

# **BLATTICOMPOSTING**

By

**Ken Chiarella**



**Wormman.com**

## Table of Contents

INTRODUCTION.....	2
WHAT IS BLATTICOMPOSTING.....	5
TYPES OF ROACHES USED FOR BLATTICOMPOSTING.....	7
Eublaberus sp. 'Ivory' or Ivory Head Roach.....	8
Pantanal Roaches or Eublaberus serranus.....	12
HOW TO HOUSE THE ROACHES.....	<b>Error! Bookmark not defined.</b>
HOW DO I SET UP AND MAINTAIN MY ROACH COMPOST.....	16
Setting up the roach compost.....	16
Maintaining the roach compost.....	16
WHERE DO I SET UP MY ROACH COMPOSTING BIN?.....	18
WHAT DO I FEED MY ROACHES?.....	18
COMMON PROBLEMS AND HOW TO TROUBLESHOOT THEM.....	<b>Error! Bookmark not defined.</b>
WHEN DO I HARVEST THE ROACH FRASS OR CASTINGS?.....	<b>Error! Bookmark not defined.</b>
HOW DO I APPLY ROACH FRASS/CASTINGS TO MY PLANTS AND GARDEN?.....	20
CAN I ADD OTHER CRITTERS TO MY ROACH COMPOST?.....	20
CONCLUSION.....	24

## INTRODUCTION

Why this book? I own Wormman.com. I have been raising worms and composting for most of my life. I turned my passion for gardening and my love of insects into a business in 1996 and bought the domain name “Wormman.com” in 1997. I spend my days farming insects, gardening and interacting with my customers. I love every waking moment of it and sleep very little because I am so excited to get up and do what I do every day. Life is a blessing and embracing every breath, doing good things and being grateful is how we give back.

I have been growing roaches for years and started feeding the roaches some of the food scraps generated by my organic garden, which is several acres large. Some of the roaches loved the vegetable scraps and some turned their noses up at them. For instance, our Lobster Roaches love protein rich food and fruit but have not been very fond of many vegetables. Some roaches prefer straw and prepared roach food while other attack vegetables with a vengeance. What I noticed was that the burrowing species of roach, mainly housed on coconut coir bedding, were very fond of food and vegetable scraps. I started experimenting with fruit and then leftover food that would usually go to our chickens or to our composting worms. The burrowing roaches took to that food as well and even ate egg crates and cardboard that we provided for places for the roaches to climb.

We clean out our roach enclosures monthly. We take the roach frass and spent bedding and pile it up, add green material to it, wet it down and let it heat up. We then use that as compost. I started to wonder if the roach frass and spent coir bedding was useful without the addition of green material and the heating process. I decided to use it on our garden plants in 2013 and was astounded by the results. The plants took to the roach frass much the same way as they did to worm castings. In Fact, we started using it as a top dressing for our potatoes and squash, which we grow to feed our mealworms and superworms. I did some research and found that there were university studies and small groups dedicated to roach composting and it had a name. They called it “Blatticomposting”. I was pleasantly surprised and found it ironic that I had been in business for nearly 20 years, at the time, and never heard of composting with roaches before. I searched for books on the subject and could not find any, so I decided to create an introduction into Blatticomposting for other who may want to know more about it, but I am adding a twist.

This book is not just about composting with roaches but is about composting with roaches so that our customers can feed their roaches with food scraps and also breed their own roaches for use as food for their pets. We are killing two birds with one stone here. Imagine being able to compost and breed roaches in the same space. The compost grows vegetables, which feeds roaches, which breed and make baby roaches, which then are used to feed pets and the cycle repeats itself. I am not sure that we will change the world but we will surely help people save money and get natural fertilizer, vegetables and roaches for free.

Imagine a bio-active composting bin containing various species of roaches, isopods, springtails, red worms, mealworms, superworms and even buffalo worms. We are talking

about an entire feeder farm in a Walmart plastic bin. We will concentrate on Blaticomposting for this eBook but I will touch on the bioactive setup.

Composting is an excellent alternative to the chemically manufactured fertilizers because most of these fertilizers release nitrous oxide and emission of methane to the environment which is harmful to the body. They also leave behind residue, such as salt, that will destroy the farm land over time.

Household garbage, in an ever expanding “throw-away” society, is using up landfill space at an alarming rate. Millions of tons of compostable materials are sent to landfills each year when it could be home composted and then the end product can be used in gardens or as soil amendments for house plants. Home composting will help decrease the problem of dumping overflowing landfills, reduces health issues with regards to chemically treated farm soil, and help make the environment a safer and more “green”.

## **WHAT IS BLATTICOMPOSTING**

There are different types of composting, such as vermicomposting, which was mentioned earlier. We will focus on Blatticomposting. What is then is Blatticomposting? It is a system that utilizes cockroaches to eat food scraps and turn those scraps into roach frass or roach poop.

There are over 4000 species of cockroaches, and of that number, less than 15 are pests to Humans. Very few roaches live in Human dwellings. Most roaches live outdoors and could not survive in a home. We raise 25 species of roaches on our farm and, with the exception of one, we have never had any escapees survive in our buildings, office or home. The one that survived was *Blattalateralis*. The colony grew to about 5 roaches after an initial escape from a package that we were shipping to a customer. They lived for about 5 months under a refrigerator in our office. We caught them when we were moving that refrigerator to clean. They were captured and we never saw any others.

The roaches that live near we humans are not raised for commercial production for reptile and pet food. These roaches have a bad reputation as they are known to be very destructive

in dwellings. They are the little speedy creatures sometimes found in your refuse bins, kitchen, and so on. Thankfully, we have never had a pest roach infestation, and after 20 years of breeding roaches for resale, I can assure you that the pet and feeder roaches are safe for your home and will not infest your dwelling.

Aside from the pest species mentioned, other species of cockroach are harmless to us humans and live outdoors in the wild, feeding on fruit, leaf litter, and other organic materials. Like every other animal, they play a significant role in the food chain, as after feeding on natural materials, many predators feed on them. In more tropical regions, cockroaches also play an immense role in nutrient cycles, eating leaves and woods thereby transforming them into the soil. We grow some roach species, that only feed on straw, oak leaves and leaf litter. They won't even look at a slice of banana. In fact, there are surprisingly cockroaches that help in the desert to prevent wildfires by eating dead, dried wood that gathers on the ground. The significance and importance of cockroaches is only just becoming clearer, and investigation into cockroaches for human uses has just barely started.

I have become a fan and there are some really beautiful species that many collect just for the sake of collect them as pets.

## **TYPES OF ROACHES USED FOR BLATTICOMPOSTING**

In composting, it is important that the insects used for this process are always busy decomposing the food given to them. The problem or issue with using some species of feeder and pet cockroaches for composting is that many species of roaches can climb glass and plastic and some can even fly away and leave the compost. Some require high temperatures to grow and breed. There are some species that are just right for composting. Those roaches can't fly or climb, they do well at room temperatures and will pretty much eat whatever you provide for them. Those same roaches burrow, eat paper and cardboard as well as the bedding and they thrive in crowded conditions at room temperature to slightly above.



**(*Eublaberus* sp.'Ivory') or Ivory Head Roach:**



The species that is very good for composting seems to be the Eublaberus roaches. There are at least four that we grow. Each has a slight difference in needs but they are all basically the same. Ivory Head roaches are not very common and usually grow very big in both length and size. The adult males and females have straightforward white wings and fascinating pronotum markings which help set them apart from other roach species. This roach species is tame and very social. I have fed them right out of my hands on occasion. They endure crowing quite well and breed at a very high rate at room temperature or higher.

Using a reptile heating mat in winter will help keep them eating and breeding we vociferously.

#### **Features:**

- **Adult Size:** Male: 2.5 inches Female 2.5 to 3 inches.
- **Flying Abilities:** Cannot fly.
- **Climbing Habit:** Cannot climb
- **Air Humidity:** Can tolerate dry substrate well.
- **Locality:** None.
- **Mode of Birth:** Ovoviviparous.
- **Temperature Requirements:** 68-85 degrees Fahrenheit.
- **Substrate Humidity:** dry but we do keep a cup of Cricket Crystals in the bin with them. They get most of their moisture from the foods we feed and the Cricket Crystals.
- **Favorite Foods:** Everything. They love fruits and dry dog/cat food if you would like to just culture them and not compost.
- **Climbing Abilities:** All life stages can't climb.

**Six Spotted Roach (*Eublaberus Distanti*):**



Six Spotted Roaches are found in South American in bat caves where they live in crowded conditions on cave floors eating anything that comes there way, including bat poop and dead animals. They will grow to about 2.5". They are a burrowing roach and the nymphs have distinctive patterns of six spots on their backs.

**Features:**

- **Adult Size:** Male: 2" Female: 2.5"
- **Flying Abilities:** Cannot fly.
- **Air Humidity:** Not assiduous.
- **Locality:** Bat caves of South America
- **Mode of Birth:** Ovoviviparous.

- **Temperature Requirements:** 75-85 degrees Fahrenheit.
- **Substrate Humidity:** Moist.
- **Favorite Foods:** Not assiduous.
- **Climbing/Flying Abilities:** All life stages can't climb or fly.

**Pantanal Roaches or (*Eublaberus serranus*):**



This species of roaches are usually bred in captive and are a native to the "Pantanal" wetland area of Brazil and are known to love dampness. The adult Pantanal have different pronotum designs ranging from T-shape to a dark blob with two headlamp marking spots. These

features set it apart from the other *Eublaberus* spp. Nymphs. The fact that they like slightly more moisture than Ivory Head roaches make Ivory Head my choice for Blatticomposting.

**Features:**

- **Adult Size:** Male: 48 mm. Female: 54 mm.
- **Flying Abilities:** Cannot fly.
- **Air Humidity:** Not assiduous.
- **Locality:** Pantanal. Mato Grosso, Brazil.
- **Mode of Birth:** Ovoviviparous.
- **Temperature Requirements:** 75-85 degrees Fahrenheit.
- **Substrate Humidity:** Damp
- **Favorite Foods:** Not assiduous.
- **Climbing/Flying Abilities:** All life stages can't climb or fly.

**Orange Head Roaches (*Eulaberus posticus*):**





Orange Head roaches, although in the same family, have some characteristics that do not make them great for composting. The first is that they tend to be cannibalistic and they will eat one another. They are known for biting wings and will readily eat other critters that you supply for your bioactive setup. They also prefer it warmer than room temperature.

- **Adult Size:** Male: 48 mm. Female: 54 mm.
- **Flying/Climbing Abilities:** Cannot fly or climb.
- **Air Humidity:** Not assiduous.

- **Locality:**
- **Mode of Birth:** Ovoviviparous.
- **Temperature Requirements:** 80-90 degrees Fahrenheit.
- **Favorite Foods:** Provide food and water at all times. Always keep dry dog or cat food in a bowl in their culture container. Change it if it turns moldy.
- **Substrate Humidity:** Moist

So, the two roaches that we finally chose for Blatticomposting are the Ivory Head Roaches and the Pantanal Roaches. We compost with both but we keep them in separate composters so that they do not mix. It is hard to tell the nymphs apart and we do not want to get confused.

Ivory Heads win out overall, in my opinion because they like dry bedding. They thrive in dry bedding. That dry bedding ensures that flies, maggots and mites will not be drawn to the composting operation. The roaches will eat the vegetable scraps and humidity will be generated from that. The Cricket Crystals that you provide will also provide them with moisture.

## **Housing Your Blatticomposting Setup**

The good thing about this is that these roaches are not so demanding. You can use any plastic tote for your Blatticomposting setup. You do not need to drill holes unless you are going to put the lid on. In that case, air holes are needed. For vermicomposting, holes are drilled in the bottom of the composter for air circulation and for drainage. No such holes are needed in the bottom of the Blatticomposter. In fact, the only reason that you will need the lid is to



keep critters out if you are housing your composter outside in warm weather. Other than that, the top is not needed because your roaches will not be able to escape.

For housing roaches in vast numbers, and for breeding, a large plastic receptacle is fine and Walmart has great containers for about \$5.00. Aquariums are also being used, especially if one is interested in breeding roaches for use as food.

## **HOW DO I SET UP AND MAINTAIN MY ROACH COMPOSTER?**

### **Setting up the roach composter:**

Establishing a roach composter is relatively easy to do as you do not need much. For indoor composting, after getting container of any length, width, or size of your choice; depending on how big you want the composter to be, your next step is to add substrate.

Add a substrate surface for the roaches to live on, and in, that is about two to three inches deep. We use coconut coir bedding. You can also put an empty paper egg crates, shredded paper or peat moss

“Substrate” is a term used to describe what goes into the base of the composter. The substrate allows the roaches to hide, as they do in nature, but it also enables you to bury the food scraps so as not to attract flies.

### **Maintaining the Roach Composter:**

The roach composter requires very little maintenance besides being fed and being provided Cricket Crystals to drink from. The roaches will begin recycling your waste into fertilizer right away. Once they get to know you they will even swarm you when you add fresh food. The compost bin will need to be cleaned out every month or so and the frass can be used, or stored, for later use. The monthly cleaning is to remove old food peels, uneaten food and to remove excess frass.

The composter requires extensive cleaning of the entire setup once every six months or so, inside and out. This is done to get rid of spider eggs, bad bacteria and good old dirt. The only thing you should do within this period is to change the water once every two to three weeks. This six month cleaning will also allow you to remove adults or babies and create another bin if needed, or collect the excess roaches for feeding your pets. You can store those roaches in a smaller aquarium or container, provide them food and drink and then feed them to your pets as needed.

When it is time for cleaning, you should visually check out the substrate surface before cleaning it. Check for baby roaches or any other critters that you placed in the bins and remove them so that you do not lose them.

After six months the bedding will be rich, moist, thick, and full of nutrients. The frass will consist of compiled roach frass and decomposed organic matter. The roaches are removed to another container for safe keeping. The bin is then cleaned, and a new substrate and egg crate are put into the compost bin. The roaches are then put back into the bin.

## **WHERE DO I SET UP MY ROACH COMPOSTING BIN?**

Choosing a perfect location to set up a roach compost bin is simple. They don't smell, they can't escape so keep them dry and bury their food in the substrate and you can keep them anywhere. Keeping them in a warm location will ensure that they will continue to consume your food scraps and that they will breed well.

## **WHAT DO I FEED MY ROACHES?**

As stated earlier, there are well over 4000 species of roaches and are all known to be omnivores except a particular one named "cryptocerus". This makes it very easy to feed roaches as they will eat just about anything you give them. Most roaches do not need to be given fresh food at all times, but we provide the 25 species that we grow food at all times because we are running a farm and farming is about maximizing space, output and growth. A water source at all times is a necessity. A decent meal for the Blatticomposting roaches can be made up of rice, beans rolled oats, biscuits, cheese, apples, bananas and oranges.

They will also eat meat, beef, sugary items, vegetables over-ripened fruits, spoiled food, and even animal poop.

In general, this is to say that they can eat virtually anything and everything that you give to them, so when dumping unwanted material do not be afraid of what you give to them just be rest assured that they will eat and decompose anything that you give to them. Just do not over

feed. This can cause issues with flies, gnats and mites. Just give them what they will eat in an hour or so and replenish it when you see that the food is gone. You may find yourself doing this a couple of times a day.

## **Troubleshooting:**

**Problem:** Fruit Flies, Gnats and Mites in the Substrate:

**Solution:** The bedding is too wet. Let the bedding dry and cut back on the food given. Feed only what the roaches will completely eat in an hour or two and then bury new food in the bedding.

**Problem:** Roaches not Eating

**Solution:** Check the temperature. Room temperature is a temperature between 60 to 80 degrees. Composting roaches require the higher end of that range to be active. Take a temperature reading and get a reptile heating pad if you notice that they stop eating during colder periods.

**Problem:** Roaches not shedding properly or dying during a shed.

**Solution:** This could be caused by low humidity. To correct this, mist the inside of the composter in between feedings. You can also create a humid oasis by wetting the substrate in one section of the composter that you will not be feeding the roaches in.

**Problem:** Roaches not making babies.

**Solution:** In order to make baby roaches the temperature must be slightly warmer than room temperature. 80-85 degrees is perfect. You can achieve this by using a reptile heating pad

and a cover on the bin. Just ensure that you make air holes so that your composting bin gets air flow.

## **HOW DO I APPLY ROACH FRASS/CASTINGS TO MY PLANTS AND GARDEN?**

Roach frass is the poop excreted by the roaches after eating and digesting the food that was given to them. The roach frass is 100% organic and serves as excellent fertilizer and manure. This frass contains the nutrients that are required by plants to grow healthy.

Roach frass can be used for seedlings and on all plants, lawns, gardens and house plants. For use on seedlings, a small amount will be enough; you can mix it with the soil or just dump it on the ground of the seedling. A few tablespoons are also enough in plants. Research shows that One pound should cover 350 – 400 sq ft.

Roaches are high in Chitin, and this helps increase nutrient levels in plants. The roaches shed their chitinous skin as they grow. Those sheds of exoskeleton then get ground up as the roaches move around. They become part of the substrate over time, and if you have other organisms in your composting bin, they will also eat the skins and help break them down. The chitin is a very nutritious part of the roach frass or castings that you will feed your plants.

## **CAN I ADD OTHER CRITTERS TO MY ROACH COMPOST?**

In this composting process having other insects or organism other than the roaches is actually recommending, especially if you raise reptiles, birds, chickens or other animals that eat insects. The addition of other insects will speed the breakdown of the food, roach poop and

exoskeletons. The grouping of several insects will create a bioactive unit where the various insects live in symbiotic bliss. Maybe I went a bit overboard there but you get the picture.

Some insects that can be grouped with a Blatticomposting setup are, isopods, springtails, red worms, European Nightcrawlers, mealworms, Buffalo Worms, Superworms, Dermisted Beetles. The Dermisted are great for eating exoskeletons. You can also add secondary roaches like *Blatta Lateralis* or other non-climbing roaches to your composting bins to increase the variety of feeders. If you would like to see other roaches that are compatible with Pantanal and Ivory Head then visit [Wormman.blog](http://Wormman.blog) and look at the roach care sheets. Any roach that does not climb, and that eats vegetables can be tried in your experiment. . Please let us know how it works out.

#### **Table of Compatible Compost Bin Helpers:**

<http://www.wormman.com>



Isopods



Redworms



Superworms



Mealworms



Blatta Lateralis



Spring Tails

If you do add other organisms, please remember to use a lid. Dermestid Beetles can fly and will live in your house, infest dog food bags and foodstuff. All of the other insects will not escape and will work to break down various ingredients. For instance, the mealworms will eat grain based items, fruits and vegetables and the red worms will eat the roach frass and bread it down further in to worm castings.

In order to use a variety of insects the substrate will have to be moistened and then the possibility of flies and pests returns, but it is a great way to grow a variety of healthy insects in one container.

Here are some of the likely organisms that can be seen other than roaches in the compost bin:

If you do opt for composting with a variety of critters as mentioned above, some pest may seek out your compost container.

**Some of those pests are:**



**EARWIGS:** they are one of the smaller insect order with cerci, a pair of pincers on its abdomen, with membranous wings under the rarely used forewings. These insects are more active in the night and found in small moist areas during the day, feeding on a numerous variety of organisms both insects and plants.



**MILLIPEDES:** these organisms are quite commonly known with a copious amount of legs (thousand legs), round body and two sets of legs on each body segment. These organisms are known to be vegan which will also help the decomposing process though they don't feed on other organisms but are very useful in this decomposing process.



**CENTIPEDES:** they organisms have a much smaller amount of legs (one hundred legs) than the millipede and are thin and level bodied with a single pair of legs for each segment. These organisms are not necessarily seen in worm compost bins to often but will be good because they eat both insect and plants and are quite known to sometimes be predators.



## CONCLUSION

I am hoping that you learned a little about Blatticomposting. Should you be interested in more information please join us in our forum at <http://www.wormman.blog/forum> .

### **Benefits of Blatticomposting include:**

- Little to no smell
- Clean healthy roaches
- Roaches are fast composters
- Easy to maintain
- Does not require a huge capital
- It requires a minimal maintenance cost
- Harvest is very good and your plants will reward you with great crops.

All these advantages and more should convince you and not confuse you with the fact that Blatticomposting is one of the best methods for composting and is worth a try.