

By Larry Shier

Beware false knowledge; it is more dangerous than ignorance

-George Bernard Shaw

Introduction

This EBook was produced and provided free of charge by The Blue Worm Bin vermicomposting, organic growing and soil remediation blog for its subscribers. Subscribers are welcome to share this book. If you've received this book and are not a subscriber, you're encouraged to visit the blog and we hope you'll subscribe.

Whether you're a brand new worm farmer, an experienced pro or someone just researching; there are a few common mistakes that if prevented (or fixed) can make everything easier.

The good news is many of these mistakes can be avoided or fixed using only a couple of "tricks". Others are just a matter of a little more knowledge.

The source of many of these errors comes from the distribution and repetition of poor information. I've watched huge numbers of YouTube videos by complete amateurs

spreading information they believe to be true because it was told to them by someone else lacking any true experience.

A couple of questions to ask to determine if someone's videos should be suspect are: Does this person have any other videos showing results? A single (especially older) video of setting up a worm bin, without follow up might indicate the person was not successful. Does this poster have numerous "unboxing" videos of new worms? Several of this type of video might indicate the person has tragically killed their worms and keeps starting over.

The goal of this book is to help avoid some common pitfalls or improve what you're already doing.

Let's begin examining the mistakes and the solutions that very commonly lead a worm farmer into trouble....

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Mistake #1 Overfeeding

Over feeding is hands down the biggest reason beginners kill their first worms. You can very easily find many places in your research that say "worms can eat their body weight each day". This may be true of certain foods that are high in moisture and of a low density (like ripe watermelon). However dense foods, or foods that haven't begun to decompose and become soft will not be eaten by worms that quickly (think carrots for example).

Overfeeding can result in foods becoming hot as thermophilic microbes begin to decompose them essentially cooking your worms.

Overfeeding can result in fermentation and the production of alcohols or ammonia, poisoning your worms. Symptoms of overfeeding include, feeling hot to the touch, a bin that smells like a trash can or in later stages "string of pearls" in your worms. String of pearls is an apt name for the condition as the worms begin to look like little balls with thin areas between.

Worms eat their bedding as well as "food". Carbon rich bedding materials cause few (if any) problems if overfed. I recommend as a rookie to never stress that you'll starve your worms if there is bedding present. Begin conservatively with things like kitchen scraps until you gain some experience. You

want food to last at 3-7 days but no more. If your conservative amount of food is eaten in 2 days, feed a little more. If the food you add is still visible after 7 days you're on the brink of overfeeding, reduce the food the next feeding. As your worm population increases the amount of food composted will also increase. This is a fairly safe method to start out and keep your worms alive as you gain experience.

Placing food on only a portion of the bin's surface allows the worms to seek refuge in the non-fed area if heating occurs or toxins begin to be formed. If you notice worms leaving the area of food you've added, remove that food and lightly feed something else.

Mistake #2 Bin Too Wet

Keeping a worm bin too wet is perhaps the second most common and deadly mistake for your worms. Many people recommend pouring water through a worm bin to collect "worm tea", "worm wee", "worm pee" or one of a host of other names for it. The correct term for water captured this way is leachate. Leachate is NOT worm tea and since worms have no urinary organs like kidneys or a bladder, I can assure you it isn't "worm pee" either.

Many commercial worm bins have a drainage area with a spigot. Many believe this is to collect the leachate to use as fertilizer. Nature's Footprint, maker of one of several models of bins (Worm Factory) with a spigot has an excellent article on their website about leachate vs casting tea. Leachate however can potentially contain phytotoxins that can harm your plants. Excessive water can close up air spaces in the bedding and begin suffocating your worms. Often the worms will attempt escape or will begin to die as conditions become anaerobic.

Bedding in a worm bin should only be wet enough to squeeze 3-5 drops of water from a handful of material. Once you adjust your bins moisture to this level, you'll find tour compost begins to have a better appearance and that removing worms from it becomes easier.

The <u>Worm Inn</u> or <u>Worm Inn Mega</u>, being a rugged cloth bag are excellent choices for commercially built worm systems that are well drained and do not readily stay wet.



The Worm Inn and Worm Inn Mega come in 5 colours

Mistake #3 Restricting Airflow

This is a mistake I remember making myself. As a new worm farmer I worried about worms escaping their bin and drying up on the floor (or ones imagination can create worse scenarios). I drilled a few holes in a bin; then clamped down a tight fitting lid. When I would check my bin there were worms all over the walls of the bin and on the lid. I would think "wow good thing that lids keeping them in." Finally an experienced worm farmer told me "if the worms are on the walls they're not eating and making compost" Face, meet palm!

Worms do best with a lot of oxygen. Lids hold in moisture and cause excessive condensation inside the bin, wet walls are climbable walls to worms. Suffocation is the reason and wet bin walls provide the opportunity. Removing the lids almost always solves the escaping issue. This is probably my single biggest reason for loving the Worm Inn Mega These bins provide maximum airflow and are like Alcatraz for worms, virtually inescapable.

Airflow also maximizes worm breeding and worm density, meaning that once a well ventilated bin is going well, it's composting capacity is higher.

Mistake#4 Over handling

Once you've committed to being a worm farmer; there's a great deal of excitement in receiving the first order of worms. Some folks I know have compared the feeling to being a kid anticipating opening a gift.

This excitement often leads to a strong desire to watch and look at your new workers. Many new worm wranglers have reported not being able to stop peeking, the need to "fluff" or turn the bedding to watch the worms scurry away from the light. These are natural desires and feelings BUT it is not in the best interest of the worms. Worms managed for several million years on Earth without us; our fussing over them is unnecessary. In nature they can easily survive without us and in captivity they really only need us to provide moisture and organic material they can eat.

We should try really hard to limit our checks to a maximum of about once every 3 days (unless your area is extremely dry and there's a risk of them drying out). Over handling of worms causes stress and can slow their reproduction rates and even cause a string of pearls death similar to overfeeding.

Mistake#5 Lacking Carbon

Many new worm farmers (and a quite a few with more experience) start out their worm bins with bedding but never replace the carbon materials as they're eaten. Kitchen scraps are added exclusively after the initial bedding. The worms can do quite well with this. The issue comes when it's time to harvest castings. I'm asked repeatedly "why are my worm castings so sticky?" "Why do my castings go hard and like cement once dry?" The answer is almost always not enough carbon materials. Adding additional pieces of ripped cardboard, or some shredded paper or some dried autumn leaves occasionally in addition to food helps to give the castings a more pellet like structure and prevents a lot of the hardening into blocks. Less sticky castings are also easier to get the worms out of the castings. All around simply increasing the amount of carbon materials makes worm farming easier. Another advantage may be that you are placing carbon back into the soil where it can be kept from the atmosphere.

Mistake #6 Buying Materials

Some pre-made worm farms come with a supply of bedding and other materials for the beginner to successfully begin their farm. These extras make beginning easy and are a confidence booster initially. Many new worm farmers become convinced that these things are necessary and purchase refill kits. Often the kits will come with things that can be replaced with other, around the house stuff that might be heading to the landfill anyway or is at the least a lower cost or free. Other times a new worm farmer will watch someone on YouTube using peat moss as bedding and presume it's needed. It is not.

Peat moss or coconut coir is easily replaced with autumn leaves, chunks of cardboard or crumpled newsprint.

Pumice or other grit materials included as grit for a worms gizzard is easily replaced with finely ground eggshell or clean, fine sand. At worst a 10 kilo (about 22 pound) bag of garden lime or dolomite that'll last you for years is usually under \$10.

Grain based worm foods like Worm Chow® are usually used for the bait industry to grow larger worms more consistently. These products are completely unnecessary for the home composter. Farmland is better served by growing food for humans than worms and transportation costs fuel and money.

Mistake#7 Over Prepping Food

This is another practice I tend to blame on YouTube and a few other sources. Activities such as making "slurries" or purees for worms with a food processor are wasteful of electricity and your time. The idea is to increase the surface area of foods so they break down and are eaten faster by the worms and the associated microbes. This does make foods decompose faster, but with some risks. You're blending away airspaces between particles so food can become anaerobic and begin to ferment. Pureed food LOOKS like less food; so there's a strong tendency to overfeed the worms. Blending releases all the water fro foods at once and often needs additional water for the blades to properly make a "smoothie", leading to a bin that's too wet.

It's sufficient to just chop food waste into smaller chunks during food preparation; you've already got the knife in your hand anyway. You'll save more time by not slaving over worm food than you can save in composting time. Moisture will be more time released and you'll save digging out (or burning out) the blender.

Mistake#8 Other Creature Panic

A healthy worm bin is an ecosystem, seldom are worms and invisible microbes the only creature involved in the decomposition process. A vast majority of the creatures you'll find in a worm bin are beneficial. One issue that can come up in a worm bin is overpopulation; there are usually few predator insects inside a worm bin ecosystem.

Collembola are commonly called springtails. They often have an appendage called a furcula on their hind end. The furcular is tucked under the body and when springtails are disturbed they use the furcula to launch themselves like a pole vaulter into the air. Collembola are usually white but there are orange varieties and look like tiny termites. Not all species of springtails jump. Recognizing these fast moving little bugs as no threat is helpful to relieve some rookie jitters. Notice the little antennae in the photo.



Collembola-Springtails

It is rare for springtails to wander from a bin and infest a home. They prefer to stay where the food and moisture is. It seems like there is no real good way to eliminate springtails from a worm bin but temporarily reducing food can lower their numbers.

Mites: most mites, like springtails are in your worm bin to help make larger pieces of food smaller. Worms will eat the droppings of mites and springtails. Both are just aiding in creating compost. Mites are tiny and may appear as white or reddish brown balls on the surface of your bin. Some very obviously move and others appear to just lay there. Lowering their numbers can usually be accomplished by allowing the surface of your bin to dry a little, adding some ground eggshell or other source of calcium carbonate such as garden lime or dolomite.



mites on a watermelon rind



1 Land Planarians- Brought to USA from Asia

Land planarians or flatworms are becoming common in rhe southern USA and in warmer areas throughout the world. Often they have a hammer shaped head but almost always appear like a very large worm but flat at least on one side. Planarians can reproduce or regenerate from a very small piece of their body. These are earthworm killers; they can eradicate a worm bin pretty quickly. If you find a planarian in or near your worm bin NEVER try to kill it by cutting it up as you may get more this way. The best method to dispatch planarians is to place them in a Ziploc type bag with a quantity of salt to remove moisture from their body.

Fruit flies and fungus gnats: these are totally harmless to your worms. They are however annoying as they hover around and you risk inhaling them in your throat or nose. Fruit flies are easier to get rid of than fungus gnats but in both cases a good vacuum cleaner can be the first line of attack. Sucking up the adults can prevent them from laying eggs and creating a new generation. Suggestions for traps to catch fruit flies abound with a Google search.

Other creatures you may see in your worm bin may be:

- Pot worms enchytraeids
- Pseudo scorpions
- Black soldier fly larvae
- Housefly in various stages of life

This is in no way a complete list of other worm bin creatures but should aid in finding an identification of the most common.

Mistake#9 Hoarding Food

Many people that begin vermicomposting are environmentally conscious. Many people begin with the goal of composting ALL their household vegetable and fruit waste. Most begin with a single pound of worms; quickly they realize that this won't handle as much waste as they produce. This sometimes leads new wormers to begin freezing their food waste for later. Unless your waste stream for some reason is very inconsistent this idea simply doesn't make sense. Filling your freezer with waste can mean you won't be able to take advantage of sales at your market to save food to feed your family.

By the time you are able to process all the waste you're already feeding plus all the food you've saved you'll have far more worms than you need to process your weekly output of scraps. You're better off to feed what your worms can eat and either compost the remainder in a traditional pile or even bokashi composting. Otherwise temporarily throw it out with your trash with the knowledge you're on a journey not at the destination.

Mistake#10 The Scams

This section is of utmost importance. Worm farming has, over several decades had more than a few con artists. Buy back scams are less common now than in the 1970's and 1980's but some still exist. The advertisements usually were something like "Large scale worm farm can't meet their demand" This was followed by a business proposition to learn their "system" and get worms and equipment with flowery promises of being an entrepreneur and making thousands of course they would sell you the equipment and worms with step by step directions and a promise to buy back all the worms and castings you can produce. This is where the scam takes different directions.

- 1. You buy the worms and equipment and never see or hear from the "company" again or get neither worms nor equipment.
- 2. You purchase the system and get the trays, racks, worms, bedding and even a harvester maybe (at a highly inflated price). But the "company" abandons you without buying anything back.
- 3. This is less common but it follows the same as #2 except the buyback contract requires you to produce impossible quantities of worms or casting and the company then sues you for a breach of contract.

Buying a system or business for worms almost always ends with the purchaser losing. If you aspire to growing a business in worms or vermicompost then it's better to begin small, learn what you can and grow as your knowledge and experience dictate. I am a member of The Worm Farming Alliance; a group of people with a great deal of knowledge in operating worm farming businesses and producing quality castings. Beginners are very welcome to join as well. For about \$8/month you can tap into the knowledge of many successful worm business people. There are also lessons on growing a worm business, building websites for business and discounts on worms and supplies available with membership. You do not need to spend a lot of money to purchase a system and possibly get separated from your money.

Conclusions:

I hope you've learned to conquer a common mistake or several with this EBook. Hopefully some bit of information here has been helpful to you.

I want to thank everyone who is subscribed to The
Blue Worm Bin and I will try to continue bringing quality content to the site and have some aspirations for future EBooks as well

Happy Worming Everyone!!