FEEDING HERBIVOROUS TORTOISES AND PREVENTING LUMPY SHELL GROWTH

Feeding herbivorous tortoises is a vast subject which can be quite complicated to grasp. This care sheet aims to provide some useful information regarding that subject, but more research would be helpful to provide the best possible care for your tortoise.

Wild diets versus captive diets

Wild tortoises feed predominantly on green leafy plants which grow close to the ground.

Tortoises are very fond of flowers and in plentiful seasons may consume nothing but flowers.

These animals can see well in the UV spectrum and are very attracted to bright colours which phosphors (glows) under UV radiation.

His adaptation allows reptiles to home in on flowering plants. During Drier periods tortoises will feed on dry leaves, grasses and may even browse on herbaceous plant leaves growing closer to the ground.

Another source of food regularly eaten is dry snail shells. In hotter climates many snails species are killed by waves of hot weather. This is a fantastic source of calcium.

Occasionally animal dung is eaten. Usually herbivorous animals such as camels, sheep and goats. This nutritious food will provide part digested plant material and beneficial cellulose digesting bacteria, useful when digesting high fibre plant material.

Wild diets are very low in protein, and fats. They are high in fibre and calcium and low in phosphorus and sugars. In fact a wild tortoise diet is quite low in calories, and these animals are quite adapted to such a way of eating.

In captivity tortoises diets can be completely different, often presenting many problems. Food is often available in large quantities in the same place daily. Food which is commercially grown for human consumption (such as lettuce or cabbage) is regularly used. Food which is commercially grown is often lower in fibre and higher in protein in sugars, the levels of phosphorus are also higher than the levels of calcium.

These nutrients are the reverse of food found in the nature by tortoises, and this is the most likely cause of nutritional disorders.

CONSTITUENTS OF FOOD AND THEIR USES

Protein

Proteins are used as building blocks for muscle tissue major organs and ceratin (horny growth covering shell)

Proteins are essential for healthy growth and development.

High levels in the animals diet causes accelerated growth, deformities in shell growth and high levels of urea in bladder. Tortoises like all other animals use their kidneys to remove urea from the blood. Excessive levels of urea (a bi-product from breaking proteins down) put a lot of pressure on the kidneys to keep the blood clean.

Fats

Fats are a good source of energy, in tortoises adapted to low fat diets, since reptiles store fat in large cysts around the body. These cysts may become so large that they infiltrate major organs such as the liver this impairs liver function.

Carbohydrates (sugars)

Carbohydrates are a good first source of energy; they are the most usable source of energy for tortoises. Foods that are really rich in sugars such as fruits can be a problem since not all are absorbed by the tortoise and therefore remain in the gut. This provides a good food source for internal parasites such as intestinal worms and protozoon's.

Fibre

Fibre is the indigestible cellulose which is essential to the tortoises since it speeds up digestion and combines waste products together to be easily passed.

Fibre also prevents internal parasites from building up into aggressive numbers, by pushing them faster through the gut.

Vitamins and minerals

Vitamins are essential for healthy organ development and function, most are commonly available in a varied diet.

Calcium and phosphorous are the most important minerals to be concerned with in tortoise diets, food stuffs must be higher in calcium than phosphorus by at least 2:1 although wild diets are often 10:1 or even 50:1. This is particularly important since phosphorous is easily absorbed by tortoises in higher levels it is absorbed before calcium causing chronic difficulties.

An essential vitamin is vitamin D3. This is required by reptiles to absorb calcium from their food without D3 tortoises can't use any calcium in their diet.

Wild tortoises produce vitamin D3 by sunbathing; UVB light from the sun stimulates a steroid in the animal skin and with good temperatures produce vitamin D3.

This important vitamin enables reptiles (tortoise) to absorb calcium from their diet. Without vitamin D3 tortoises can't use any calcium they eat and quickly suffer from calcium deficiencies.

|In captivity UVB light can be provided indoors with the use of specialist bulbs. Tortoises should be allowed to sun bathe below these for 8-10 hours per day.

Remember that temperature is important for the process so provide basking lamps when using fluorescent bulbs which give off no heat.

Although expensive powersun spot bulbs are much better.

Provide as much out door exposure as possible, weather permitting. Natural sun light is the best source of UVB light.

Supplements

Provide calcium supplements regularly especially for juvenile tortoises and adult females.

Only use supplements which use calcium carbonate as this will be of most benefit for raising calcium to phosphorous ratio (vetark Nutrabol)

Healthy diets in captivity

Healthy diets for herbivorous tortoise must be low in protein, low in fats, high in fibre and have a calcium phosphorous level of 2:1 if not 10:1. This is best achieved by providing food collected rather that brought.

Wild food such as dandelions and sow thistles when grown naturally both have protein levels below 5% and are naturally high in fibre and have calcium phosphorous levels at least 3:1. If a good quality calcium supplement is added the calcium to phosphorous level may jump to 8:1. Variety is essential so feed at lest 5 or 6 different species of plant at any one time.

Quantity in Captivity

Wild tortoises are often only active at dawn and dusk, since midday temperature are often too hat. Also food levels vary depending on the time of year. Tortoises in the wild generally feed more heavily during the spring when food plants are most available. During the summer when hotter drier weather kills off a lot of growth.

Tortoises in captivity should be fed one goods meal per day. It is often better to feed animals by growing food plants in their outdoor enclosure to create an environment for browsing this would encourage more natural feeding responses.

Preventing lumpy shells in juvenile

Juvenile tortoises show the greatest problems when a diet is incorrect.

Shell deformities are very common in animals which are fed a diet high in protein, low in fibre and with poor calcium, phosphorus balance, so

- Feed only foods which are low in protein, high in fibre, with a good calcium phosphorus balance.
- Always add a good calcium carbonate based supplement in every feed.
- Feed only once per day.
- Provide good UVB 5.0 lighting whilst indoors.
- Where possible maintain animals out of doors.
- Create interesting environments which provide varied temperatures, places of substrate to bury, places to climb and hide under.
- As larger enclosure ass possible.