

## Chapter 1 : Worm Farm Business: How Much Money Can You Make Per Worm Bed?

*In this book you will learn how the earthworm can move through soil, you will get to see a close-up photograph of its mouth, you will learn what it eats, you will learn about castings, how the earthworm protects itself from enemies, how it can regenerate lost parts, you'll learn to tell the difference between the head and the tail, how it.*

Rotting food in your bin Bin smells Unwanted pests Too wet- Check drainage holes for blockage and ensure they are at lowest point in bin. It is also possible that recent addition in excess amount of wet foods have produced a wetter environment that can be easily corrected by adding some shredded newspaper that will absorb the excess moisture. Too dry- Use a mister or spray nozzle to evenly distribute water over top of bedding and check temperature conditions that may be causing bedding to dry out faster than normal. Make sure when new bedding is added, additional water is added to prevent your new material from absorbing existing moisture from bed. Too hot- Ensure plenty of ventilation and shade in the summer. You can attempt a short term solution by placing ice in a tray and setting it in the top of your bin. If bin temperature cannot be maintained at a safe level, move to an environment that is climate controlled such as basement, garage, spare room or closet. You can help keep your bin warm by placing it on a rug instead of bare ground or concrete and by covering it up with blankets or other insulating materials and by the use of a light or heating pads placed under your bin as long as the space is adequate so as not to pose a fire hazard. Rotting food- If you see rotting food in your bin, you may be either adding too much food for your worms to consume, or the food is too large for them to eat and they are just waiting for it to break down some where they can manage it. While this is normally not a big deal as long as it is covered with bedding, it can become a problem if it is in excess. It can lead to unwanted pests, bad smells, and an unbalanced environment. Excess rotten food should be removed or chopped smaller and given more time before adding more food. You can use a blender or food processor to chop up your kitchen scraps which will help speed up the breakdown process. Smells- Typically when your bin is properly maintained, you should have no smell other than a slight earthy smell. Some reasons for a bad smelling bin can be from not properly burying the food, by adding the wrong foods that the worms avoid, too much food or excess moisture. Ensure all food is properly buried and moisture levels is maintained. Worms escaping- The red wiggler is not typically an adventurer and are content to stay put when their environment fits to their liking. The only time they should try to escape is when they are not happy about something in their bin. There can be a few different things that can cause this. Bin temperature, moisture level, pests, etc. The most common is if the bedding has taken on a high acidic or alkaline content from excess levels of certain foods. This can normally be corrected by adding some dried crushed eggshells and cutting back on excess foods with a high acid content. Some sources mention adding powdered lime dust, but this is like driving a thumbtack with a sledge hammer and definitely overkill for a small bin. Unwanted pests- I say unwanted, because some actually help the process of breaking down the waste and are only a concern when they become a nuisance to you. This is one of the most sought after subjects around worm composting. While most pose no immediate threat to the worms, if left alone they can rob your bin of the food intended the worms and eventually become a bug habitat. The easiest way to avoid them is to properly bury the food, and keep your bin secure from any openings other than screened off ventilation holes. You may notice gnats, flies, ants, and a variety of others if your bin is not properly maintained. Keep in mind that if your bin becomes invaded with pests and nothing seems to be working to eradicate them, it may be easier to start a new bed and move your worms. You can use a cardboard box temporarily while you clean your bin inside and out. The following list should help you remedy the problem pests. Flying insects- Attracted by certain smells and can usually be avoided by completely burying food and keeping bin closed. Fly paper can be placed around the outside of bin and hung from the lid. Also for most flying insects, you can suck them up with a vacuum. Traps can be made from placing cups of vinegar with a drop of dish soap around your bin. Cover the cups with plastic wrap and poke some holes in it for the flies to get in through. Ants- They work fast and can wreak havoc in a short time. You can also treat the infected areas leading to your bin with granular ant poison. If you have them in your bin, you can soak the affected areas and the ants will usually leave on there own. For the rest you may have to

scoop them out by hand and discard the affected bedding. After you have them removed, clean and dry all outside areas and add new dry bedding if needed to soak up excess water. Mites- There are several species of mites that are normally of no threat to your worms, but they can rapidly increase in population, causing the worms to go deeper and not be able to process the upper levels of food. Mites will be present from over feeding, over moist bedding and meaty or wet food. To remove them, leave the lid open for a couple of hours, driving them into the bedding. Water the bedding, forcing them to the top and use a propane torch to flame across them thereby killing them. This is only a quick fix and you will need to correct the problem that caused them or you will find yourself repeating in a short time. Springtails- These oblong wingless insects will jump when disturbed and will turn the top of your bed with their rapid reproduction. The only real threat other than being a nuisance is the same as mites and can be dealt with in the same manner. Rodents- Usually no threat of rodents as long as area around bin is kept clean, bin is kept secured and no bad smells are present. Traps can be placed around bin as a safety measure if needed. You can review and order our Ebook on Vermicompost by clicking [here](#), or with the link below. Written as a helpful guide to vermiculture, providing tips and info on all areas of healthy composting and loaded with information to help get you started and guide you through the process of setting up and maintaining a worm bin.

### Chapter 2 : Squirmy Science: Which Soil Types Do Earthworms Like Best? - Scientific American

*Auto Suggestions are available once you type at least 3 letters. Use up arrow (for mozilla firefox browser alt+up arrow) and down arrow (for mozilla firefox browser alt+down arrow) to review and enter to select.*

Choose a location that is cool and in the shade if you are testing outside or in a dimly lit room if you are testing indoors. If the plastic box is transparent, use an especially dark location, such as a closet. Spray the sand with water counting the squirts as you go until it all feels wet, stopping before puddles of water appear; mix the moistened sand with a spoon or fork. Make sure the sand does not spill out over one quarter of the area of the bottom of the box. Spray the other "soils" gravel, dried leaves and potting soil in the mixing bowl each separately just as you did the sand. Use the same number of sprays of water for each soil type as you did for the sand. When each soil has been sprayed, transfer it in its own corner of the box. How wet does the sand feel compared with the gravel, dried leaves and potting soil? Space the soils so that there is roughly two to five centimeters of space between the samples. Check to make sure the soils are still separated and not touching one another. Watch the earthworms for a minute or two. What do the earthworms do at first? How do they move? Do they follow one another? Did they all go into one soil or did they burrow into different soils? Note what time it is. Let the earthworms stay undisturbed in the box for 24 hours. Do you see any worms outside of the soil? You may need to look very closely through the different soils to make sure you do not miss a small earthworm. Which soils have the most earthworms in them? Which soils have the least? Why do you think some of the soils hold more earthworms than others? Do earthworms stay in the soil in which they are put? Do this activity again but put one earthworm in each soil type. After 24 hours, is there still one earthworm in each sample, or are there more earthworms in one soil compared with another? Earthworms are blind, but they have special cells that can sense light. What kinds of light do earthworms avoid and what kinds do they not mind? Set up a box with damp potting soil in each corner. Put a small red-light flashlight pointing straight down above one corner, a small blue-light flashlight above another corner, and a small white-light flashlight above the third corner. Put an earthworm in the center of the box, put the lid on, and turn on all three flashlights. Which flashlight or flashlights does the earthworm go toward and which does it avoid? Did the earthworm try to stay away from all the lights or just certain colors? Do multiple earthworms behave the same way? Observations and results Were most of the earthworms in the leaves? Were some in the sand and potting soil? Were none in the gravel? Earthworms eat dead plant matter, such as fallen leaves, and transform it into a nutritious substance that plants can absorb more readily. So, if they want a tasty meal, they would most likely be in the leaves. However, if there is organic matter dead plant matter or animal matter, which they also eat in the other soil types tested, the earthworms might be attracted to those soils as well. But just because an earthworm is in one of the soils does not mean that it is its ideal environment or that it wants to eat that soil. Besides adding nutrients to the soil, earthworms also keep the soil healthy by tunneling. As they eat, earthworms create tunnels that keep the soil open and full of paths for water and air. Without earthworms, the soil would be smashed down, or compacted, making it difficult for water and air to reach the roots of plants. Overall, it would be very hard to grow all the beautiful plants that give us oxygen and food without these wiggly, little creatures.

### Chapter 3 : Lets Look at Earthworms : Suzanne oro Dell :

*Lets Look at Earthworms by Suzanne oro Dell , , available at Book Depository with free delivery worldwide.*

When you look at earthworms you will see a slimy, brown, squiggly thing. And where is the head on this thing anyway? Even without eyes and ears this squiggly worm can sense when the sun is shining and if a hungry Gopher is hanging around. Imagine eating a bathtub full of cereal everyday, yikes! But earthworms eat a lot of soil so it is much better for the earth. Earthworms are made to do really hard work. Nature made them to be the perfect recyclers and underground farmers. When they move through the ground they eat away all of the dead plants and animals around and turn all of this yucky stuff into good stuff. The organic trash gets digested by the worms and gets turned into vitamin rich and healthy soil. This good soil that the worms make gets used in growing better plants for all living things on earth to eat! The very famous English naturalist Charles Darwin studied earthworms for almost 40 years. He kept worms everywhere around his house, in jars in his library to the beds in his garden. He would count them, and make noises at them, feed them odd foods like horseradish and cabbage, and watched them working away in his yard. Charles Darwin and Worms In , Darwin wrote, "It may be doubted whether there are many other animals which have played so important a part in the history of the world. Darwin may have been right, and probably is, because even some scientist today say that ancient civilizations might not have evolved without earthworms. As the worms worked away underground making the rich soil about 5, years ago, they were actually improving the river valley soils of Egypt, India, and Mesopotamia. With the rich soil came the ability to start growing food crops and feed the first citizens in the earliest towns and villages. How do you tell if a squirmy critter is an earthworm? Look at the picture above after reading about earthworm I. Earthworms have a band-like section clitellum on their body that looks like a girdle or really thick rubber-band. This band is put to good use when they need new baby worms to help with the farming. You bet they do! Every true earthworm has rings all along its body that divide the worm into segments. The first and last segments are smooth, but all of the rings in between have four pairs of itsy-bitsy hair like bristles. The worms use these hairs to grab a hold of the earth around them and pull themselves along increasing the amount of air in the soil, which makes the soil better for growing things. So, when you find a worm on the ground and it has segments, rings and bristles, you can be sure you have indeed found yourself the hard working, earth friendly earthworm! A Leech may have segements, but no rings. Leeches are NOT earthworms. Roundworms are not earthworms either! Imposter Worms are Easy to Spot! So be sure to check it for its earthworm I. You can see clearly in the two pictures to the right that to be a true Earthworm takes some special and identifiable features. Check-out These Amazing Facts. In one day an earthworm can eat its own weight and more in organic waste. Think about how hard it would be to eat your weight in food everyday. Charles Darwin gathered up and weighed the rich soil fertilizer created by the worms to see how much they create over a one year period of time. In a grassy area next to his house he mounded up 18 tons of the earth friendly manure manufactured by his worms. If you think Mount Everest is tall, scientist say that if you were to pile up all of the topsoil that worms have made over the past millions of years in one place, it would be five times as tall as Mount Everest! Can you imagine being buried under a mountain of dead leaves and organic stuff? Earthworms spend their whole lives breaking down this organic matter, so if we lived in a world without worms , we would be living under a mountain of waste! That does not sound very comfortable to me!

### Chapter 4 : Top 10 facts about Worms - InfoBarrel

*Let the earthworms do all the soil churning and turning. You can also consider to purchase earthworms or you can take them from your worm-farm and add them to the soil.*

One sure sign of spring is when you see earthworms coming up during rains. Ask for volunteers as the "worm wrangler" to help keep the worm on the plate for each group. Give each group a plate with a moist paper towel on it, plus a paper to record their observations. Gently set an earthworm on the moist toweling and let the children observe them. Earthworm Observations Look at your earthworm closely. What shape is it? Does it have a head? Which end is the front end? How can you tell? Is the top different from the bottom? What color is the earthworm? How does it feel when you touch it? What happens when your worm meets another worm? How fast does it go? How can you measure how fast it is going? Are there any other special features that you notice? How long is your earthworm? Measure it with a ruler. Do you think all earthworms are the same length? Why or why not? Does it look different under a magnifying lens? Draw your earthworm on a piece of paper. Return the earthworms to the moist soil as soon as possible and release where they were found. Have the children think about the earthworms and write down any questions. Earthworm Information What do earthworms eat? Many children will answer that earthworms eat soil. This answer is partially true for the types of earthworms that spend most of their time underground. Although they appear to eat the dirt, the parts that they actually digest are the soil microorganisms, such as bacteria. The rest of the soil simply passes through the digestive tract. Other kinds of worms, such as the red wigglers used in worm bins, live naturally at the surface in piles of dead leaves. Sometimes they will drag a dead leaf into a burrow in the soil and eat it there. What are earthworm castings? Casting are simply the remains that have passed through the earthworms. Some types of worms that live in burrows leave their castings at the soil surface. The castings are full of nutrients for enriching the soil. Some people keep earthworms in a worm bin so the worms turn kitchen and garden scraps into valuable worm castings see more about that below. How do earthworms move? Earthworms have sets of muscles that alternately squeeze them, pushing them out like a tube of toothpaste. Then another set of muscles pull them together again. Stiff hairs called setae on the outside of their skin stick into the soil to help them move forward. In the original of the photograph above you could see the setae, but at this size they just look like bumps. Look on a real earthworm and see if you can spot them. Worm Bins The type of worms that do well in worm bins are the red wigglers. They are relatively small, as the name implies, actively wiggle around. In fact, if the red wigglers are disturbed by the conditions of the bin, they may wriggle right out. You can often find someone with a bin who is willing to donate a few. There is a pop-up ad. Making a worm bin is an absolutely wonderful project to do with kids. I still remember when we found our first cocoon, which is the structure the earthworms form around their eggs. It was so exciting! I could go on and on about earthworms. Please let me know if you have any comments, questions or suggestions. Do you have a worm bin? At Kids Do Science there is an earthworm anatomy poster to download at bottom of the page and experiments to perform. Sorry, the link is broken. Just a few of the tons of fun books about earthworms for kids: Wormology has more experiments and activities.

## Chapter 5 : Let's Look at Earthworms

*What animal has a long body, slimy skin, and no backbone? An earthworm! But do you know where earthworms live? Or which end of an earthworm is its head?*

A friend of mine asked me about putting worms in potted plants. Here is what I sent him. The thing you are after with the earthworms are their castings. They also loosen the soil but if you are doing pots your soil will be aerated. Just change out the soil each time you re-plant. What I would do is just start a worm composter. You can buy one or build one. I built my own. Then I bought a pound of red wigglers. After about 4 months they double. They eat half their weight of your compostable stuff. That includes paper and paper products - napkins. They really do the trick. Then you can add that stuff in your potting mix or you can take it and dissolve it in a watering can and make worm tea - sounds gross I know but it is like all natural steroids for your plants. If you start one but are worried about waiting 2 months to get a supply you can buy worm castings from nurseries. That would hold you over till you started to get some for free. Send me some pics when you get it started. Also if you want to build your own worm bin I can help you out. This website is an urban farm and they advocate putting a handful of worms into each pot. They produce a ton of food and are going strong so I would have to say they know what they are talking about. If you want to be creative try two pots - one with and one without and see which does better. Just plant the same thing in each. Let me know what you decide. There are a lot of variables at play here. Do they have a high turnover on the plants potted and are constantly adding new soil mixture? They use mostly compost in their pots so does this make it ok? Is it dependent on the size of the pot? Worms are beneficial in the garden because they eat organic material and deposit castings. They help build soil. The mucus they do excrete helps soil to clump together which helps in water retention. They aerate the soil, loosening it up for roots to grow deep in search of water. The micro-organisms associated with the worms help digest minerals and place them into a form that plants use. The one bad comment is that their burrowing allows water to run out of the plant too fast. I used to treat my pots like they were their own entity and somehow different then if I was growing in a field. Building good soil is the same whether its in a field or in a pot.

## Chapter 6 : I Got Worms, Now What?

*Let's look at earthworms. [Suzanne Paul Dell'Oro] -- This book introduces the physical characteristics, habitats, habits, and babies of earthworms. Each audio-enabled VOX Book has an audio reader with complete narration permanently attached inside the.*

## Chapter 7 : Let's look at earthworms ( edition) | Open Library

*Get this from a library! Let's look at earthworms. [Suzanne Paul Dell'Oro] -- Simple text and close-up photographs describe the anatomy, behavior, habitat, and enemies of earthworms.*

## Chapter 8 : Suzanne Paul Dell'Oro (Author of Let's Look at Earthworms)

*BRAND NEW Please allow working days for delivery This item is shipped from our NZ warehouse Let's Look at Earthworms by Dell'oro, Suzanne Paul.*

## Chapter 9 : Weekend Science Fun: Earthworms € Growing With Science Blog

*Let's look at earthworms by Suzanne Paul Dell'Oro, , Lerner edition, in English.*