



## Reptiles and nutrition:

We know that good health begins with the diet. Many new reptile owners find themselves overwhelmed with the choices and options, especially when it comes to supplements. Other reptile owners find themselves stuck in a rut, feeding only one or two foods that are most convenient.

Proper understanding of reptile nutrition is a vast, complicated subject that requires a lot of study and understanding of physiology and chemistry. But we have to remember that in the wild wildlife does not need supplements. Their diets are varied, depending on the season and the region of the world they live in. The carnivores and insectivores are randomly eating prey that is "gut loaded" with everything imaginable found in nature. Herbivores also are daily eating a varied diet, vegetation that hasn't been washed or commercially grown adding beneficial micro nutrients.

We're going to cover some of the basics and most important topics of this subject here, but the most important fact to keep in mind is that no one food has all the nutrition a pet needs, so offer a lot of variety.

As always, consult your reptile veterinarian for any specific questions relating to your reptile's health and diet.

Reptiles fall into four categories: carnivores (meat eaters), insectivores (insect eaters), herbivores (vegetable eaters), and omnivores (eating both meat and veggies). Research your specific reptile or amphibian to find the optimal diet for them.



Bearded dragons,  
a very popular  
omnivore



**Feeding veggies:** Offer a wide variety of different dark, leafy greens. It is not recommended to feed iceberg lettuce, as it is mainly water with little nutrition. Our favorite veggies are brightly colored, grated squashes, red bell peppers, carrots and sprouts. Our favorite leafy greens: romaine lettuce, beet greens, kale, turnip, collard, mustard greens, and dandelion greens. Some vegetarians, such as tortoises and uromastyx love an occasional flower, such as dandelions and hibiscus, as an occasional treat.

Keep some foods to a minimum (if you feed them at all): spinach, chard, parsley, carrots, and beet roots. These foods contain oxalates that can prevent calcium from binding into their bones and cause kidney problems if fed in high doses.

**Fruits:** Some herbivorous and omnivorous reptiles like an occasional piece of fruit as a treat; this could be a small piece of strawberry, apple, berries, or grapes. Each animal is going to have their favorite foods, but always offer them a lot of variety and choice. Fruits should be kept to a minimum, especially for desert reptiles, as they contain a lot of water and overfeeding can cause diarrhea. Diets high in fruits also tend to be high in phosphorus. (More on phosphorus later).



**Feeder insects:** For reptiles that need protein, we offer the following live foods:

**Crickets:** One of the most common insects used as a live food, as they are available in various sizes and are usually readily taken by reptile. Over time, only feeding crickets is thought to cause some nerve damage in your reptile due to a mild toxin in the insects. Over feeding can also lead to impaction and an overdose of phosphorus.



**TIP:** Do not put a lot of crickets in the enclosure at the same time; they can actually start to bite the reptile. Use a [Cricket Keeper](#) to house and feed your crickets, and feed only as many as your reptile can eat in a few minutes. The dark tubes in the Cricket Keeper are really handy, as the crickets hide in them; simply shake out a few to feed (or into a bag for shake and bake.)

**Mealworms:** larval form of the darkling beetle (*Tenebrio molitor*). They make a great addition to your reptile's diet, but there is concern that over-feeding mealworms can lead to impaction due to their hard exoskeleton.

**Super worms:** the larvae of a larger species of darkling beetle, these are another choice for feeding reptiles. Again, their hard exoskeleton could, if overfed, lead to a higher risk of impaction. Both mealworms and super worms are high in fat, and can lead to weight gain if over fed.

**Waxworms:** Larvae of the greater wax moth (*Galleria mellonella*), these grubs are higher in fat than most other insects. Feed as an occasional treat and a great way to put weight on undersized or wintering reptiles. They contain great nutrition, are very soft with no hard exoskeleton, so there is no risk of impaction, although over feeding could lead to weight problems.



**Calci worms:** Also known as phoenix worms, these are larvae of the soldier fly (*Hermeia illucens*). They are naturally high in calcium, which gets passed on to your reptile, reducing the need to supplement or gut load. They are very nutritious, low in fat, and their soft bodies reduce the risk of impaction.

**Dubia Roaches:** This beetle is very different from the roaches we see as home pests. *Blattella germanica* makes one of the most perfect live foods to offer your reptiles. They are very nutritious, are not high in phosphorus like crickets, and produce very little odor and no noise. They also do not have a hard exoskeleton, meaning their risk of impaction is low.

**Earthworms:** These are considered an almost perfect food for most amphibians and some reptiles. They are very nutritious and easy to keep alive when kept cool in the fridge.

**Red Wigglers:** Smaller than earthworms, they are appropriate for smaller amphibians - and even many species of fish! Soil based worms, such as earth and red worms, are ideal for herps that are naturally found in soft damp earth such as box turtles and salamanders. Feeding soil loving worms can cause bacterial infections to animals who are not accustomed to a natural diet of worms such as arid or arboreal reptiles.

**Other sources of protein:** Most carnivores would fare poorly if they were only fed insects their entire lives. Some reptiles such as bearded dragons and leopard geckos would occasionally in the wild eat a small rodent, and do well if occasionally fed a whole small pinky mouse. Whole, live fish can be offered to many species of aquatic turtles to supplement their diet of pellets and greens.

**Gut loading:** You'll hear the term "gut loading" a lot. In nature, reptiles and amphibians are eating a wide range of insects that are, themselves, eating a wide range of foods. In captivity, that selection is more limited. We can give our pets a nutritional boost by feeding their insects



healthy foods. Whatever they eat, the reptile winds up eating. [Fluker's Orange Cube Cricket Diet](#) is a great source of nutrition; orange cubes are convenient because they feed and hydrate your insects without spoiling or attracting fruit flies but offer little additional nutrition for herb. Feeding Fluker's dry cricket meal will offer multi vitamin and minerals. Use Fluker's Cricket Quencher to hydrate your insects. You can also offer veggie stems, apples, potatoes, carrots, and zucchinis for you insects to munch on.

**Prepared foods:** Pellets, like [Fluker's bearded dragon diet](#) for an example, are a convenient way to give your pet combined nutrition. Because most herps are not accustomed to eating commercial diet, they are colored to help encourage them to eat. Slowly introduce pellets sprinkled over preferred insects or chopped veggies and gradually increase the quantity of pellets. But again, pellets should be just one part of a balanced diet. One day give veggies, the next give veggies with pellets mixed in, the third day give pellets. Pelleted diets are available in formulas for most reptiles; choose the one appropriate for your species of reptile, and make sure it's the right size.



**Supplements:** In nature, reptiles and amphibians are exposed to a wide variety of food items, often much more varied and ultimately more nutritious than those diets fed to captive herps. We often need to give supplements to ensure great health. There is a great deal of discussion in herpetology about vitamins and mineral supplements. How much to give? With D3 or without? How much is toxic? Find the right amount that your reptile needs by consulting your reptile veterinarian.

**Vitamins:** A broad vitamin supplement focusing on much-needed vitamin A, meant to help fill in nutritional gaps in a favorite staple food. Well balanced, but most do not contain an adequate amount of calcium, so extra supplementation is needed.

**Calcium with phosphorus:** This is used for reptiles that do not eat insects, to give them that necessary nutrient. For omnivores and carnivores, crickets provide adequate phosphorus in their diet. Too much phosphorus will, over time, prevent calcium from being metabolized.

**Calcium with vitamin D3:** Phosphorus free calcium supplement, the vitamin D3 helps the body absorb the calcium. Given to most reptiles to ensure adequate levels, but, since vitamin D3 can be overdosed, it is often alternated with the calcium without D3.

**Calcium without vitamin D3:** Most frequently given to nocturnal or diurnal reptiles, as they get enough vitamin D3 for their limited needs from the intense



UVB bulbs. It is also given to animals kept outside, as they get enough vitamin D3 from their exposure to the sun.

We recommend giving your supplements on the following schedule:

Day 1: vitamin powder      Day 2: calcium powder      Day 3: Nothing      Repeat.

When feeding insects, use the "shake & bake" method: place your insects in a small bag, add a pinch of that day's supplement, close securely and then shake. Do this right before giving the insects; if you do it too long before hand, then powder will be cleaned off and not taken by your pet. Supplements can also be mixed into that day's veggies so your herp gets some in every bite; Simply putting it on top can cause some problems if your reptile avoids that piece of food.

Over time, a lack of vitamins and minerals can cause a lot of health problems for your pet, including metabolic bone disease, neurological and physical problems and even death.

Feeding snakes: Most carnivore snakes can be conditioned to eat fresh frozen defrosted foods. Feeding frozen foods is considered more humane, convenient and safer because due to possibilities in defensive wounds caused by its prey. While there is not a lot of choice in items



to feed to snakes, there is an important tip to offer here: keep your snake friendly by not feeding them in their cage. When you offer them food by hand in their cage, they begin to associate the warmth and smell of your hand with eating; this is a great way to train a snake to bite. Feed them in a dedicated feeding container. Place their food in a simple ventilated & secure plastic box, and then put the snake in. After the snake eats, return them back to their cage. Another good snake

feeding technique is place your snake in a paper bag with its food, crease the bag shut and lay the bag on its side in the snake's cage. Once the snake eats and feels ready, the snake will push itself through the opening of the bag. While their food is defrosting is a great time to give the snake a soak in warm water.

We often get asked "What is the best diet to feed my reptile?" The best answer is that there is no one perfect food that has complete nutrition, so offer a wide variety to keep your reptile healthy. Understand what the species specific diet for your herp in the wild would be, and duplicate it as closely as possible.