

Uromastyx

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Natural History

Uromastyx, also known as spiny-tailed or dabb lizards, are a genus of herbivorous, diurnal lizards found in northern Africa, the Middle East, and northwest India. This genus of lizard is in the agamid family, the same family as bearded dragons and frilled lizards. There are 13 recognized uromastyx species, but not all are commonly kept in captivity in the United States. *U. aegyptia* (Egyptian), *U. ornatus* (ornate), *U. geyri* (saharan), *U. nigriventris* (Moroccan), *U. dispar* (Mali), and *U. ocellata* (ocellated) are some of the most commonly kept. Uros dig burrows or spend time in rocky crevices to protect themselves from the elements in their desert habitats. These lizards naturally inhabit rocky terrain in very arid climates and are often found basking in direct sunlight.

Characteristics and Behavior

Uros tend to be quite docile and tolerant of handling, with some owners even claiming their lizard seeks out interaction. These lizards don't tend to bite, but can be skittish if time is not taken to tame them. Ornate uromastyx have been noted to be bolder, while Egyptian and Moroccan uromastyx may be more shy. As with other members of the agamid family, uromastyx do not possess tail autotomy (they can't drop their tails). Uros are heat loving, mid-day basking lizards that thrive in arid environments. Uros have a gland near their nose that excretes salt, which may cause a white build-up near their nostrils (keepers affectionately refer to this build-up as "snalt"). They are fairly hardy and handleable lizards that make good pets for intermediate keepers.

Lifespan

12-20 years.

Adult Size

Most species grow to around 15-17 inches, with ornate uromastyx averaging 10-14 inches and Egyptian uromastyx reaching up to 30 inches.

Housing

Uros under 15 inches need a minimum cage side of 4'x2'x2' while uros over 15 inches need a minimum cage size of 6'x2'x2'. As with all reptiles, a bigger enclosure is always better to provide opportunities for exercise and enrichment. An elevated basking area

should be provided to allow uros to move closer to or farther away from the basking source. This can be accomplished with branches, basking shelves, rocks, and logs. Plants (live or fake), ground clutter, slate, flagstone, and corkwood can all be provided to create more opportunities for enrichment and cover. A hide should be provided on both the warm and cool end of the enclosure so a reptile doesn't need to choose between thermoregulation and security.

As with bearded dragons, there is a debate amongst keepers about which substrate is best for uros. There is no "best" substrate; all have pros and cons. Loose substrate, when combined with improper husbandry, can lead to life threatening impactions. Tile and newspaper have no risk of impaction, but do not allow natural burrowing or digging behavior. Newspaper may be placed on top of tile to allow the lizard to burrow between layers. Tile offers the benefit of acting as a filing surface for a uro's nails. If non-loose substrate is being used, a dig box with ReptiSoil or EcoEarth can be provided to allow the opportunity to dig and burrow.

In the wild, uromastyx live on a mixture of compact earth, clay, and rocky soil, not loose shifting sand. Lugarti's Natural Reptile Bedding, which is a mixture of sphagnum moss, fine sand, and clay, is an option for uros. ZooMed Excavator Clay can also be used and offers the advantage of being able to make preformed burrows, but it can be quite expensive and messy. The Bio Dude TerraSahara is another acceptable choice, particularly for bioactive setups. Some keepers chose to make their own mix with 50% washed play sand, 30% topsoil (be sure it is reptile safe), and 20% Excavator Clay. Millet is sometimes recommended but it can be an issue if the uro starts to excessively snack on it. Uros under 50g should not be kept on loose substrate as their aggressive feeding responses make them more prone to impactions.

Avoid CalciSand, VitaSand, crushed walnut, gravel, and corncob as these substrates carry a much higher risk of impaction. Always talk to your veterinarian before using loose substrate to ensure your lizard is healthy and your husbandry is correct. When using loose substrate, food should also be offered on a feeding dish to avoid ingestion of substrate. Live prey can also be offered with tongs.

Lighting

Like all lizards, uromastyx require UVB light to synthesize vitamin D3 in their skin. Vitamin D3 is needed for proper metabolism of calcium and prevention of metabolic bone disease. The ReptiSun T5 10.0 HO, Arcadia T5 12% Desert, or Arcadia T5 14% Dragon are all acceptable choices, depending on where you set up your uro's basking

spot. Arcadia provides a guide as to where to place your UVB fixture in relation to your lizard's basking spot. UVB fixtures should be roughly as long as half your reptile's enclosure length. It is important to note that UVB cannot penetrate glass, so natural sunlight through a window will not be sufficient for a lizard to synthesize vitamin D3. Allowing safe outdoor time is also an excellent source of UVB and visible light. Uros taken outdoors should be kept in an escape-proof and predator-proof, non-glass enclosure. Provide shade and basking spots so your lizard can regulate their temperature.

Sunlight is made of ultraviolet, near infrared (IR), mid IR, far IR, and visible light. It is our job as keepers to provide full spectrum lighting, which means as close to sunlight as possible. Unfortunately there is not one source for all of these components, so we must provide multiple types of lighting. For visible light, LED or halide bulbs should be provided.

UVB is NOT optional for lizards. Lack of proper UVB can lead to impaired skeletal, muscle, and immune function. Replace UVB bulbs every 6 months, as they can continue to give off light even when not producing UVB. Lights should be turned off at night to maintain normal day/night cycles. For this reason, red or black nightlights should not be used as they can disrupt normal day/night cycles.

Arcadia UVB guide: <https://www.arcadiareptile.com/lighting/guide/>

Heat

Unlike mammals, reptiles cannot internally regulate their temperature and rely on their environment to heat and cool themselves. Therefore, it is important that we provide captive reptiles with a temperature gradient so they can warm up or cool down as needed. Reptiles have three temperatures to measure: basking spot, warm ambient, and cool ambient. The basking spot is the hottest area in the enclosure where they bask, the warm ambient is the air temperature on the warm side of the enclosure, and the cool ambient is the air temperature on the cool side of the enclosure. Ambient temperatures are best measured with digital thermometers (one on the warm end and one on the cool end), as analog thermometers are often inaccurate. Basking temperatures can be measured with a digital infrared thermometer.

Uromastyx need a basking spot of 115-125F, a warm ambient of 90F-100F, and a cool ambient of 77-85F. Any light emitting sources should be turned off at night and temperatures can drop to 65F. If needed, a non light emitting source like a ceramic heat

emitter, radiant heat panel, or deep heat projector can be used to maintain temperature. Sunlight is made of UV, near IR, mid IR, far IR, and visible light. Flood tungsten-halogen bulbs are the most efficient at producing near IR, which is the most abundant IR in sunlight, and they also produce significant mid IR and some far IR. Far IR is the least abundant in sunlight, but is most often produced in large amounts by sources like ceramic heat emitters, heat pads, and radiant heat panels. Tungsten-halogen bulbs should be the flood type to ensure a wide enough basking site. These heat producing bulbs can be found as reptile specific bulbs or at hardware stores. Avoid hot rocks as these can easily burn reptiles.

Humidity

As a desert dwelling species, uros don't need a high humidity environment. Ambient humidity can be maintained around 20-35% and should be measured with a digital hygrometer. A damp sponge or damp moss can be added to a hide while a uro is shedding to make a humid microclimate that the lizard can enter at will.

Feeding

As with all reptiles, a varied diet is important for enrichment and to prevent nutrient deficiencies. 75-85% of the diet should be leafy greens, 5-10% should be edible flowers, 5-10% should be other veggies, 5% should be seeds and lentils, and 0-5% should be fruit or other food sources. Uros that are still growing should be fed daily, whereas fully grown uros should be fed 4-5x/week. It should be noted that uromastix may not reach adult size until 18-24 months of age, or even later. A calcium carbonate based calcium powder with no phosphorus should be sprinkled on salads 2-3x/week, and a multivitamin supplement with vitamin A should be provided weekly. Repashy SuperVeggie is a good multivitamin for uros. A rough amount of food to feed is to start with a bundle the size of the lizard's abdomen and adjust based on the uro's body condition and if they are leaving leftovers. It is appropriate to offer commercial iguana, tortoise, or herbivorous reptile pellets as a supplement but not as the sole diet.

There is conflicting evidence about whether or not wild uromastix consume insects. Cunningham (2001), noted in "Notes on the diet, survival rate, and burrow specifics of *Uromastix aegyptius*" that <1% of fecal samples contained insect remains. More recently, Castilla et. al (2011) noted in "Plant diversity in the diet of the lizard *Uromastix aegyptia microlepis* in Qatar: The effect of zone, sampling date and faeces size" that both vertebrate and invertebrate remains were found in 26% uromastix feces. At this time, current recommendations are for uromastix to be maintained on a herbivorous diet. If insects are offered it should be no more once or twice per month.

Leafy greens: Dandelion greens, turnip greens, spring mix, escarole, bok choy, mustard greens, radicchio, endive, carrot greens, collard greens, radish greens, alfalfa (plant, not sprouts). Spinach and kale should be fed in moderation as they contain oxalates, which can disrupt calcium absorption.

Flowers: Hibiscus, dandelion, rose petals, Arcadia FlowerBoost, alfalfa flowers, pansies, violets, dahlias. As a general rule, human-edible flowers are safe for uros.

Veggies and herbs: Squash, sweet potatoes, asparagus, cactus pad, basil, bell pepper, cucumber, zucchini, rosemary, celery, cilantro, occasional carrots. Broccoli, cabbage, and brussel sprouts can be fed in moderation but can cause thyroid issues if fed too frequently. Avoid garlic, onion, rhubarb.

Seeds and lentils: Flax, safflower, sesame, hemp, chia, buckwheat, quinoa, clover seeds, white millet, lentils (can also be sprouted).

Fruit and other: Blueberries, mango, raspberries, pomegranate, grapes, melon, strawberries, apples without seeds, blackberries. Bee pollen is also an excellent occasional mix in for uros. Avoid avocado.

Water

Soaking greens in water before feeding is a good source of hydration. A shallow dish of water can also be provided but uros often do not drink from standing water. Females will drink vigorously following egg laying.

Sexing

Males tend to be larger and have a prominent hemipenal bulge. Mature males also have more prominent femoral pores. Ornate and Mali uros have sexual dichromatism; males are brighter colored.

Zoonosis

Like other reptiles, uromastix can carry *Salmonella*. Always wash your hands after handling reptiles or items from their enclosure.

Health

Uros tend to be fairly healthy but may be prone to nutritional secondary hyperparathyroidism (metabolic bone disease), dysecdysis, substrate impaction, parasites, and reproductive disorders.

Sources and Further Reading:

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- *Mader's Reptile and Amphibian Medicine and Surgery*
- *The Arcadia Guide to Reptile and Amphibian Nutrition*