

Uromastix Care Sheet

Lighting/Heat:

First and foremost, Uromastix are heat lovers, the ultimate heat lovers! They must have a basking site that reaches between 110F and 120F (surface temp). No, that's not a typo, one hundred and ten to one hundred and twenty F! This is actually easy to produce with a Zoo-Med or comparable reptile basking bulb (reflector or flood type bulb) shining over a smooth piece of slate or other suitable rock. Adjust the height of the basking light so that it heats an area at least as large as the whole body of a basking Uromastix and make sure the light is placed high enough to prevent the animals from accessing it. Do NOT use hot rocks or similar "in-cage" electric underbelly heaters. These will not suffice and can cause serious injury to your animals. An under-the-tank heating pad is ok but only for supplemental heat. The overhead basking light is still essential. You're aiming for a general background temperature around 100F in the warm end of the cage, and the mid 80'sF in the cool end of the cage. This permits your animals to self-regulate their body temperature. Night temps should be much cooler, typical of their desert homes. Most people shoot for the low 70's in the summer, the upper 60's in the winter. Along with the basking lights, we recommend installing a UV producing bulb such as Zoo-Med's Reptisun 5.0's, Arcadia High OutPut UVB or Mercury Vapor basking bulb. The usefulness of these bulbs is still debated and some breeders feel they are a waste of money (\$20 to \$30 ea. for Zoo-Meds, \$35 up for Mercury Vapors), but the jury is still out. UVB initiates the conversion of vit. D3 precursor into active vitamin D3, and in theory these bulbs produce enough UVB to stimulate this reaction. However, for this to be reasonably effective, the bulbs must be mounted within a foot or so of the basking animal. Also these bulbs gradually lose the ability to produce UVB with use and thus should be replaced annually to biannually. Look for a change from bluish white to a clear white glow with age, faint blue tint = good, white = worn out). Some breeders choose to simply add vit. D3 to the diet and dispense with the bulbs. This approach also seems to work, but which is more reliable is still unknown. Regardless of how well UVB impact vit D3 issues, strong UVB exposure does produce more intense pigmentation in captive Uromastix. For some species, this alone may be sufficient justification to use the UVB-producing bulbs. In addition to UVB, these bulbs also produce UVA, which has been suggested to increase appetite and give desert animals a "psychological" benefit. Again the jury is still mixed with some swearing the bulbs help and others equally convinced there is no noticeable impact on behavior or health. We use a mixed approach. We feed low levels of Vit D3 to our animals (by dusting w/ Miner-AL brand mineral supplement w/ D3) while using Arcadia Hi UV compact fluorescent bulbs in all our cages.

Our data on bulb-generated UVB's effects are mixed. Some Uros seem to do better with the bulbs while others show no detectable differences with or without the bulbs. We have noticed better coloration in many Uromastix exposed to strong UVB from Mercury Vapor bulbs or Arcadia bulbs and Uro pairs in cages with these bulbs tend (by coincidence or not) to be some of our better breeders. Uromastix do detect the difference between normal "man made" light and sunlight and are unmistakably attracted to sunlight. Uromastix raised outdoors in unfiltered sunlight are the most dramatically pigmented of all. Of the available commercial reptile UVB lights, the Mercury Vapors bulbs seem a better choice in open topped cages, however the cost and excessively short life span (most rarely last 6-8 months for us) make them impractical for us. The current wattages/sizes available also put out excessive heat and so are unusable in our solid-topped Vision and ShowCase brand cages. The fluorescent bulbs have minimal heat output and come in many lengths and are thus more user friendly. Their useful lifespan however is often comparable to the Mercury Vapor bulbs. We use clear infrared bulbs for heat in our ground pens and standard silver-backed reflector-type bulbs for our oak cages and "Vision" / Showcase brand pre-fab cages as the heat sources. We currently use compact Arcadia UVB bulbs for our UVB source but have been experimenting with other brands of Mercury Vapor bulbs for our ground pens. You can see some of our pens/cages in the various photographs throughout our web site.

For most of the year, we are looking to produce a 13 hour day and 11 hour night time period for all species of Uromastix. You can shorten this by a few hours during the winter, but only if you don't mind the possibility of them cycling and going through breeding behaviors in the spring. This is NOT an option if you have multiple specimens of the same sex housed together. Going through a yearly full brumation cycle does not appear to be essential to the long term health of most Uromastix. Seasonal variation in day length and background temperatures is probably a good idea, but for most pet owners, don't go below a 10 hour day during the winter or 68 F night time low temperatures.

Bedding:

Opinions vary on the ideal bedding. It's a common misconception that Uromastix prefer sand and come from a sandy environment. In fact they tend to avoid overly sandy locales in the wild, preferring clay/sand or gravelly-loam mixes, rocky outcrops or other soils better suited to holding a burrow without collapsing. If you use sand, make sure it is a natural sand (rounded edges) like beach sand or washed playground sand. Man made sand (from crushing gravel) has jagged edges which easily interlock, leading to gut impactions in animals that swallow it. We personally don't like sand and restrict it's use to only in the nest boxes.

We've tried bark, which the Uros enjoyed but the excessive dust produced was unacceptable and picking out fecal pellets was far too labor intensive. We then tried rabbit pellets (alfalfa), but the problems were essentially the same as bark but with more odor. We finally switched to high quality wild bird seed (predominately millet) in the mid 90's and have been extremely pleased with the results. The Uro's can snack on the seed throughout the day, it's generally dust and odor free, and sticks to fresh fecal pellets, quickly drying them. Seeds which the Uro's crack before swallowing are digested while uncracked seeds pass whole, acting as much needed roughage. The fecal pellets can be quickly sifted out of the cage with a 1/4" mesh hardware wire sieve (easy to make from a cat litter scoop), allowing us to easily maintain a large number of Uromastix without needing additional hired help. The seed is good for several months per cage, then with one final cleaning, can be fed to our other livestock (Fallow deer) or wild birds. If the Uros drag damp sand into the bedding or pile bedding in the nest box, the seeds sprout. As a side note, we've also looked into using calcium carbonate sand (Calci-sand, T-Rex), but other Uro keepers have told us the dust produced is too great to be acceptable bedding. The fine dust has a tendency to get into the eyes as well, potentially causing significant irritation/injury. It is particularly dangerous to use around hatchlings and juveniles, getting into the lungs and causing severe desiccation. It tends to clump when damp and form semi-hard masses which potentially could lead to intestinal blockages. There is also some concern calcium-based sands act like giant anti-acid tablets, upsetting the digestion process. Ground walnut shell has also been suggested as a good bedding and is advertised as an attractive, digestible, odor free, safe bedding by the manufacturers. While we agree it's quite attractive, it is otherwise a nightmare of a product. Walnut shell is composed primarily of lignin which in fact is not digestible by vertebrates, and the crushing process basically leaves most the resulting pieces with jagged edges. These edges have been indicated in the deaths of several Uromastix - necropsies revealing their stomachs had been extensively lacerated by ingested bedding. All in all, we strongly suggest avoiding it. Similarly, ground corn-cob is too dangerous to use. While it has smooth edges, it's extremely hydrophilic and if swallowed absorbs water from the gut and greatly swells. This can easily lead to fatal impactions and as Uromastix don't normally drink water, even small amounts inadvertently ingested can easily dehydrate smaller specimens. Bed-a-Beast (shredded coconut husks) are used by some with good success, but again fecal pellets have to be removed one by one by hand and it tends to be quite dusty. We've tried it in our nest boxes but it readily molds and attracts gnat flies which can harm newly laid eggs, so we've had to eliminate it. The chucky version of it works well as bedding for our Agamas and Tortoises and at least for them is an attractive, low dust, no odor bedding.

Note for all these bedding, make the depth very shallow -say 1/4 inch max. For most situations, making the bedding deep enough to burrow in greatly complicates their care. Use artificial burrows or hide boxes to satisfy your Uro's desire to burrow. For hatchlings/juveniles under 6 inches total length we recommend bare tank bottoms or butcher's paper. Hatchlings are much more sensitive to ingesting dry, hard material so it's best to avoid the problem.

Shelters: Uromastix are burrowers by nature and must be provided with some form of low shelter. In most of our breeding pens, we use patio blocks (8"x16" red cement bricks) and solid plastic boards (1/2" thick x 8"x18") glued onto 2"x2" boards to give a ground clearance of approx. 2". The goal is to produce a shelter just high enough so that the Uro's can feel the top of the shelter while standing inside it. It's best not to place these directly under the basking area unless you also place a second one elsewhere in the cage. For most cages we also add a nest box to simulate a burrow/sleeping chamber and the naturally higher humidity contained there-in. This is usually made from a Rubbermaid "Roughneck" brand 3.3 gal. or larger soft plastic tub. We then insert a piece of 3" diameter flexible plastic drain-pipe into the upper side of the box to act as the "burrow" leading to the nest/sleeping "chamber". The tube then extends approx. 18" from the side of the tub with the end touching the ground, preferably along the back wall of the cage. We prefer soft ABS drainage pipe as it's flexible, cheap and ribbed for easy footing. Fill the tub with only very slightly damp 50/50 sand/potting soil (preferred soil w/out perlite or added fertilizers or "water" holding pellets). "SuperSoil" brand potting soil is generally considered the best for terrarium use.

Housing:

Uromastix tend to have a low tolerance for cohabitating with other Uromastix unless reared together. Under most circumstances, two mature males may not be kept together! Sooner or later one will attack the other, possibly causing serious injury. While females of most species are more variable in this regard, many females also are intolerant of same-sex housing (Saharans and Mali's are occasional but not reliable exceptions). Many Uromastix will tolerate and even prefer being housed with a member of the opposite sex, but exceptions exist even here (note: Moroccans, Orange benti, and Ornaments in particular tend to be common exceptions to this rule). Females of all species tend to become very belligerent towards all other Uros, male or female, once they are bred and begin preparing a nesting site. Most are very moody the first few weeks pre-and post-laying and may need to be separately housed for several weeks or even months. The aggression can be subtle and easily missed if you're not around the animals throughout the day. Periodically examine your animals, noting their weight and the condition of the skin along their flanks. Individuals intimidated by others tend to gradually lose weight. Aggressive animals tend to bite others along the flanks, leading to distinct thickening of this area. If allowed to continue, this can lead to significant tissue damage or even death, even if the aggressor never directly breaks the skin.

If you wish to try to house a sexual pair or trio together, first setup the cage so that each individual will have access to separate basking, sleeping and feeding sites. Then introduce them to the new cage simultaneously. Uros are by nature territorial, and even calm animals tend to attack new individuals placed in their cage. A notable exception occurs between individuals of vastly differing size. In particular, large adults are very tolerant of sharing their cage with small juveniles. Note trios generally only work if you don't cycle them for breeding. Bred females are rarely tolerant of a second female living in the same cage.

As far as cage size, the larger the better for all but hatchlings. Our ground breeder pens run approx. 4' long by 2 1/2' deep by 2' high and house strictly pairs. We primarily use Vision brand and Showcase brand 4' cages for housing single individuals or breeding pairs off the ground. If you wish to use a standard aquarium or terrarium as a cage, we'd strongly suggest not going smaller than a 40 gal. "Breeder" style long tank for young adults and no smaller than a 20 gal. (long version) for hatchlings. You should cover the back glass with some background (dessert scene or whatever) and at least initially, the two sides as well, leaving only the front open glass. This will help prevent the Uros from excessively clawing at the glass or running face-first into the sides of the tank if spooked. Placing cage ornaments (logs etc.) along the edges will also help in this regard. A better option would be to build your own cage out of A-grade plywood sealed with non-toxic polyurethane to produce a cage at least 4' long, 24" wide, 18" tall for an adult pair of Uromastix. Many breeders maintain their Uros in large steel or plastic livestock water tanks. This is an inexpensive means of housing them but the aesthetics are somewhat problematical for "in the home" housing! Uros are active creatures and like to run around. Shoot for as large a cage as you have space for.

We keep our hatchlings 8 to 10 per cage in 4' Vision "low profile" cages (4' long, 24" wide, 14" tall). Larger than that and they tend to have more trouble finding the food or regulating their temperatures. Note hatchlings of some species such as Moroccans tend to get very territorial after about 4 weeks of age and must have separate shelters throughout the cage. The more aggressive individuals may need to be housed separately (or at least moved in with much larger individuals) as soon as they start showing aggression.

Diet:

Uromastix are primarily herbivores, with a taste for insects on the side. Our primary diet is composed of two main fractions. The first is fresh leafy greens. As of 2006, we are trialing Earthbound brand "SpringMix" as our base diet as we can buy it in bulk and it needs no further chopping etc. to be used. It comes in 1 pound clear plastic resealable tubs and for the most part contains a good mix of nutritious greens. It is a bit too high in leaf lettuces so we mix in one chopped head of either Endive or Pok Choy leaves for each 1 pound tub of Spring Mix. We rinse it all in cold water, shake off the excess moisture then dust it very lightly every day with Miner-Al (I) mineral supplement. On alternate days we also dust it heavily with ground up Mazuri Tortoise pellets. For specimens 1 year old or older we also add a handful of warmed up frozen mixed veggies (peas, carrots, corn, cut green beans) to the mix once or twice per week. During the winter and early spring, this is our primary daily diet. During the summer and early fall, we harvest home grown leafy greens and blooms and use that to replace about 50% of the Spring Mix. The greens/blooms we primarily use are dandelion greens/ blooms, clover greens /blooms, Rose of Sharon hibiscus blooms, nasturtium blooms, cats claw blooms (a late-season dandelion-mimic), viola (Johnny jump ups blooms), rose blooms, and fresh (not dried) alfalfa leaves / blooms. We try to feed a slightly different mixture of food items each day, alternating what greens we add to the base diet. The primary store-purchased greens we add are endive first and foremost, followed by Pok Choy, mustard greens, graded yellow squash, and collards. Spring mix is already very high in romaine and oak leaf lettuces so while those are fine as lesser food items, we don't want to add any more of those to the spring mix. We do not pre-chop the added leaves for hatchlings but simply tear it fresh into chunks for the diet. When available, we also periodically place cactus pads in each cage (Opuntia sp, commercially produced as human grade food, de-spined at the store). These last for days, allowing for periodic nibbling at will.

As stated above, we dust the food lightly but daily with Miner-AL brand mineral supplement. We use the indoor version which has low levels of vitamin D3 in it. We're not convinced that the UVB levels from the commercial UVB bulbs are completely adequate for natural vitamin D3 synthesis so the dietary D3 is our insurance policy. Other products on the market work as well, but for us Miner-All is the safest one. An alternate product usually available from larger pet shops is Mardel Labs mineral supplement and no doubt several other brands should be ok as well.. We personally really dislike the most commonly stocked pet shop product: Rep-Cal, as we feel it is too high in D3 levels and it only supplies calcium, ignoring the other essential minerals. The excess calcium in the gut can then lead to excessive excretion of the other minerals in the diet, leading to other nutrient deficiencies. What ever product you use, make sure it contains a well balanced list of minerals, not just calcium.

For yearlings on up, we also dust the food once per week with Uromastix Dust. This is touted as a complete diet and looks good on paper, but we choose to use it only sparingly. We don't feel this is safe if you dust the food with ground up Mazuri pellets, but it's a nice insurance policy. We're not sure it's safe for use in hatchlings to sub-yearling, so we don't add it to the diet until the Uro's first birthday. Mazuri tortoise pellets have a longer track record and is well accepted by our Uros and we feel it serves a very similar function in the diet. We use to feed it by moistening the intact pellets with water and adding it to the frozen mixed veggies, but this proved too problematic for us. It tends to stick to the mouth, occasionally leading to bacterial infections and it spoils by the end of the day. We now grind it up in a blender and use it dusted over the damp greens. There is less waste this way and it non longer is a spoilage problem.

If you house your Uros on anything other than bird seed, you can partially replace the Mazuri pellets with a dish of dry "Pretty Bird" brand finch pellets or T-Rex tortoise pellets or Juvenile Iguana pellets (Uros housed on seed tend to ignore these pellets). These are a synthetic "seed" which has multiple vitamins added and is much better digested than most bird seed. Hopefully if the Uros main diet is lacking in some minor nutrient, snacking on this will make up for it. Some breeders also like to add ground dried bean mixes to the diet. This mix is generally comprised of various soup beans to which low levels of a multi vitamin-mineral supplement is added then run through a coffee grinder. The final mix is offered to the Uros in a shallow dish left in the cage.

It's wise to highly limit spinach, beet greens, Swiss chard, or true cabbage in the diet, and go easy on broccoli, kale and collard greens (the exception being the blossoms of these). These leaves either you blind important nutrients or tend to induce metabolic problems over time. Peas have their faults as well but if you supplement with a balanced mineral supplement (especially ones containing zinc, manganese, magnesium along with the more common additive calcium), the benefits out-weigh the potential harm as long as you use them sparingly in the diet. In our experience, it's very difficult to reliably acclimate wild-collected specimens or underweight long term specimens without adding peas to the diet. In particular, we don't consider Sudanese or Orange or Rainbow long term to be successfully acclimated until they are eating peas. Insist on this when buying these 3 species, it will greatly improve your success potential with them.

While most Uros consume the occasional insect in the wild, these generally cause more problems than they are worth in domestic specimens. On very rare occasion, we may offer an occasional superworm (Zoophobia sp.) to individuals that are slow to settle in. These are a great way to tame your Uros. Many are easily addicted to superworms and will go to great lengths to procure them. Conventional wisdom suggests gravid females fed a slightly higher than normal amount of insect matter produce better clutches, but we have not found that to hold true. Most commercially available insects are excessively high in phosphorous which causes the body to excrete calcium into the feces. Be careful to supplement w/ calcium whenever you feed insects and never feed more than just a couple per sitting and only a few per week at most. Hatchlings in particular easily develop metabolic problems if fed too many insects. All in all, we strongly suggest you avoid insects in the diet except under special circumstances (for example for individuals that are refusing to eat or refusing to tame down).

Water:

Opportunities to drink are a rare occurrence in the wild for most species of Uromastix. Uromastix solve this problem by producing metabolic water from their digesting food. As long as their bellies are relatively full, most are making more than enough water to meet all their needs. Thus we don't normally offer water to our healthy Uros. The exceptions are for newly acquired/shipped animals, individuals which haven't kept up a reasonable gut mass of digesting food, females which are near term-gravid or have just laid their clutch, and for fresh hatchlings. Individuals with near empty bellies MUST be offered drinking water on a regular basis. If a Uromastix goes off-feed, their bellies slowly empty. As this progresses, their bodies tend to dehydrate. As they dehydrate, appetite is often further suppressed, resulting in a spiral down towards death. (Note: dehydrated animals have limited abilities to process proteins so NEVER offer insects or dry bean mixes to an overly thin, dehydrated Uromastix. The burden on the kidneys and livers may prove fatal months down the road). Despite all I've stated above, there are still very few circumstances when it is acceptable to put a water bowl in a Uromastix's cage. If you feel an individual needs water, take him or her to a tub filled with approximately 1/2" of bath-water hot (100F) water. It must be as warm as you can safely make it so that the individual stays near their optimum body temperature (105F). Some will drink on their own, others can be enticed by dripping water on their snout. (Note: Saharan Uromastix are prone to aspirating water into the lungs so be very careful when soaking them. Put them very slowly into the tub and keep the water very shallow (1/4" max.) Other Uro species seem much less likely to have this problem). Many unacclimated individuals will not drink while being watched. You must leave their line of sight. It's also wise to leave them undisturbed for a few minutes after drinking to avoid them regurgitating. Truly dehydrated animals may need to be tubed with a warmed electrolyte solution. See your vet if you are unfamiliar with this procedure. Using Pedialyte or even Gatorade or similar product instead of water for the soak is one way to supply these electrolytes. Just make sure to rinse the solution off them and dry them well afterwards. The hindgut is also capable of absorbing water, so use of dilute electrolyte/vitamin enemias may also be useful for seriously dehydrated individuals. Individuals with intestinal problems (parasites or bacterial infections) may not be able to absorb water through the gut and will need to be taken to a Vet for injections of a saline/glucose or other sterile water mixture (even ratio of each is usually best). Note it's easiest to give this injection under the front arm pits - if placed just right, you hit what appears to be a lymph duct and you can easily inject several cc's of fluid without any backwash out of the injection site. If you tube them orally, juveniles usually will hold down 2 cc, medium adults 5 cc, large adults 7 to 10 cc's of fluid. While it's easy to give more than this, they will often regurgitate larger amounts a few minutes to hours later. If given regularly, reduce these doses by about 1/3.

An alternative method to offer water is to take a small jar lid (approx. 1/4" deep) early in the morning, fill it with water and place it in the cage (along a wall in a corner). Most Uro's have a higher tendency to drink in the morning, perhaps being programmed to seek potential dew at this time. This small amount of water should evaporate off during the day, causing no harm. We routinely have a lid of water in our hatchling tanks, but stop this practice once they go though the first sheds (when 8 to 12 weeks old). Uro's if you feed ground bean mixes, especially to hatchlings, a water dish can cause significant health problems. The Uro's tend to constantly walk through their water dishes. If they then walk through their bean dish, they essentially glue the powder to their bellies and toes. This can result in significant skin infections/lesions which can take months to clear up. Note feeding soft fruits can cause the same problem - the material easily glues itself to their bellies as they walk through it, resulting in significant infections if repeatedly left unattended.

A species exception to the no water rule are the benti and Saharan Uromastix. While most Uromastix species will commonly refuse offered water, both species of benti and Saharans will often accept the offering and drink heartily. While they can do fine without water, water as long as they keep a belly full of digesting food, since they readily drink, we offer them soaks more often than the other species. Note, we still don't keep a water bowl in their cages, we just offer more opportunities to soak in the tub. Please be sure to dry them off afterwards as dampness will eventually lead to health problems.