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Bamboo as an alternative diet

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ABSTRACT

Despite carnivore, taxonomic classification Pandas and other herbivores eat bamboo as a bulk of diet. In fact, giant pandas are the only bear species that have a digestive system that depends entirely on bamboo. In order to satisfy their daily dietary, giant pandas eat twenty to forty pounds of bamboo. They usually eat soft bamboo shoots and leaves. Due to their poor nutrient and food resources, bamboo loving animals have lower metabolic rates and generally live a sedentary lifestyle. Giant pandas are primarily solitary animals, they spend most of their lives roaming and feeding in the bamboo forests.

INTRODUCTION

Bamboos belonging to family Poaceae are considered as one of the most versatile multi utility forest tree grasses. Though distribution of bamboos is worldwide with over 1250 species, their presence is predominantly found in Southeast Asia. Bamboo shoots have immense potential of being used as important health food as they contain high proteins, amino acids, carbohydrates, many important minerals, and vitamins. Animals across different continents and habitats use bamboo as their alternative food habit. So that Bamboo is

considered as an alternative diet. Pandas (mainly giant pandas and red pandas) are the most popular bamboo eaters worldwide. 99 percent of what giant pandas eat is bamboo. But aside from pandas, bamboo lemurs and bamboo rats also eat lots of bamboos. Other animals that eat bamboo include golden monkeys, elephants, chimpanzees, bamboo orders, and mountain gorillas, among others. Humans also eat the cooked shoots of bamboo plants (Scurlock et al. 2000).

Bamboo as a diet of Giant Pandas

Giant pandas are the most popular bamboo eaters in the world, and that is because they eat lots of them. They live on bamboo plants and hardly leave their “home”. So, bamboo is the only available meal in their immediate environment. Giant pandas also eat other foods aside from bamboo, but that’s only about 1% of their diet. Bamboo makes up the remaining 99% of the giant panda’s diet. Their favorite part is the shoot, but they love eating the young leaves too (Bystriakova et al. 2003).

Bamboo as a diet of Red Pandas

Red pandas live in high-altitude bamboo temperate forests all around the world. They eat an 85-95% bamboo diet. Red pandas are not selective eaters like giant pandas. They eat almost any part of the bamboo plant that’s above the ground. These include the culm, stem, shoots, roots, and leaf tips (Bystriakova et al. 2003).

Bamboo as a diet of Bamboo Lemurs

Bamboo lemurs live in damp forests, which is bamboo’s natural habitat. So, bamboos are readily available for them to eat. What’s more, they spend most of their waking time on the bamboo plant and hardly ever come down from the plant. They eat lots of bamboo, as an almost exclusive diet. Experts still wonder how bamboo lemurs can detoxify the high cyanide contents in the bamboo shoots they eat (Shi et al. 1992).

Bamboo as a diet of Mountain Gorillas

The mountain gorillas are mostly found in African forests where they eat various plants and fruits. Their diet comprises over 140 plant species, including bamboo. These plants make up over 85% of their diet. They love eating the leaves, stems, and shoots of bamboo and other plant species. Mountain gorillas are likely to spend about 2 months in bamboo forests each year. While there, they eat fresh bamboo shoots. There is even a common myth that these gorillas sometimes get drunk with bamboo sap. But

experts found that the drunk-like reactions are nothing but times of sugar-high. The rich sugar content of bamboo gives them extra energy (Shi et al. 1992).

Bamboo as a diet of Asian Elephants

Asian elephants are the largest land animals on earth. They eat so much food, probably because of their large size. Asian elephants can consume 150 kg of plants daily. They eat over 110 plant species, including bamboo. Of all bamboo species, Asian elephants love eating the Mai Roak species the most. They eat any part of the bamboo plant, including the shoots, leaves, stems, and seedlings (Shi et al. 1992).

Bamboo as a diet of Chimpanzees

Chimpanzees are also known lovers of bamboo (Shi et al. 1992).

Bamboo as a diet of Bamboo Rats

Bamboo rats make their habitat in dense bamboo thickets, and their principal food is bamboo. But unlike many other bamboo eaters, bamboo rats eat only the underground portions of bamboo plants. Lesser bamboo rats, a species of bamboo rats, also eat bamboo but it’s not their principal food (Shi et al. 1992).

Bamboo as a diet of Bamboo Borers

Bamboo borers (*Dinoderus minutus*) also love eating bamboo. But it only attacks felled bamboo culms. Minutus also feasts on manufactured products of bamboo timber. What’s more, Minutus lays eggs at the bottom area of bamboo plants. And at the larvae stage, its caterpillar eats its way up bamboo shoots (Shi et al. 1992).

Bamboo as a diet of Rabbits

Rabbits can chew bamboo leaves for nourishment, but they do not attack bamboos in their natural habitat. However, rabbit owners can give bamboo leaves to their rabbits for food (Shi et al. 1992)

Bamboo as a diet of Guinea Pigs

Guinea pigs enjoy eating the leaves and shoots of the bamboo plant. Chewing on bamboo helps keep the teeth of Guinea pigs healthy. What's more, the plant contains lots of fiber, which is good for their digestion (Shi et al. 1992).

Bamboo as a diet of Termites

Termites are common insects found in bamboo. They make their way into any tree or plant, so long as the climate condition is moist and warm. Subterranean termites make tube-like runways with feces and soil, and through it, climb up to bamboo plants to attack them. They gnaw at the bamboo plant from the inside. Drywood termites also build nests inside bamboo culm and eat them (Shi et al. 1992).

Bamboo as a diet of Beetles

Beetles are also common insects found in bamboo. Powder post beetles can eat an entire bamboo culm. They only leave a thin shell behind. Beetle larvae also eat bamboo culm because of the sugars and starch in its parenchyma cells. They infest the bamboo culm with more intensity when lots of starch is available in it (Shi et al. 1992).

Bamboo as a diet of Humans

Bamboo is edible for humans. Some Asians and native Indians cook and eat bamboo shoots. This is the only known edible part. But you must cook it thoroughly or allow it to ferment before eating it. If you don't cook bamboo shoots, they would be bitter and may be poisonous. Boiling and fermentation are two ways to neutralize the poisonous cyanide content in bamboo (Shi et al. 199).

REFERENCES

Scurlock JMO, Dayton DC, and Hames B. (2000). Bamboo: an overlooked biomass resource. *Biomass and Bioenergy*.19(4): 229–244.

Bystriakova N, Kapos V, Lysenko I, and Stapleton CMA. (2003). Distribution and conservation status of forest bamboo biodiversity in the Asia-Pacific region. *Biodiversity and Conservation*. 2(9): 1841.

Shi QT and Yang KS. (1992). Study on the relationship between nutrients in bamboo shoots and human health in Proceedings of the International Symposium on Industrial Use of Bamboo. International Tropical Timber Organization and Chinese Academy, Beijing, China. pp. 338–34