

How do I create a Terra Fauna or Terra Flora Bioactive Vivarium?



From the desk of The Dude

What is a bioactive terrarium?

A bioactive terrarium is a self-sustaining, self-maintaining, direct replication of the natural ecological cycle that happens on the rainforest floor. The rainforest floor is composed of thousands of different detritivores that break down decaying matter to return nutrients back into the soil. Detritivores such as isopods and springtails are the most commonly seen on the rainforest floor.

Why go bioactive?

In any terrarium the soil is the most important part of the setup. The soil is the backbone for live plants, water drainage, and tank maintenance. Many times, hobbyists will setup a terrarium and have to break it down months later because of the microbial build up in the soil, as well as the death of plants from using soil that becomes water clogged. Having a proper bioactive setup allows for optimum plant growth, but also allows for tank longevity (10+ years without a soil change) if kept properly. The detritivores established in the tank will break down feces and other decaying matter which recycle nutrients back into the soil, thus keeping the substrate fresh and ready for the next generation. Many small amphibians such as dart frogs relish the springtails and isopods as an additional food source. Having these micro feeders established will bring out unique behaviors in your pets such as foraging and hunting, they will thrive in an environment that is a direct replication of the natural ecological cycle they are accustomed to.

How do I go bioactive with tropical setups?

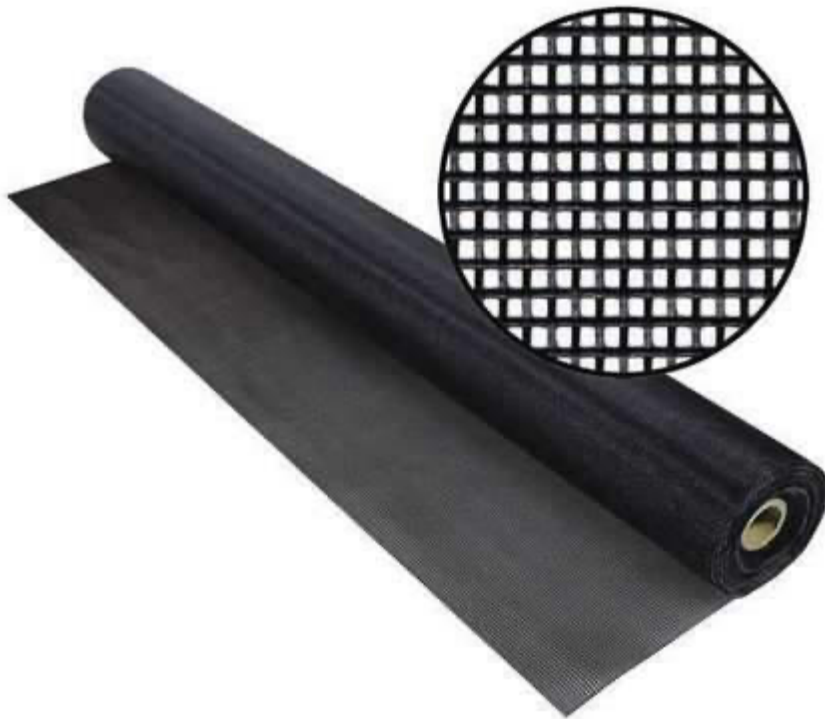
Layer 1 (Drainage layer for Terra Flora and Terra Fauna)



HydroGrow, which is the terrarium drainage layer is the backbone in a successful tropical bioactive setup. This lightweight, porous material sits on the bottom layer of the terrarium with a depth of 2". The drainage layers purpose is to catch the excess water that drains out of the soil. This is to prevent the Terra Flora or Terra Fauna from becoming water clogged. Excess water in the soil will lead to microbial buildup, loss of microfauna, root rot, and eventually the death of the plants. Maintaining the water level is very simple. When the water level reaches the top of the HydroGrow layer simply siphon the water out of the tank.

Layer 2 (above the HydroGrow with Terra Flora and Terra Fauna setups)

The substrate barrier has one simple purpose: to keep the substrate out of the drainage layer. This makes maintaining the HydroGrow layer easier, as well as maintains the quality of the Terra Flora. The screen should be cut to match the perimeter of the inside of the tank, and place directly on top of the HydroGrow.



Layer 3 (above the substrate barrier)

Directly on top of the substrate barrier sits the bringer of life, the specialty terrarium soil known as Terra Flora or Terra Fauna. This specialty mix created by the dude is the staple for a living substrate. This premium blend offers water retention yet drains exceptionally well. It also boasts the capabilities to boost microfauna production (springtails and isopods) and promote proper development in plants. This substrate when used exactly as directed in the Dude's guide this substrate can last 10+ years in the terrarium without ever being changed. This mix should have at least a 2" layer in the terrarium. When this mix is added it should be dumped into a bucket full of water, and squeezed so it is saturated, but not dripping. This is the appropriate water balance that this soil will maintain during the life of the vivarium.



Layer 4 (above the substrate)

Nestled softly on top of the Terra Flora or Terra Fauna lies the New Zealand premium AAA Spag Moss. This moss provides excess moisture on the top of the substrate mix to help plants with shallow roots take hold. This moss also prevents the soil from sticking to your animals if they would venture on the floor of your terrarium and helps prevent ingestion of soil (especially with Chameleons). Prior to adding to the terrarium, it is recommended to soak the moss in a bucket until saturated, but not dripping wet. Cover the substrate layer with a thin layer of moss that has a depth of about 1/2". This will help retain moisture, and eventually breakdown putting essential nutrients back into the soil.

Layer 5 (above the sphagnum moss)

The true meaning of bioactive comes from these small organisms that are seeded into your terrarium after the previous steps have been fulfilled. These small insects, also known as detritivores, are the key to the longevity of your terrarium. The isopods are larger organisms similar to the rolley polley insect we see commonly here in the USA. Isopods are your top janitors that will be established in your vivarium. They will quickly chase down a piece of decaying matter, cover it, and devour it very quickly. As they break down the decaying matter the essential nutrients are put back into the soil. Isopods are also an excellent source of bioavailable food for small amphibians and reptiles. They are very high in calcium, minerals, and vitamins that are a great supplemental source of food found naturally in the tank. These microorganisms will breed very quickly in the tank and create a small micro population that will establish quickly in your terrarium. Springtails are another tank janitor, but besides breaking down decaying matter they also flow through the soil. These small microorganisms will aerate the soil which help with drainage, root development, and longevity of the terrarium. These are also an excellent source of food for small amphibians such as dart frogs and will encourage their natural foraging behavior exhibited in the wild. To seed your tank is simple. Simply dump a culture of springtails and a culture of isopods into the tank and they will quickly form a sustainable population in the terrarium.



Layer 6 (above the microfauna)

Leaf litter is an absolute must when having a bioactive setup. Decaying plant matter is what drives the beginning process of the ecological cycle on the rainforest floor. As the terrarium progresses with age the leaves will eventually breakdown (with the help of the springtails and isopods) and put essential nutrients back into the soil. Leaves provide hiding spots for many small amphibians and reptiles as they forage on the forest floor looking for food. Leaves also help boost springtail and isopod levels in the terrarium. When initially seeding the terrarium with leaves I typically do a generous 1/2" layer. As the terrarium progresses with age, and the leaves start to breakdown, I typically add in fresh New Zealand AAA Spag moss (sparingly) and fresh leaf litter to keep the cycle going.

Maintenance with your Terra Flora and Fauna -

While the bio activity is a key factor with the life of the vivarium, the substrate itself will need spot cleaned occasionally in specific areas of the terrarium. Generally, most reptiles defecate in the same area. To help with cleanup, it is important that the substrate itself is relatively damp in that area, as the springtails/isopods will flourish in that area and breakdown the fecal matter quicker. You will need to add in biodegradables such as leaf litter and sphagnum moss as this aid in the breakdown process and aeration, if not your system will begin to breakdown the soil itself and will not function in the way intended,

- Breakdown on biodegradable for tropical; 2-3 months

The Dude Abides

-Josh Halter

www.thebiodude.com



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