

# *Élevages Lisard*

## Care Sheet Uromastyx

Spring 2023





## **IMPORTANT :**

This care sheet has been written by Élevages Lisard and is based on more than 20 years of hands-on experience with several species of the *Uromastyx* genus.

It compiles all the basic information required for the good husbandry of these wonderful lizards in captivity. You will not find any information on either breeding *Uromastyx*, or special care for hatchlings, because this is beyond the scope of this text.

If you read several care sheets, you will likely see that there are some differences between them, and this is normal. Several topics are still a matter of debate even today. In our care sheet, we only wish to inform you the best we can in order that you can provide the best possible conditions for your *Uromastyx*.

Have a good read!



## Table of Contents

<u>To get only one or to get a pair? .....</u>	<u>1</u>
<u>Required Equipment List .....</u>	<u>2</u>
<u>The Terrarium .....</u>	<u>3</u>
Dimensions.....	3
Type .....	3
Location .....	5
Layout .....	5
Substrate .....	7
Husbandry parameters.....	9
Temperatures:.....	9
Humidity: .....	10
Lightning:.....	10
<u>Food and Water .....</u>	<u>11</u>
<u>Food Supplements.....</u>	<u>14</u>
<u>Costs.....</u>	<u>15</u>
<u>Before Welcoming Your New Lizard .....</u>	<u>16</u>
<u>Welcoming Your New Lizard .....</u>	<u>17</u>
Acclimatization .....	17
Taming .....	18
<u>Brumation .....</u>	<u>20</u>

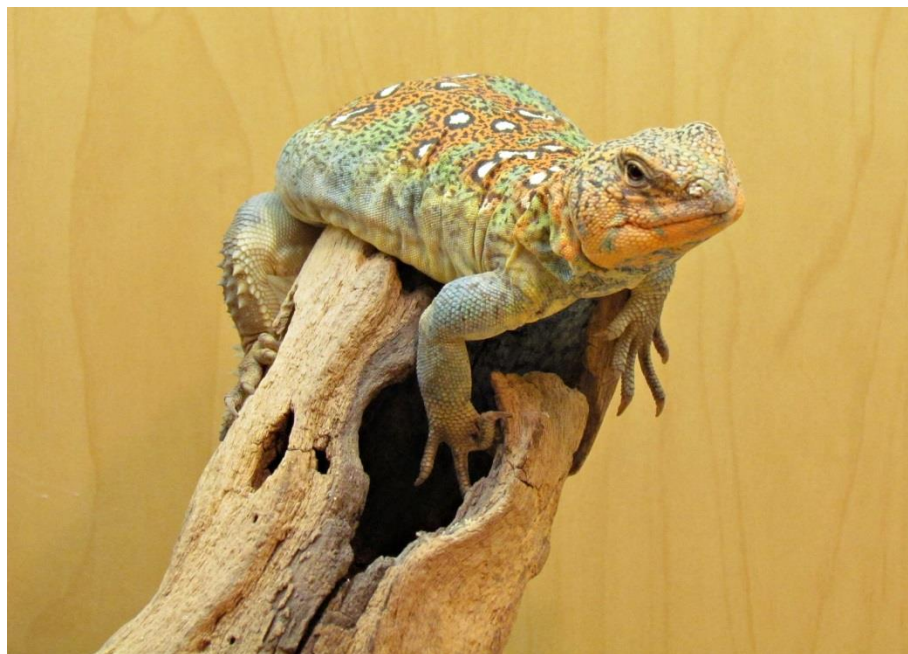


## To get only one or to get a pair?

For beginners, for which this care sheet is written for, we suggest to only start with a single animal housed alone in a terrarium. This way, it is much simpler and easier to see changes in behavior, which are often indicators of disease or poor care (lower appetite, lethargy, etc.). Also, you avoid all potential problems related to pair cohabitation (dominance, stress, aggression between the animals, fight injuries, etc.). So this care sheet will only deals with single housed Uromastyx.

For more experienced people, some Uromastyx species can be housed in pair but with a careful attention to the terrarium size and layout in order to limit potential problems. But this is made to the owner's risk and we always strongly suggest that the owner already have all the spare equipment and terrarium ready in case they need to be separated.

Don't worry about them being depressed or needing a "friend". Most lizards prefer being alone, and not having to fight over resources (food, best basking site, best hide, etc.). If you really want to stimulate your lizard, there are some really easy behavioral enrichments (also known as environmental enrichments) that can be done. But first, let's offer them a good foundation on which to build, and this mean offering them the best basic husbandry parameters as describe in this care sheet.







## Required Equipment List

Élevages Lisard has everything that you'll need for your lizard. If you want to encourage us and benefits from our expert advices, please buy your supplies directly from us. This way, you'll save on supply cost and avoid unnecessary purchases.

Here is a list of all the minimum equipment required for the proper husbandry of Uromastyx. Take note that this is meant to be a purchasing list, explaining what to buy, and what not to buy. More in depth details will be covered on each item in the following sections of this care sheet.

Equipment	Important Note
A <u>good-size</u> terrarium	Bigger is better! There is no such thing as a too large terrarium for lizards. The best are wooden enclosure or front-opening glass terrarium.
A <u>quality digital</u> thermometer	This is the most important tool for reptile husbandry. <b>NO stick-on aquarium strip thermometer. NO analog thermometer.</b>
A <u>safe</u> substrate	<b><u>For baby to juvenile lizards and for beginner owners:</u></b> <b>NO sand, NO crushed walnut shell, NO millet. It's better to be safe than sorry.</b> Stick with vinyl flooring or ceramic/stone tiles first. Adults can be kept on sand.
A " <u>white</u> " basking bulb	<b>NO red bulb: Reptiles do see the color red. NO night bulb needed.</b> Think about replacements, as these only last 2-4 months on average.
A big flat <u>natural</u> rock	<b>NO plastic/resin "fake rock". NO heat rock.</b>
A <u>quality</u> UVB source	<b>NO Exo-Terra UVB. They simply don't emit enough UVB for Uromastyx.</b> We use and recommend Zoo Med Reptisun T5HO 10.0 fluorescent tubes. Arcadia T5 D3+ 12% or 14% is also a quality brand for UVB tubes. <b>We DON'T recommend MVBs since they are hard to properly set up and less versatile.</b>
The lamp fixtures	At least one fixture for the basking bulb. Forecast another one for additional ambient light and/or heat.
A <u>good-size</u> branch	At least one provide them with a good UVB-gradient. Also a good way to use the height of the terrarium.
A <u>low-height</u> hide	Uromastyx will always choose a low-height and tight hiding spot with narrow opening. It's better to offer a size-adapted hide and to change it as they grow.
A <u>large</u> food dish	Large and deep enough to mostly hold the food in as Uromastyx tend to sort their food and spread it everywhere in the terrarium.
A <u>complete</u> multi-vitamins / multi-minerals supplement	Check our website for a good brand selection. We like to use the Repashy Superveggie.
A programmable digital timer	To supply them with a stable day/night cycle: We suggest around 14h of daytime (with all lights ON), and 10h nighttime (with ALL lights and heating devices OFF).



## The Terrarium

This will be the home of your lizard for the rest of its life, so plan accordingly. As said before, bigger is better in this case, so please don't stick to our minimum or recommended terrarium dimensions.

### Dimensions

	For a single Uromastyx (Most species except <i>U. aegyptia</i> *)
Minimum :	40" x 18" x 19"
Recommended :	48" x 24" x 24"
Ideal :	The largest you can afford! Larger is better!

Dimensions are in inches and following this convention: Length x Depth x Height (LxDxH).

**\*Note for *U. aegyptia*:** Egyptians are the largest species of *Uromastyx* and therefore require a larger environment. A baby or juvenile (up to about 3 or 4 years old) can be housed in a temporary 48"x24"x24" terrarium. But a much larger terrarium should be provided once adult. We suggest an enclosure of approximately 60"x36"x24" or 72"x30"x24". You will need to make this terrarium as there are no commercial terrariums with these dimensions.

### Type

As for the type of terrarium, we strongly advise against aquariums, because being designed for fish, their dimensions are rarely adequate (often too narrow) and their opening is from the top (which generally stresses lizards). We recommend instead glass or resin terrariums with front opening, or even better, homemade wooden terrariums, also with front opening of course.

Homemade wooden terrariums have several major advantages. For example, it is much easier to achieve the right temperatures in this type of terrarium, you can design it however you want (dimensions, materials, etc.) and they generally look better. However, make sure that there is no way for your lizard to get out of its terrarium other than through the door: if there is a slit of more than 1/4 ", a baby could come out.



If you're not a DIY enthusiast and want to get a commercial glass terrarium, this is a great option too. However, please note that it will be much more difficult to reach the right temperatures with this kind of terrarium. What we suggest to people with this type of terrarium is to make a wooden cover with an air vent on the cold side.



Photo courtesy of the Legault-Houde family.

We suggest to plan, immediately during construction, two locations for heating bulb fixtures, on the hot side (here on the left). At all times, you will use the fixture furthest from the center as the main radiant source, and the more central fixture will be used to add, if necessary, a second auxiliary radiant source. For the cold side, a floor air vent does a great job. You can even use one with a built-in adjustment which will further help you to properly adjust the required temperatures over the seasons.



Photo courtesy of the Legault-Houde family.



Another solution is to hang your light fixtures inside the terrarium, by hanging them using a metal pin and to cover a certain part of the mesh of the lid (from 50% to maximum 90% of surface starting from the warm side of the terrarium) with a wooden board. This will keep most of the heat in the terrarium, instead of escaping by convection, which will increase the temperature of the hot area. Otherwise, we advise customers who wish to use a glass terrarium with the included a mesh cover, to plan to use two fixtures and two heat bulbs right from the beginning.

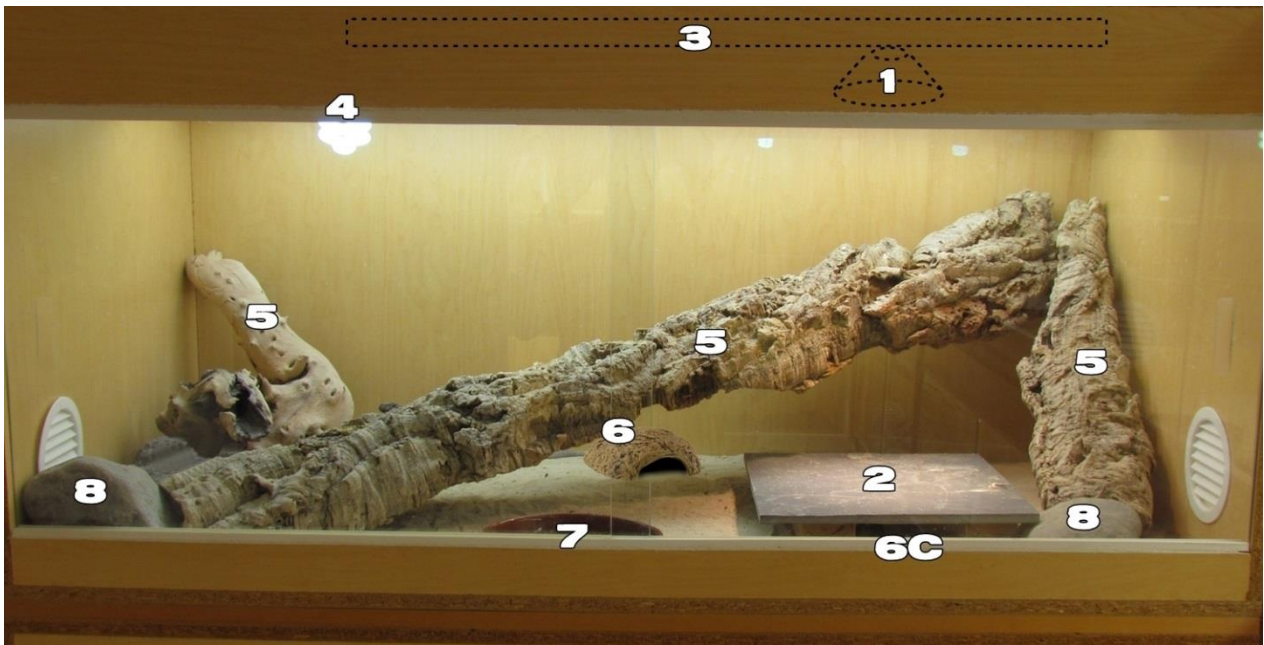
## ***Location***

Ideally, place your terrarium in a room of your home where there is action, like the living room. Remember to put it away from direct sunlight though. Also place the front of the terrarium so that your lizard can see people (or your other pets) coming from afar. This prevents your lizard to startle when someone arrives near and promote its acclimatization. Also, place your terrarium on a cabinet or furniture so that your terrarium floor is at least 30" from the ground. This is also very important: being high above the ground allows the lizard to see his environment and feel more confident, which will also promote his acclimatization.

## ***Layout***

Here is how you should layout your terrarium in order to offer everything your lizard needs. Remember that they know more than us what they needs, so **our goal as responsible keepers is to offer them choices**, in order for them to thermoregulate (heat or cool themselves), photoregulate (to expose themselves more or less to UVB), and even hide elsewhere than in dedicated hides. Remember that in the wild they simply use their environment, which is rich in opportunities, thus giving them a lot of choices. So let's just do that in captivity: offer them choices and they'll do what they need to do.





1. A good directional "white" incandescent (or halogen) basking lamp placed directly over the basking rock. Make sure that the basking spot (the area where most of the heat lamp's light and heat is concentrated) is larger than the lizard's body.
2. A large basking rock (at least the total size/length of the lizard) made of natural rock, preferably of dark color to absorb more heat (we use natural slate tiles).
3. A good-quality UVA/UVB source placed on the same side as the hot side, near the basking heat bulb. For fluorescent tube, choose a length between 1/2 to 2/3 your terrarium length.
4. Supplementary light sources, either as fluorescent tubes or fluorescent compact lamps. This may not be required in glass terrarium in a luminous room, but they are really required if you use wooden enclosures or if your terrarium is in a dark room.
5. A branch in order to allow your lizard to get closer to the UVA/UVB source, thus offering him a photogradient. These can also be used to optimize the terrarium volume and even create other hides. More branches and accessories like Magnaturals rock ledges can be used to provide more climbing opportunities.
6. A hide placed in the middle section of the terrarium. Remember to create more hiding opportunities on the hot side with other accessories like under the basking rock (6C).
7. A food bowl placed in a clear area where your lizard can easily see it.
8. Other natural rocks can be used to secure branches and other accessories, and also provide them with a rough surface for them to scratch, which is especially useful when they shed.

## Substrate

The substrate topic is one with a lot of controversy, especially considering what are the criteria used to select it. Here at Élevages Lisard, we believe that the substrate used must be first safe, then adapted, practical and only lastly, esthetic.

First, let's focus on their natural habitat substrate. Contrary to the popular belief, *Uromastyx* don't live on loose sand. Forget the sand dunes of the Sahara. Desert doesn't necessarily mean a lot of loose sand; it means arid (dry). In fact, studies have shown that vast regions of loose sand are natural barriers that define the distribution of populations and species of *Uromastyx* because these areas are inadequate for their survival. *Uromastyx* actually live mostly on a mix of compact earth, clay and rocky ground. So they live on a hard and adhering soil.



Pictures courtesy of Redouane Tahri.



That's why we need a substrate that first offers a good grip that doesn't affect their movement and natural behavior. You will therefore understand that glass terrarium bottoms doesn't meet this first criterion, thus we add a substrate.

Here at Élevages Lisard, we use a dual substrate system. First, we use a hard and adhering layer composed of either rough ceramic/porcelain/stone tiles or tile/rock imitation vinyl flooring. Both have their advantages. Ceramic/porcelain/stone tiles allows a natural wear out of their claws, but it is more work intensive to properly install. Also, since it's stone-based, it has the same thermal inertia as the soil in nature, absorbing heat during the day, and releasing it slowly during the night. Vinyl flooring on the other hand is easier to install and offer better traction. Both are a completely safe substrate and are easy maintenance.

For hatchling and juveniles under 50g, we use nothing else on this first layer as it satisfies our substrate criteria: it is safe, mostly adapted, really practical and can be esthetic, especially if you carefully select your tiles or vinyl flooring.

For larger juveniles (larger than 50g) and adults, we add over the first layer some sand. We use the ZooMed Reptisand. We like it because it's not dusty. Please use the "desert white" color or the skin of your lizard could be tainted with the color of the sand. Some other Uromastyx keepers will also use washed playsand. This second layer further improves the characteristics of our dual substrate system: it is still safe (though not as safe as with no loose substrate, thus the animal's size limitation we suggest), adapted, really practical and more esthetic. You don't have to put a lot of substrate to be effective: we suggest only using a layer of around  $\frac{1}{4}$  inch or so (roughly 6mm).

If you read more care sheets over the Internet, you'll probably see people suggesting "food" type substrate, like millet seeds or small bird seeds mix. Here at Élevages Lisard, we don't recommend these as Uromastyx have a strong tendency to eat too much of these, thus encouraging obesity, and it's also very difficult to control their diet when they have access to an unlimited food supply. There is also an unhealthiness issue for your pet to defecate directly on potential food for him.





## Husbandry parameters

### Temperatures:

Here are the required temperatures when they are taken with a **digital probe thermometer** (ambient temperatures):



		Daytime Temperatures		Nighttime Temperatures	
		°F	°C	°F	°C
Basking Spot	(T1)	110-125°F	45-50°C	65-75°F	18-24°C
Hot End	(T2)	95-110°F	35-45°C	65-75°F	18-24°C
Cool End	(T3)	85-95°F	30-35°C	65-75°F	18-24°C

Here are the required temperatures when they are taken with a **digital infrared thermometer**, also known as "temp gun" (surface temperatures):



		Daytime Temperatures		Nighttime Temperatures	
		°F	°C	°F	°C
Basking Spot	(T1)	125-140°F	50-60°C	65-75°F	18-24°C
Hot End	(T2)	95-110°F	35-45°C	65-75°F	18-24°C
Cool End	(T3)	85-95°F	30-35°C	65-75°F	18-24°C

**IMPORTANT:** During summertime, you must get the higher temperatures of the ranges above. These ranges represent normal temperature variation between seasons.

Here is where you should take these measurements:





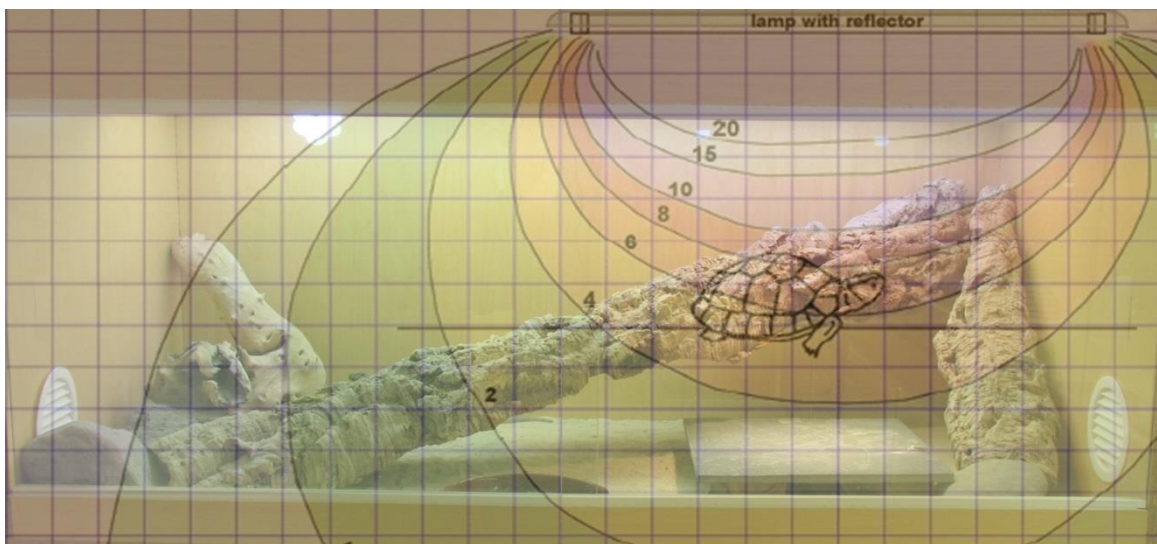


## Humidity:

Ambient air humidity is not really important for these desert-dwelling lizards. Thus, as long as the relative humidity level in your home stays within the comfort zone of 35-55%RH all year round, the humidity level within your terrarium will fluctuate between around 15-20%RH during the day (because of the heating devices desiccating the air) and back to your home relative humidity level (35-55%RH) during the night, which replicate pretty much the natural cycle of their natural habitat.

## Lightning:

Uromastyx being diurnal desert-dweller reptiles are sun lovers. Thus, to emulate the sun spectrum, strong luminosity with **a strong UVA and UVB source is mandatory for their wellbeing**. It's more than just for vitamin D3 conversion and calcium absorption. UVA and UVB are also important for a lot of other biological functions. To offer them this, a combination of the heat bulb, UVA/UVB sources and also supplemental daylight bulb is required for all the daytime length (roughly 14 hours). Use branches and other accessories in order to offer them a UVB photogradient, in order for them to photoregulate themselves by getting closer or farther (in shaded areas) from the UVB source. Also, don't forget to change the UVB source every single year, ideally at the beginning of the spring season.



This picture use Frances Baines' Zoomed Reptisun 10.0 T5HO 22" UV-index iso-radiance graph



## Food and Water

Modern studies have shown that Uromastyx are strict herbivorous animals, contrary to some old and incorrect information still widely spread over the Internet. Here is the composition of the typical herbivorous diet of Uromastyx in captivity:

**75-85% of leafy green vegetables :** (coarsely torn/chopped pieces)

Curly endive, escarole, dandelion greens, chicory, kale, radicchio, collard greens, bok choy, rapini, turnip greens, carrot greens, radish leaves, baby spinach, spring-mixes, etc.

**5-10% of comestible flowers :** (coarsely torn/chopped pieces)

Dandelion, hibiscus, and any other comestible flowers are welcomed.

**5-10% of other vegetables :** (grated or chopped into bite size pieces)

Various kinds of squashes, carrots, sweet potatoes, bell peppers, broccoli, etc.

**5-10% of seeds and legumes :** (either sprouted, dry or fresh)

\* A bit more can be offered for growing juveniles, which require a bit more fats and proteins of plant origin.

Seeds: Chia seeds, flaxseed, sesame seed, hemp seeds, buckwheat, quinoa, etc.

Legumes: Various kinds of lentils, peas, etc.

**0-5% of fruits :** (chopped into bite size pieces)

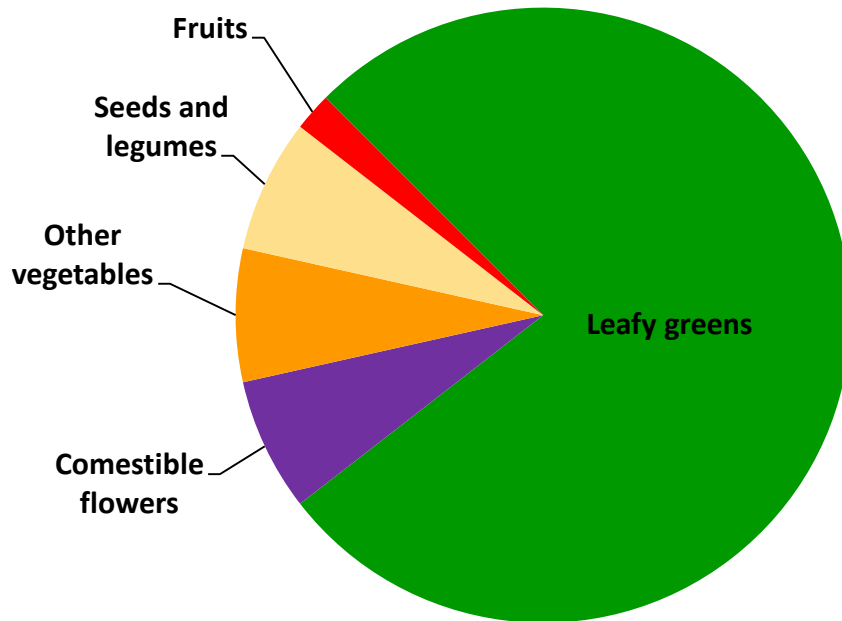
Blueberries, raspberries, blackberries, strawberries, pomegranates, mangos, etc.

**DO NOT FEED :**

Avocado, rhubarb, tomato leaves, all plants from the onion/garlic family.



As you can see from this chart, the majority of their diet should consist of leafy plants and not just fruits and vegetables, as one might think. Here is another graph to show you, visually, the proportions of the different types of food to offer:



Nutrition is a really complex topic with a really simple answer to get the most of it and avoid problems: **variety!** So, in order to get the most benefits out of fresh whole foods, you just have to provide your lizard with a wide variety of fresh products in every single category above. It's still ok for them to eat the same 2-3 greens a week long (with some flowers/vegetables/seeds/legumes/fruits "toppings"), but at least change their base diet every single week, rotating between other available greens. Also, avoid processed foods as the best food is always fresh whole food.





In addition to fresh whole foods, we suggest adding in their daily diet moist Zoomed Natural Grassland Tortoise Food. This diet is rich in fiber and low in protein, which is great for your Uromastyx. This is a perfect addition to your lizard's meals of fresh greens, not only because it's good for them, but also because it makes your lizard's stool more consistent and well formed, which it easier to clean.



Here is a typical meal example for a baby (on the left) and an adult (on the right), consisting of a good leafy vegetables base (here a mixture of curly endive, escarole, dandelion, kale and radicchio) with few toppings (here grated squash, sprouted lentils and quartered blueberries). For the exact amount of food to offer according to the size of your lizard, begin by offering a meal the size of his abdomen, then adjust according to his appetite (if he finishes his bowl put more food for the next meal, if he wastes food, reduce the next serving).







## Food Supplements

Even if you try to offer them the best diet from a varied source of quality fresh products, it may not be sufficient for them to get all nutrients (vitamins, minerals, amino acids, etc.) required for their growth and wellbeing. That's why we use some dietary supplements as a preventive measure. These powdered products are simply offered lightly sprinkled over their greens as per the manufacturer directions. In these products, you'll encounter two types of supplements: the all-in-one product and the separate multivitamins/multiminerals supplement with a separate calcium supplement. Both products type are good if you purchase quality brands.

The **Repashy SuperVeggie** is an all-in-one supplement tailor-made for herbivorous lizards and tortoises. Mostly made of plants/flowers extracts and of added vitamins and minerals, it's a great product that we use and recommend. This product is more a supplemented food complement and is thus less concentrated than other products on the market and must be used as follow:

Lizard Age/Size	Frequency
Juveniles (still growing)	6 times a week
Adult (full grown)	3 times a week



The **Rep-Cal Herptivite** and **Rep-Cal Calcium Supplement** is the world leading reptile supplement, which is offered into the separate form. We also use and recommend these products. They are true multivitamins/multiminerals supplements that must be used sparingly as they are more concentrated. Also, since we recommend using a good-quality UVB source (changed every year), we recommend using the calcium supplement without vitamin D3 added. They must be used as follow:



Lizard Age/Size	Herptivite Frequency	Calcium Frequency
Juveniles (still growing)	2 times a week	4 times a week
Adult (full grown)	1 time a week	2 times a week



## Costs

Now let's talk about a less interesting aspect, but still a very important one to consider before buying your lizard: the costs associated with the good maintenance of your lizard. Here are two tables that will help you prepare a preliminary budget before buying your lizard (all prices are in Canadian dollars):

<b>Initial Costs</b>	
Associated with the good husbandry of a single captive Uromastyx lizard	
Price of the lizard itself	≈ 225 - 550\$
Terrarium and equipment	≈ 600 - 1300\$
<b>TOTAL</b>	<b>≈ 825 - 1850\$</b>

<b>Annual Costs</b>	
Associated with the good husbandry of a single captive Uromastyx lizard	
Spare Equipment	≈ 100 - 150\$
Food	≈ 100 - 250\$
Veterinary care	Keep a vet budget ready!
<b>TOTAL</b>	<b>≈ 200 - 400\$ / year</b>

Please note that these are only approximation of the different costs. They can of course vary depending on several factors. For the lizard itself, costs vary depending on the species, age and origin of the animal. In terms of equipment costs, they vary depending on what you buy (both in quantity and quality), selected brands, but also on where you shop. For example, to reach the lower end of the equipment price range above, this means buying all the equipment used, not new.

Again, remember that Élevages Lisard has almost everything that you'll need for your lizard. So if you want to encourage us and benefits from our expert advices, please buy your supplies directly from us. This way, you'll save on supply cost and avoid unnecessary purchases, as most customers that buy their supplies at their local pet store end up with a lot of inadequate items for their lizards, thus wasting money.

## Before Welcoming Your New Lizard

The first thing to do prior welcoming your new lizard at your home is to setup your terrarium to meet all husbandry parameters as detailed in the current care sheet. To do so, you'll need all the equipment a few days prior purchasing your lizard. This way you'll be able to test what are the temperatures you reach using a digital thermometer. You may need to adjust your setup in order to reach the required temperatures. This may therefore mean to cover your top screen mesh to avoid heat lost, or even adding a supplementary heat bulb. It is really important to get the right temperature as this is the single most important parameter in order to get an active and happy lizard. So don't skip this important step!





## Welcoming Your New Lizard

Now that you have prepared the terrarium and tuned the husbandry parameters in order to get a perfect habitat, it is now the time to actually purchase him, bring him home, and introduce him to his terrarium. After all this waiting time to read how to care for him and preparing his terrarium, you must be eager to finally be able to enjoy it a little. But calm your enthusiasm! If you want to make sure your lizard is acclimatizing himself to his new home, his terrarium, and his new environment, your home, you will still have to be patient.

### **Acclimatization**

For the first week (a full 7 days), do not handle or even touch your lizards. This is vital to promote its acclimatization. Do not worry if he does not eat, or if it does not come out of his hiding place during this period. This is completely normal and is not at all worrying.

Then, you should minimize handling of your new lizard to the absolute minimum (read here "if really necessary", like for cleaning the terrarium), as long as he doesn't seem well acclimatized. Plan an acclimatization period of at least two weeks for a captive-bred lizard\* but it can take much longer if you do not respect the animal and want to handle him too soon. Use this time to take the time to observe and learn about his behavior, his routine, his food preferences, etc.

How to know if he is now at ease and well acclimatized to his new home? It's very easy! If he demonstrates a normal behavior like: basking under the basking spot, wandering and exploring peacefully in his enclosure, eating and defecating normally (one does not go without the other), licking his surroundings and coming close to the front of the terrarium, well, he is now well acclimatized to his terrarium and doesn't show obvious signs of stress.

However, if your lizard hides all day long\*\*, or run to his hide when seeing you or when you do sudden movements in front of his terrarium, this means that he is still stressed and you need to give him more time for his acclimatization.

\* Plan an acclimatization period of several months (and sometimes more than a year) for a wild-caught lizard.

\*\* be careful here though, as temperatures that are too low will give the same result, but for a completely different reason.





## **Taming**

If your lizard is well acclimatized, you can now start to tame him and then handle him. The trick? Yet again, patience. Let him come to you and do not force things. An Uromastyx is a naturally curious animal and if you offer him food by hand for example (especially a food he loves, hence why it is necessary to have observed him well previously to identify his preferences), he will come to see you. So, he will get used to you very quickly and you will have a calm and curious animal that first will trust you and tolerate your presence, then even maybe enjoy it (as it will mean treats for him).

To start handling him, make sure he has first seen you and put your hand in the terrarium (ideally with his favorite food). Then wait for him to smell you (by licking your hand). Just wait until he decides by himself to climb in your hand or eat in it. That's when you're going to finally start handling him gently, near the terrarium opening and for a very short period of time. Put him back in his terrarium, taking care to offer him another treat once back in his terrarium, for him to associate handling with something enjoyable (positive reinforcement). It may take some time, a few weeks (and dozens of tries), but be patient and try another time during the day or another day. Take the time to always repeat these steps as long as your lizard has not climbed on your hand (or eat in it) by himself, and be patient. One day it will work, but we cannot know how long it will take because each individual is unique. Some are very curious and calm upon arrival, while others, more nervous, take more time to trust people and more time to accept being handled.

Every individual is unique and it is up to you to adapt yourself to your lizard, after all, it is you that has chosen him, and not the other way around.

But rest assured. Over time, he will come very quickly to the window to see you even before you open the doors of the terrarium (and even if you do not have a treat for him). You can then handle them more spontaneously, but taking care to ensure that he always see you first and only if he wants to. It is important to always respect your pet.



**IMPORTANT:** Each time you will handle your lizard before he is acclimated and tamed, you will increase his level of stress and delay the time he will trust you. In short, if you force things, you risk having a stressed animal and therefore a less pleasant one to have, and this all by your fault.

In short, take your time and be patient with them, and they will return the favor, as a well acclimated and tamed lizard is a truly wonderful pet to own.





## Brumation

We believe it is good to add a segment on brumation in this care sheet. This is a phenomenon that can normally happen in the fall or winter and is a source of great concern for new owners.

Brumation is a natural mechanism in lizards, but especially in those living in deserts where the temperature differences are quite extreme between seasons. It is characterized by longer sleep (even for several days/weeks without waking up), reduced appetite (or even zero appetite for several days/weeks) and lethargy. Lizards that go into brumation mode will tend to stay in the cold end of the terrarium and look for a place to sleep (under a branch, a rock, or any hiding place). They will no longer want to eat (or very little) and will be much less active. Obviously, they will have fewer bowel movements since their food intake will be reduced.

In captivity, this period of winter dormancy is more common in juveniles and adults and less common in *Uromastyx* under one year of age. On the other hand, all those who have sufficient reserves (fats) can do it without problem, nor help from us. Brumation can last from a few weeks to several months (typically between 2 and 4 months) depending on the lizards and their husbandry conditions.

The stimuli that trigger brumation are mainly the decrease in the photoperiod and the decrease in temperatures (of both day and night). Thus, since we live in Canada, at fairly high latitude, the seasonal variations in photoperiod and temperature in our climate are large enough to easily induce brumation of desert lizards in captivity. Even if the temperatures in your lizard's terrarium were perfect in summer, the drop in outside temperatures in the fall (typically around October or November) is enough to lower the temperatures inside your home and therefore inside the terrarium (especially at night time). This is even truer if your lizard's terrarium is placed near a window or against an outside wall of your house.



So if you want to prevent your lizard from entering brumation (or want it to do so to a lesser extent), you need to make sure to adjust the temperatures in its terrarium in the fall (in fact, with every change of season and also during each period of extreme temperatures, you should do a temperature check as a preventive measure). Concretely, this means increasing the power (wattage) of the heating bulbs already in place, or even adding an extra heating bulb for the winter period, sometimes even on the cool side. Even if your lizard doesn't get up at all, don't turn off the bulbs or reduce the lighting time. This will have an amplifying effect on brumation. Remember, the two major stimuli that trigger brumation are the drop in temperature and the drop in photoperiod. So if your lizard is starting a brumation period and you want to avoid it, then it is better to increase the photoperiod and temperature than to reduce them.

And what to do if, even despite your temperature adjustments, your lizard brumates? Nothing. As said at the very beginning of this text, this process is a natural mechanism and therefore quite normal. Above all, avoid waking your lizard and putting it under the heat lamp. This is not only unnecessary; it can even be dangerous for your lizard. When your lizard goes into brumation, he must conserve his energy and one of the mechanisms to do this is to reduce his body temperature (which the lizard does behaviourally), by avoiding exposure to heat and by seeking a cool hiding place. So, by taking him out of his hiding place and putting him on a warm rock, you force him to increase his temperature and thus increase his energy expenditure (in short, you reduce his reserves more quickly) and this can go as far as making him lose too much weight. A healthy lizard that brumates will lose no more than about 10% of his body weight between the start and end of wintering (and typically just around 5%). Also, do not force food into his mouth during this time. Without his body temperature, he cannot digest well and therefore does not eat. It's normal.

In summary, if your lizard brumates, be patient. This is normal and it is not worrying. Yes, he may seem a little more uninteresting during this time, but tell yourself that this is a little break for you too, because during this time you will not have to do the housekeeping as often or even spend money for his food. And this little break will make you appreciate his company even more when he wakes up in the spring.





We hope that you'll enjoy keeping your Uromastyx. We also hope that this care sheet have made you understand all the basics husbandry parameters required for these fascinating animals. By providing the best husbandry conditions and by respecting your animal desires, your reward will be a healthy animal that will give you countless hours of fun and interaction!

## Thank you!

