#) and feeding worms.

Note:

Remember, if you don't have the perfect conditions for your worms don't be overly concerned. Sometimes they'll move completely out of the food source and cling to the walls of the worm bin.

Worms are somewhat migratory. They'll move to a section of the bin they feel comfortable with, then move back into the bedding when conditions are right. You'll get the hang of it pretty quick and when you feel comfortable, you'll stop checking on them so much.

I've been in possession of worm bins not maintained for a couple of months before. When I lifted the lid, it was business as usual. I'm sure I could have left them longer (definitely not advised), but most of the time I miss my worms and end up lifting the bin every other day to let them know I care. I know...I'm crazy! But you'll learn to love your little poopers too.

For a better understanding on the implementations of food, aeration, moisture, temperature, & darkness please read...

[The 5 Fundamentals for Any Worm Bin](#)

There's plenty more info on worm bins discussed in
[The Worm Farming Revolution Book](#)

Thank you for reading *Worm Farming Revealed's Free Guide to Worm Farming*. If you'd like to continue reading more free information on worm farming, click the links below. In the meantime...

Please Share/Distribute This Guide to EVERYONE!

I hope this information has been helpful, informative, and sparks excitement within you to begin a new journey into gardening, recycling, fishing, or whatever your heart leads you to do.

Remember, worms are ready, willing, and able to help transform your life, work with you, and help you return to the founding principles of successful gardening.

Teaching, Inspiring, & Empowering,

~Pauly Piccirillo, "You'll Never Garden the Same Again" 😊

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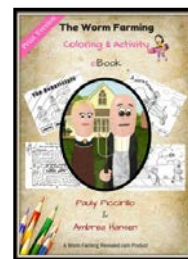
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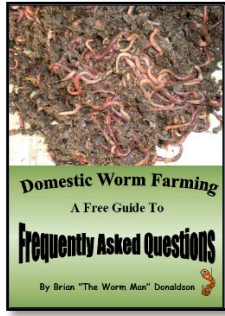
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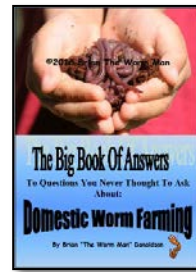
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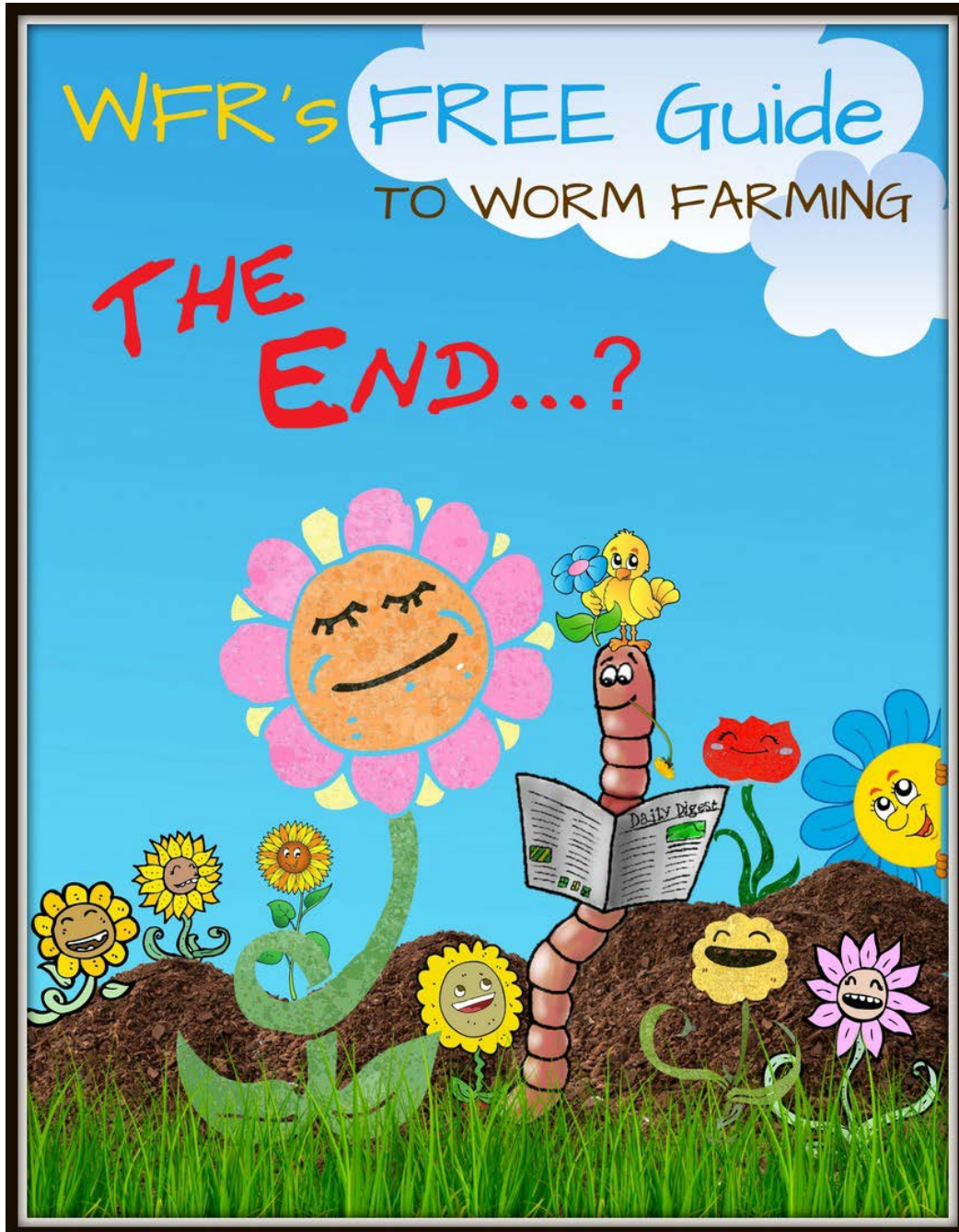
We search the Internet to bring you the best of the best all in one entertaining read.



Please don't forget to ethically share this book with **[EVERYONE!](#)**

Thank you again so much for reading this free guide. While I don't have all the answers, I hope it points you in the right direction and you're able to glean from some of my other worm farming friends.

May all your composting, gardening, and
worm-partying dreams come true! **Grow Something Amazing!**



Contact: [The Little Worm Farm](#)