

# How to Take Care of Your New Sulcata Tortoise

by Sulcata Station ([www.sulcata-station.org](http://www.sulcata-station.org))

## Your sulcata tortoise will need:

- ◆ Space (they're big!)
- ◆ A way to warm up
- ◆ A way to cool off
- ◆ Proper food and vitamin/calcium supplements
- ◆ Water
- ◆ UVB exposure
- ◆ A moderately moist substrate to sleep in
- ◆ Exercise -- daily!
- ◆ A reptile-competent vet

## Adult Size:

The first thing you should realize about your sulcata tortoise is that it **WILL** get **BIG!** Although sulcata hatchlings will easily fit in the palm of your hand, they will grow up and grow big -- in fact, sulcata are the third largest species of tortoises in the world. Only Galapagos and Aldabra tortoises get bigger!

Experienced sulcata keepers say that you can expect an adult sulcata to reach at least 18 inches (45 cm) in shell length, and 70 to 100 pounds (30 to 45 kg) in weight. And if your tortoise turns out to be the chelonian equivalent of Shaquille O'Neal, it might reach 24 to 30 inches (60 to 76 cm) in shell length, and around 150 lbs. (68 kg) in weight!



*A hatchling (baby) sulcata is being held atop the shell of an adult sulcata. That tiny hatchling will grow to become an 80-pound-plus adult tortoise within 10 to 15 years!*

## Heating and Housing Requirements:

Sulcata tortoises are native to the semi-arid Sahel region of Africa (the area just south of the Sahara Desert). Thus, they have evolved to deal with a warm, dry environment with lots of natural sunlight, and their habitat in your home or yard should be set up with this fact in mind.

Provide your tortoise with daytime temperatures between 75 and 85 degrees Fahrenheit (23 to 29 degrees Celsius). Always make sure that your tortoise has access to cooler areas or shade so that it can cool down when necessary. Nighttime temperatures should be lower than the daytime temperatures, but should not be allowed to drop below 60 degrees Fahrenheit (16 degrees Celsius).

**Sulcata tortoises DO NOT hibernate during the winter** -- in their native environment, winter is a dry season, not a cold season. Thus, during cold, snowy winters, you must provide your tortoise with large, secure indoor quarters with appropriate heat and UVB light.

**Aquariums of any size are NOT suitable for sulcata tortoises.** A tortoise table is a much better way to provide an indoor enclosure for juvenile sulcata. A tortoise table provides more room and better air circulation than even a large aquarium can. A simple tortoise table can be made using a sheet of plywood (as the "floor" of the enclosure) and four 1x8 or 1x10 boards (the "walls" of the enclosure). You can find photographs and drawings of tortoise tables on several different websites -- See the listing of good websites at the end of this caresheet.

At some point, your tortoise will become large enough that it will be inconvenient to keep indoors. When this happens, you will need to construct a heated, secure tortoise shed to serve as the tortoise's nighttime home.

## Feeding your Sulcata Tortoise:

Sulcata tortoises evolved in a semi-arid environment where the only food available for much of the year is dry grasses and weeds. Therefore, your tortoise requires a very high-fiber, low-protein, grass-based diet to stay healthy. If you feed the wrong foods to your tortoise, it will grow too quickly, develop a bumpy, pyramided shell, and may develop other health problems that could drastically shorten its lifespan.

### **DO NOT give your sulcata tortoise the following foods:**

- ➔ A steady diet of vegetables - small amounts of leafy greens can be used as treats, but not as the main diet.
- ➔ Cat or dog food of any kind
- ➔ Prepared commercial tortoise food of any kind
- ➔ Fruit of any kind

**AVOID giving your sulcata tortoise fruit!** Even though sulcata love fruit, it's best NOT to give them any. Grazing tortoises like sulcata rely on beneficial bacteria in their intestines to help them digest and extract nourishment from the grasses that they eat. If you give your tortoise large amounts of fruit, the acids and sugars in the fruit can actually change the pH of the tortoise's digestive tract. This pH change can cause the beneficial bacteria in the tortoise's gut to die off. When large quantities of gut bacteria die, they release toxins that can cross the gut wall and enter the tortoise's bloodstream, causing the tortoise to experience a form of Toxic Shock Syndrome that can be fatal.

**What you SHOULD feed your tortoise:**

**Grasses** should make up at least 75% of your sulcata tortoise's diet. You should try to supply as many different grasses as you can from the following list:

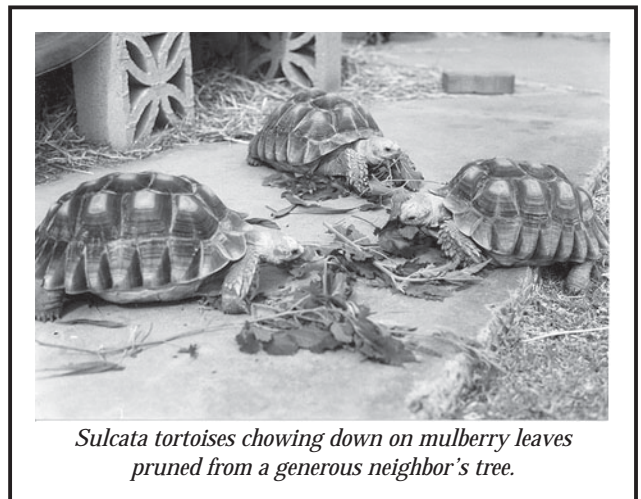
- ◆ Buffalo grass (*Buchloe dactyloides*)
- ◆ Bermuda grass (*Cynodon dactylon* -- which actually originated in Africa!)
- ◆ Orchardgrass (*Dactylis glomerata*)
- ◆ Big Bluestem (*Andropogon gerardii*)
- ◆ Little Bluestem (*Andropogon scoparius*)
- ◆ Western wheatgrass (*Agropyron smithii*)
- ◆ Blue Grama (*Bouteloua gracilis*)
- ◆ Arizona Fescue (*Festuca arizonica*)
- ◆ Lawn Fescue (*Festuca arundinacea*)
- ◆ Sheep Fescue (*Festuca ovina*)
- ◆ Creeping Red Fescue (*Festuca rubra*)

The best way to provide the grass-based diet that a sulcata requires is to have a large, safely-enclosed outdoor yard in which you can plant various types of grasses for your sulcata to graze on. With a tortoise yard, you don't have to worry about overfeeding or whether the tortoise is getting enough UV exposure. Your tortoise can graze at will while he gets exercise and exposure to sunlight.

**Edible weeds, leaves, and flowers** should make up the remaining 25% of the diet, if possible. Make sure that any plants you feed to your tortoise have not been treated with chemical fertilizers, pesticides, herbicides, or fungicides. If you buy a plant from a large chain store like Lowe's or Home Depot, re-pot the plant in organic potting soil and wait until the following year to feed the plant to your tortoises -- all the fertilizers and/or pesticides used by the store need to leach out of the plant before it is safe to feed to your tortoise. Here are some recommended plants for sulcata tortoises:

- ◆ Dandelion -- both the yellow flowers and the leaves
- ◆ Prickly Pear Cactus pads (*Opuntia* species) -- You can scrape off the needles with a sharp knife or burn them off by holding the pad over the flame of a gas stove or propane camp stove.

- ◆ Broadleaf Plantain or Buckhorn Plantain (*Plantago major* or *Plantago lanceola*)
- ◆ Globe Mallow (*Sphaeralcea grossulariaefolia*) -- flowers and leaves
- ◆ London Rocket or Tumble Mustard -- leaves only; they tend to reject the flowers
- ◆ Henbit (*Lamium amplexicaule*) -- flowers and leaves
- ◆ Hollyhock (*Alcea rosea*) -- flowers and leaves
- ◆ Roses (*Rosa* species) -- flowers only
- ◆ Sowthistle
- ◆ Chickweed
- ◆ Hibiscus (*Hibiscus* species) -- flowers and leaves
- ◆ Mulberry (*Morus* species) -- leaves only; give the mulberry fruit to box turtles.
- ◆ Geranium (*Pelargonium* species) -- leaves and flowers
- ◆ Grape -- leaves only; give the fruit to box turtles or make wine!



*Sulcata tortoises chowing down on mulberry leaves pruned from a generous neighbor's tree.*

**About vegetables:**

Sulcata tortoises that are fed a steady diet of fresh produce and/or frozen thawed vegetables tend to develop severe health problems over time.

Vegetables should only be given in SMALL quantities, and only a few times per week. These food items are NOT necessary, but they can serve as a nice treat for your tortoise, or as a way to get them to eat calcium and vitamin supplements. Good choices for treats are dark, leafy greens such as Romaine Lettuce or Mustard, Collard, or Turnip Greens. Dandelion Greens are an excellent choice, too.

**About Grass Hay:**

Grass hay (NOT alfalfa hay) is a good staple food for sulcata during the fall and winter when fresh grass isn't available. Grass hay is grown for horses, so you may find local suppliers by calling feed stores in your area. If you cannot find grass hay in your area, you can order it from the Oxbow Hay Company via their webpage at [www.oxbowhay.com](http://www.oxbowhay.com) or by calling them at 1-800-249-0366.

### Calcium and vitamin supplements:

Sulcata hatchlings and juveniles grow relatively quickly, so they need additional calcium in their diets along with daily exposure to the UV radiation in sunlight.

The best and cheapest way to provide calcium is to buy plain, powdered limestone (calcium carbonate), which is usually sold as a supplement for poultry. You can buy a 50-pound bag of powdered calcium carbonate for less than \$10 at most feed stores. The best way to provide calcium powder is to sprinkle it lightly on just-washed leafy greens (any type of edible weeds or greens) and offer it to your tortoise three or four times per week.

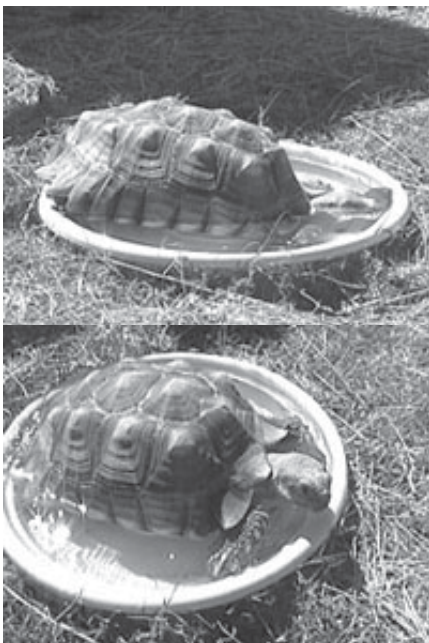
If your tortoise is not able to go outdoors, we recommend using Rep-Cal's Phosphorus-Free Calcium with Vitamin D3® for reptiles to provide additional D3 to your tortoise.

You should also buy a powdered vitamin supplement for your tortoise. Rep-Cal's Herptivite® powder is recommended. Vitamin supplements are also given by sprinkling them lightly over greens -- but use them sparingly, and only twice a week at most. Overdosing with vitamins can do as much or more harm than not using them at all.

### Water Requirements:

**Tortoises do require some water!** Dehydration is the most common health problem that hatchling tortoises can experience, and it can actually be fatal to them.

**Always make sure your tortoise has access to drinking water!** Provide a water bowl large enough for the tortoise to climb into, but shallow enough that the tortoise won't drown in it. The plastic or terracotta saucers that go underneath potted plants make excellent water bowls.



*A juvenile sulcata climbs into its water bowl for a drink and a good soak on a hot day.*

The smaller a tortoise is, the more easily it can become dehydrated. Thus, in addition to providing a water bowl, many owners also soak their hatchling or juvenile tortoises in shallow water regularly to help keep them properly hydrated.

Hatchling (less than 1 year old) torts should be soaked every day. Juvenile tortoises (between the ages of 1 year and 5 years) should be soaked two or three times per week. Adult sulcata tortoises should be provided with a very shallow pond so that they can walk into the water to drink and soak as desired.

Soak your tortoise in comfortably warm -- not hot -- water. The water level should be no deeper than the base of the tort's neck. It's best to use some sort of plastic container that you can wash and disinfect after each use because your tortoise may poop when placed into warm water. (Be prepared to change the water at least once during each soak!) Soaking time can range from 5 minutes to 15 minutes -- just don't let the water cool down too much. After the soak, dry the tortoise off with paper towels before you put it back into its pen or enclosure to keep it from getting chilly. (After all, you don't like to run around the house without drying off after your bath, do you?)

### UVB Light Requirements:

Sulcata evolved in a very sunny, semi-arid region that is somewhat similar to New Mexico. Sulcata tortoises require daily exposure to UVB light to help them produce proper levels of Vitamin D3 in their bodies. Vitamin D3 is essential in allowing the body to extract and use the calcium from food. Tortoises that lack sufficient levels of Vitamin D3 cannot build healthy bones and shells, no matter how much calcium they eat.

Sunlight is the single best source of UVB rays, so the best and safest way to provide Vitamin D3 to your tortoise is to allow it to go outdoors on sunny days for at least 20 minutes; longer is even better! If this is not possible (either because of where you live, or if we have a stretch of cold, wet, or snowy weather), then you must provide the tortoise with a light that produces artificial UVB rays.

We recommend that sulcata owners use self-ballasted mercury vapor bulbs to provide indoor heat and UVB. We use the 160-Watt Flood UVActiveHeat® Bulb made by T-REX, but the ZooMed Company makes a very similar product (the PowerSun® bulb) that seems to be just as effective. These bulbs consistently put out high levels of heat as well as UVB rays, so you need to use a clamp lamp or reflector lamp with a ceramic socket with these bulbs.

These bulbs may seem expensive initially, but they last for more than 2 years and produce **much** more UVB than a tube fluorescent bulb.

If you do use a tube fluorescent bulb, make sure you replace it every six months. The UVB is produced by a special coating on the inside of the fluorescent bulb; this coating breaks down over time and the bulb no longer emits UVB radiation, even though it continues to emit plenty of regular light.

Some places online that sell self-ballasted mercury vapor bulbs include:

- ◆ The PetGuys webstore: [www.petguys.com](http://www.petguys.com)
- ◆ Big Apple Herp Supply: [www.bigappleherp.com](http://www.bigappleherp.com)
- ◆ Herp Supplies.com: [www.herpsupplies.com](http://www.herpsupplies.com)
- ◆ The Bean Farm: [www.beanfarm.com](http://www.beanfarm.com)

**NOTE:** As a "substitute" for UV exposure, some pet stores sell "Solar Drops" which contain high levels of Vitamin D. DO NOT use this product! Giving your tortoise large doses of Vitamin D orally or by injection can be dangerous -- or even fatal.

### Substrates for indoor enclosures:

We recommend using a moisture-holding substrate such as Bed-A-Beast or similar products with hatchling tortoises to prevent them from becoming dehydrated.

In the wild, tortoises make extensive use of "micro-habitats" -- they look for areas that are warmer when they are cold; areas that are cooler when they are too warm; and areas that are more humid or moist when they feel dehydrated. Almost all tortoises spend the first year or two of their lives in underground burrows. This is for two main reasons: one, avoiding predators is much easier in a hidden burrow; and two, the humidity levels in such burrows are much higher than the above-ground humidity levels.

Researchers have found that humidity levels inside tortoise burrows in semi-arid regions of Africa stay at 50 to 60 percent. The \*above-ground\* humidity in those areas can drop as low as 10 percent, so the tortoises rely on the increased humidity down in their burrows to stay properly hydrated. Most of the moisture that tortoises lose is through respiration -- they don't sweat, and they can recycle their urine to prevent losing water that way. Breathing in moist air helps reduce moisture loss through respiration.

A high-humidity micro-habitat is crucial for hatchling tortoises since they do not retain body moisture as well as adults. A two-inch tortoise has 8 times the surface-to-volume ratio of a four-inch specimen. That means it only has one-eighth the reserves (moisture) of the larger animal. Chronic low-grade dehydration over time can cause kidney failure in young tortoises -- and kidney failure almost always results in death.

You should buy a hygrometer to measure humidity in the environment where your tortoise sleeps. If it's below 40 percent, then you need to add moisture to the environment to keep your tortoise from getting dehydrated overnight.

**Substrates that you should AVOID include:** Sand, Calci-Sand, corncob, ground walnut shells, and wood shavings of any kind. These substrates are not digestible and can cause intestinal blockages if they are eaten in sufficient amounts. Cedar and pine shavings contain toxic volatile oils that can poison your tortoise.

### Sulcatas Need Exercise!

Sulcatas are very active tortoises. They evolved to walk long distances daily while searching for food in their sparsely-vegetated surroundings. It's not a good idea, though, to allow your tortoise to walk around inside your home unsupervised. They have been known to bite cords, push around furniture, knock over and eat potted plants and so forth. The best way to accommodate your tortoise's need for exercise is to provide a securely-fenced outdoor yard where it can walk, graze, and get exposure to sunlight, all at the same time.

### Finding A Reptile Vet:

Most regular "dog and cat" vets do not have the specialized knowledge of reptile physiology and pharmacology to properly and safely diagnose and treat sick reptiles. Therefore, the best time to find a reptile-competent veterinarian is BEFORE your tortoise ever becomes ill or injured.

Word of mouth is the best way to find a good reptile vet. Ask other reptile keepers who they recommend. You can also check with your local herpetological group or society.

### Recommended Websites:

*To learn more about sulcata tortoises, please visit:*

- ◆ **Sulcata Station:** [www.sulcata-station.org](http://www.sulcata-station.org)
- ◆ **World Chelonian Trust:** [www.chelonia.org/Articles/sulcatacare.htm](http://www.chelonia.org/Articles/sulcatacare.htm)
- ◆ **Turtle Homes:** [www.turtlehomes.org/usa/sulcataindex.shtml](http://www.turtlehomes.org/usa/sulcataindex.shtml)
- ◆ **Tortoise Trust:** [www.tortoisetrust.org/care/csulcata.html](http://www.tortoisetrust.org/care/csulcata.html)
- ◆ **Anapsid.org:** [www.anapsid.org/sulcata.html](http://www.anapsid.org/sulcata.html)
- ◆ **Hatchling Haven:** <http://home.earthlink.net/~rednine/index.html>
- ◆ **California Turtle & Tortoise Club:** three articles about living with large sulcata tortoises:  
[www.tortoise.org/archives/sulcata1.html](http://www.tortoise.org/archives/sulcata1.html)  
[www.tortoise.org/archives/sulcata2.html](http://www.tortoise.org/archives/sulcata2.html)  
[www.tortoise.org/archives/sulcata3.html](http://www.tortoise.org/archives/sulcata3.html)

*To find your local herpetological society or a reptile vet, please visit:*

- ◆ **Herpo Productions Herp Society listings:** [www.herpo.com/societies.html](http://www.herpo.com/societies.html)
- ◆ **Herp Vet Connection:** [www.herpvetconnection.com/](http://www.herpvetconnection.com/)
- ◆ **Association of Reptilian & Amphibian Veterinarians:** [www.arav.org/](http://www.arav.org/)