

African Sulcata Tortoise (*Geochelone sulcata*) Species Profile: Housing, Diet, and Care

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The African Sulcata Tortoise (*Geochelone sulcata*), or African Spurred Tortoise, is surpassed in size only by the giant tortoises of the Galapagos Islands and Seychelles. Not only do these tortoises grow very large, they grow very rapidly – up to two and a half feet long and 80-110 pounds or more. Distinct features of these huge creatures include sandy-ivory or golden yellow-brown skin and two or more very large and prominent tubercles (or spurs) on the rear legs.

Natural environment

African Sulcatas are from the hot, arid regions of the Sub-Sahara, and do not do well in damp, wet, or cold conditions. In the wild Sulcatas "aestivate" which means they go underground for months at a time in periods of intolerable heat and drought. The burrows are cooler and supply enough humidity to prevent the tortoise from dehydrating during this extended period. Aestivating is not hibernating, which is winter dormancy characterized by lowered blood pressure and respiration rate.

Physical characteristics

The carapace (top shell) is tan to yellow in color in the center of each scute (the external plate or scale of the shell). Each scute is outlined by brown growth rings. The plastron (bottom shell) is light tan to yellow in color with no markings. The skin of African Sulcata Tortoises is very thick and the legs are covered in dull, spine-like projections. The prominent spurs on the rear legs serve no observable function.

Temperament

Both male and female Sulcatas can be aggressive. When males reach maturity (roughly 14 inches in carapace length) they will ram into other males and attempt to flip them over. Therefore housing more than one male together should be avoided.

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Sulcatas are active and like to burrow, climb and roam about, often in search of food. They are extremely strong animals and have been known to break down fences and even walls. They are very attracted to items with bright colors and will attempt to move through anything between the attraction and themselves.

Handling

African Sulcatas can be handled gently when they are young. They often get too large and heavy to be handled when they are juveniles and adults. A brightly colored edible flower or piece of fruit can be used as a lure if you need to move them.

Housing

As hatchlings, African Sulcatas can be kept in vivariums or dry aquariums. Because of their size, juveniles and adults are best suited for the outdoors. A "house" large enough for the Sulcata to move around in, such as a lean-to or dog house, must be provided to protect them from cool or inclement weather. A heat source may need to be provided in the house depending on the environmental temperature. It is extremely important that the outdoor house remains dry inside; it is best kept raised slightly off the ground with a wide ramp that is not too steep to prevent the toppling over of the tortoise.

Lighting: Outdoors, Sulcatas must have areas of direct sunlight and areas of shade for cooling. If kept indoors, provide 14 hours of daylight using full spectrum UVB light and a white (incandescent) basking lamp. UVB is necessary for the tortoises to produce vitamin D3 which aids in the body's utilization of calcium for healthy shell growth.

Substrate: A mixture of soil and sand for burrowing with areas of sunshine and shade should be provided.

Temperature: Daytime temperatures during most of the year should range from 75-100°F. During the night, the temperature inside the house should not fall below 70°F. Heat must be provided if the tortoise is kept outdoors during periods of cooler weather. If cooler weather is more frequent, the opening to the house should be covered with a curtain. If housed indoors, the temperatures should fall within the same range and a basking area of 90°F should be provided during the day.

Humidity: Although African Sulcata Tortoises live in the desert, their actual environment may be more humid since they spend much of their time in caves or burrows. Research has shown that tortoises raised in dry conditions are more likely to develop a shell abnormality called "pyramiding," which is an abnormal hump-shape of the scutes. Tortoises raised in environments with 45-99% humidity had less abnormal shell growth than those raised in drier conditions.

Landscaping and 'furniture': African Sulcata Tortoises like to climb. They should not be given the opportunity to climb onto things that are too steep, as they may topple over. If they fall over onto their backs, they may not be able to turn themselves



over. Toxic plants or vegetation not suitable for the Sulcata's diet should not be accessible to them.

Because they are so strong, the yard in which they are kept should be fenced in with very strong materials. Sulcatas have been known to move walls and even posts supported in concrete to get to something that interests them. The fence should also be built in a way to prevent the tortoise from digging under it. Anything that is brightly colored will attract their attention and they will attempt to eat it. For this reason, anything that is small enough to be ingested, such as toys, cans, glass, and plastic should not be kept within the Sulcata's range.

To give the tortoise security and some interest, provide clusters of low-growing plants, smooth rocks, large pieces of wood, and other edible plants around the yard.

Housekeeping: Because Sulcatas are such voracious eaters, they produce a large amount of waste. Sulcatas will regularly eat their own and other animal feces; fecal samples should regularly be checked by a veterinarian to be sure they are free from bacterial, protozoan, and worm infestations. Daily cleaning of the yard is required to keep it sanitary.

Water

A shallow water bowl should be available at all times. The water bowl must have shallow sides so the tortoise can reach into it and be able to climb out of it, if necessary since Sulcata's cannot swim, and could drown.

Diet

African Sulcata Tortoises have voracious appetites. Providing a proper diet is critical for Sulcata Tortoise health. They require a diet high in fiber and calcium and low in fat and protein. In the wild, Sulcatas graze, similarly to cows or sheep, and the desert vegetation is often coarse and of poor nutritional quality. Offering a diet of higher nutritional quality can lead to malformations of the shell, too rapid of growth rate, diarrhea, and other problems. Grass hay or hay flakes most closely resemble their natural vegetation.



Grass hay and hay flakes may be bought commercially or grass pasture seed may be purchased and grown. Clover is another source of forage. Dark green leafy vegetables should be offered, but should make up less than 25% of the diet. Appropriate items include turnip greens, endive, escarole, dandelions, and small amounts of romaine lettuce (not iceberg lettuce). Spinach, beet greens, carrot tops, kale, broccoli, and especially rhubarb, contain high amounts of oxalates which bind calcium, so these should be offered in limited quantities, if at all. Cabbage, cauliflower, broccoli, kale, and mustard greens contain substances called "goitrogens" which can affect thyroid function, although this effect is seldom seen unless large amounts of these foods are fed. Small amounts of strawberries, bananas, melon, berries, and apples may be given. A calcium supplement needs to be given regularly. A vitamin/mineral supplement is also recommended. Tortoises are herbivores, so meat-based food items should not be fed.

Reproduction

In the wild, reproduction occurs most often right after the rainy season €“ September through November €“ but can occur anytime from June through March. Males typically become very vocal during mating. As the eggs are developing inside the female, her appetite will decrease. She will become restless as she begins to roam looking for a suitable nesting site. She may excavate several nests before she selects one. The female will dig a large nest, approximately two feet in diameter and several inches deep and deposit a clutch of eggs, 15-30 or more. Tortoises in warmer climates that are kept outdoors for most of the year may have two clutches. After all the eggs are laid, the female will fill in the nest, covering the eggs with the soil and sand that was excavated.

The eggs incubate for about eight months. Hatchlings will emerge from the nest and will be 1½-2 inches in carapace length and weigh less than one ounce. They are aggressive and active, ramming into almost anything kept in their enclosure.

Hatchlings may be kept indoors in a dry aquarium or vivarium. The substrate should be edible, such as alfalfa hay. (Alfalfa is not appropriate for adults.) The enclosure should be kept no cooler than 72°F with a basking area of 95-110°F. 10-12 hours per day of UVB lighting is necessary for healthy growth.

Hatchlings may not start eating right away. Food should be offered daily until they start to feed, then every other day after they begin eating. They tend to like darker greens such as alfalfa, kale, dandelion, collards, and grasses. Multivitamins and a calcium supplement may be added to their food.

Hatchlings kept outdoors should be provided the same housing requirements as adults.

Sulcatas grow rapidly and will reach their full adult size within 15-20 years.