



SULCATA STATION

Diet Recommendations for Sulcata Tortoises

What you feed your sulcata is critical to its health and development

Sulcata tortoises evolved to deal with life in a semi-arid environment, where the only food available for much of the year is dry grasses and weeds. Be aware that your sulcata tortoise requires a very high-fiber, 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 it may develop other health problems that could drastically shorten its lifespan.

Common Dietary Problems With Sulcata Tortoises

There are five common dietary problems that owners of sulcata tortoises typically encounter when feeding their tortoises:

1. Not providing enough fiber
2. Providing too much protein
3. Giving fruit or other sugary foods to grazing tortoises like sulcata and leopard torts
4. Not providing enough calcium, or the right calcium/phosphorus balance
5. Generally overfeeding the tortoise

How to Avoid These Common Dietary Problems

You are responsible for the health and well-being of your tortoise, so you must make the effort to feed the right foods, and in the right quantities. Here are a few suggestions to help you avoid the typical dietary pitfalls:

1. Fiber: Provide enough fiber by feeding your tortoise a diet that is based predominantly on grasses with some edible weeds, leaves, and flowers, as described in more detail below.

2. Protein: AVOID giving your tortoise foods that contain high levels of protein. This means that **you should NEVER give your sulcata tortoise the following foods:**

- Cheese or dairy products of any kind
- Cat or dog food of any kind
- Legumes (peas, beans, green beans, soybeans or soy-based products like tofu)
- Commercially-available “tortoise diets” (such as Pretty Pets, Mazuri, Zoo Med, etc.)
- Grains and Grain products (corn [maize], wheat, barley, rye, etc.)

High protein diets stress the tortoise's kidneys and liver. High dietary protein, particularly when accompanied by inadequate hydration, has also been shown to cause pyramided shells in sulcata tortoises. For more information on this issue, download our [What Causes Pyramiding in Tortoises?](#) document.

SULCATA STATION

Page Title: Diet Recommendations for Sulcata Tortoises:

Page Location: www.sulcata-station.org/pdf/diet.pdf

Page 2 of 5

You should also avoid feeding your tortoise a steady diet of fresh or frozen/thawed vegetables. New owners are usually surprised to find out that these foods are high in protein. In fact, all types of produce grown for human consumption -- even dark leafy greens -- are too high in protein for sulcata tortoises to thrive on. However, SMALL quantities of dark, leafy greens, given ONCE IN A WHILE as a treat, don't seem to be harmful.

If your tortoise is hooked on a diet of fresh or frozen veggies, you need to download our [Switching Your Tortoise to a Healthier Diet](#) document.

3. Fruit: AVOID giving your sulcata tortoise fruit! Even though sulcata love fruit, it's best NOT to give them any, if possible. Grazing tortoise species such as leopard and 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, and 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.

4. Calcium: Provide the right amounts of calcium and avoid or reduce giving foods that prevent calcium absorption. Sulcata tortoises require a great deal of calcium in their diet to help them grow healthy bones and shell. The Sahel area of Africa where sulcata naturally occur is a semi-arid region that has calcium-rich soils. Wild sulcata tortoises therefore get sufficient calcium by eating the grasses that grow in these calcium-laden soils.

Think about where you live and how you feed your tortoise. If you live in a semi-arid or arid area with little rainfall, the calcium levels in your local soil will be relatively high. Any grasses grown in such a calcium-rich soil will also be high in calcium, so if you allow your tortoise to graze at will on grasses grown in this soil, you might not have to give your tortoise as much in the way of calcium supplements.

However, if you live in a rainy, humid area, then the calcium levels in your soil will be very low because it is dissolved and removed from the soil by the frequent rainfall. Any grasses grown in your local soil will be calcium-poor. Therefore, you should provide your tortoise with calcium supplements on a regular basis.

In choosing a calcium supplement, make sure you choose one that does NOT contain Phosphorus. Calcium (Ca) and Phosphorus (P) are both necessary to build healthy bone tissue. However, the phosphorus available in most food items is used much more readily by the tortoise's body than calcium, so you really don't need to supply any additional phosphorus to your tortoise.

We've found that the easiest way to get calcium into our tortoises is to leave cuttlebones in their pens. We purchase cuttlebone in bulk from the [Cuttlebones Plus website](#). If you choose to use

SULCATA STATION

Page Title: Diet Recommendations for Sulcata Tortoises:

Page Location: www.sulcata-station.org/pdf/diet.pdf

Page 3 of 5

cuttlebone for your tortoise, make sure that you remove the hard shell-like backing from each cuttlebone (a small flat-blade screwdriver seems to work best to pop this backing off), then break the cuttlebone into pieces and spread it around your tortoise enclosures. Your tortoise should chew on the cuttlebone when it feels the need for additional calcium.

If you prefer to use a powdered calcium supplement, we recommend buying a human calcium supplement – one that contains calcium citrate and/or calcium maleate – in capsule form. Twice a week, open a capsule and mix the powder inside with a spoonful of canned pumpkin puree. (Sulcata love pumpkin puree, so anything mixed with the pumpkin will be eaten!) You could also sprinkle the powder lightly over dandelion greens instead (or any type of edible weeds) and offer it to your tortoise. Powdered supplements stick better to dampened greens, so wash the greens, shake off the excess water, then sprinkle the powdered supplements onto the greens.

5. Over-Feeding: AVOID over-feeding your tortoise. Sulcata tortoises can experience a variety of health problems when they are fed the wrong foods -- but they can also have problems when they are fed too much of the right foods. Overfeeding is the single biggest mistake that most tortoise keepers make. Reptiles have slower metabolisms than mammals like dogs or cats, so they really do not need to take in as much food as you might think.

You should also consider the activity level of your tortoise. Can he go outdoors and walk around a secure yard every day? Or does he stay indoors on a small tortoise table? If your tortoise is mostly sedentary, he doesn't need to be fed every day -- really! Every other day is fine, even though he may look up at you with pleading eyes in between feedings. A certain amount of “tough love” is required on your part to not give in.

Consider this analogy: A sedentary tortoise on a tortoise table is like an office worker stuck in a cubicle all day long. If the office worker eats a lot of fast food all the time and never gets any exercise, the chances are pretty good that he or she is going to be overweight, flabby, and have high cholesterol, high blood pressure, and other health problems. Tortoises who live indoors on a tortoise table and who are fed lots of vegetables (which are their equivalent of fast food!) on a daily basis are ALSO going to experience health problems. They will develop pyramided shells, they may be more susceptible to upper respiratory infections, and they may develop damage to their kidneys and livers.

Recommended Diet Items

Now, after reading about all the things that you shouldn't feed your tortoise, you may be thinking, “What on earth am I supposed to feed this little guy/gal?”

The goal in feeding your sulcata tortoise should be to imitate Mother Nature. You should try to provide those items that the tortoise would encounter in its natural range, and in roughly the same proportions that it would encounter. If you can do this, you will find that your tortoise has few, if any, health problems and will grow slowly and steadily, with little to no pyramiding.

Below is a list of items that SHOULD make up the diet of your sulcata tortoise:

SULCATA STATION

Page Title: Diet Recommendations for Sulcata Tortoises:

Page Location: www.sulcata-station.org/pdf/diet.pdf

Page 4 of 5

1. Grasses: Grasses should make up at least 75 percent 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. This will allow your tortoise to graze at will, while he gets exercise and exposure to sunlight. Owners who can provide a tortoise yard don't have to worry about overfeeding, or whether the tortoise is getting enough UV exposure.

2. Edible Weeds, Leaves, and Flowers: These items should make up the remaining 25 percent 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, Home Depot, Do-It-All, etc., re-pot the plant in organic potting soil and wait a couple of months to feed the plant to your tortoises -- it will take a while for all the fertilizers and/or pesticides used by the store to leach out of the plant. Here are some recommended plants for sulcata tortoises:

- Dandelion -- both the yellow flowers and the leaves
- Prickly Pear Cactus pads (*Opuntia* species) -- Scrape off the needles with a sharp knife or burn them off by holding the pad over the flame of a gas or propane camp stove.
- Broadleaf Plantain or Buckhorn Plantain (*Plantago major* or *Plantago lanceola*)
- Globe Mallow (*Sphaeralcea grossulariaefolia*) -- flowers and leaves
- 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

SULCATA STATION

Page Title: Diet Recommendations for Sulcata Tortoises:

Page Location: www.sulcata-station.org/pdf/diet.pdf

Page 5 of 5

- Grape (*Vitis* species) -- leaves only; give the fruit to box turtles or make wine!

3. OPTIONAL: Leafy Greens: Use these only as special treats for your tortoise. This means you can feed these items in SMALL quantities, once or twice a week. These 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.

Some dark leafy greens contain significant levels of a compound called oxalic acid. This compound affects the way that the body absorbs calcium. If you can, choose greens that are lower in oxalic acid, and feed them only in small quantities as treats.

Leafy Greens that are relatively low in Oxalic Acid:	Leafy Greens that have higher levels of Oxalic Acid:
Romaine Lettuce	Mustard Greens
Arugula	Spinach
Collard Greens	Kale
Turnip Greens	Broccoli
Dandelion Greens	Cauliflower

Many people asked us to clarify this recommendation. Basically, a couple of kale or spinach leaves given to your tortoise once in a while is probably fine, if the tortoise is eating grasses and weeds most of the time. On the other hand, feeding your tortoise only kale and spinach will lead to it having health problems. The key concepts here are small quantities and infrequently.

4. OPTIONAL: Pumpkin: Used occasionally, this is a beneficial food since pumpkin is naturally high in beta carotene and contains mannitol, a natural de-worming compound. We use canned pumpkin puree as a way to get calcium and vitamin supplements into our tortoises. Each tortoise receives a spoonful of canned pumpkin mixed with a calcium and vitamin supplement once a week as a treat.

Whole pumpkins are also a good seasonal food. When the pumpkins ripen in the fall, purchase a small one for your tortoise. You don't need to cook it or peel off the rind before giving to your sulcata, but you should remove the seeds beforehand. Cut the pumpkin into small chunks, and give a few to your tortoise. Freeze what you don't use immediately; even though the chunks tend to get stringy after being thawed, your tortoise will still love them as an occasional treat, rind and all.