



Nutrition and Feeding of Omnivore and Carnivore Animals



**Rashmi Kumari¹, Dinesh Kumar², Harshita Rani^{3*}, Brishketu Kumar⁴
Ankit Robert Bara⁵, Archana Pandey⁵**

¹Assistant Professor, Sanjay Gandhi Institute of Dairy Technology, BASU, Patna, Bihar

² Assistant Professor and Junior Scientist, Department of Animal Nutrition, College of Veterinary Science & Animal Husbandry, BAU, Ranchi, Jharkhand

³Pentair, Noida, Uttar Pradesh, India

⁴Assistant Professor, College of Agriculture, Navsari Agricultural University, Bharuch, Gujarat

⁵M.V.Sc. Scholar, College of Veterinary Science & Animal Husbandry, BAU, Ranchi, Jharkhand

INTRODUCTION

Studying and managing the nutrition of wild animals presents many difficulties that aren't usually faced when working with domestic animals. This is mostly because when dealing with wildlife, scientists must always consider the bigger picture of the ecosystem. Wild animals live in environments that are always changing, and humans can't control many of the ways animals interact with their surroundings. Also, wildlife researchers often don't have the same motivation as those working with farm animals to focus on increasing meat production or making money.

The mammalian group called carnivora includes animals we both love and are afraid of, like our pets dogs and cats and bigger predators like bears, lions, and wolves. People really like domesticated carnivores, which shows in how many there are: there are more than 100 million house cats and dogs worldwide, which is more than any other wild carnivore population. There are about 286 living species of carnivorans, which is similar to the number of primates, but less than the number of bats or rodents. However, the size of carnivorans, from the smallest, which is the least weasel weighing just 30 grams, to the largest, the male northern elephant seal that can weigh up to 2300 kilograms, is bigger than any other mammalian group.



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Corresponding Author

Harshita Rani*

E-mail ID:

harshita.r46@gmail.com



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The ways they move and the places they live are also very different there are animals that swim a lot, like seals, sea lions, and otters, some that climb well like the red panda and kinkajou, others that dig like badgers, and some that run long distances like wolves, African wild dogs, and hyenas. Carnivorans can be found all over the world, from the poles to the equator, and they live in different environments like deserts, forests, grasslands, tundras, and both fresh and saltwater areas. Even though they are very different in many ways, carnivorans have some common traits. They all have good forward-facing vision, thick fur, and claws that vary in size and shape. They also have a strong sense of smell, with scent glands that help them mark their territory. They are also good at seeing and hearing.

Carnivores and omnivores from different groups like insects, birds, and mammals have shown the ability to control and balance their intake of major nutrients by choosing the right foods and eating the right amounts (Simpson et al.2006). However, the idea of balancing nutrients in predators has not been widely studied. This is mainly because prey animals are often seen as having similar nutrient content compared to the variety of foods that herbivores and omnivores eat (Galef 1996). Also, predator populations are usually thought to be limited by how much food they can find and catch rather than the quality of that food (Fryxell & Lundberg 1997). New research shows that this first idea may not be correct. For example, insect-eating predators face changes in the nitrogen levels of their prey, ranging from 5.7% to 13.0%, and in fat

levels from less than 5% to over 56%. Larger predators that eat birds and rodents might find fat levels in their prey varying from 1–2% in animals that are starving (Voltura 1997) to over 65% in animals migrating long distances (Ankney 1984). Similarly, mammal and bird predators that hunt in the sea may also face big changes in the nutrient content of their prey. Some studies even suggest that the decline in numbers of certain predatory sea birds and seals might be linked to changes in their diet between different types of prey that have different nutrient levels (Romano et al.2006).

Following point to be considered during feeding of carnivore and omnivore

1. Make sure the food given to the animals is good quality and enough. If you need to change the food, do it slowly and write down the changes.
2. Feed the animals at the same time every day unless there is a reason you can't.
3. You can change the food if the animals need it for things like being pregnant, giving birth, or being sick.
4. Try to have one person feed a group of animals regularly so they get used to that person.
5. In groups of animals like deer herds, make sure there are enough feeding spots so they don't fight over food.
6. Clean up any leftover food quickly.
7. Keep away animals like rats and birds so they don't eat the food.
8. Check for any health problems that might be caused by bad nutrition.
9. In winter, some animals need less food, so adjust the amount you give them.

Table 1: Feeding strategies of carnivore and omnivore

Nutrients	Carnivore	Omnivore
Carbohydrate	Very little or none, can't handle more than 2% fiber	More than 50% of their diet, with 4-5% fiber
Protein	High (20-30%)	12-18%
Fat	High (20-30%)	4-5%
Energy	Comes from fat and protein	From more carbohydrates and fat
Vitamins	Need a lot of all vitamins	Need some, but not as much
Minerals	Minerals Need a lot, especially the big ones like calcium and sodium	Need some, but not as much

Feeding of carnivore

Depending on what they eat, carnivores use different ways to hunt and find food. Foxes, which are a type of carnivore, are not picky about what they eat. They can eat a lot of different things, including vegetables and fruits, which can sometimes make up a big part of their diet. These animals often look for such food regularly and sometimes use clever methods to get it, especially when they live near people. So, offering food in special ways can be really helpful for foxes that are kept in captivity. Before, people have tried many ways to make food more interesting for captive carnivores. For example, using fake moving prey made servals and cheetahs act like they were hunting. In European wildcats, automatic feeders helped them act naturally and avoided bad behavior. But for margays, feeders that needed to be opened didn't work well. With tigers, using feeders that they could play with

helped reduce repetitive behaviors. In lemurs, giving food in self-service boxes increased their activity and movement. Also, hiding food in their space helped black bears act less repetitively and encouraged bush dogs to search for food.

Some peculiarities of carnivore's animal which must be considered during feeding

1. Digestive tract of tiger is very simple and the strategy adopted is to retain the food for a very short period of time in the GIT.
2. Absence of enzyme glukokinase
3. Higher excretion of nitrogen irrespective of dietary nitrogen
4. Inability to convert beta carotene to vitamin A
5. Arachidonic acid is a dietary essential
6. Taurine is a dietary essential
7. Behavioral enrichment

Table 2: Feeding strategies of carnivore during wild and captivity condition

Animals	Wild diet	Captive diet	Remarks
Small cat	Eat rodents, birds, fish, small mammals, small deer, lizards, insects, frogs, and snakes.	The captive diet includes chickens, pigeons, rabbits, rats, mice, and sparrows. Raw meat can be given along with fine bone meal and cod liver oil. One kilogram of buffalo meat can be offered to a leopard cat each day.	Small cats feed in a crouched position
Dhole	Cheetal, nilgiri tahr, sambar, swap deer, four horned antelope, nilgai, and wild pigs. Insect, lizard, rodents, and wild berries.	Raw meat, cod liver oil, apples, grape, mice, sparrow and chickens	
Jackal	Eat small animals like rabbit, mice and lizards, insects, plant material and carrion	Raw meat, dog treats, rat, chicken heads, cooked veggies and fruits.	

Feeding of omnivore

The fact that omnivorous species of primates and other mammals may select food item from a broad array of plant and animal food in the wild should not be taken to mean that they must be offered a similar array of food in captivity. Given the differences in composition between market produce and plants eaten in

the wild, it is difficult to replicate the natural diet. A more practical approach is to provide a diet that will meet estimated nutrient requirement while also providing sufficient fibre for normal digestive function and sufficient diversity to provide behavioral stimulation

Table 3: Feeding Ecology and Nutritional Management of Primates in Wild and Captive Environments

Animals	Natural diet	Captive diet
Chimpanzee	Fruits, leaves, bark, roots, ants, termites, flowers, seeds, soft pith, and resins are the natural things that make up their food.	Ground wheat, lettuce, potato, carrot, cabbage, ground corn, wheat bran, bread slice, meat, egg, banana, orange, tomato, honey, and sunflower seeds. A diet that includes fruits (1 kilogram), milk (1 liter), bread slices (6 pieces), one boiled egg, 100 grams of garlic and onion, and 2 cups of tea can be provided. Water should always be available. A ration made up of 10% ground wheat, 15% wheat bran, 41% ground corn, 1% dehydrated alfalfa, 8% dried skim milk, 6% soybean oil meal, 2.5% animal fat, 2% brewer's yeast, 5% sucrose, 2% meat, 3% bran cellulose, and 4.5% minerals and vitamins can be given.
Mongoose	They eat a variety of things, including small animals, birds, eggs, reptiles, insects, and sometimes fruits. Some also eat crabs, frogs, crustaceans, dead animals, and snails.	A mix of raw meat, dog food, bones, and cod liver oil is given, along with small bits of whole raw meat, milk, and eggs, all of which are similar to the minerals provided.
Bears	Diverse feeding habits	Muscles meat, calcium carbonate should be supplemented @ 400mg/100g of meat in addition to multivitamin. Milk and milk power for young one
Himalayan black bear	Plant and animal matter, nut, fruits, ant, bark, leaves and insect larva.	The animal is kept healthy on a diet that includes commercial dog food or omnivore meals. In captivity, it is fed a mix of bread (250 grams per day), ripe bananas (2 kilograms per day), eggs (one per day), vegetables (2 kilograms per day), rice (500 grams per day), and milk (500 milliliters per day).
Sloth bear	Fruits, insect, termites, honey sugarcane, grubs, eggs, carrion, flower, ant, beetles, tubers, roots and berries. Jamun, amaltas and ber are favorite fruits.	Raw horse meat, milk, honey, bread, banana, apple, cooked rice, ground meat, dog food, bone meal, and cod liver oil.