

# Animal Usefulness

## Camel

### Overview and History

The camel is a large, strong desert animal that can travel great distances across hot, dry deserts with little food or water. Their hooves allow them to walk easily on soft sand where trucks would get stuck, and carry people and heavy loads to places that have no roads.

The camel carries its own built-in food supply on its back in the form of a hump which is a large lump of fat that provides energy if food is hard to find. There are two chief kinds of camels: (1) the Arabian camel also called “dromedary”, which has one hump, and (2) the Bactrian camel, which has two humps. In the past, hybrids (crossbreeds) of the two species were used widely in Asia. These hybrid camels had one extra-long hump and were larger and stronger than either of their parents (hererosis).

Camels have been domestic animals for thousands of years. Arabian camels may once have lived wild in Arabia, but none live in the wild today. There are several million Arabian camels, and most of them live with the desert people of Africa and Asia. The first Bactrian camels probably lived in Mongolia and in Turkistan, which was called Bactria in ancient times. A few hundred wild Bactrian camels may still roam in some parts of Mongolia, and over a million domesticated ones live in Asia.

Scientists believe that members of the camel family lived in North America at least 40 million years ago. Before the Ice Age, camels had developed into a distinct species and had moved westward across Alaska to western Asia. In Asia, two groups

separated and gradually became the two different kinds of camels that we know today. Meanwhile, smaller members of the camel family had moved southward from North to South America. Today, four members of the camel family live in South America: (1) alpacas, (2) guanacos, (3) llamas, and (4) vicunas. By the time Europeans went to North America, no members of the camel family had lived there for many thousands of years. Their disappearance is a mystery.

The first dromedary (one-hump) camel was imported into Australia in 1840. This ill-fated animal took part in an expedition into the northern part of South Australia. It was destroyed after accidentally causing its owner's death. Later, large numbers of camels were imported into Australia for exploration and station work and helping to build a railroad in the arid interior. About 250,000 camels still roam wild in the central Australian deserts.

### **Usefulness**

Millions of people who live in Africa and Asia depend on camels to supply most of their needs. In deserts lands, camels pull ploughs, turn water wheels to irrigate fields, and carry grain to market places. Deep in the deserts, camels are almost the only source of transportation, food, clothing, and shelter. In turn, camels need people to fetch water for them from wells if they are to survive the hot summers.

Camels work hard for people. They routinely carry loads of up to 150 kilograms for eight hours. They can carry more but do so unwillingly. Usually, camels work only six months of the year. If too much is demanded of them, they will die from over exertion.

Camels have been very useful through history for human kind; not only as transportation in long desert areas but also as food. Camels are an important source of food in the desert. The meat of young camels is eaten, though it can be very tough. Fat is melted from the animal's hump and used as butter. Camel's milk is used as a beverage and also cheese is made from it. The advantage of Camels is in arid or marginal areas, the camel needs little or no supplementation for milk production verses full supplementary feeding and husbandry which is required for cattle.

Camel also supplies wool and leather for clothing and shelter. Wool is an important camel by-product in many camel-producing countries. Camel owners weave the animal's soft, wooly fur into fine cloth and warm blankets. The long fur of the Bactrian camel is especially good for weaving into cloth. Arabs use the cloth for much of their clothing, and they also make tents from it. Camel's hair cloth is sold in many parts of the world for making blankets, coats, and suits. The average wool clip of males is 3.28 kg. and 2.10 kg. for females. Fiber diameter is 12-27 microns and the length ranges from 4-12 cm. Dromedary wool processes a number a valuable technological properties such as low heat conductivity, softness and strength. From camel wool, a wide range of warm fabrics can be manufactured. Currently the strong, tough skin of the camel is converted into camel leather which is made into hats, riding boots, shoes, bags, saddles and ladies fashion garments. Dried camel bones can be carved like ivory for jewelry or utensils. Camel droppings are also dried and used for fuel.

Tourism is one of the functions camels fulfill. Camel rides are now available all over Australia. There are over 40 camel farms operating in Australia, primarily to target the tourist trade, by providing camel rides and safari treks. On camel safaris, the

distinctive landforms of the Australian countryside, the wildlife and the serenity, allows the tourist a unique opportunity to enjoy and understand the environment.

## Chicken

Chickens are very important and also the most common domestic animals. One of the physical features that differentiate chickens from most other birds is that they have a comb and two wattles. The comb is a red appendage on the top of the head, and the wattles are the two appendages under the chin. These are secondary sexual characteristics and are more prominent in the male. The comb forms the basis for the Latin name or classification of chickens. In Latin, gallus means comb; the domestic chicken is called *Gallus domesticus*.

The domestic chicken, *Gallus domesticus*, is thought to have descended from one of several different fowls still found wild throughout Southeast Asia. Some sources suggest that most chickens may have descended from the red jungle fowl (*Gallus bankiva*). Although the exact date is unknown, evidence suggests that the chicken has been domesticated in Indo-Pakistan since 3250 B.C. Archaeological evidence from India indicates that the domestication of chickens may have occurred at approximately 2000-3000 B.C. Chicken remains were also found in Egyptian tombs dating back to 2000 B.C. Chickens are thought to have spread from India to other parts of Asia, Europe, and then the rest of the world. It is thought that the original interest in chickens was perhaps for cock-fighting. It was later that chickens were recognized as an important source of meat and eggs.

Chickens are a major source of meat the world over. The bird therefore forms a significant component of animal protein in the human diet. Chicken raised for their meat are heavily muscled and noted for rapid and efficient growth. Mature male birds can weigh between 2.6 and 6.4 kilograms; however, they are frequently slaughtered before they reach full maturity. Another food related use of the chicken is their eggs. Eggs from chickens are used for a great variety of dishes. Eggs can simply be cooked (boiled, fried, poached) and eaten. Eggs are thus an important source of protein in the human diet. The leghorn is the most popular of the egg laying breeds of chickens. For example, the leghorn is used as the basis for 75% of all layers stocks in Canada. The leghorn is thought to have originated from Italy. It was first brought to America in the 1840's. Layers (egg producing chickens) have been bred for maximum egg production rather than meat yield, and can produce up to 300 eggs per year. There are currently over 13 billion chickens in the world providing both meat and eggs to humans.

Chicken feathers have also been used for industrial purposes such as the production of pillows, mattresses, and other soft beddings and can also be hydrolyzed for the production of animal feed. In addition, chicken droppings are used in many places as organic fertilizers. In many places, especially in Africa, chickens are used for ritual sacrifices. For example voodoo shrines in Surinam and Africa use chickens in sacrifices.

In conclusion, domestic chickens (*Gallus domesticus*) were domesticated in Indo-Pakistan, and may have descended from several varieties of wild fowls. Chickens are a very important source of protein (meat and eggs) in the human diet. Chicken droppings are also used in many parts of the world to fertilizer crop fields.

## **Cows and Oxen**

### **History and Usefulness**

Cows and oxen, were among the first animals to be domesticated, have been with humans for at least a millennia and are now found in almost every part of the world.

There is no clear agreement as to where cattle were first domesticated but it is believed to have occurred 8500 to 9000 years ago. Some claim that cows were first domesticated in southeastern Europe about 8,500 years ago and are descended mainly from aurochs (*Bos primigenius*), which are now extinct. Others maintain that cattle were first domesticated in Libya in 9000 BC. Still others maintain that archaeologists believe cattle were first domesticated 8000 years ago in the area that is now Iraq which is watered by the Euphrates and Tigris. Another source argues that cattle were first domesticated in Europe and southern Asia. This argument appears to be more plausible because the wild ox-like animals (aurochs) from which modern-day cows and oxen are said to have descended from ones that roamed large areas in Asia, Europe, and North Africa. It is likely that cattle were domesticated in these three regions (Europe, Asia, and North Africa) independently at about the same period (8500-9000 years ago).

At least what is certain about the history of cows and oxen is that these animals were first domesticated in the Stone Age and that they descended from aurochs, which have been extinct since 1627. Wild cattle, the aurochs, were suitable for domestication for a number of reasons. First, the aurochs were herd animals, implying that they were not solitary animals. Secondly, the aurochs were also well-developed at birth, and did not form strong breeding pair bonds. These characteristics of the aurochs made it easier for domestication. The aurochs were huge beasts, about six feet tall at the shoulder

which suggest that taming and eventually domesticating them must have been a formidable task. Today there are over 1.3 billion cattle of various breeds in the world, and more than half of these are in South America, Europe, and countries of the former Soviet Union.

The usefulness of cows and oxen to human kind cannot be overemphasized. It is believed that the domestication of cattle played a pivotal role in the development of many civilizations around the world. The usefulness of cattle to humans can be divided into three main aspects: food, industrial materials, and work. The domestication of cattle provided a reliable source of meat and milk. Cattle currently remain as a major source of meat and dairy products (food). Prior to the domestication of animals, including cattle, our ancestors had to rely upon hunting (which was often not reliable) to meet their meat requirement.

Industrial materials obtained from cattle include leather (hides), glue, and gelatin. Cow dung is also used as organic manure for crop and pasture production. In some villages of Africa and India, cow dung is also used as a building material. The dung is mixed with other materials and used to plaster homes made of mud and is also used as fuel for cooking.

Cattle have also been used as draught animals and are mainly used for plowing and hauling foodstuff, manure and other bulky materials. They were also used to draw water from underground water sources (aquifers). The draught role of cattle played an important role in fostering intensive agriculture. It is also believed that the ancient Egyptians partly used oxen to cart the boulders that were used in the construction of the majestic pyramids. Notwithstanding even with the widespread mechanization of

agriculture, draught oxen are still used for plowing and hauling of produce and other materials in many developing countries in Asia (particularly, India), Africa, and parts of Latin America. In some parts of West Africa, cattle are still used as the price of a bride in marriages.

In conclusion, it is important to reiterate that cows and oxen were first domesticated about 8500-9000 year ago. The domestication of cattle may have occurred independently in Europe, North Africa, and Asia. Cows and oxen are very useful domestic animals since they provide a reliable source of meat and dairy products (food) in addition to other industrial materials such as leather, glue, and gelatin. Cow dung is also used to manure cropland and pastures. Cattle are also used as draught animals for plowing and hauling.

## **Elephants**

There are two main breeds of elephants, the Asian Elephant and the African Elephant. The Asian elephant is descended from the African elephant and has been in existence for thousands of years. The Asian Elephant is much smaller than the African elephant and the Asian's ears are said to be in the shape of India, while African elephant's ears are said to have the shape of Africa. Currently it is believed that there are 600,000 African elephants in the wild and 40,000 Asian elephants. These numbers are much lower than in the past. In fact, from 1979 to 1989 half of the African elephants in the world were killed by poachers.

The elephant has played a major role in the development of society. Approximately 4,000 years ago, humans were able to tame elephants and use them to better civilization. They have been used for a variety of uses, from use during war time



for the transport of soldiers and equipment, to the use of its ivory for sale. Elephants were used in military operations as recently as the conflict in Vietnam. Currently, in many parts of Southeast Asia, elephants are still being used in logging operations and in other remote areas in place of machinery. During World War II, all of the elephants that were under private ownership in India were used by the armed forces to defend against the possibility of a Japanese attack.

While elephants are endangered species and hunting is prohibited, both the African and Asian elephants are often poached for the valuable ivory that the males have in their tusks. The tusks are then sold for use in a variety of products, most notably jewelry. Poaching is a major reason for the rapid decline in wild elephant population.

In recent years, many elephants in the wild have been used as tourist attractions to help the economy of the native area. Both safari's and elephant rides are popular and again show the importance of the bond between the elephant and people.

There is a strong cultural connection between humans and elephants, especially in Asia. In India, elephants have a significant status in the Hindu faith. Elephants are said to be the carrier of Indra, the king of Gods. Elephants are also revered in Buddhism, and the elephant is the symbol of the Buddhist faith. Buddhists often have religious festivals to honor the elephant. The Thai people believe that elephants were originally white and had the ability to fly in the air. White elephants are the most revered animal in the Buddhist faith.

In the United States, most zoos have elephants and they are usually incorporated into traveling circus acts for entertainment purposes. The elephant also serves as the

symbol for the Republican Party. The Republican Party has used the symbol since it was first published in a political cartoon in Harper's Weekly in 1874.

## **Goats**

Goats were domesticated almost 10,000 years ago. This is earlier than any other animal inclusive of the dog. Goats were primarily raised for their meat. They were first thought to be domesticated by the nomadic people of the Middle East. Goats were often carried on ships as a source of fresh milk (e.g. Captain Cook and Christopher Columbus). Goats are usually found in the driest of climates. Until the 1920's, goat meat was not very popular in the US. It has become even more popular with a large influx of individuals from traditionally goat eating areas of the world.

### **Nutrition of Goats**

Goats are fed like cattle usually with dry feed like hay. These animals seem to be satisfied with just about anything edible. Grass hay or grass-alfalfa hay is a good choice for most goats, although requirements do vary depending on age, growth, stage of pregnancy, and environmental conditions. Hay should be fed in feeders constructed so that the goats can feed comfortably without getting their feet in the hay and causing excessive waste.

### **Reproduction of Goats**

Goats are seasonal breeders; that is they will only breed from late summer to early spring. Birth is referred to as kidding or freshening. The exception to only seasonable breeding is the Pygmy goat, who for some unknown reason, ignores the signal of the shortening of the days and breeds at almost any time of year. Goats are usually bred to kid once a year. While in some situations it may be desirable to have a ratio of three

kiddings in two years. Gestation lasts from 145 to 155 days or approximately five months. Kids are usually born as twins, but this depends on breed, age, and condition of doe. Individual does may also successfully carry triplets, quadruplets, and even quintuplets; but sometimes only single kids. Kids are weaned at 8-12 weeks.

### **Utility of Goats**

1. Meat: Primarily this animal is reared for its meat but in some societies the goat is also used for sacrifice to please the gods.
2. Fibre: This is of a lesser value than in sheep.
3. Milk: this is more of a demand in certain countries like India where it is consumed and is in great demand.

### **Horse, Donkey, Mule**

Ancient man survived by hunting and agriculture and this was accomplished with only utilizing the hands. As evolution of man progressed, he began to domesticate and use certain animals for his own benefit. The horse, donkey, and mule have been useful to man for a long time. The ancient wild horses were captured and domesticated by the Mongols and about this same time horses were also domesticated in parts of Eastern Europe.

The mule and the hinny have been cross-bred by man mainly for transportation and for agricultural purposes such as plowing. The mule is a cross breed between a donkey stallion (called a jack) and a horse mare (female). Hinnies are just the opposite - a stallion horse crossed with a donkey jennet (female).

Until the 20th century, horses were heavily used by the cavalry in warfare. Horses were also primarily used for transportation in medieval times and even up to the early

20th century. Horses were used to ride, to pull a chariot, carriage, horse-drawn boat, stagecoach, and even trams. Today, horse riding, horse chariots and tongas (open horse-carriages) are used as entertainment and sport, rather than a serious mode of transportation.

To this day, the Mongols and even the cow-herders in Southern parts of the USA use horses as a trusted and speedy means of transportation to ride in the plains and rocky areas.

Horse meat and even horse tongue is used as food and considered a delicacy in parts of Europe. Horse hair was used for furniture padding and along with horse shoes are considered a lucky charm and preserved in certain parts of the world.

Entertainment: In today's modern world, horses are primarily used for recreational purposes such as horseback riding, and horse racing. The Happy Valley Race Turf, in the center of Hong Kong, is a classic example of a world famous horse race turf where nearly a 100,000 people participate in betting each day. Horse racing and horse breeding are often pursued as a profession.

Horses are also used in games like polo, a game like hockey where players ride horses and even horseback riding of bronco horses in rodeos, a sport that originated in Spain and is now participated in many parts of the western world.

Recent studies and experiments have shown that horses are also valuable in psychological counseling and therapy for children who have undergone trauma or who suffer from autism.

## **Llama and Alpaca**

### **Introduction**

Both the camels and the alpacas are members of the camel family and are generally referred to as camelids. The difference between camels and camelids is a mere technicality. The camels, according to the old world classification, are of only two types - one humped dromedary of the arabian deserts and the two humped Bactrian camel of the Mongolian deserts. To make the classification to fit the llamas and alpacas, the term camelid was used by the new world schema of classification. The llama, alpaca, and guanaco are all camelids.

### **Morphology and Physiology of Camelids**

Llamas and alpacas have always been domesticated and are not wild. The alpaca is smaller than the llama.

The llamas and alpacas are not true ruminants - that is they have only 3 compartments in the stomach while the ruminants have 4 and there are other minor differences too, but the feed utilized by these animals is the same as that consumed by ruminants. These like cattle cannot be fed with oats as the awns on oats can cause them to be caught in the stomach and cause ulceration. Unlike other ruminants, camelids can conserve feed better than other ruminants; therefore, to sustain a camelid far less is needed than it would require for sheep or other ruminants.

Camelids are two toed and they walk with a leathery pad on their feet which means that they tread very lightly and therefore are very agile in rough areas.

## **LLAMA**

### **Origin and history**

These animals originated in South America. The Spanish mummies at El Yaral settlement in Peru have been shown to have used the fiber from llama. Peru and Chile are the major producers of the wool from the alpaca and llama, about 4,000 tons of it is produced per year while the wool from sheep is 18 million tons. Llamas were domesticated by the Incas in the higher Andes Mountains, near lake Titicaca around 4000BC. The Incas used llamas in many ways, as a beast of burden, in religious ceremonies and for other things like their fiber, etc. They were the property of the government and were very important for the Incas.

**Life span** -15-29 years.

**Adult weight** - 250-450 lbs

### **Reproduction in Llamas**

This is different than most mammals since with the Llamas ovulation takes place after mating and not before so there is nothing called a heat period for a female llama which essentially means that they are receptive throughout the year, therefore, breeding can be well planned. The gestation period is 11-11.5 months.

Uses

**1. Fibre Production** - Lama fibre is variable. Not all llamas can produce quality fiber so the breeder must be aware of this.

**2. Packing** - They can carry heavy packages and are very good trail and trek animals.

These animals are well behaved and they are browsers and not grazers so they eat on the way and since they are two toed they do not disturb the trail. The disadvantage is that llamas cannot carry an adult.

**3. Cart pulling** – Llamas can be trained to pull carts.

**4. Sheep guarding** - These animals are instinctively more alert than sheep and watch for dogs, puma and other canids.

**5. Meat** - Llamas are used for meat mainly in South America.

## **ALPACA**

### **History and origin**

Like the Llama, the Alpaca also originated in the Andes Mountains, and were also first domesticated by the Incas and then were later discovered by the Spanish. Ninety eight percent of the world's alpaca is in Peru, Bolivia and Chile.

There are different types of Alpaca-(1)The Huacaya is the teddy bear alpaca and the fleece is crimped and comes with 22 different colors. (2)The Suri- the alpaca with dreadlocks, non crimped lustrous coat. These are more expensive.

**Life Span** - 15-25 yrs.

**Weight** -100 -115 lbs

**Gestation Period** - Approximately 335 days.

**Reproduction** - Similar to the llama.

### **Uses**

Broadly the uses of alpaca are the same as that of the llamas. As mentioned the coat of the alpaca is slightly more expensive.