



info@aeacarizona.com

Address:

1911 South Lindsay Road

Mesa, AZ 85204

Phone: (480)706-8478

Fax: (480)393-3915

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(pages answered every night until 10 pm!)

Desert Tortoise Hibernation

October/November is usually the time that tortoises become more sluggish, eat less, and bask less. A suitable hibernation place needs to be provided. An insulated doghouse with dry soil on the floor and a tarped entrance works well. The doghouse or natural burrow should be kept in a non-flood zone area. Some keepers prefer to hibernate their tortoises inside (garage, closet, or basement). A deep, newspaper insulated, cardboard box works well. The box should be covered with a blanket and kept off the floor. If keeping the tortoise in the garage DO NOT IDLE YOUR CAR (carbon monoxide poisoning). The incubational temperature should be between 50-60 degrees Fahrenheit.

Hibernating tortoises should be checked weekly and should respond when touched on the feet. Around March or April, tortoises become active in their hibernation areas and should be taken out of hibernation. At this time, soaking them in 1" of lukewarm water will stimulate them to drink. Within a week or two, they should resume normal activity. If not, consult your veterinarian.

A desert tortoise should weigh an adequate amount before hibernating.

Mohave Desert Tortoise: (Shell Length (cm) x Width (cm) x Height (cm) x .66) = ideal weight in g/kg

Sonoran Desert Tortoise: (Shell Length (cm) x Width (cm) x Height (cm) x .6) = ideal weight in g/kg

If the tortoise weighs more than 5% less from its ideal weight, it should not be hibernated. Do not hibernate sick or injured tortoises. These tortoises need to be brought inside, kept at 85 degrees, and nursed back to health (underlying problems should be diagnosed and discussed with your veterinarian). All tortoises should have a pre-hibernation exam and fecal test before going into hibernation. Hatchlings and tortoises under 2 years old should not be hibernated.

When concepts below are followed, hibernation can be done safely. The incidence of death during or shortly after hibernation is higher than at any other time of the year for Desert Tortoises. Questionable health before hibernation lends itself to post-hibernation death if or when the tortoise is deemed potentially ill, it should be evaluated further medically by routine blood analysis, x-rays, and potentially cultures.

Tortoises begin the process of hibernation when nighttime temperature drops are into the 60's for several consistent days. Feeding slows markedly a month or so prior to hibernation. In Arizona this time of slowdown is usually mid-September to mid-October. Supplemental feedings (if started) in a healthy tortoise should stop when natural eating begins to slow down to prepare the bowel for hibernation.

Healthy tortoises should be allowed to naturally hibernate as the process is important for reproductive health, is part of their natural behavior, and probably has other unknown benefits. During hibernation, the decreased temperature causes the body's natural processes to slow down. As a result, the immune system functions less effectively, making it easier for a tortoise to become ill. Therefore, it is important for a tortoise to have a pre-hibernation exam to ensure overall health. Health can be determined by accessing body weight compared to body measurements, fecal parasite exams, as well as physical exams.

Hibernation is a natural process for a Desert Tortoise. In the wild, mountains, weather, and freedom allow a tortoise to pick an appropriate area in which to hibernate. In a captive back yard environment, selection of an appropriate burrow is significantly limited. Burrow optimization for hibernation requires understanding and implementation of methods to control burrow flooding, excess humidity, and temperature regulation. Hibernation temperature should ideally be 60 degrees or less and always above freezing.

The goal of the hibernating tortoise is to avoid winter freezing and flooding. On the valley floor, the burrow opening direction is not as important as it is in the mountains (the floor of the desert is warmer which is the goal for tortoises in the winter). In the wild, the base of the mountains facing south to west would be the most ideal burrow sites to accomplish both goals. Avoiding flooding can be more challenging on the desert floor in a back yard environment as burrows are often not built out of the floor pane. When roofs are pitched toward the burrow or in a flood area, hibernating tortoises may drown or possibly wake up extremely ill. Outside hibernation should not be attempted in such burrows. Drip and sprinklers systems may also get damaged by the tortoise or develop leaks that will result in the tortoise developing similar problems. Burrows over and around such areas should be avoided.

Hibernation Indoors (not usually recommended):

The process of hibernation can be started outside. When temperature dictates the tortoise's hibernation activities, it can be collected and brought inside a cooled garage to complete the process. Tortoises can be placed in a cardboard box with shredded paper or hay. Garage temperatures below 60 degrees are adequate for hibernation and result in less weight loss through it. The tortoise can be soaked in a shallow tub or water in order to avoid significant weight loss or dehydration.

Hibernation continues throughout the spring and females begin to come out in April and May. Most males wake up around the same time, although in the wild hibernation is usually about a

month longer. Waking up is also a process. Most tortoises begin by drinking only until sufficient enough temperature is achieved to aid in digestion.