

Hibernating Tortoises

Hibernation is a physiological process in which all metabolic functions slow down to a minimum maintenance level and animal becomes torpid for several weeks, living on its tissue reserves. It occurs in response to cold temperatures and is an adaptive process enabling a species to survive cold periods when food is scarce.

Not all tortoises will hibernate. In the wild Mediterranean species, Greek Spur thighed, Afghan or steppe tortoises will hibernate, but the North African species do not hibernate.



Reasons for Hibernation

- Helps juveniles slow down their rate of growth which is increased in captive animals
- In adults decreases onset of obesity.

Should you hibernate your Tortoise?

Firstly you need to check you have a species that will hibernate. Your tortoise must be in good body condition, and if they have been ill over the past 12 months they should not be hibernated. Never hibernate a sick tortoise.

How do you initiate hibernation?

- In the build up to hibernation, both photoperiod and temperature should be reduced by increasing the height of the basking source and reducing the ambient temperature.
- The tortoise should be fasted 1 month before hibernation.
- They should be bathed regularly in warm water. This encourages faeces and urine output and ensures adequate hydration.
- The ambient temperature should be reduced by 5°C over a period of several weeks.

Hibernation is initiated by prolonged temperatures below 15°C and is maintained between 2°C-9°C. Temperatures below 0°C can lead to serious cellular damage and death.



Common mistakes

- Feeding the tortoises prior to hibernation
- Hibernating at temperatures $>10^{\circ}\text{C}$ or $<0^{\circ}\text{C}$
- Leaving the tortoise with no protection against predators
- Hibernating a sick tortoise

How to hibernate a tortoise

1. Cardboard Box

This is an insulated box within a second larger box filled with shredded paper. This is then placed in a cool place i.e. loft, cupboard. This is not a recommend technique and has many disadvantages. The cardboard box is easily chewed through by potential predators and you can not monitor the tortoise accurately.



2. Refrigerator

The tortoise is placed in a plastic box and placed in the fridge. The box should contain loamy soil to allow for burrowing. This technique is useful in small tortoises as it lowers the risk of dehydration through respiratory water loss.

3. Indoor Hibernation

This is a purpose built hibernaculum filled with loamy soil and fitted with a heating element to ensure the temperature does not fall below the thermostat. Regular monitoring of the temperature is essential.

Checks during hibernation

- Weigh weekly

The total weight loss should not exceed 8% over the course of hibernation. Therefore a weight loss greater than 1% per week is cause for concern and the tortoise should be woken up.

- Check for Urination

Any urine output may result in dehydration. In this situation animals should be brought out of hibernation and housed in an indoor enclosure.



- Movements

Check for signs of activity. This may be a result of high temperatures and may need readjusting.

- Trauma

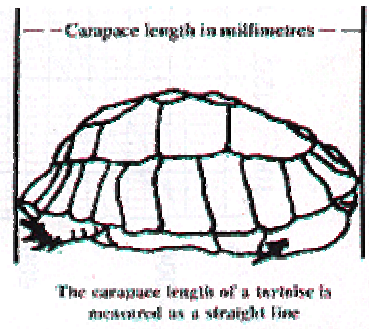
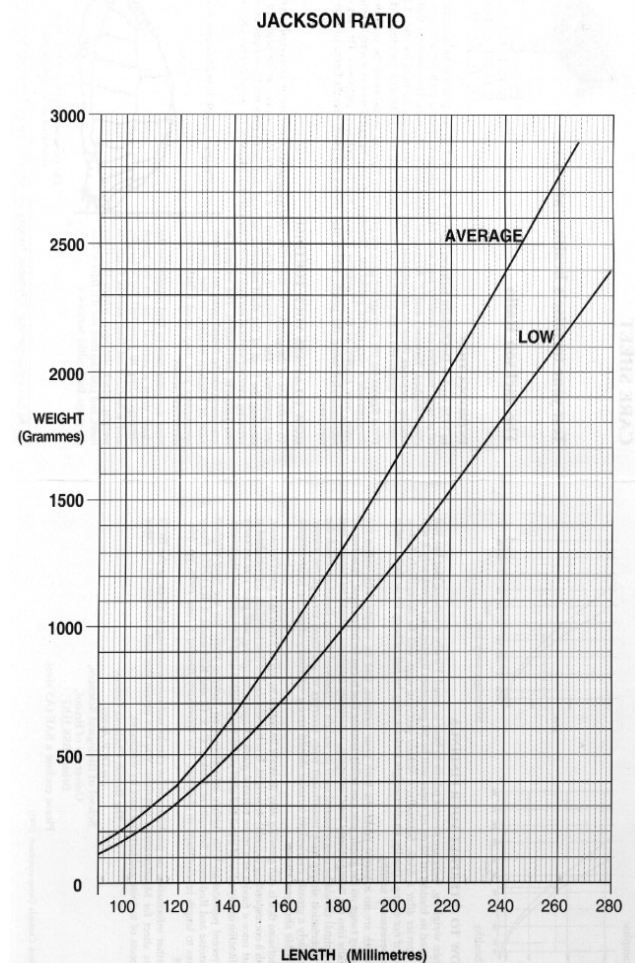
Your tortoise needs to be checked for any signs of trauma that can be caused by predators such as rodents. They may chew through the hibernation container and may cause trauma to the limbs of the tortoise.

Awakening Procedure

The following steps should be taken as soon as a tortoise starts to move around in its hibernation box in early spring:

1. Examine the tortoise

Inspect its eyes and nostrils for signs of discharge and inside its mouth. Weigh the tortoise and measure its carapace length using the Jackson ratio scale to obtain an accurate bodyweight.



2. Warm

Allow the tortoise to warm to room temperature and then place back in their terrarium in a temperature within the species preferred optimum range.

3. Bathe

Bath the tortoise twice daily to encourage urination. If dehydrated give oral fluids administered by a stomach tube until urinating.

4. Food

Offer highly palatable food such as cucumber, tomato then once eating normally introduce their regular diet. **If not eating within 7 days please consult a veterinary surgeon.**