

Sulcata Tortoise (*Geochelone sulcata*)

Difficulty: Challenging

Sulcata tortoises (*Geochelone sulcata*) are also known as the African spurred tortoise. They are giant terrestrial reptiles with a thick, domed shell, large overlapping scales on the front legs, spurs on the rear legs, a slightly hooked upper mandible, and serrated anterior and posterior marginal scutes. The shell is light brown to yellow in color, with older individuals showing noticeable growth rings on each scute. The plastron is ivory-colored. The skin is light to medium yellow-brown.

Sulcata tortoises are among the largest tortoises in the world. Although females are generally smaller than males, these tortoises can still grow 24-30"/61-76cm long and weigh between 70-110lbs/32-50kg on average, although particularly large males can reach over 40"/102cm and 200lbs/91kg.

Sulcata tortoises are native to the southern Sahara area of Africa, from Senegal and Mauritania in the west to Sudan, Eritrea, and Ethiopia in the east. Here they have adapted to making the most of hot, arid desert or dry savannah-type habitats.

Tortoises are well-known for being long-lived, and sulcatas are no exception! Although this species is fairly hardy, their lifespan, activity level, and care requirements make them a high-commitment pet. Sources indicate that this species is capable of living for over 70 years when appropriate sulcata tortoise care is provided, so plan on this pet being in your family for a while.

Shopping List

The following recommendations are for housing a <10" sulcata tortoise indoors. Information on housing sulcata tortoises outdoors can be found at <https://reptifiles.com/sulcata-tortoise-care-sheet/>.

- 8'L x 4'W x 2.5'H enclosure, or larger
- 46" T5 HO desert UVB bulb
- 48" T5 HO fixture with reflector
- 34" T5 HO 6500K LED lamp, x2
- 90w PAR38 halogen flood bulbs, x2
- Dual dome lamp fixture or 2 lamp sockets
- 80w radiant heat panel
- Proportional (dimming) thermostat
- Handheld pressure sprayer
- Digital probe thermometer/hygrometer, x2
- Digital light timer power strip
- 16 ft³ 60:40 sand/soil mix
- Misc. décor (cork flats, flagstone, edible plants, etc.)
- Shallow feeding dish
- 12" plant saucer
- Herbivore multivitamin supplement
- Cuttlebone

Housing

Sulcata tortoises, like other reptiles, require an enclosure that is large enough to give them adequate opportunity to explore, forage, thermoregulate, and generally exercise natural behaviors. A good rule of thumb for housing tortoises is to use the following formula, based on the tortoise's expected adult length: *Length = 10x adult length, Width = 5x adult length, Height = 3x adult length*

The minimum recommended enclosure size for housing a juvenile sulcata tortoise under 10"/25cm is 8'L x 4"W x 2.5'H, or 32 square feet of floor space. In metric, that's 2.5m x 1.25m x 0.75m, or 3.25 square meters. This may seem like a lot, but remember that young sulcatas grow fast! You can build your own enclosure (the [DIY Reptile & Amphibian Enclosures](#) group on Facebook is very helpful), or purchase one pre-made.

While tortoise tables may seem like an appealing housing option because they're less expensive, the open design makes it very difficult to maintain the needed levels of heat and humidity. This is important because young sulcatas are particularly sensitive to being too cold or too dry, and it affects their health and development.

Enclosures must have a 6-12" tall, opaque barrier on the front to discourage pacing behavior.

Can multiple sulcata tortoises be housed in the same enclosure?

Sulcata tortoises are not a notably social species, and can be kept individually without it negatively affecting their mental health.

Lighting & UVB

Sulcata tortoises are diurnal, which means that they are most active during the day. This also means that in order to provide appropriate sulcata tortoise care, bright light and UVB exposure are required during the day to maintain good mental and physical health. Indoors, light sources should be left on for 13 hours/day during summer and 11 hours/day during winter to replicate natural seasonal rhythms. When you are housing your pet outdoors, artificial lighting of any kind is not necessary.

UVB Lighting

UVB lighting can be tricky, because in order to get the right strength of UVB (measured by UV Index, or UVI), distance must be considered. To provide appropriate UVB to a sulcata tortoise housed indoors, you will need one of the following:

- Arcadia T5 HO Desert 12% — 9-12" / 23-31cm (mesh), 14-16" / 36-41cm (no mesh)
- Zoo Med T5 HO ReptiSun 10.0 — 9-12" / 23-31cm (mesh), 14-16" / 36-41cm (no mesh)
- Arcadia T5 HO Dragon 14% — 10-13" / 25-33cm (mesh), 15-20" / 38-51cm (no mesh)

Whichever bulb you use, you will need a reflective T5 HO fixture (Arcadia or Vivarium Electronics brand). I DO NOT RECOMMEND ANY OTHER BRAND OR STYLE OF UVB LAMP AT THIS TIME. This bulb should be roughly **half the length of the enclosure** and **placed on the warm side**, close to the heat lamp(s).

(This recommendation is an approximation. It is strongly recommended to use a Solarmeter 6.5 to determine the best placement to achieve a UVI between 4.0 – 6.0 in the basking area.)

Daylight Lighting

A UVB bulb isn't bright enough to replicate daylight. To get a little closer to this goal, you will need to supplement with a bright, 6500K T5 HO fluorescent or LED lamp, long enough to span 3/4 to the full length of the enclosure. This is particularly important if you are using live plants, but it is also valuable for supporting your tortoise's general wellbeing. I prefer the Durolux T5 HO 4' dual lighting system, Arcadia Jungle Dawn LED Bar, or Bio Dude Glow & Grow.

Heating

Humans are *warm-blooded*, which means that our body temperature is regulated automatically. Tortoises, however, are *cold-blooded (poikilothermic)*, which means that they have to move between areas of different temperatures to regulate their body temperature. In the wild, sulcata tortoises warm up by basking in a sunny spot first thing in the morning.

These are the enclosure temperatures you will need to maintain a young sulcata tortoise:

- **Basking area temperature:** 100-105°F / 38-41°C
- **Ambient/cool zone temperature:** 80-90°F / 27-32°C

- **Nighttime temperature:** 70-75°F / 21- 23°C

Older sulcatas are more resilient to a broader range of temperatures.

To create an evenly-heated basking area, you will need two 90w Philips PAR38 Halogen Flood Bulbs or similar mounted in ceramic sockets such as the Arcadia Lamp Holder Pro or Zoo Med Combo Deep Dome Dual Lamp Fixture. If you are using a 4' tall enclosure, it's best to mount the heating inside the enclosure. If shorter, mount the heating on top. If you notice that the basking area is too warm, dial it down with a plug-in lamp dimmer or rheostat. If your basking area is too cool, you will need higher-wattage bulbs.

For a large enclosure such as an 8x4, you will most likely need a supplementary heat source to help maintain appropriate ambient temperatures. A Vivarium Electronics radiant heat panel will do the job well, and connecting it to a proportional thermostat set to 80-90°F will prevent it from getting too hot.

Measuring temperature: To measure the temperature of the basking area, you will need a digital probe thermometer with the probe placed on the basking surface. There should be another digital probe thermometer on the other side of the enclosure to monitor the cool end of the temperature gradient. Most reptile-branded digital probe thermometers work well for this purpose.

Humidity

Sulcata tortoises may be native to a dry habitat, but that doesn't actually mean they should be kept super dry. In fact, they need quite a bit more humidity than most people give them. Juvenile sulcata tortoise **humidity should always be >80%**, with higher at night.

Adults are more resilient to drying out, but juveniles are particularly vulnerable to dehydration. Babies hatch during the rainy season in their native range, and they spend a lot of their time in burrows, which have much higher humidity levels than the surrounding environment. Best-case scenario, chronic dehydration will deform a young sulcata's shell and cause a condition called "pyramiding." Worst-case scenario, chronic dehydration can be life-threatening!

To increase humidity levels in the enclosure, use a pressure sprayer to moisten the substrate as-needed. Periodically pouring water into the substrate with a watering can and manually stirring it in is a good idea. You may want to consider installing an automatic misting system such as the MistKing Starter to make it easier to maintain optimal humidity levels. The expense is worth the convenience!

Monitor humidity levels with a digital probe hygrometer with the probe placed in the middle of the enclosure.

How to create a humid tortoise hide: Whether you are housing your tortoise indoors or outdoors, it must always have access to a humid hideout. This should be a cave or hide box placed on the cool end of the enclosure and lined with moistened substrate to create a humid microclimate.

Soaking young sulcata tortoises: Hatchling sulcata tortoises must be soaked in shallow, 85-95°F/29-35°C water for 20-30 minutes every day to make sure that they are adequately hydrated. The water should be no deeper than their elbows.

Substrate

Sulcata tortoises like to dig, and their substrate should facilitate the expression of this natural behavior. The right substrate is also very helpful for maintaining healthy humidity levels! This substrate should be layered at least 6" deep for juveniles, and 24" for adults. However, new sulcata tortoises should pass quarantine before naturalistic substrate is added to their enclosure.

Here are a few good options for sulcata tortoise substrate: DIY arid mix: 60% organic topsoil + 40% play sand, coconut fiber, play sand, and cypress mulch. All of these materials should be readily available to be purchased in bulk at your local garden center.

Feces and urates should be removed daily, and contaminated substrate should be scooped out and replaced. Indoor substrate should be completely replaced once every 3-6 months, depending on how diligent you are about daily cleaning.

Décor

Decorations play a vital role in sulcata tortoise care as *environmental enrichment*. Enrichment items encourage exercise, stimulate your pet's natural instincts, and help promote overall wellbeing. And, of course, they make the enclosure look nicer! Without décor, your tortoise's enclosure is just a big box of very boring dirt.

Hollow logs, cork flats, flagstone, dirt mounds, and edible, drought-resistant plants work well as décor in a sulcata tortoise enclosure. A homemade shell-scratching station is often a welcome addition! To determine what plants are safe to use in your enclosure, [The Tortoise Table](#) is an excellent resource. Tortoise seed mixes are also a good way to stock your enclosure with appropriate plants.

Arrange these items in a way that encourages your tortoise to explore, and provides a variety of places to sleep or shelter in during the day.

Food

Sulcata tortoises are herbivores, which means that they eat plants. Young and growing sulcata tortoises should be given as much as they can eat every day. Once they near adulthood, this should be reduced to a limited quantity (roughly the same size as their shell) daily to prevent obesity. Food should always be offered on a plate or tray to prevent unnecessary ingestion of substrate.

Here is a starter list of appropriate plants for sulcata tortoises: alfalfa, aloe vera, bermuda grass, bok choy, carrot greens, celery greens, chicory, cilantro, clover, daisy, dandelion leaves and flowers, endive, escarole, geranium leaves and flowers, grape leaves, green/red leaf lettuce, hibiscus leaves and flowers, honeysuckle flowers, kale, mallow, mulberry leaves, mustard greens, nasturtium, opuntia cactus, petunia flowers, plantain leaves, romaine lettuce, spinach, squash leaves, thistle, timothy grass, turnip greens, violet flowers, watercress

The key to providing your pet with balanced nutrition is VARIETY! So provide as many different kinds of foods to your pet tortoise as possible. Certain commercial diets such as [Mazuri Tortoise LS Diet](#), [Zoo Med Natural Grassland Tortoise Food](#), and [Repashy Grassland Grazer](#) can make nutritious additions. While certain vegetables such as pumpkin and squash can be offered as an occasional treat, fruit should NEVER be offered, as it is too sugary for sulcata tortoises.

Supplements

To make sure your tortoise is getting the right nutrients in its diet, it's a good idea to sprinkle its food with [Repashy Superveggie](#) supplement powder. You will also need to provide a [cuttlebone](#) in the enclosure. Aside from being a good source of calcium, it also helps keep your tortoise's beak trimmed!

Drinking Water

Your tortoise should have access to clean drinking water at all times. They tend to foul the water quickly, so you will need to replace the water daily and give it a good scrub with animal-safe disinfectant such as [F10SC](#) or [Rescue](#) weekly. A large [flower pot saucer](#) or [baking tray](#), sunk into the substrate for easy access, makes for a good water dish. The water should be no deeper than your tortoise's knees.