Bearded Dragon Care

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There are 20 different species of bearded dragons in Australia but only three of those species are commonly found in the pet industry. The Inland or Central Bearded Dragon (*Pogona vitticeps*) is the most common lizard kept and recommended for keeping in the pet industry due to its gentle disposition and relatively friendly manner when being handled. The Bearded Dragon (*Pogona barbata*) and Lawson's Dragon (*Pogona henrylawsoni*) are also found in the pet industry but in much smaller numbers. For the purpose of this hand out however, bearded dragon or "beardie" will stand for the Inland or Central Bearded Dragon.

Natural History

Beardies are found throughout the semi-desert regions of Central and Southern Australia along forest edges too. In Australia , they are frequently found basking on tree stumps, fences, railings, and any other object that juts out of the ground.

Description

Bearded dragons are well muscled, broad headed, flat bodied lizards. Their signature "beard" is under the chin and consists of small spikes that jut out when the throat is inflated. The head is spined as well as the sides of the abdomen. Some breeders sell Leather Backs which are genetically designed to have a softer feel by eliminating some of the spikes. Juveniles lack a beard. The tail is half the length of the lizard and incapable of autotomy (a defense mechanism found in some lizards also known as "dropping the tail"). The bearded dragon has become quite popular in the breeding industry for morphs (different variations of color not created in the wild). The most common morphs are Red/Gold, Sandfire, Sandfire Pastel, and Gold Headlight Iris. These lizards have an average life span of 5-9 years although 12 years is no longer uncommon.

Feeding *See Supplemental Handout*

Adult bearded dragons are omnivorous while hatchlings and juveniles are more insectivorous. Hatchling up to two months old should be fed two to three times a day a mixture of insects and healthy greens. Several feedings is especially advantageous when there are several dragons housed together. Proper growth is achieved through several small meals with smaller prey items versus one large meal with a large prey item. Adults, however, can be fed a salad of greens such as romaine lettuce, escarole, Swiss chard, mustard greens, and turnip greens with a small amount of other vegetables and fruits such as carrots, peas, strawberries, blueberries, melon, and squash once a day. Edible flowers such as squash blossoms are also okay to offer and generally relished. Insects such as crickets, meal worms, and feeder roaches (such as dubias) are excellent protein sources and should be offered every other day to every three days depending on your lizards' body condition (thin, normal, or obese) and your vet's recommendation.

Calcium and multivitamin supplements are key to a healthy beardie. Please consult the supplemental handout for additional information.

Enclosure

Hatchlings grow fast but can be maintained well in a 10 gallon aquarium at a young age while growing into adults that can be housed in aquariums as large as 75 or 120 gallons! The smallest cage for a singly housed adult is a 30 gallon breeder although larger is preferred. Multiple lizards housed together require more room to allow for escape from each other. Custom enclosures for adults made of wood or melamine should be 72" long, 16 inches wide and 17 inches high according to some sources. Ventilation is important regardless of the size of the enclosure. It is recommended that aquariums have 3 sides covered to prevent escape attempts and allow for a feeling of security.

During the warmer months, beardies can be housed outside in an outdoor set-up created with wood and wire mesh. There are several blue print plans available on the internet for these enclosures. Please, do not take the aquarium outside! This can cause lethal hyperthermia especially in direct sun light. Frequent supervision is required ensure the health of your beardie. These enclosures must be protected from large amounts of rainfall and predators. The optimal positioning allows for some shade to be available as well.

Substrate

It is never recommended to keep bearded dragons on a sand substrate even the calcium sand sold in pet stores. Life threatening impactions are frequently caused by accidental ingestion of particulate bedding including sand, coconut fiber substrate, and crushed walnut bedding. A better substrate that is easier to clean is indoor/outdoor carpet, potting soil (requires weekly changing), and butcher paper. The substrate should be spot cleaned daily and changed as needed or after 7 days, whichever comes first.

Temperature and Humidity

The temperature for bearded dragons during the day should be around 80-85 degrees Fahrenheit and drops to 75 degrees Fahrenheit at night. The basking site should be around 88-95 F. Two thermometers should be used in the cage. One placed at the level of the basking site and the other on the cool end of the tank an inch above the substrate. It is highly recommended to regulate the temperature using a thermostat. The primary heat source should be an over head basking light or ceramic heat emitter. Secondary heat if needed ideally comes from under tank heaters under half the tank. Do not use electrical heating rocks due to the extremely likely chance the bearded dragon will develop thermal burns.

The humidity in the cage should be maintained between 40 and 60%. This can be achieved by placing a water dish in the enclosure, preferably one the lizard can soak in, and daily misting. A hygrometer is highly recommended.

UVB

UVB lights are necessary for the proper growth and maintenance of bearded dragons. The ultraviolet B radiation stimulates the synthesis of calcium. The best source of UVB is the sun but only when the animal is outside and directly in the sun light. Never place the cage by a window. The UVB light is filtered out through glass and the chance of over heating the enclosure is extremely high. The recommended bulb for a hatchling and sub-adult is a Repti Sun 10.0 and a Repti Sun 5.0 for adults. The bulb must be changed yearly as the strength of the UVB will deteriorate with time despite the bulb giving off visible light. Placement of the bulb should be overhead and no more than 10 inches away from the basking site. The light cycle for bearded dragons should be 12 hours of light with 12 hours of darkness. Mercury vapor bulbs work well, too.

Cage Accessories

Dried wood branches are appreciated by most bearded dragons as the species is a modest climber. A large rock under the basking light makes a wonderful basking site. Live plants such as aloe and palms can be added to the enclosure. Artificial plants are easily disinfected and make appropriate accessories. Most beardies will utilize a half log hiding area. Custom and creative hides can be made as well.

Grouping

Although we recommend single housing we understand that group housing is a popular option among reptile keepers. Males are typically very territorial and fighting comes to a head during breeding season. It has been noted that a submissive male can be housed with a dominant male but it is still best to separate them. Dominance displays include inflation of the throat (also a defensive move) and head bobbing. Displays of submission are seen as arm waving which as males become older disappears but is retained in females throughout their life.

Females, once they establish a hierarchy seem to live with each other without incident as long as there are multiple feeding stations and enough room. Bearded dragons can also be housed along or in a group of several females to one male. The hierarchy is often very clear with bearded dragons as the dominant lizard will bask higher than the others as well as eat first. It is always recommended to have multiple feeding stations if more than one beardie is housed together.

Sexing

Bearded dragons can reach sexual maturity by 6 months of age and as late as 12 months. Males have large femoral (under side of the thigh) pores and a thicker tail base. Females have small or non-existent femoral pores and a slender smoothly tapered tail. As the lizards mature, males will develop broader heads as well.

Reproduction

Breeding is triggered by an increase in the temperature generally in late winter and early spring and lasts around four months. Females indicate receptivity by laying flat on the ground and raising their tails. The male will hold the female by biting her neck and using his tail to push their cloacas together. Copulation is not long. Bearded dragons are capable of laying several clutches (as many as 5!) in one four month season with around 20 eggs a clutch! Females will become restless and aimlessly wander the cage digging at random and go off food right before eggs are laid. A nesting box of moist sand helps stimulate laying of the eggs. Females will lay eggs regardless of fertilization but most females reabsorb unfertilized follicles. Fertile eggs if incubated properly at 84 degrees Fahrenheit will hatch around 55-75 days. Eggs must be removed from the enclosure and kept moist and protected.

Grooming and Handling

Bearded dragons will learn to tolerate routine handling. When handled on a daily basis, they seem to become

more relaxed as time goes on, and cleaning the enclosure is simplified when the animal is docile. Bearded dragon skin is very rough, so light gloves and long sleeves should be worn to protect against mild scratches. Their toenails also become needle-sharp, and should be trimmed every few weeks. Finally, because all reptiles are potentially infected with Salmonella bacteria, which can be transmitted from reptiles to humans, routine cleanliness and hygiene are essential.

Sources and Resources to Utilize

Lizards Volume 1, *Manfred Rogner*
Keeping and Breeding Lizards, *Chris Mattison*
Reptile Medicine and Surgery, *Doug Mader*
Manual of Exotic Pet Practice, *Mark Mitchell and Thomas N.Tully Jr.*
The Bearded Dragon Manual, *Philippe de Vosjoli*
Bearded Dragons: A Complete Guide to Pogona Vitticeps, *Philip Purser*
King Snake Forum www.kingsnake.com

Bearded Dragon Diet Recommendations

1. **Crickets:** these can be easily gut-loaded with great vitamins and nutrients that benefit your reptile. They are not high in fat so they make a great staple diet. If they are not gut-loaded, they have little to no nutritional benefit. (Gut-loading info follows below)

2. **Dubia Roaches:** high protein food choice and easy to keep. With gut-loading, these can also be a staple diet for many reptiles.

3. **Silkworms:** Silkworms are soft bodied and are a high source of Calcium, Protein, Iron, Magnesium, Sodium, and Vitamins B1, B2, and B3. They are not always available and usually have to be ordered from an online vendor. Chameleons love them and they are a great diet option.

4. **Hornworms:** Hornworms are similar to silkworms but they grow much faster and get larger. They are more readily available and are soft-bodied. They have much less protein and calcium than silkworms. Due to the speed of growth and adult size, hornworms are better for larger reptile species.

5. **Calciworms:** Calci-worms/ repti-worms/phoenix worms are black soldier fly larvae. They have a great calcium: phosphorus ratio and small in size. They are active but cannot get out of most dishes. These are great for smaller reptiles.

6. **Superworms:** Superworms are very active and readily accepted by most reptiles. They are larger than meal worms and have less chitin, which makes them easier to digest. It is suggested to feed the worms that have shed recently, since they are softer. These should only be given in moderation and should always be gut-loaded and calcium dusted prior to feeding.

7. **Mealworms:** Mealworms are a poor staple feeder on its own because their nutritional value is low and the exoskeleton (chitin) is very hard. These should only be given in moderation and should always be gut-loaded and calcium dusted prior to feeding.

8. **Waxworms:** Wax worms (waxmoth's larvae) are high in Fiber, Protein and Fat. Due to the fat content, this should only be fed in moderation and used as “treats”.

https://www.rainbowmealworms.net/
*Great online retailer for insects
Offer variety/combo packs, species packs, etc

	Fat (%)	Calcium:phosphorus ratio	Protein (%)
Crickets	6	0.13:1	18
Dubia Roaches	8	0.33:1	36
Silkworms	10	0.77:1	64
Hornworms	3	0.33:1	9
Superworms	17	0.05:1	22
Mealworms	13	0.14:1	18
Waxworms	25	0.1:1	14
Calci-worms	9	1.52:1	17

Safe and Healthy Plants and Vegetables

Green = daily staple option **Blue = feed rarely** **Black = feed occasionally**

-Basil	- Clover	-Carnations	-Dandelion Greens
-Sage	-Impatiens	-Oregano	-Maple Leaves
-Rose petals	-Thyme	-Chives	-Mint Leaves
-Rosemary	-Collard Greens	-Turnip Greens	-Plantain
-Hibiscus	-Red clover	-Artichoke heart	-Bell Peppers
-Butternut Squash	-Celery	-Carrots	-Endive
-Mustard Greens	-Cabbage	-Cucumber (peeled)	-Acorn Squash
-Bok Choy	-Alfalfa	-Summer Squash	-Yams
-Kale	-Okra	-Asparagus	-Spaghetti squash
-Cactus	-Escarole	-Red leaf lettuce	-Brussel Sprouts
-Broccoli	-Cauliflower	-Parsley	-Romaine lettuce

Safe Fruit (fed in moderation)

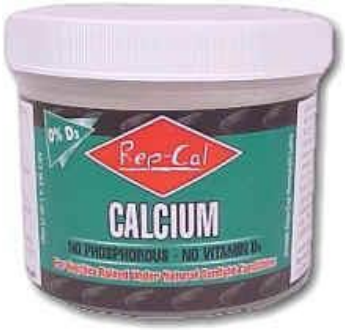
-Apples	-Blackberries	-Grapes	-Pears	-Banana
-Prunes	-Watermelon	-Cranberries	-Melons	-Pineapple
-Raisins	-Blueberries	-Figs	-Peaches	-Plum
-Strawberries	-Prickly Pear			

Bearded Dragons are omnivores, so they need a balanced diet of insects and vegetable matter. Hatchlings eat mostly small insects. As they grow, they will start to eat more vegetable matter. The diet of a juvenile dragon (2-4 months of age) will consist of approximately 80% insects and 20% greens. Young dragons should be fed 2-3 times daily. Feeding pinkie mice is NEVER recommended due to the high fat content and difficulty of digestion.

NEVER FEED

-Avocados	-Fireflies	-Pinkie Mice	-Rhubarb
-Wheat Bran	-Beet tops		

Reptile Supplementation



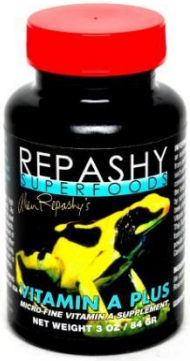
REP-CAL Calcium supplement (no phosphorus or Vitamin D)

This will be your staple supplement. Contains no added starch, sugar, soy, preservatives, artificial coloring, flavoring, or fragrance.
Use three times weekly

REP-CAL Herptivite multivitamin

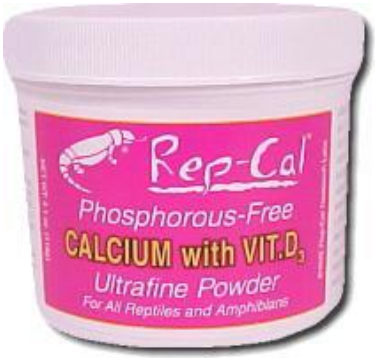
Contains precise levels of vitamins and minerals combined in perfect balance to ensure correct utilization of protein and other essential nutrients for growth, reproduction, maintenance and many aspects of your reptile's bodily functions. **HERPTIVITE is the first reptile vitamin without Vitamin A**. **Instead they use Beta Carotene** which is an anti-oxidant that is converted into Vitamin A in a regulated way, so there is **no threat of Vitamin A toxicity**.

Use every other week



REPASHY Superfoods Vitamin A Plus

Preformed Vitamin A (Retinol) is an **essential fat-soluble vitamin** that in nature comes from **animal sources only**. Plant sources of Vitamin A, such as Beta Carotene, must be converted into this active animal form to be utilized by the body. Carotenoids can be converted into Retinol by some species given optimal conditions, but it has been shown that deficiencies can develop if Preformed Vitamin A is not directly provided in the Retinol form. This Supplement provides Preformed Vitamin A in the form of a spray dried water dispersible Retinyl Acetate powder in combination with natural sources of Beta Carotene derived from algae.
Use in moderation (**every 2 weeks**).



REP-CAL WITH vitamin D3

Rep-Cal Ultrafine (fine grind) is an excellent source of calcium for all reptiles and amphibians. Scientifically formulated from 100% natural Oyster Shell phosphorous-free calcium carbonate with added Vitamin D3 to aid in the absorption of calcium.
Use in moderation (**every 2 weeks**).

Gut-Loading

Gut loading is a term used to describe filling feeder insects with a nutritious diet 1-3 days prior to feeding them to your reptile. Unfortunately, most commercially available foods are very poor in nutritional value, especially products like gel cubes or bran flakes. These are not a suitable gut-load and it can lead to health issues down the line for your chameleon. There are plenty of great diets available over the web, but are not available in pet stores. You can also add fresh fruits and veggies 1-2 days prior to feeding them to your chameleon.

Best Gut-Loading Ingredients

Food items that are high in calcium but low in phosphorous and oxalates.

Mustard Greens, Turnip Greens, Collard Greens, Dandelion Leaves, Hibiscus Leaves or Flowers, Mulberry leaves, Grape Leaves, Escarole Lettuce, Squash – either Butternut or Spaghetti, Papaya, Watercress, Alfalfa, Orange, Carrot, Arugula, Basil, Apple, Spirulina, Dried, Seaweed/Kelp, Flax Seeds, Sesame Seeds, Bee Pollen.

Recommended commercially available gut loading diets

1. **MAZURI® Better Bug Gut Loading Diets**

Protein (%): 30%
Fat (%): 15%
Fiber (%): 9%
Calcium (%): 9% (need at least 8%)

http://www.mazuri.com

2. **MAZURI® HI Calcium Gut Loading Diets**

Protein (%): 18%
Fat (%): 3.5%
Fiber: 9%
Calcium (%): 8-9% (need at least 8%)

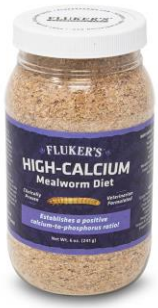
http://www.mazuri.com

3. **Fluker's High-Calcium Cricket Diet**

Crude Protein (min) - 20.0%
Crude Fat (min) - 5.0%
Crude Fiber (max) - 9.0%
Calcium (min) - 8.0% (need at least 8%)

http://flukerfarms.com/hi-cal-cricket-diet/

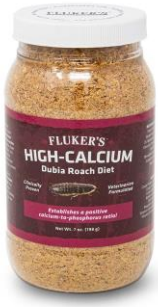
4. Fluker's High-Calcium Mealworm Diet



Crude Protein (min) - 13.5%
Crude Fat (min) - 4.75%
Crude Fiber (max) - 8.5%
Calcium (min) - 7.75% (need at least 8%)

http://flukerfarms.com/high-calcium-mealworm-diet/

5. Fluker's High-Calcium Dubia Roach Diet



Crude Protein (min) - 14.75%
Crude Fat (min) - 4.25%
Crude Fiber (min) - 6%
Calcium (min) - 6.5% (need at least 8%)

http://flukerfarms.com/high-calcium-dubia-roach-diet/

Recommended Water Supply for Insects

Crickets: You should never place a bowl of water in the cage with the crickets. They will drown! Because of this, I recommend using water crystals. They come dry and you mix them with water. The crystals expand with water so your crickets can drink without drowning. You can get these online at many different retailers. A few links are listed below:

http://www.beautifuldragons.com/Cricketwater.html

http://www.rainbowmealworms.net/cricket-and-roach-water-crystals/

http://www.pangeareptile.com/store/water-crystals.html

http://www.joshsfrogs.com/food-nutrition/feeder-insects-supplies/crickets-2/cricket-care-2/show/all.html

The last link shows gut-loading diet and crystals.

You can also provide fresh fruits and veggies that have water content to keep them hydrated. Some keepers use large sponges (from Home Depot or Lowes) and keep them moist in the enclosure. These will become dirty easily and will need to be cleaned often.

If you prefer a water option more readily available at local pet stores, I suggest Flukers cricket Quencher. The same concept as the water crystals but already come in ready to use form. These end up being much more expensive in the long run.