

# Bearded Dragon Care Guide

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*Rescue and Rehabilitation*

*Science-based Education*

*Advanced Husbandry Practices*



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## Resources

## Introduction

Bearded dragons are one of the most common species of pet reptiles in the trade. Their docile nature and seeming ability to bond with their owners makes them a favorite for families and hobbyists.

## Shopping List

### 1.) Supplies:

- **FOR JUVENILES 0-6 MONTHS** 40 Gallon Front-Opening Terrarium (36x18x18" or larger)
  - Minimum recommended size for ONE juvenile bearded dragon
  - Please refrain from cohabitating multiple dragons. Bearded dragons are very territorial, and your pet will be at serious risk for injury or death from fighting with cage mates
- **FOR SUB-ADULTS TO ADULTS 6-12 MONTHS** 4x2x2 Front-Opening Terrarium (48x24x24" or larger)
  - Minimum recommended size for ONE adult bearded dragon
  - Please do not cohab adult bearded dragons. Serious injury or death of the animals can occur
- Linear UVB (long tube, half the length of the enclosure, **do not use compact coils**)
  - Zoo Med ReptiSun T5HO 10.0 UVB Kit
  - Arcadia D3 Desert 14% UVB Kit
  - Arcadia ProT5 12% UVB Kit
  - Reptile Systems T5HO Zone 3 10.0 UVB Kit
  - Leap Habitats T5HO 10.0 UVB Kit
    - **IMPORTANT!** Please avoid knock-off Chinese brands of UVB you may find on Amazon! These are NOT safe and could harm your pet. Brands to avoid for UVB include ReptiZoo, Giangarden, OIIBO, Lucky Herp, Reptile King, etc. The brands listed above are SAFE and thoroughly tested by experts
- Incandescent Basking Bulb
  - Fluker's Basking Bulb
  - Exo Terra Intense Basking Spot Lamp
  - Arcadia Basking Spot Lamp
    - Wattage may vary based on your house temperatures, but typically a 75-150w bulb will work well
- Ceramic Heat Emitter
  - Use **ONLY** for extra ambient heat if needed. Do not use as the main heat source
- Dimming dome for your heat bulbs, OR a pulse proportional dimming thermostat

- Laser thermometer gun
  - LED Full Spectrum Bar
  - Natural, safe substrate options
    - 70/30 Mix of Scott's Organic Topsoil (no fertilizers!) and Quikrete Play Sand
    - Josh's Frogs Desert BioBedding
    - BioDude Terra Sahara
    - Jurassic Natural Australian Desert Sand
  - Hygrometer/thermometer devices x 2
  - Temperature probe
  - Water dish
  - Aquarium bubbler
  - Flat stones for basking, stacking
  - Driftwood and logs
  - Multivitamin with preformed vitamin A (Important!)
    - Reptivite with D3
    - Repashy Calcium Plus with D3
    - Arcadia Revitalize D3
      - Please note, if you choose Arcadia Revitalize D3, this needs to be paired with their other products EarthPro-A and CalciumProMG
  - Plain calcium WITHOUT D3
  - Calcium WITH D3
  - Outlet Timer/Power Strip
  - Hides
    - Hides can be created by stacking stones, driftwood, or using pre-made hides (Zilla, Exo Terra and Fluker's have good options)
- 2) Products to Avoid:** (This is not a complete list, just a compilation of the most common unsafe items on the market)
- Coil Florescent UVB Bulbs
    - These bulbs do not provide a broad enough gradient of UVB for proper exposure
  - Mercury Vapor Bulbs
    - These bulbs can lead to serious UVB and heat burns. They do provide UVB and heat all in one, but are dangerously inconsistent in their output and cannot be controlled with a dimming device. MVB's also produce an unnatural green light, which may affect an animal's color vision and inhibit natural behaviors
  - Reptile Carpet
    - Snags nails and teeth, holds bacteria
  - Walnut Shell Substrate
    - Serious risk of impaction, oral, nasal and eye blockages. If ingested, this material can cause internal damage
  - Freeze-dried or canned insects
    - These feeding options do not provide the necessary nutrition beardedies need. They can be used as occasional snacks, but should never be a staple
  - Pellet or dried/preserved foods

- Fresh vegetation and live insects will always have superior nutrition, and pellet/dried foods may contain ingredients that are harmful to your dragon
- UVB “test” Cards
  - These items do not accurately detect UVB. They react to light emitted by heat lamps as well, and do not tell you exactly how much UVB is being emitted by a bulb
- Colored Heat Bulbs
  - Colored bulbs (red, blue, purple) wash out a reptile’s color vision. This can interfere with their natural circadian rhythm and behavior. Heat bulbs should mimic the warm/white color of sunlight
- Heat Mats
  - Heat mats do not provide the correct Infrared heating reptiles need for proper warming, metabolism, digestion. Even with thermostat use, power failures can occur leading to severe, even fatal burns
- Heat Rocks
  - Heat rocks do not provide the correct Infrared heating reptiles need for proper warming, metabolism, digestion. These items have been known to cause serious, sometimes fatal burns
- Cloth and Hemp Hammocks
  - These items can tear out claws and teeth. They are easily soiled and will hold bacteria
- LED UVB Products
  - As of current research (2025), LED UVB products are not recommended for safe usage in reptile keeping. They do not produce vital UVA2 wavelengths, which signal an animal’s body to stop producing pre-D3. This can potentially lead to **hypervitaminosis D3**, and **photoconjunctivitis**

## Nutrition

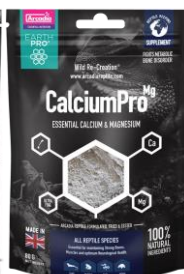
### 1.) Diet:

- Bearded dragons are omnivorous reptiles. They eat insects and vegetation. Please note, fruits should never be included in your beardie’s diet. Dragons do not have the enzymes to process sugars, which can also lead to periodontal disease
- A variety of dark leafy greens should be offered for well-rounded nutrition
  - Staple greens:
    - Collard greens
    - Turnip greens
    - Mustard greens
    - Arugula
    - Escarole
    - Bok choy (green portions only)
    - Watercress
    - Chinese cabbage
  - Feed in moderation:
    - Kale
    - Dandelions
    - White clover (do not collect in winter, white clover produces cyanides with freezing temperatures)
    - Plantain

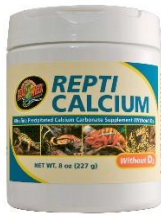
- Purple nettle
  - Zucchini
  - Parsnip
  - Brussel sprouts
- Feed rarely:
  - Spinach
  - Bell pepper
  - Broccoli leaves
  - Cilantro
  - Parsley
- NEVER feed (toxic!):
  - Tomatoes
  - Garlic
  - Leek
  - Egg plant
  - Avocado
  - Onions
- Feeder insects should be no larger than the space between their eyes
  - Good staple insects:
    - Crickets
    - Dubia roaches
    - Silkworms
    - Locusts
  - Feed in moderation:
    - Black Soldier Fly Larvae
    - Mealworms
    - Captive-bred hornworms
  - Feed rarely:
    - Wax worms
    - Butter worms

## 2.) Supplementation:

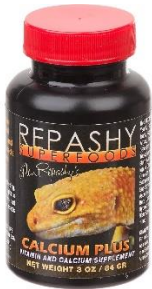
- Plain calcium and calcium D3 should be rotated and dusted on insects and salads, except for multivitamin days
- A multivitamin with preformed vitamin A (also labeled as Retinol, Retinyl, Vitamin A Acetate) should be dusted on feeder insects and salads once a week



Arcadia RevitalizeD3, EarthPro-A, CalciumProMG



Zoo Med Reptivite with D3, Calcium without D3, Calcium without D3



Repashy Calcium Plus, can be paired with Zoo Med ReptiCalcium and Repticalcium D3

### 3.) Feeding Frequency:

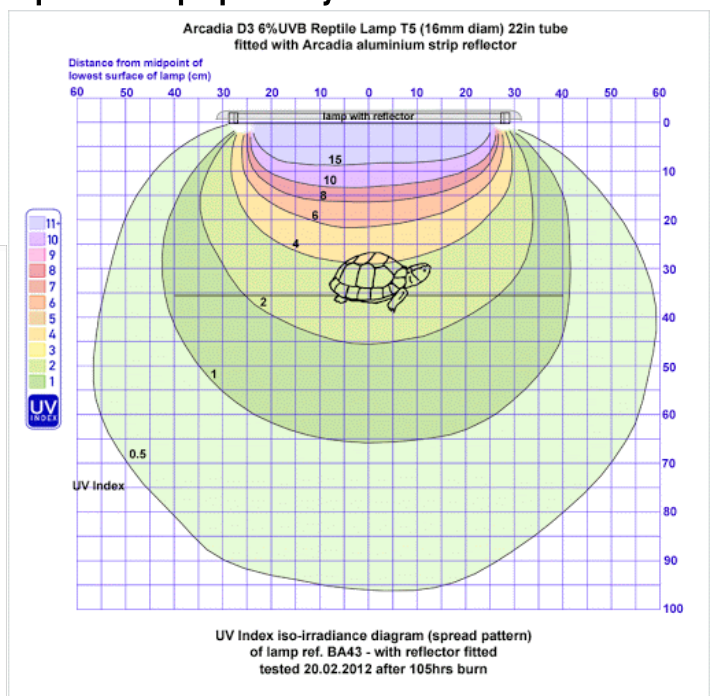
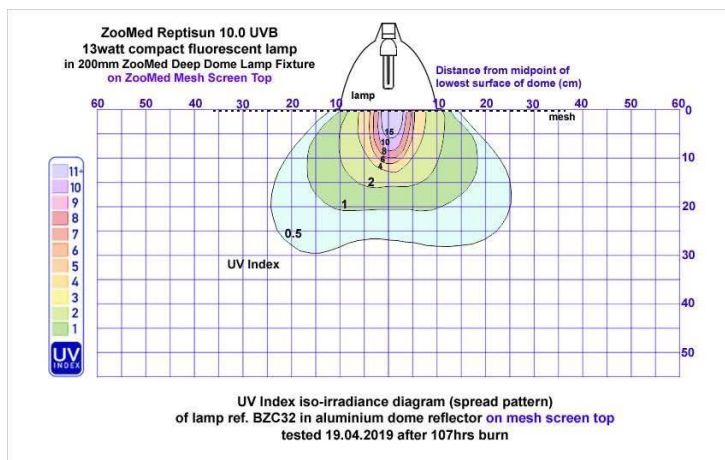
- Juveniles 0-6 months: 5-6 insects every day, with a salad
  - Monday: Calcium
  - Tuesday: Calcium D3
  - Wednesday: Multivitamin
  - Thursday: Calcium
  - Friday: Calcium D3
  - Saturday: Calcium
  - Sunday: Calcium
- Sub Adults 6-12 months: 3-6 insects every 3 days, with a salad
  - Sunday: Calcium
  - Monday: Calcium D3
  - Wednesday: Multivitamin
  - Thursday: Calcium
  - Saturday: Calcium D3
- 12+ months: 3-6 insects one time a week, with salad
  - Monday: Calcium
  - Wednesday: Multivitamin
  - Thursday: Calcium
  - Saturday: Calcium D3
- If using the Arcadia supplement product line:
  - Juveniles:
    - Monday: CalciumProMG
    - Tuesday: EarthPro-A
    - Wednesday: RevitalizeD3
    - Thursday: EarthPro-A
    - Friday: Calcium D3
    - Saturday: EarthPro-A

- Sunday: EarthPro-A
- Sub Adults:
  - Sunday: CalciumProMG
  - Monday: EarthPro-A
  - Wednesday: RevitalizeD3
  - Thursday: Calcium
  - Saturday: CalciumD3
- Adults:
  - Monday: CalciumProMG
  - Wednesday: RevitalizeD3
  - Thursday: EarthPro-A
  - Saturday: Calcium D3
- **Do not use a multivitamin on every feeding. This can lead to Hypervitaminosis A, E and/or D3**
- Water dishes will not be large enough to cause a significant increase in humidity levels, and your dragon should always have access to fresh water. An aquarium bubbler may stimulate your dragon to drink by mimicking moving water.

## UVB, Heating and Visible Light

### 1.) The Importance of UVB

- UVB lighting is superior to D3 powder supplementation for the following benefits:
  - Creates beta-endorphin “feel-good” hormones in the skin
  - Promotes better organ health
  - Stimulates white blood cells and promotes better immune health
  - Facilitates natural D3 synthesis for calcium absorption
  - Simulates natural UVB that would be provided by the sun in the wild and promotes more natural behaviors
  - **Full-body coverage of UVB wavelengths is important for proper D3 synthesis**

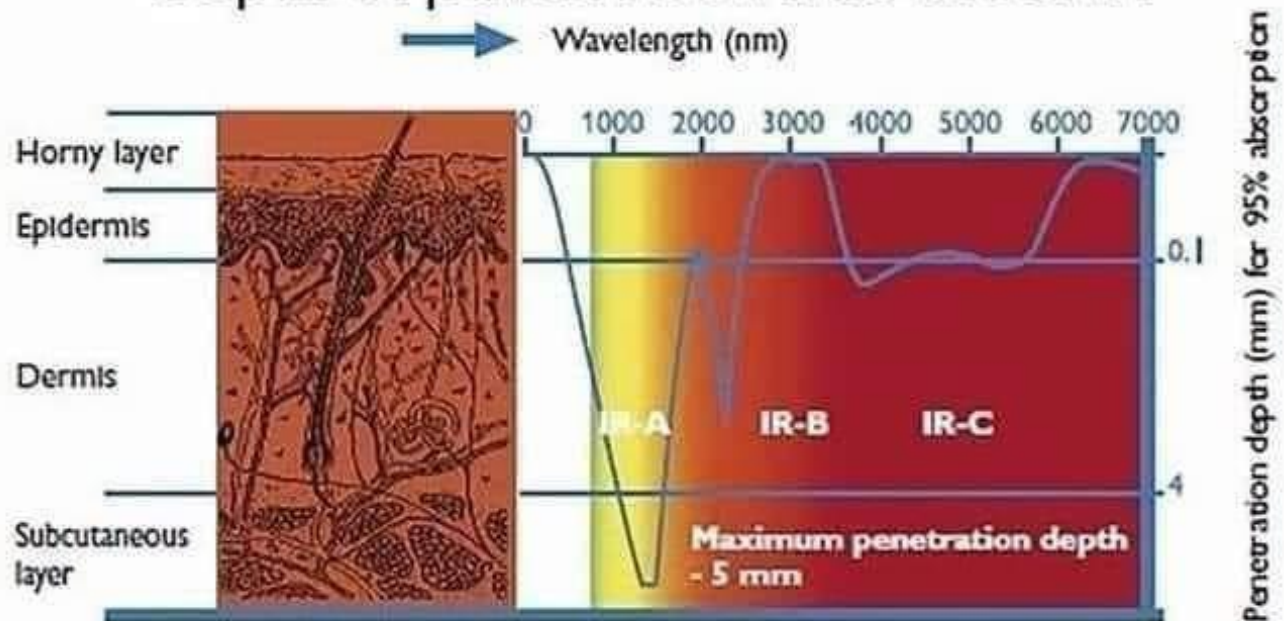




## 2) The Importance of Infrared Heating

- Heat sources that provide Infrared A and B are important for:
  - Deep tissue-penetrating heat
  - Faster warming of the animal's body
  - Less time needed to bask
  - Better metabolism and digestion
  - Promotion of more natural behaviors
  - Surfaces below the basking area that absorb IR-A wavelengths will radiate that heat back out as IR-C, so your animal gets the full spectrum of Infrared heating

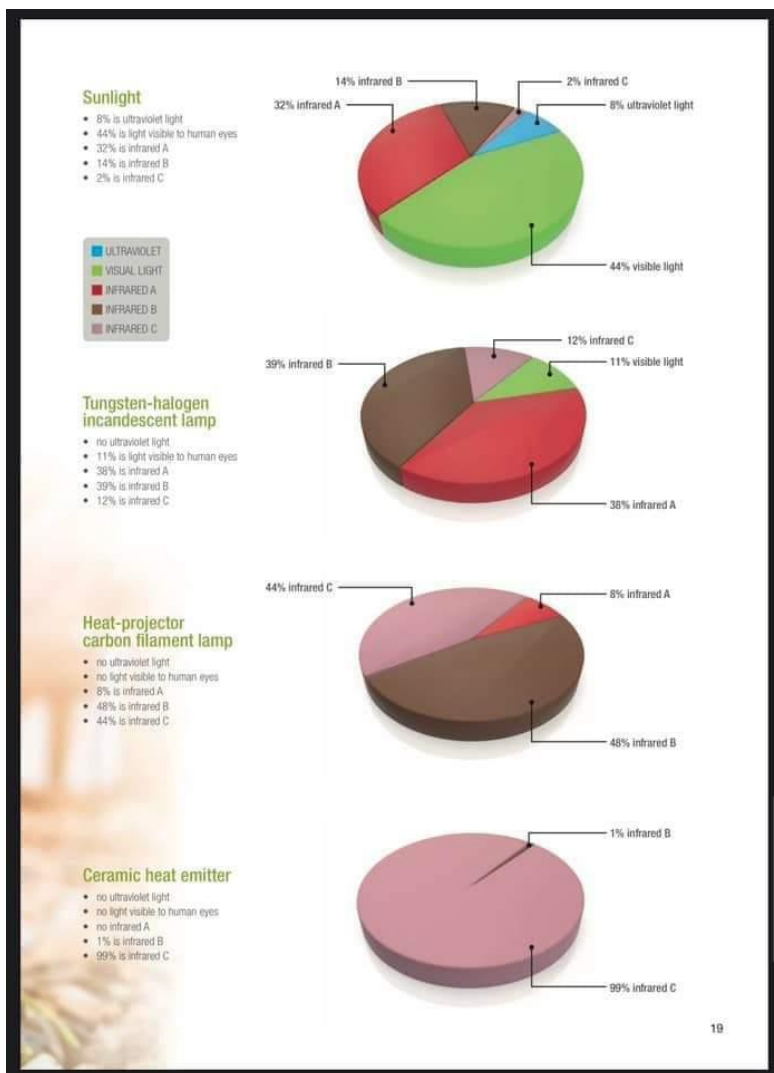
### Depth of penetration into the skin



*Example illustrating the depth of penetration between IR-A, IR-B and IR-C wavelengths. IR-A penetrates into the subcutaneous layer, where IR-C is relatively surface-level on the epidermis*

*Example illustrating the depth of penetration between IR-A, IR-B and IR-C wavelengths. IR-A penetrates into the subcutaneous layer, where IR-C is relatively surface-level on the epidermis*



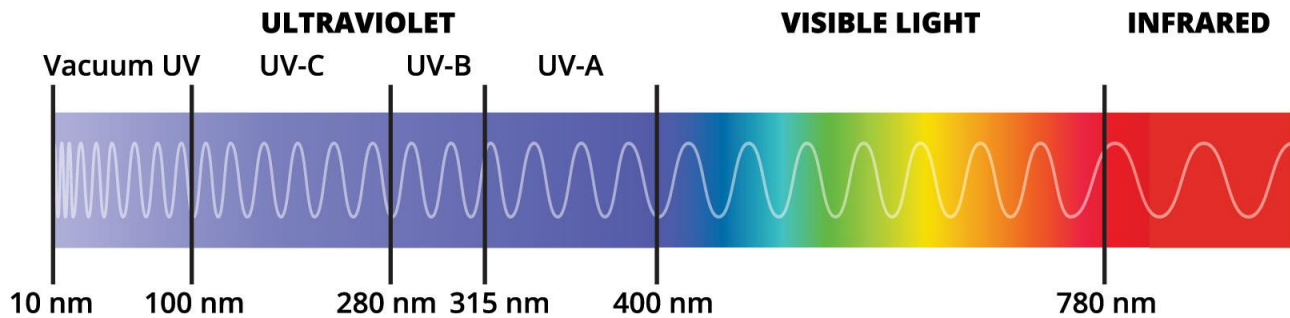


*The difference between various heating elements. Incandescent lights provide the most natural array of IR*

### 3.) The Importance of Full Spectrum Lighting

- Many reptiles have **tetrachromatic vision**, meaning they have four rods in their eyes for color detection and can see much more of the visible light spectrum than we can. Providing additional full spectrum lighting in the form of an LED full spectrum bar helps with:
  - More visible colors for your animal to see
  - Promotion of natural behaviors
  - Closer visible replication of what they would experience under sunlight
- Good brands for LED spot lamps and bars:
  - Sansi
  - Arcadia
  - Barrina

# ULTRAVIOLET LIGHT



*Quality lighting will cover most of the visible light spectrum (here shown between 400nm to 780nm); however, the purple, or Ultraviolet spectra will be covered in part by UVB lighting. Note that UV-C wavelengths are excluded from UVB and full spectrum equipment and are dangerous.*

## Temperature, Humidity and UV Index

### 1.) Temperature

- Temperatures should be provided in a “hot-to-cool” gradient across the tank, with your basking bulb placed on one side of the enclosure
- Temperatures can be monitored by placing a hygrometer/thermometer device on the hot side, and one on the cool side. A thermometer temperature probe can be placed just outside of the beam of light beneath the incandescent heat bulb.
  - Hot side temperatures: 80-85f
  - Basking surface temperatures: 100-105f
  - Cool side temperatures: 75-80f
- Surface temperatures can be measured with a laser thermometer gun

### 2.) Humidity

- Bearded dragons live in arid desert locations, but they do experience annual rainy seasons.
- Be burrows often have higher humidity levels than the outside environment.
- In captivity, we can provide humidity spikes, but should aim for:
  - 30-40% humidity ranges
  - Occasional spikes of 50-70% with adequate dry-out periods can be implemented
  - Ensure your enclosure has good ventilation before attempting to create humidity spikes. If air is allowed to stagnate, bacterial growth can occur and your dragon may develop a respiratory or fungal infection
- Do NOT bathe your dragon for hydration. Bearded dragons do not absorb moisture through their vents or skin, and frequently wetting them could potentially lead to

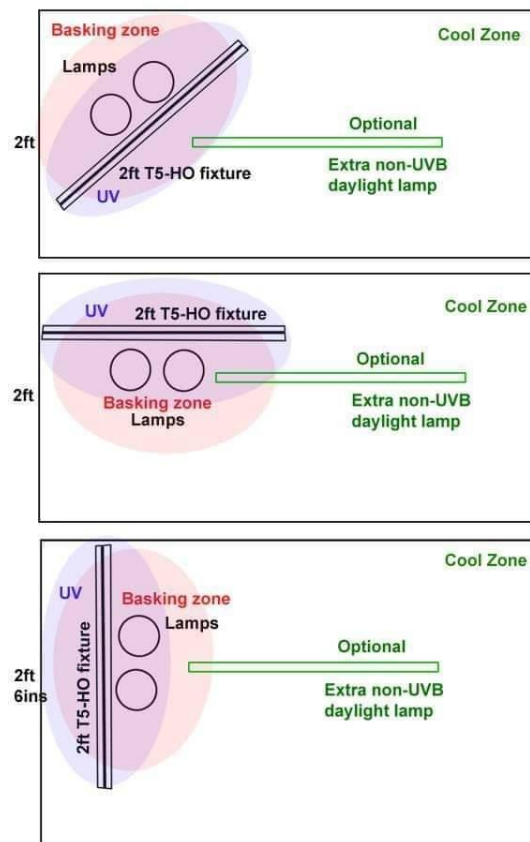
### 3.) Safe UVB Exposure

- UVB should be provided through a linear tube that spans halfway across the enclosure. It should be aligned with your basking bulb to one side of the tank, with the basking bulb centered with the middle of the tube

- Not all UVB bulbs are created equally! Certain strengths, bulb styles and brands are not safe or effective for bearded dragons (refer to the shopping list for safe UVB products)
- Bearded dragons are **diurnal** animals, meaning they openly bask during the day and sleep at night
- Because dragons are full-sun baskers their UVB requirements are higher than they would be for a leopard gecko, for example
- On the Ferguson Zone (the UV requirement scale for various reptile species), leopard geckos are in Zone 3. This means they need a UVB index between 3.0-3.5. A leopard gecko, for example, needs a lower UV index between 0.7-1.0. This level of UVB would not allow a dragon to properly synthesize D3 in their bodies
- The height of your enclosure, whether your UVB is mounted above mesh or inside the enclosure, what brand of tank you have all affect how much UVB your dragon will be exposed to. To figure out how to safely provide UVB for dragon, refer to the following sources:
  - Reptile Lighting on Facebook
  - Northampton Reptile Center – Ferguson Zone
  - Thomas Griffiths, Tomaskas LTD
  - Reptiles: Advancing Husbandry Practices on Facebook

#### 4.) Proper Lighting Arrangement

- Heating and UVB lighting should be provided in a “light-to-dark”, “hot-to-cool” gradient, with the highest concentration of light over the basking area
- Basking bulbs should be centered with the middle of the UVB tube, where the strongest UVB wavelengths are. This effectively creates a “patch of sun” where the animal can get UVB and heat all in one area
- Full spectrum LED lighting should overlap with the UVB and basking bulb



Ideas for positioning of 24watt, 22" T5-HO tube and basking lamps in a 2ft or 2ft6ins wide vivarium, with maximum overlap of high UVB in basking zone. (NB, a 2ft tube won't fit widthways in a 2ft wide vivarium. You have to use a diagonal or lengthways orientation.)

*Examples of proper lighting arrangements*

## Enrichment

### 1.) The Importance of Enrichment

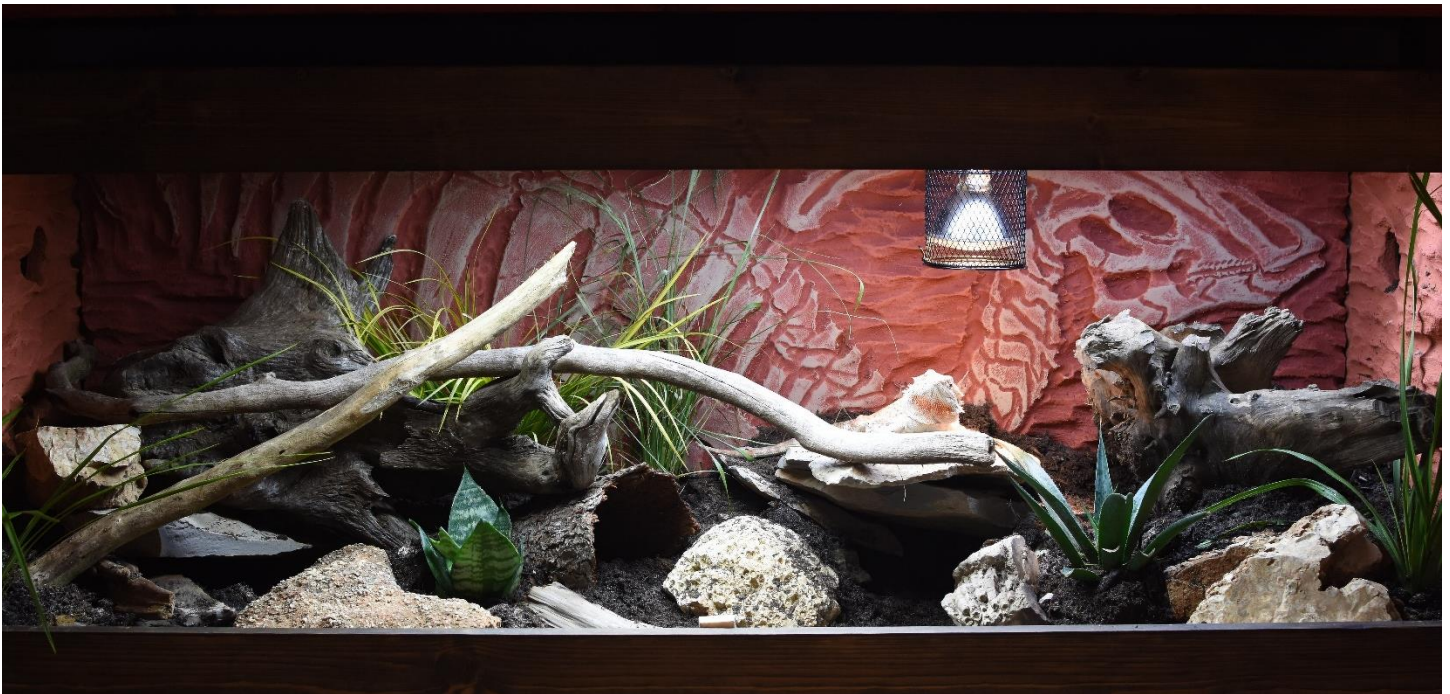
- Many reptile species, including bearded dragons, are highly curious, active animals. They enjoy living in a stimulating environment where they can climb, dig, bask, sleep, hunt and explore
- When these animals are housed in small, bare enclosures, they often exhibit “stereotypy” behaviors, which may include glass surfing, frequent hiding, pacing, pushing at enclosure doors or corners, and listlessness. These are all indicators of boredom, stress, frustration, anxiety, and eventually sensory-atrophy
- Giving our animals more space and more things to investigate, climb, etc, allows them to exhibit natural behaviors and stimulates their senses. These provisions also decrease fear and stress, and enhance the animal’s sense of security

### 2.) Ways to Provide Enrichment

- Enrichment can be provided by “cluttering up” your dragon’s home. Add in lots of flat, stacked stones (just make sure they are securely placed so the dragon can’t harm themselves by burrowing beneath the rocks), use natural substrates, bury cork bark rounds in the substrate to create tunnels, stack lots of driftwood to create climbing opportunities, give the dragon a new item on occasion to investigate, and let them free-hunt insects every once in a while

## Enclosure Examples

- These enclosures belong to Loving Leos Reptile Rescue. They are 5x2x2’ front-opening terrariums, have full spectrum LED lighting, UVB and incandescent heating









## How to Set Up a Bearded Dragon Enclosure

When setting up a dragon enclosure, it's important to consider their natural environment and behaviors. We should do our best to replicate this so that our dragon can express natural behaviors, and remain physically and mentally healthy. "Dollhouse" setups that are more catered to human aesthetics should be avoided. This graphic will cover the basics of what an enclosure should have. Keepers of course can go as big and as natural as possible.



*Basic bearded dragon setup guide, graph courtesy of Bearded Dragon Advanced Care, Facebook*

## Common Bearded Dragon Illnesses

### 1.) Metabolic Bone Disease (MBD)

- Metabolic bone disease (MBD) is a broad-spectrum term for a variety of illnesses affecting reptiles' skeletal structures. Most commonly in captivity, it is caused by a lack of D3 in the animal's body, which prevents calcium absorption. This leads to softening bones, permanent physical deformities, disability, and death if the condition is allowed to progress
- MBD is one of the most easily preventable diseases in captive reptiles, but it is the most common ailment seen from poor keeper knowledge
- MBD can be prevented by providing species-appropriate UVB, changing out UVB bulbs according to the brand's specifications, and proper supplementation



*Severe MBD in a bearded dragon. Note the deformed jaw, disfigured limbs, spine, and hips. These deformities are permanent and painful*

## 2.) Vitamin A Deficiency

- Vitamin A deficiencies occur when a multivitamin is not used in a dragon's supplement rotation. Vitamin A (Retinol, Retinyl, Vitamin A Acetate) is essential for immune health. Without this critical vitamin, the dragon's immunity will break down, leading to a vulnerability to bacterial infections
- Vitamin A deficiencies often present as difficulty shedding, eye and mouth infections, and in males, hemipene impactions may occur
- **DO NOT** provide a multivitamin too frequently! Vitamin A is fat-soluble, which means it stores in the body for longer periods of time than water-soluble vitamins. This can lead to Hypervitaminosis A/Vitamin A Toxicity, and can be fatal



*Infected mucosal debris has formed over the eyes in this juvenile bearded dragon*

## 3.) Parasitic Infection

- Parasites are a common occurrence in captive reptiles, especially for those who are wild-caught, or who need animal or insect protein in their diets
- Parasites are normally kept in check by the reptile's immune system, but stress and incorrect care can cause parasite populations to bloom in the animal's gut
- Symptoms can include runny stools, blood in stools, lethargy, weight loss, belly bloating, regurgitation





*Bearded dragon abnormal stool chart*

#### 4.) Gout

- Gout can be caused by over-feeding your bearded dragon, especially high-protein insects such as superworms, or insects with naturally high uric acid levels like dubia roaches. Providing too much vitamin A can also lead to renal issues and gout. Dehydration can contribute to lowered kidney function and renal failure as well
- When gout occurs, white nodules of uric acid crystals (tophi) will appear on the joints, or on the organs (visceral gout). Shedding issues and skin tearing may occur in late stages of renal failure
- In the early stages, gout may be treatable with aggressive fluid treatment, strict dietary changes, and lowered doses of vitamin A. Symptoms may be managed long term with medicinal treatment, but are usually progressive. Gout buildup on the joints and organs is painful, so a full quality of life assessment should be considered, and symptoms monitored with your veterinarian



*Bearded dragon with advanced gout tophi in limbs*

#### 5.) Fatty Liver Disease

- Fatty Liver Disease, or Hepatic Lipidosis, is generally caused by over-feeding and lack of exercise

- Providing adequate enclosure space and time outside of the enclosure to exercise will help to keep your dragon fit
- Symptoms may include jaundice, lethargy, weight loss, lack of appetite, changes in stool consistency, regurgitation



*Morbidly obese bearded dragon. If steps are not taken to reduce weight, Hepatic Lipidosis is a high risk*

#### 6.) Fungal Infection

- Fungal infections can occur when the bearded dragon is exposed to unclean living conditions and/or consistently high humidity levels
- Bathing your dragon too frequently can create an optimal environment on their skin for fungus proliferation
- Some fungal infections such as Yellow Fungus Disease are aggressive, contagious and often fatal



*Yellow fungus disease affects the organs, later presenting externally around the mouth, vent, nose and eyes*

#### 7.) Atadenovirus (ADV)

- Atadenovirus (ADV) is a viral infection that can cause liver and gastrointestinal disease

- In advanced cases, neurological issues, such as star-gazing (staring straight upwards for extended periods of time), uncoordination, seizures, limb weakness and abnormally-colored stools may present
- ADV is often fatal for young bearded dragons. Dragons who survive will be carriers for the rest of their lives and can potentially transmit the virus to other dragons. Some dragons may also be asymptomatic carriers



*A juvenile bearded dragon with Atadenovirus (ADV) "star-gazing"*

#### 8.) Muscular Dystrophy (MD)

- The cause for Muscular Dystrophy (MD) in bearded dragons is not directly known, but it is suspected to be a genetic issue. More cases have been noted from poor breeding practices
- MD is a neuromuscular disorder. Symptoms can include weak limbs, inability to chase insects, muscle spasms and inability to control muscles, flipping over and inability to right themselves



*A bearded dragon displaying poor limb control from Muscular Dystrophy (MD)*

#### Resources

- Facebook
  - Reptile Lighting
  - Behavior Education

- Bearded Dragons: Advancing Husbandry
- Reptiles: Advancing Husbandry Practices
- Loving Leos Reptile Rescue
- **YouTube**
  - Elle's Reptiles
  - Animals at Home
  - Reptiles and Research
  - Herp Talk
  - Jessica's Animal Friends
- **Supplies**
  - Pangea Reptile
  - Bean Farm
  - Light Your Reptiles
  - Reptile Basics
  - Dubia Roaches
  - PetCo
  - PetSmart
- **Experts who have published papers online for science-based research**
  - Thomas Griffiths, Tomaskas LTD, Zoo Husbandry Consultant
  - Dr. Frances Baines, Veterinary Surgeon
  - Dr. Sarina Wunderlich, light physicist
  - Lori Torrini, Behavior Education, Animal Behaviorist
  - The British Herpetological Society