

PORCELLIO LAEVIS CARE INSTRUCTIONS

Your Isopod Package Includes:

- P. laevis* (the smooth woodlouse or composting isopod) of various sizes, in a starter container with some food
- A starter amount of blended substrate from our lab, which only includes enough for your isopods to last for a week or so. Please rehome ASAP.
- Possibly some springtails (tiny, beneficial jumping invertebrates which cohabitate in a bioactive unit with your worms)

Things You Might Need:

- a spoon or scoop for scooping dirt or picking up your new friends
- a tote-type container for their habitat (plastic shoeboxes or storage bins work well)
- chopsticks, spoons, or forceps to help you dig around in the dirt
- a spray bottle with mist function, in case your soil gets dry

GETTING STARTED

Check them over: make sure they are alive and scurrying around. They have limited food and habitat in the little shipping cup (wood and leaves from a hardwood tree such as oak or apple, substrate, and some veggie scraps). This is only enough for a week or so, until you have your supplies for a large home gathered. Please rehome your isopods as soon as possible: the more space, the better.

Immediate Needs:

- Keep your isopods between 18 and 25 degrees.
- Put them somewhere quiet, and in low light. Isopods like the dark!
- **Humidity levels need to be fairly high** (50-75%; so, keep the lid on) to ensure your dirt does not dry out. **They always need moist dirt**, because they breathe through gill-like structures on some primitive appendages on their ventral (bottom) surface. If you notice the dirt drying out on top, spray it with water until you see condensation forming. Dirt should be visibly moist/damp, where it forms clumps when compressed: but not forming puddles or muddy. You may need to mist the shipping cup if your habitat is not yet ready.



STEP ONE: BUILD A HABITAT

This is best done even before they arrive if you can! You'll need to gather materials.

The Substrate

Proper bedding is critical in maintaining the health of your isopods; it is their primary food source, it is their main source for hydration, and it is also where they live! Quality substrate is the most important care factor in maintaining and growing your population of isopods.

Your isopods only have enough substrate for shipping: you'll need to expand on that. The mix you have been given is approximately a 1:1:1 blend of coco coir, black earth, and shredded rotten hardwoods (we use birch, oak, and apple). Suitable substrates you blend and use:

- clean black earth potting soil (no chemicals, no fertilizer; usually available at garden centres) and coconut coir (can be found at greenhouses, hydroponic stores, pet stores).
- peat moss
- orchid bark or other shredded wood (decayed is best; no cedar!)
- a handful of clean sand for grit
- New Zealand sphagnum moss
- Some kind of ground cover: they would be living under the leaf litter in the wild. Dried leaves, moss, rotten pieces of wood, or cork bark from a pet store.

Wherever possible, use hardwood species for wood and elaves, as it is most nutritious.

Be cautious collecting things from the wild: a lot of leaf litter or wild-collected materials are going to be contaminated with runoff, herbicide, or pesticide.

Cuttlebone: crumble some in (available in the bird section at pet stores). Isopods need calcium.

The Bin

Your isopod habitat should have a lid, be waterproof, and ventilated. Your container can be many sizes: we use big 60L bins, but a plastic shoebox from WalMart or wherever works well. Aquariums can be used, but be mindful of the open top: open top containers are hard to maintain because they dry out quickly, and you may need to cover half with cling film or something.

Ventilation is also important: the isopods need air, so don't seal them into a container with no holes! Keep an eye on them, and modify the amount of ventilation as you get used to how quickly your substrate is drying out.

Do not use a bin made of wood – they cannot climb plastic or glass, but they can climb wood.

STEP TWO: FEED YOUR ISOPODS

Don't forget to monitor their substrate humidity! It may take some adjusting as you get used to your new friends.

BASICS: Isopods are "detritivores," which means in addition to all this dead plant matter in the bedding, they will also eat rotten organic waste such as dead animals or certain fruits and vegetables. You can exploit this to compost your kitchen scraps because this isopod species is known for their great and formidable hunger, though until you have more of them, it won't be a lot of food. 1-2 times a week, feed a few tidbits of scraps. If they haven't eaten it within a couple days, remove it. When in doubt, work with smaller portions of food: if you notice it disappearing within a day or two, add more in.

DO FEED:	DO NOT FEED:	NOT MUCH OF:
-Squash	-Citrus Fruits	-Protein: the best kinds are dry
-Apple	-Onions	dog/cat/fish food -
-Pear	-Potato	but protein should
-Melon	-Oil	be less than 10% of
-Cucumber	-Butter	the diet
-Avocado	-Meat or Fish	-Things super high
-Lettuce	-Pet/Human Waste	in nitrogen
-Carrot	-Cheese	
	-Wet cat/dog food (it gets stinky!)	

TREATS: There are a lot of commercial isopod foods out there, such as recipes provided by company like Repashy, or downloadable "Isopod Food" blends. In our experience these are not totally necessary, as long as the kitchen scrap diet you are feeding them is well supplemented by a good substrate blend.

TO AVOID ODOR & FLY PROBLEMS: Do not feed more than they will eat in a day or two. You can also bury the food just barely under the soil: *Porcellio laevis* are good burrowers.

Isopods make charming and entertaining invertebrate companions for terrariums, or just for fun. Isopod composting is also a growing field and one way to divert your food waste from the land fill. But: remember that they require care too! Do be aware that isopod waste is not well researched and it is not clear whether it will be as beneficial to your plants as pure worm castings: isopod waste is also harder to separate from the isopods themselves, as they tend to be bolder than worms alone and scurry about with gusto, making them challenging to remove.

Some people combine them into their tropical aquariums as beneficial recyclers, to do the waste cleaning for another pet such as tropical frogs. You've started out with one of the largest, most robust, and easy to keep species: but there are hundreds of isopod species in the hobby. Some are very fancy indeed, and they all have different needs. **Do not combine your *laevis* isopods (which are described here) with other terrestrial invertebrates** including other isopod species: *P laevis* loves protein and may eat their competition (though – as mentioned – they leave red wigglers alone).

A Little About Isopods

- Your isopods are properly called *Porcellio laevis*: try this name out as it really is the only one unique to this species. Wikipedia lists 23 common English names for isopods – including rollie-pollie, smooth woodlouse, and pillbug – and these are shared among many of the 5000 terrestrial species of isopod in our world. And that's just the English names! There are many more nicknames in other languages as well.
- Isopods are not an insect, arachnid, or a millipede. They are a tiny land crustacean, so their closest cousins are shrimps, crabs and lobsters.
- Isopod bodies: they have three body parts: head, thorax, and abdomen: with seven segments on the thorax. There is 1 prominent pair of antennae ("flagellum") at the front (you can see them waving them around and exploring their world with these) and one inconspicuous pair. They have two very simple compound eyes, and 14 legs in total. The little paired appendage at the "tail" end of the isopod is called a uropod: in males it is usually longer than on females. They breathe through primitive gill-like structures on the base of their legs.
- Your isopod's colour varies from dark grey to almost white, occasionally with pinkish or brownish hues. Some other types of isopods have heads like ducks, some isopods have stripes like zebras... there is a lot of diversity!
- The Isopod has many common names because they live almost everywhere all around the world, from the ocean to our backyards. Some live at high altitudes, some live-in deserts, some live under the Antarctic sea ice. This is an ancient family of animals, around since the carboniferous era, and they have adapted to a wide variety of environments.
- Not all of them can curl fully into a ball. This *Porcellio* species, can curve, like a shrimp, but not ball up.
- Isopods have an exoskeleton: a hard shell. They can withstand a short fall, but please be careful not to squish them!
- Female isopods have a marsupium (like a kangaroo pouch) on their belly, about 2/3 - 1/2 way down their body, in between their legs. The eggs grow and when ready, hatch inside of this pouch, upon which she "gives birth" to babies that are ready to walk around. If you look carefully and gently you might be able to see full brood pouches on mature females.

LIFE CYCLE AND MOLTING

You will have both male and female isopods. After mating (which occurs during a female's molt cycle), the female grows eggs into a brood pouch on her underside (you can see it if you look very, very carefully; like a little white bundle in the middle of the body between the legs). The eggs develop inside this marsupium, and then stay as little mini white isopods inside until they are ready to be "born," which is simply when the marsupium detaches and the little babies emerge. Some species of isopod have females who can reproduce asexually, without a male.

Like all animals with an exoskeleton, they must moult in order to grow; an isopod will molt 4 or 5 times to reach adulthood. Unlike most arthropods, they do not shed their exoskeleton all at once: first the back half is shed, and then in the next 2 or 3 days the front will follow. Watch for moulting individuals in your colony and avoid bothering them! You can spot a moulting isopod because the front half of the isopod will be a different colour than the back half (they moult their exoskeleton in two parts).

Moulted skins are called exuviae, and the adults will naturally eat them and recycle them as they would other decaying organic matter.

HANDLING

Isopods can be handled and observed easily as long as you are vvery gentle.

Use a spoon or careful fingers to scoop and gently free them from the soil and deposit into your hand. They are very small and their legs are delicate, so never pinch them or press on them because you may not be able to see the damage that they can feel. Let them walk around on your fingers or hands freely; they do not appreciate being forced to stand still. They are fast walkers and can withstand a short drop. Like all arthropods, handling while they are moulting is discouraged! Immature individuals will be more fragile than the adults, so go for the bigger ones.

Sometimes you will find a mother with a full brood pouch on her belly: it will look like a fat whit-yellowish blob in between her legs in the middle of her body on the bottom. You might even be able to see the babies inside! Avoid handling gravid mothers like this.

Congratulations on your new role as an isopod caregiver! Isopods make an easy, convenient addition to the home or learning environment: like an ant colony, but they work for you!

They are a wonderfully helpful little invertebrate ally we can incorporate into our daily 21st century lives, allowing us to reduce our carbon footprint by diverting landfill waste, and helping to close the metabolic gap through recycling. They are charming and whimsical to watch as they trundle about on their cute isopod business. We like to think they will trundle their way right into your heart.

The world of isopods is vast and interesting: enjoy your journey!

Your isopods cannot be released outdoors. *Porcellio laevis* is not a native species.

This includes adding them into an outdoor composting bin. You are better off to attract wild isopods for that.

Your colony has the potential to live indefinitely. Please take this into consideration: they are living creatures who have needs. Should at any point you find yourself without the ability or desire to care for your isopods, you have several options:

-Find them a good home. Chances are you know someone personally who would be willing to take on your compost bin. Please be sure you pass along all the information you have at your disposal.

-Notify us, and we will guide you through the process of getting them back to us or finding them another good home.

Under no conditions can you release your isopods be released to the wild. This is highly unethical, and is cruel to both the animals and the environment.