

Biosecurity in Bioactivity — What is It? Why is it Important?

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Bioactive enclosures are great. Really great, actually. They create a more naturalistic environment for your pet reptile while reducing some of the maintenance and expense for you long-term. But let's be honest — bioactive is complicated, and comes with its own set of challenges that many people neglect to consider in light of the benefits.

For example, if you don't install your drainage properly and you have a tropical setup, your substrate will flood, turn septic, and develop an unpleasant odor.

Or, if you don't routinely add bioactive-friendly fertilizers like [BioVive](#) into your substrate, the soil will lose its nutritive value and the plants' and CUC's health will decline, decreasing the attractiveness and functionality of your setup.

Or, if you don't remove feces regularly, you risk creating a booming population of parasites and germs in your setup, potentially decreasing your pet's health rather than increasing it.

Biosecurity is one of those challenges. If you neglect biosecurity, you can introduce harmful bugs and germs into your pet's environment that can hurt it or make it seriously ill. Here's what you need to know as a bioactive keeper.

What is biosecurity?

The Oxford definition is biosecurity is "procedures intended to protect humans or animals against disease or harmful biological agents". Biosecurity protocols are used in agriculture to protect farms from disastrous disease outbreaks that can wipe out millions of livestock or endanger human health. Biosecurity protocols are also used to prevent foreign plants and wildlife from taking root in and disrupting local ecosystems.

They can also be used to keep your pet healthy and prolong the longevity of your bioactive vivarium.

Why is biosecurity important to bioactive setups?

Let's take a step back and ask ourselves what makes a bioactive vivarium work. Simply speaking, in order to create a functional mini-ecosystem, you need the right balance of beneficial bacteria, fungi, invertebrates, and other microfauna, as well as plants. When you intentionally add all of these factors to a closed environment, you control the balance of the ecosystem.

But when you add the wrong factors — especially if it's by accident — the balance of the ecosystem gets thrown off, introducing disease and potentially completely crashing the setup.

Harmful microfauna usually get introduced to a setup when the keeper unwittingly adds something that is carrying them. This usually happens when the keeper picks something up from outdoors and adds it to their bioactive setup — this can be CUC critters, soil, wood, rocks, plants, etc. Of course, these things probably carry good microfauna, too (which is why you hear some people telling you not to treat things that have been collected outdoors) but that doesn't cancel out the bad stuff.

Practicing good biosecurity is especially important for protecting your pet from deadly diseases present in the wild, such as chytrid (amphibian fungal disease) and Snake Fungal Disease.

How to improve your biosecurity

- Don't use soil dug up from outdoors.

- Don't use plants collected from outside.
- Bake or boil found wood before adding it to your enclosure.
- Scrub found rocks with boiling water (do not bake or boil them — they could explode!).
- Soak and bake leaf litter before adding it to your enclosure.
- Alternatively, spread found items out on a tarp and expose them to strong, direct sunlight outdoors (high dose UV kills most of the bad stuff) for a couple days, flipping as needed .
- At the **very** least, give items a good scrub to clean the surface and let them sit for a while in a clean storage area to “detox”.
- Avoid using chemicals like bleach/ammonia for treatment, as they leave residues. However, certain veterinary-grade disinfectants like F10SC and Clean Break can be safely used on porous (natural) surfaces.
- Freeze or bake bioactive substrate before throwing it away – don't simply put it in your garden, as you could be introducing non-native isopods and other CUC critters to your local ecosystem. The good news here is that bioactive substrates are not meant to be thrown away, although a partial soil change every once in a while can be beneficial.
- Do not re-use a bioactive enclosure after the original inhabitant has died, or purchase a used bioactive setup from someone else.

Conclusion

Using found materials is a great way to save money when setting up a bioactive enclosure. However, if you don't take the right precautions, you'll end up having to face expensive vet bills and potentially have to euthanize your pet (or a significant portion of your collection) because you introduced a deadly disease.

Why take that risk? Be a responsible bioactive herp keeper. Practice biosecurity.