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## Russian Tortoise Care

Scientific Taxonomy/name: Testudo horsfieldi

Avg. carapace length: Males average around 5.5 inches and 1.3 pounds. Females average around 7.5 inches and 3 pounds.

Natural location: Dry/arid, hot areas around the Mediterranean Sea (i.e. parts of Turkey, Afghanistan, Russia, Iran, China, and Pakistan). Russian tortoises live in burrows for nine months of the year. They are the only land tortoise (Testudo spp.) without a hinge on their plastron near the rear legs, and the only land tortoise with only four claws/toes on each foot.

Temperature: 70-80 degrees Fahrenheit with basking area of 90 degrees. For tortoises kept inside, keep thermometers at various locations in the enclosure in order to check the temperature in their environment.

Humidity: 30-50% (dry environment). Use a hydrometer to check humidity levels in the enclosure.

Lighting: Natural sunlight (not blocked by windows) is the best source of light for tortoises (and other reptiles)! If being kept indoors during the winter or due to an illness, use a broad-spectrum heat bulb. The most efficient light source is the Exo Terra Solar Glo. It is a mercury vapor bulb that emits heat, UVB, and UVA. UV light has multiple benefits, including calcium metabolism and improved appetite and activity. Proper calcium metabolism helps protect against metabolic bone disease. Follow manufacture directions on proper installation and use a clamp lamp with a ceramic fixture to prevent melting. The fixture should be carefully secured to avoid being bumped and breaking the filament or starting a fire. Make sure to replace the bulb yearly and remember that glass and plastic blocks UV light. If needed, a red bulb can be added for nighttime temperature drops.

Avg. age of Reproduction: 7-11 years

Avg. age of Reaching Maximum Size: 20-30 years

Gender Identification: Females are larger than males of the same age. Females have a blunt, stubby, short tail. Males have a longer, pointier tail, which has a hard, bony prominence at the tip of the tail, used for mating. Females have a flat plastron (bottom shell) and males have a curved plastron. Male have larger serrations on the scutes near the tail.

Husbandry: The Russian tortoise digs out large burrows, or finds empty rodent dens, in which to take refuge during the night, hot summer days and cold winter months.

### Indoor cage:

Plexiglass aquarium

Bedding: Astroturf, Carefresh bedding, alfalfa pellets, dirt (without fertilizer/pesticides, baked in oven to kill parasites and germs).

Overall temperature should be 70-80 degrees Fahrenheit with a basking spot temp of 90 degrees via heat lamps.

Provide warm water soaks 1-2 times a week for hydration or a shallow water bowl in the enclosure for drinking (or more commonly used for soaking).

Provide full spectrum lighting using Exo Terra Solar Glo overhead for the tortoises to metabolize calcium correctly.

Usually 1 tortoise per cage to prevent fighting trauma.

### **Outdoor cage:**

They are very good diggers and climbers! Bury thick wood boards, concrete, or chicken wire about 1 foot deep to prevent tortoises from burrowing out

Build walls at least 3 feet high to prevent them from climbing over and escaping

Screening above the cage (i.e. chicken wire) to prevent other animals from attacking the tortoises

Fill in with regular soil (without pesticides or fertilizer), gravel, or sand so they may dig (only dry, thick dirt will work for them to dig burrows without them caving in; also make sure the substrate stays dry!)

Shallow water bowl for drinking (or more commonly used for soaking)

Plant grasses and plants (i.e. clover, hibiscus, etc.) inside their enclosure for a snack. Plant bushes near the cage so the leaves provide shade

Keep the tortoises dry!!! Their health will suffer if kept in a damp, rainy, humid environment

### **Food:**

They need a high fiber, low protein, and calcium rich diet for normal digestive tract function and proper growth. Do not offer cat/dog food. Fruits can be given, but only in moderation because sugar can lead to upset stomach, overgrowth of bacteria, and diarrhea. The packaged spring mix contains a good variety of dark, leafy vegetables, which is their primary diet. However, most prefer food with leaves and roots still attached to the plant. Feeding a variety of foods is always important. Always make sure to sprinkle their diet with a 2:1 Ca:P supplement 2-3 times a week while they are still growing. Do not use calcium powder containing vitamin D. However, be careful not to over-supplement their diet. Overdosing on vitamins and minerals is just as bad as not getting enough in their diet.

### **List of foods that can be fed to Russian Tortoises:**

Banana, Melon, Sweet corn off/on the cob, Dark leafy greens (i.e. collard greens, leaf lettuces (not iceberg), kale, endive, escarole), Hay (only a small amount), Bulk vegetables, Weeds (i.e. Dandelions) and grasses (i.e. from lawn but without pesticides and fertilizers), Flowers (i.e. Roses, clover, mulberry leaves and hibiscus), Bok Choy (small amounts), Berries, Squash, Apples (seeds removed), Romaine lettuce, Red and green leaf lettuce, Radicchio, Turnip greens, Mustard greens (small amounts), Collards (small amounts), Spring Mix (mixed salad greens), Hosta, Sedum, Prickly pear flowers, fruit and pads (burn the spines off), Mallow (flowers and leaves), Chrysanthemum flowers, Cornflowers, Dayflower, and Californian Poppy.

### **Foods NOT to feed:**

Spinach, rhubarb, cabbage, peas, potatoes, and beet greens all contain oxalic acid, which can bind to calcium. Legumes (i.e. Peas, beans) and cereal grains which contain phytic acid. Cabbage, kale, and mustard interfere with iodine absorption so only feed infrequent small amounts, if at all.

### **Hibernation:**

The Russian tortoise hibernates during the winter months. It is recommended to have your tortoise examined prior to hibernating during the winter. During hibernation, body temperature decreases and develops immunosuppression as a result. Tortoises that go into hibernation sick typically decline in health and can die during hibernation.

### **Common Diseases:**

Calcium deficiency/Metabolic Bone Disease: Usually, there is either not enough calcium in the diet or no access to UV-B light (which allows the animal to absorb the proper amount of calcium they need from their diet). Usually, they will get weak in the limbs and may have muscle tremors in their legs. Their shell may feel soft and have abnormal growth. If left untreated, this disease will progress to painful broken bones, heart complications, and kidney failure.

Bacterial Infection (Shell rot): Usually due to poor husbandry. Shell rot can also be due to a disease circulating throughout the body.

Herpes virus: A viral disease that is associated with an upper respiratory tract infection in Mediterranean tortoises. Russian tortoises are all potential carriers of this virus and can pass the disease on to other tortoises and reptiles when introduced to each other.

Hexamita parva: A parasite (similar to Giardia), that causes damage to the kidney, urinary system, GI tract, and may infect other organs. Signs include weight loss, dehydration, lethargy, and decreased appetite. Kidney failure may develop. Other symptoms include thick/slimy urine and may smell of ammonia. Urine and fecal tests can be run to check for these and other parasites.

Trauma: Russian tortoises may fight with each other or with other tortoise species. Dogs are also a common source of trauma to tortoises.

Viral stomatitis: This is an inflammation of the mouth, which can be caused by infectious organisms (i.e. bacteria, viruses, fungus, etc.), or trauma leading to inflammation and infection.

Hepatitis: This is an inflammation of the liver that can be caused by infectious organisms (i.e. bacteria, viruses, fungus, etc.) or other primary causes leading to liver dysfunction.

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Enzyme-Linked Immunosorbent Assay for Detecting Herpesvirus Exposure in Mediterranean Tortoises (Spur-Thighed Tortoise [Testudo graeca] and Hermann's Tortoise [Testudo hermanni])

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