Difference Between Herbivores and Carnivores Digestive System

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Key Difference - Herbivores vs Carnivores Digestive System

The digestive system of animals involves the breakdown of ingested food into forms which could be easily absorbed into the body. This provides essential components for the functioning and the survival of living organisms. The digestive system differs according to the species of organisms. This depends on the type of species, the type of ingestion, their metabolic conditions and the level of energy they need for their survival. According to the type of food that animals consume, living organisms could be categorized into three types such as carnivorous, herbivorous and omnivorous. Omnivorous animals depend on both plant and animal matter. Herbivorous animals only depend on plant matter whilst the carnivorous animals only depend on animal matter. Herbivorous animals have a special type of digestive system since they only depend on plant matter. Carnivorous animals possess a shorter digestive system when compared with herbivorous animals. **Herbivores digestive system possesses a long small intestine while the carnivores possess a short, small intestine.** This is the **key difference** between Herbivores and Carnivores Digestive System.

What is Herbivores Digestive System?

Herbivorous animals have a special type of digestive system since they only depend on plant matter. The energy requirements, the nutrients and other essential compounds necessary for the survival of herbivores are fulfilled by plants. Plant materials contain cellulose. Hence, a special type of digestive mechanism is needed since cellulose is only digested by the enzyme cellulase. The teeth of herbivorous animals are flat since they need to grind plant material in the buccal cavity to complete mechanical digestion. The typical digestive system of a herbivore is composed of a single stomach and a long intestine along with a large cecum.

Herbivores possess teeth that are highly specific to eat plant matter. The molars of herbivores are usually flat and wide which assist them to break and grind plants that they ingest. The herbivore incisors are not present on both upper and lower jaws, but they are sharp to tear the plant material. Many herbivores like goat, cow, and horse possess jaws which could be moved sideways. In their large pouch-like cecum, millions of bacteria reside that contains cellulase enzyme. This helps in the digestion of cellulose. This is the exact reason why herbivorous animals possess a longer intestine than carnivorous animals. Herbivores such as cow, goat, and sheep possess multiple stomachs. These are called ruminant species which they possess four stomachs. This allows these animals to swallow partially chewed plant matter mixed with saliva which is known as a bolus. The partially chewed plant matter first enters the first two stomachs that are, the rumen and the reticulum respectively. Here the plant matter is stored until taken for later use.

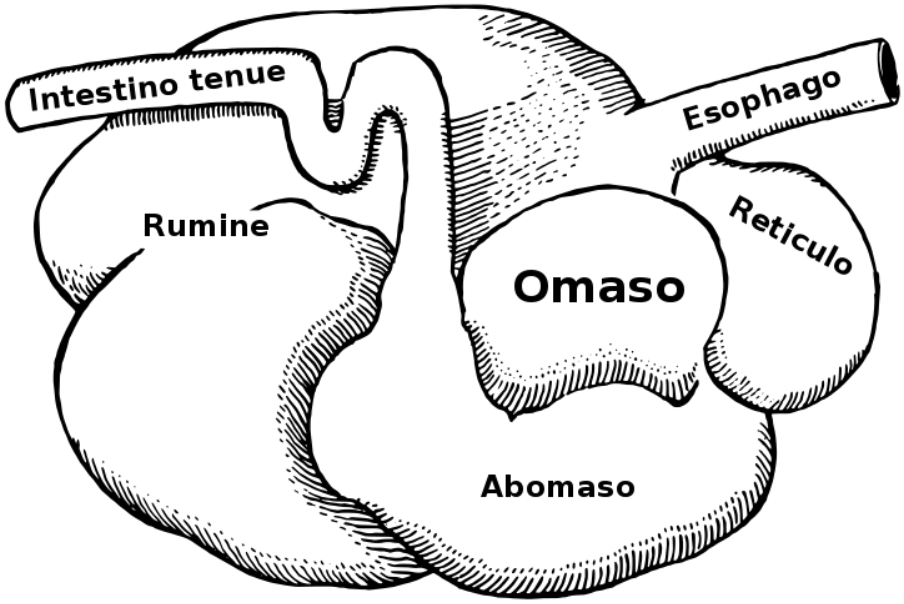

Figure 01: Parts of the Herbivores Digestive System

When the animal is at rest, it can cough up the partially chewed food back into the buccal cavity and chew it completely forming another bolus of food. This bolus enters the third and fourth stomach; omasum and abomasum. In the omasum, the liquid part of the bolus which contains water and minerals are absorbed into the bloodstream. The abomasum is similar to the human stomach where chemical digestion of food takes place, and the digested nutrients are absorbed in the small intestine.

What is Carnivores Digestive System?

Carnivorous animals possess a shorter digestive system when compared with herbivorous animals. This is due to the reason that carnivores possess a diet that could be easily broken down unlike the presence of cellulose components in herbivores. Carnivores obtain their food by killing other animals. They also may kill other carnivores for food. This is an important aspect since carnivores play a major role in marinating the balance of the ecosystem which prevents the overpopulation of animals. Carnivores usually reside at top levels of food chains. To fulfill the ingestion of food by carnivores, they possess sharp and strong teeth. Since they have a different diet pattern when compared with herbivores and omnivores, the strong set of teeth that carnivores possess help them to kill their prey and tear flesh from it. This process is assisted by the presence of a unique set of canines and incisors that are sharp and pointed. The canine is present on either side of the incisors, and the carnivore canine is easily identified. Since the most of the physical digestion within the buccal cavity of carnivores are done by the teeth at the front, carnivores possess few molars in both lower and upper jaw.

The presence of a pointed and sharp canine tooth is not an indication of that animal being a carnivore. It only provides information about the diet pattern which contains animal meat. Once the food is ingested and broken down into absorbable forms, it is absorbed in the small intestine. Water and nutrients are mostly absorbed in the large intestine. Also at the large

intestine, less than 4% of fat and other minute amounts of proteins are absorbed. Carnivores do not possess cellulose-digesting enzymes to digest cellulose.

What is the Similarity Between Herbivores and Carnivores Digestive System?

- Both are involved in the digestion of food material they ingest by breaking them down into forms which could be easily absorbed to the body.

What is the Difference Between Herbivores and Carnivores Digestive System?

Herbivores Digestive System vs Carnivores Digestive System	
Herbivores Digestive System is the digestive tract possessed by herbivores.	Carnivores Digestive System is the digestive tract possessed by carnivores.
Type of Food Digested	
Herbivores digestive system digests plant matter.	Carnivores digestive system digests animal matter.
Structure	
Herbivores digestive system has a longer digestive tract with multiple stomachs.	Carnivores Digestive System has a single stomach with a shorter digestive tract.
Teeth	
Herbivores usually possess flat and wide molars.	Carnivores possess a unique set of canines and incisors which are sharp and pointed and fewer

Summary - Herbivores vs Carnivores Digestive System

The digestive system is an essential component in the survival of living organisms. It provides the body with needed nutrients and other essential components. According to the type of food animals obtain, they could be categorized into three groups as, carnivores, herbivores and omnivores. The digestive system differs according to the species of organisms. This depends on the type of species, the type of ingestion, their metabolic conditions and their level of energy needed for survival. Herbivorous animals have a special type of digestive system since they only depend on plant matter. They have the ability to digest cellulosic compounds since they possess cellulose enzyme. Carnivores obtain their food by killing other animals which include herbivores and omnivores. They possess a shorter digestive system. This is the difference between herbivores and carnivores digestive system.

Reference.

1.Bradford, Alina. “Herbivores: Facts About Plant Eaters.” LiveScience, Purch, 21 Jan. 2016. Available here
2.Bradford, Alina. “Carnivores: Facts About Meat Eaters.” LiveScience, Purch, 22 Jan. 2016. Available here

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How to Cite this Article?

APA: Difference Between Herbivores and Carnivores Digestive System.(2017 November 27). Retrieved (date), from difference-between-herbivores-and-vs-carnivores-digestive-system/

MLA: "Difference Between Herbivores and Carnivores Digestive System" Difference Between.Com. 27 November 2017. Web.

Chicago: “Difference Between Herbivores and Carnivores Digestive System.” Difference Between.Com. http://differencebetween.com/ difference-between-herbivores-and-vs-carnivores-digestive-system/ accessed (accessed [date]).