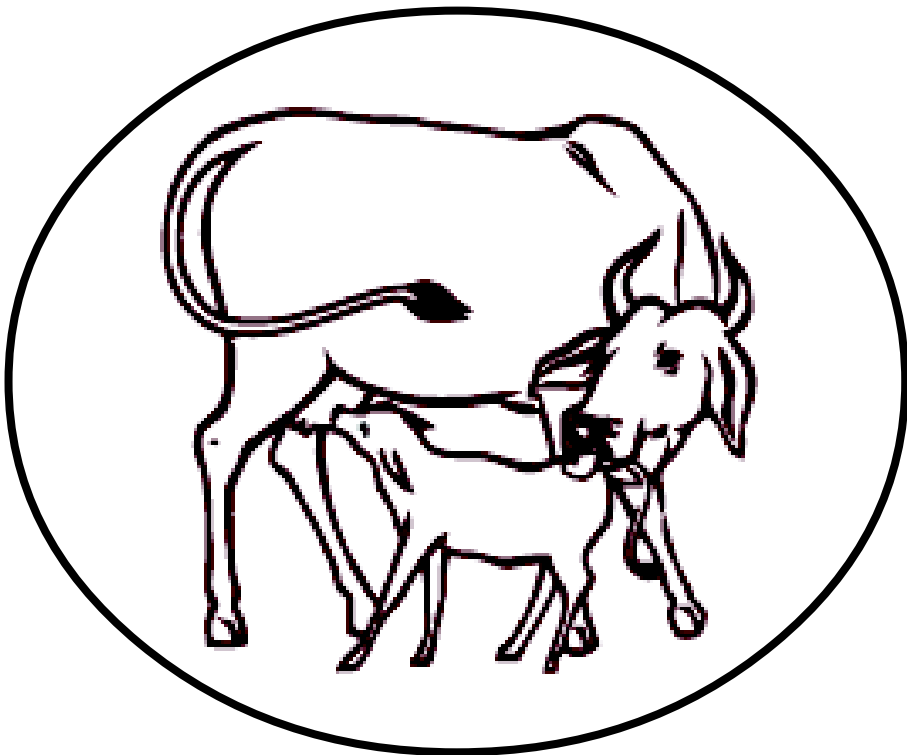


COW AND GOSHAALAA

Information on Cow, Cow progeny, Cow Sanctuaries,
Goshaalaa, and Economics of Cow Breeding

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MUMBAI SARVODAYA MANDAL

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Contents

Foreward

1.	COW AS KAAMDHEHU	4
2.	COW – PAST AND PRESENT	9
3.	HEALTH BENEFITS OF COW MILK AND RELATED PRODUCTS	17
4.	USE OF BY-PRODUCTS OF LIVESTOCK	19
5.	PROTECTION OF COW	21
6.	WHAT CAN THE GOVERNMENT DO TO STOP COW SLAUGHTER?	24
7.	GAU VIGYAN (science of cow breeding): REJUVINATION OF ANCIENT INDIAN KNOWLEDGE	25
8.	GODHAM (Cow Sanctuaries) – A FOUNT OF ALL-ROUND DEVELOPMENT	28
9.	UNDERSTAND THE COW	31
10.	WHAT WE CAN DO	35
11.	SELF-SUPPORTING GOSHAALAA	39
12.	DECLARE COW AS A NATIONAL ANIMAL	41
13.	OTHER BENEFITS FROM COW BREEDING	42
14.	AVERAGE INCOME AND EXPENDITURE ON COWS	44
15.	PROJECT ‘GIIST’	46
16.	LIST OF GOSHAALAS	47

Foreword

We have traditionally been a country dependent on agriculture. Seventy per cent of our population lives in the villages and their principal means of livelihood have been agriculture and cattle breeding. It was not so long ago when each family had a small plot of land and possessed a lactating cow and a couple of healthy strong bullocks.

There used to be a goshaalaa in each village to take care of old, ill and handicapped cattle. Maintaining these goshaalaas was also not a problem due to the social awareness and generosity of the villagers. People used to give donations to the goshaalaas on happy and sad occasions in the family. There used to be grazing land around each village which provided sufficient green fodder. This system sustained for many centuries and was an integral and important part of the Indian culture. Hence, for centuries agriculture and cattle rearing remained a very natural source of livelihood.

However, in last few years, drastic life style changes resulted in continuous reduction in resources for cattle breeding. People have stopped rearing cattle as there is no arrangement for taking care of abandoned cattle. The costs of sheds, food, water, manpower, residential accommodation for manpower, their wages, and electricity expenses are making the maintenance of cow shelters (goshaalaa) unviable and unfeasible.

Awareness campaigns on the need to construct cow shelters in every village should be organized by the local population and efforts should be made to make the cow shelters financially self-sufficient. Having cow shelters which are clean, aesthetically appealing, with all the necessary facilities would bring glory to the villages. These goshaalaas should provide sufficient fodder,

clean water, medical aid, trees for shadows and protection against rain. Also, to make it financially self-sufficient, dung and cow urine should be converted to organic fertilizers, insecticides and pesticides. Medicines and cosmetics such as soaps and shampoos can be manufactured from panchgavya.

In addition, such goshaalaas need sufficient land to grow fodder. Unfortunately, today such available land is being used to grow cash crops or the land is used for making sheds or sold off for profits. The consequences of such unethical practices have to be borne by these mute animals. The trustees of goshaalaas should give priority to the health and needs of the cattle. We are committing a grave sin and betraying the trust of cattle by turning a blind eye to the needs of these animals after having taken responsibility of looking after them. It is necessary for goshaalaa trustees to employ skilled personnel and pay them proper wages. Instead of thinking of profits, they should just think about making these goshaalaas self-sufficient. Why should they be dependent on government help? Why can't they think of ways of reducing expenses and seek donations in kind instead of cash?

The objective of this book is to act as an inspiration to individuals and society at large to contribute towards self-sufficient cow shelters by producing dairy products, medicines, cosmetics and fertilizers.

A list of literature and websites used as reference to write this article is given on the last page of this book for those who wish to pursue in-depth study of the subject.

TRK Somaiya

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1. COW AS KAAMDHEHU

We have been using the English word cow for the breed of domestic animal commonly known as 'Gaay' in India and 'Gou' in Sanskrit language. There is a difference between the western cow and Indian Gaay from the genetic point of view. They appear to look the same but if one observes these two animals closely, they look different and their biological make up is fundamentally different. It is necessary to understand this difference.

The Indian cow has a hump which is absent in the western cow. The Asian and African breeds with a hump are classified as *bosindicus*, while the European breed without the hump is classified as *bostoras*. The eastern cow is different from the western cow in many other ways; such as the sound of mooing (sound that cow makes), their internal organs, shape of ears, facial features and the like. The western cow's intestines are shorter and therefore require more feed in shorter time. Their milk is more difficult to digest and has less nutrition. The Indian cow having a longer intestine require less food and give better quality of milk.

Our scriptures (shastras) say that animals with a hump have a solar *naadi*, the western species do not have this. Because of the solar naadi, the Indian cow has the ability to absorb beneficial solar rays, the benefits of which are passed on to cow milk, urine, and cow dung.

Hence it is nothing but ignorance to think that Indian cow and western cow are the same. Just because both give milk and can be cross bred does not mean that they belong to the same biological species.

The jersey cow comes from Ireland and the HF-holstein comes from Holland. it is unnatural and selfish to bring these western

species into our country. Even the summers of western countries are colder than our winters, hence the chances of these western cows falling ill in our environment are quite high when they are brought to India. Needless to mention that our cows are acclimatized to the hot weather of our country.

In India, the cow is considered to be a Kaamdhenu (Kamdhenu is a divine bovine-goddess) revered by Hindus as the mother of all cows.

She is a miraculous 'cow of plenty' who provides her owner whatever he desires and is often portrayed as the mother of other cattle.) The utility and sense of gratitude are inherent in the word Kaamdhenu itself. Kaamdhenu means the one who fulfils all the needs of human beings. In other words, it has the capacity of fulfilling the needs of humans in a sensitive and healthy way, protecting them from undesirable elements. Kaamdhenu implies prosperity, health, spirituality, energy, beauty, and goddess of environment. This description is not of an imaginary Kaamdhenu in heaven, but that of an Indian cow. Indian cows can still be a Kaamdhenu if the cows and its progeny are protected and looked upon and cared for in the proper perspective. Our cows have the ability to provide enough to every family in India's seven lakh villages and make the country self-sufficient.

Cattle is the real wealth of our agriculture dominated country. The prosperity of this country does not lie in its industries and abattoirs, it does in agriculture based on her livestock. Those who theorize that stopping slaughter of cattle will cause financial losses to the country do not understand that preventing the slaughter of cattle wealth, on the contrary, will benefit the country ten times over. Our cattle wealth can pay off the loans of IMF and the World Bank.

Rigveda says that the cow is our glory and divinity. Once upon a time, this maxim was known to every village of this country. Our prosperity, glory, health is ascribed to cattle rearing. Cattle based

agriculture was a science which our tribes, cattle owners, charans, and farmers were well versed with. It has now become important to understand, from an economic point of view, that we can get far more by rearing cattle than what we can get by slaughtering them.

One survey indicates that 65 per cent of agriculture is still based on cattle which saves 2.40 crore tons of diesel each year estimated to cost Rs. 40,000 crores. Another survey shows that the transport of goods by cattle is five times the load the railway system carries and passenger transport is four times the railway traffic of the whole country.

We have forgotten the motto that the wealth resides in the cow and remedies for health, in cow urine. The imbalances in our eco-system can be reversed by the use of urine and dung of cow and her progeny. If we accept that the cow and her progeny play an equally important part in supporting the eco-system as wealth, health, spirituality, energy, beauty, then we can understand the importance of cow rearing, cow protection, and cattle breeding. Unfortunately, the British understood the economics before we did and they shook the foundation pillars of the prosperity of this country. Romesh Chunder Dutt, in his book, *The Economic History of India*, writes that between the years 1857 and 1900, leather worth a total of Rs. 16,67,02,42,840 was exported to Europe and America. In those days a cow cost Rs. 2/- and a bullock cost about Rs 3.5 to 4. Calculate the number of cattle that must have been slaughtered to produce such large quantities of leather. It's still in not too late; what is left can prove to be our salvation or deliverance, provided we wake up at least now.

The British rule in India created two types of economic systems in our country. One Indian (desi) and the other foreign. The former is protective and sustaining the latter is exploitative. Industrialized developed countries have 10 to 12 acres of grazing land per cattle, while in our agriculture dominated India, the

proportions are reversed and we have just one acre grazing land for 10 to 12 cattle. Some villages do not have grazing land at all.

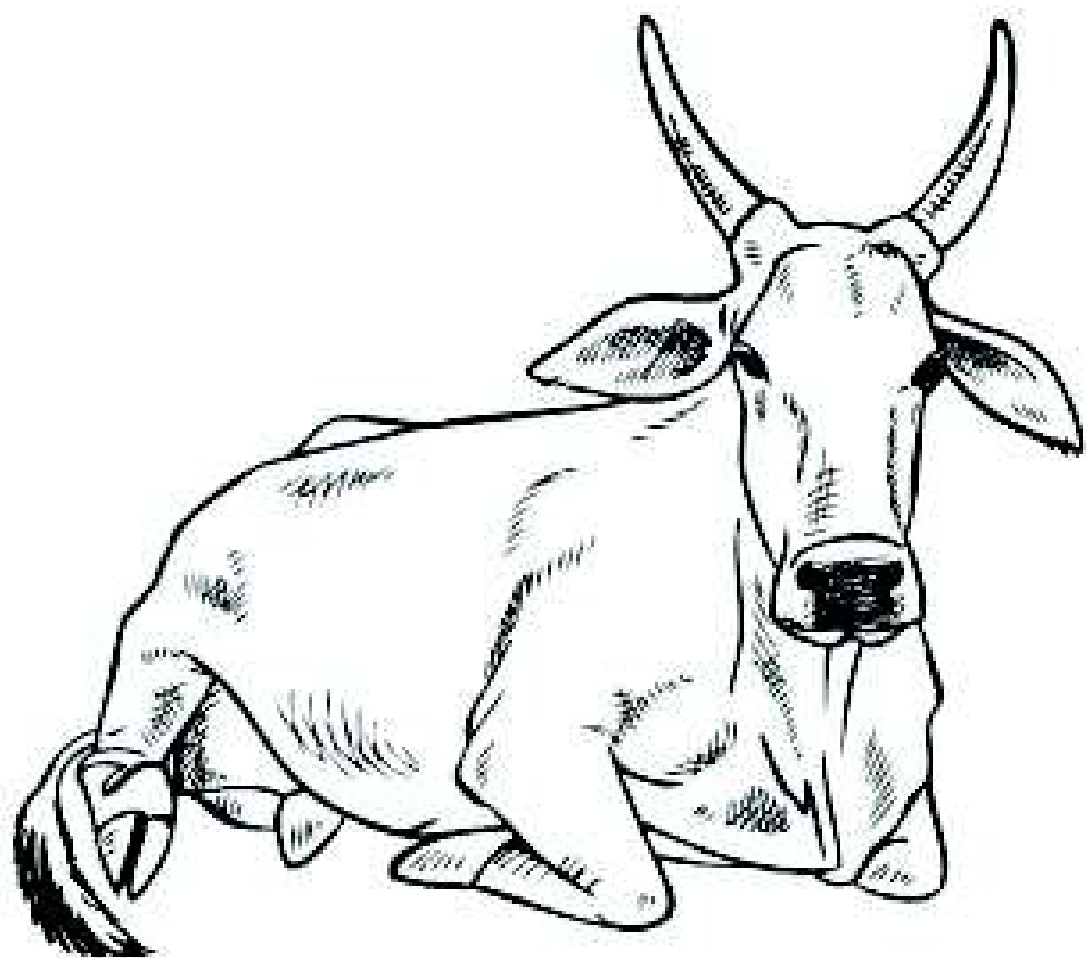
We have slaughtered cattle and exported their meat and leather, and set up industries to manufacture drugs from their blood and bones. In a nurturing economy we could, in fact, propagate many industries by keeping our cattle wealth alive. The global herbal products market is estimated to be to the tune of Rs.50 thousand crores, in which our share is only 4 per cent. Fairness cream alone has a market of Rs.1200 crore. If we protect, breed and rear our cattle wealth, we could produce milk and milk related products; manufacture drugs for incurable diseases made from cattle urine; fuel, organic fertilizers, organic pesticides, soaps and other cosmetics from cow dung. We could set up units in villages which would provide energy and help economic growth.

Research indicates that more than 50 per cent of food including grains, vegetables and fruits available in Indian markets contain a very high content of pesticides. Consuming such food items has increased health related problems. Products made from cow milk and urine can help cure these diseases. Around three years ago, a female Jain monk had used some eye drops which turned her almost blind. When the doctors gave up on her eye problem and said that the probability of her regaining her vision was almost nil, she used cow *ghee* (made in the traditional method as *anjan* or *kohl*) and got her vision back. Research has proved that cow *ghee* is useful for diseases such as blindness (due to illness) infertility and the like. It would not be an exaggeration to say that the cow is a mobile pharmacy. That is why it is said that prosperity resides in the cow and *dhanvantari* (physician of gods) in cow urine.

The world is worried about the melting of arctic glaciers due to global warming and the hole in the ozone layer. Had the world lived according to the principles of cow-based economy, we would not be facing the kind of disaster we are now confronted with.

The cow and its progeny can provide infinite amounts of energy. There would be no need to purchase atomic reactors from America using our precious foreign exchange. We can produce electrical energy and fuel from cow dung which can be used as fuel for our vehicles as well as for cooking purpose.

* * *



2. COW – PAST AND PRESENT

Quoting a shloka from Rigveda, Vinoba Bhave said that the Vedas give us our first lesson on the greatness of the cow. The meaning of the Shloka is ‘you (cow) are great, you strengthen our weak bodies, your milk is an elixir and beneficial; we consider you our mother and bow down to you.’ He enunciated the benefits of cow milk and related products and exhorted that our welfare lies in service of the cow. He said we should remember there is no benefit without sewa and no sewa without benefit. The human civilization began with the introduction of cows in our lives.

Of all the animals, cow is the only animal the human is emotionally closest to and also nearest to human existence. In ancient India, the quantity of livestock was a measure of an individual’s wealth and status. Cattle breeder or cowherd was considered the first citizen in a village. Every meal started with first setting aside an offering to the cow called *gograss*. Grazing land used to be close to the village. Our culture and tradition taught us the importance of the cow and hence she was accorded the status of a mother, not out of emotions or sentiments, but more for her usefulness and out of a sense of gratitude.

A lot has been written about the cow from the Vedic age to the present. It has also been put into practice, but that was done due to religious faith. However, today everything is done and judged with an eye on profit and loss and the cow is no exception to this approach. Even with this criterion, the cow can still pass this test. It is the eternal truth, if one is willing to accept the reality, that the cow is not a ‘poor cow’ to be looked at with pity, but is a most powerful living being and a savior.

India’s golden years for the cattle were from the rise of Bharateeya culture up to the time when we became slaves to the British. Colonial British rule created havoc by their devious policies and

cleverness forcing the cow out from the households on to the streets and from the streets to the slaughter houses. We have now completely forgotten that the economic system based on land, water resources, and forests and protection of these three is possible only with a life style based on agriculture and cattle. Tractors and fertilizers have never been the way to grow crops in this agro-centric country.

Even at the time of independence there were lakhs of cows and bullocks in Saurashtra, Gujarat. People had plenty of milk to drink. But due to the insidious policies of our government, we started losing our stock of cattle. The destruction that the British colonial government started was completed by our government post-independence. Literature on cows was wiped out hence there were no sources of knowledge left from which people could gain information on the subject. Whatever livestock was available was with the poor rabaris and bharvads (tribes in Gujarat) and some cattle breeders called maaldharis. (maaldhaaris literally means the one who has a lot of wealth)

It is a mistaken belief and ignorance to think that cow protection is possible through religion and financial help. The cattle shelters are concerned more with taking care of orphaned cattle rather than concentrating on improving the cow breeds. We are climbing up the wrong tree with this approach. The correct approach and also a necessity now is to create awareness about the science behind cow protection and protect land, water sources and forests. In fact, it is the prime duty of all humanity.

Only when the farmer and cattle rearing community learns to add value to their produce, would they be able to face any kind of competition from technological progress.

There are seven principal breeds in India. Cows can be classified as those that produce good quantity of milk and the other stud bearing cows. However, both these types are useful and both give dung and urine.

- Gir [Gujarat]
- Shahival [Punjab]
- Red Sindhi [Rajasthan]
- Rathi [Rajasthan]
- Tharparkar [Rajasthan]
- Kankrej [Gujarat]
- Ongol [Andra Pradesh]

Andhra, Rajasthan, Haryana, Karnataka, Kankrej, Gir and Madhya Pradesh are well known for their excellent and strong breed of bullocks. Lalsindhi, Rathi, Sahiwal, and Gir breeds are well known for producing abundant milk.

To know and study more about how the dairy industry and foreign breed cows have destroyed the cattle rearing culture and other cattle related issues in our country refer to the book 'Gomimansa' published by Akhil Bharat Krishi Gosewa Sangh. The author of this book Venishankar Vaasu was the President of this Sangh.

Human development and human well-being are dependent on the well-being of the cow. Worshipping the cow is not blind superstition; there is a Shastra, a science behind it. The foundation is based on the utility of the cow. The person involved in the care and service of cows should keep this principle in mind: there is no profit without service and no service without profit. That is why ancient Vedas have praised the cow and emphasized its importance and cautioned to keep the resting place of the cow neat and clean. The Vedas say that devta (gods) reside in the cow because it is equivalent to our mother. There is more benefit in serving the cow than meditating on mountain tops or sitting near river banks. Those serving the cow acquire great strength.

Our ancestors had very successfully linked our life with gosewa, which had made our life fruitful, simple and full of affection. Cow was a member of our family and an important part of life. Even now the cow and bullock are an integral part of village culture

and village economy. It keeps us close to nature. Genuine mind and body health is not possible without that. Those who rear cow only for her milk act in ignorance.

Cow protection is Hindu society's philosophy and spirituality. In that respect we are one step ahead of western culture. In India, cow is a member of the family. But today this tradition is superficially understood and has remained only in books. It is a mockery that we worship the cow but do not take care of her. The west takes care of their cattle in a far better manner. Now a days we neglect and disrespect our family members then the question of caring for the cows is a far cry. Once the cow stops giving milk or falls ill, we abandon her on the road. This is not our tradition. We used to drink cow milk, plough the land with bullocks, make excellent fertilizer from their dung and urine, and even today we also make use of their skin and bones after they die a natural death. We did not kill them or send them to slaughter houses. The time has come to revive the old tradition and culture with a scientific approach. It is time we work towards setting up dairies and industries based on cow and her off springs; our welfare lies therein.

Gandhiji, from time to time, between 1917 and 1947, had expressed his thoughts on the issue of cow in writing as well as in his speeches in the following words:

- Goraksha (cow protection) is the first duty of all Hindus.
- The efforts to save the cow lead to communal disturbances and as a result more cows die than are saved.
- The issue of cow can be resolved by only one method and that is penance, by which he meant devoting our life to serve the cow. Will Hindus be able to do this kind of sewa (service)?
- Those who want to stop others from committing a sin, should himself become free from sinning. Hindus are very cruel towards the cow and the state of the cows today

proves that. When I see old malnourished buffaloes carrying heavy loads, my heart cries out. The bullock cart owners cruelly and painfully twist the buffalo's tail to make it run. Their shoulders are injured, isn't this cruelty? They do not feel an ounce of shame to take out the last drop of blood from the bullock. When people who mistreat the cow, yet drink her milk, talk about cow protection, my heart cries out.

- The state of most of our cow shelters are pitiable and far from being a boon for the cow. We take satisfaction that we are using these shelters as a safe house for dying cows.
- Cow protection is one of my pet issues. I think it is the most important side of Hindu dharma.
- We blame the Muslims for cow slaughter but do not raise our voice against the British who stay in our country and consume beef. Why don't we stop the negligence and cruelty to these cows being carried out by our people? What we need is thoughts and ideas and not agitations for protection of the cows.
- Cow is an Indian problem, and not a Hindu or Muslim problem.
- Every state has a goshaalaa but their conditions are appalling. The problem is more managerial than financial. If goshaalaas work with dedication and in a transparent manner there is no shortage of donors.
- Cow shelters should be located outside the cities in open grounds. They should have, not only ill and old cows, but also those that are lactating so that the milk can be sold to generate income. People think that I am against technology and mechanization but I have never objected to useful and necessary instruments. I would favour the use of necessary technology in dairy business and would not object to employing a white man if a qualified Indian

is not available. If our cow shelters can be converted to milk centres and run them profitably, people can get milk, butter, and ghee at reasonable rates.

- Years ago, I had written in Hind Swarajya that our cow protection tradition and culture is becoming one of cow slaughter. After coming back to India in 1915, my views have not changed but have become firmer.
- Those who want to protect the cow should not think that we have to save the cow from Muslims and Christians, but have to save her from our own people.
- India's poverty is intricately linked with the sorry state of the cows. The urban population may not be aware of the poverty of India.
- Cow slaughter and murder are two sides of the same coin, and the solution for both is the same; non-violence and winning over the opponent with love. The test of love is penance and penance means forbearance. Gorakshaa implies protection of all weak and helpless.
- It is not proper to take the cow to the slaughter house and then call the person in the abattoir a slaughterer.
- Cow is to be protected not only from the slaughter house, but also from ill-treatment and negligence of living ones.
- Ever since cow protection has been given a religious colour and made it a religious duty, the condition of the cows has worsened. The aim of the Akhil Bharateeya Goraksha Sabha is to save the cow from the slaughter house and cruelty. There should be code of conduct for the cow shelters where awareness should be created among the cow breeders to provide shelter to old and ill cattle, arrange to supply milk to dairies at a reasonable rate, set up units to make leather goods from skin of dead cows to discourage people from export aged cows. Appoint cowherds and ethical manpower for goshaalaa work,

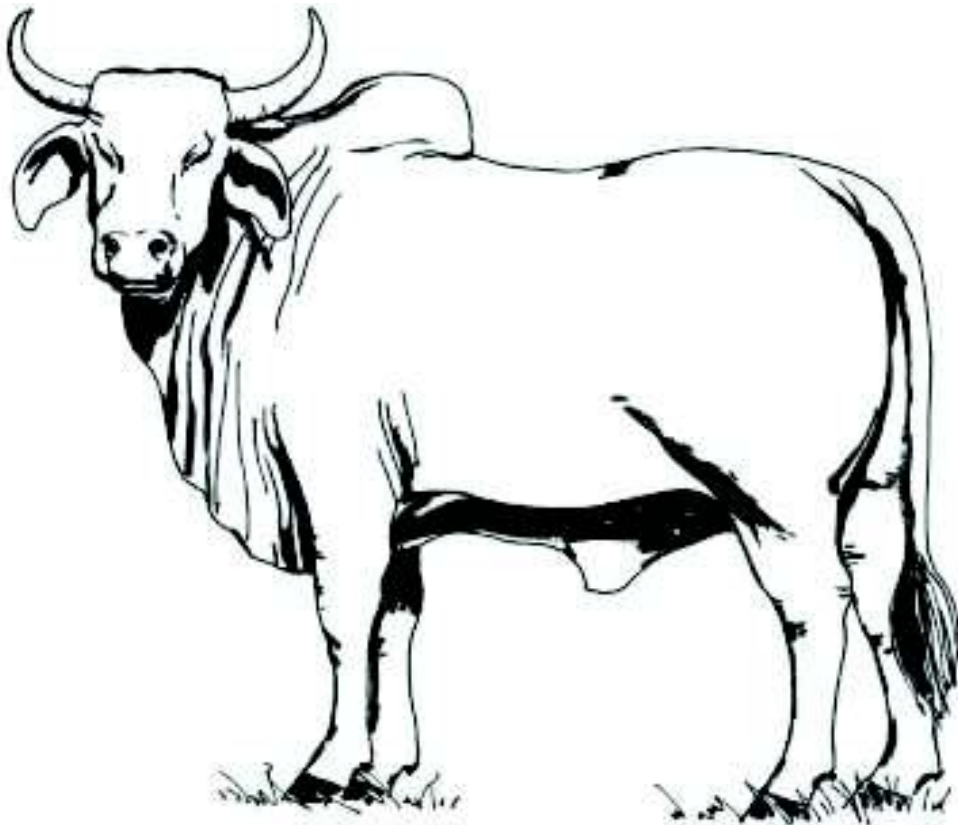
provide adequate training, wages and residential quarters, to locate disappearing grazing land and develop them, to treat ill cows and maintain cleanliness and collect funds.

- Dairy and leather works are commercial activities, but dharma (inadequately translated as religion) which keeps away from commercial considerations and does not solve economic issues make the people reject and turn their backs on dharma. Religious minded Hindus donate a lot for the cows, but that has not reduced the cruelty to the animals nor has it stopped their slaughter. Solutions have to be found for this problem. It is alright to call cow protection our duty but we must also keep in mind that dharma is intricately linked to economics, society, and politics.
- Goshaalaa is a science, so the management of the cow shelter should not be left to those who are not familiar with this science. There should be equipment available in the goshaalaa to test the quality of the milk, efforts should be made to increase the quantity of cow milk and such goshaalaa should not be dependent on any charity. The management of these goshaalaas should employ trained manpower at appropriate wages and strive for development. There should be adequate fodder, amenities, cleanliness, and medical attention. If these minimum facilities are not available, we should feel ashamed even if one cow or bullock is taken to the slaughter house, or exported or dies in the goshaalaa due to carelessness.
- Training should be given for management of goshaalaas. It should be a subject of study, and their managers should receive adequate salaries
- Cow protection is not only dharma, but in our country, it is

a matter of survival as agriculture is not possible without cows and bullocks and humans cannot survive without agriculture. Besides, there would be no nutritious milk if there are no cows left and life would be difficult without cow milk.

- The health of the cattle depends on intelligent rearing and breeding process, and it is not difficult to master that technique. Organizations associated with cow protection should fulfill this duty and guide others. There should be continuous research in this field and aversion to leather works should be removed among the people.

* * *



3. HEALTH BENEFITS OF COW MILK AND RELATED PRODUCTS

Cow milk is considered the elixir on the earth. Cow milk and curd provides vital nutrition equivalent to a mother's milk. When we refer to milk in this write-up, we are talking about milk from local Indian cows; jersey, holstein and other foreign bred cows are a different story. Zoology differentiates between Indian cow and other cow species and the nutritional qualities of milk from the two species are also very different. Because people in old times were aware of this science, they did not trade in milk and ghee. However, invasions from outside left the Indian culture totally in tatters.

Barring a few exceptions, world over, milk means cow milk. Cow is not a wild animal, nor is it a meat consuming animal. Cow's diet is mostly agriculture based, and since agriculture is mainly a human created activity, there is a special bond between the cow and man, it is a relationship of mutual need.

The majority of the human population in the world is non-vegetarian; they too consume milk in good quantity. Milk is a necessary part of human's diet, but it should be consumed judiciously. Cow milk is the next best food for infants after mother's milk. The beneficial qualities of cow milk are described in Charak Samhita. Mother's milk has 1.2 per cent protein while cow milk has 3.3 per cent. Mother's milk has 3.4 per cent fat, while cow milk has 4.1 per cent. While mother's milk has 7 per cent sugar, cow milk has 5 per cent. Mother's milk has 65 per cent calories, cow milk has 67 per cent. Cow milk also has substantial quantities of minerals and vitamins.

Cow milk is consumed as food and consumption of milk should be based on the constitution of the person and his or her digestion capacity. Actually, milk is not to be taken as a 'liquid' to drink like water, but has to be 'eaten'. The more the saliva gets mixed with

milk while drinking, the easier it is for digestion. If it just gulped down, the body will require to produce more lactic acid to digest it. This leads to ill effects on the mucous lining of the intestines. After consuming powder milk, the water used in the milk is absorbed in the blood stream, and the powder forms flakes on the insides of the intestines causing diarrhea to remove the coating. Consumption of dairy milk also requires caution. The pasteurized packed milk from dairies is not fresh. It takes two to three days to reach the consumer.

Indian Institute of Medical Science research says that cow milk has special nutrients which are not available in buffalo milk. Cow milk has balanced vitamins; contains an element called strontium which is said to resist atomic rays. Cow milk has a sweetish taste. While cow milk contains high density lipoprotein which is beneficial for brain cells and said to improve memory, buffalo milk causes cough and makes a person lazy.

According to modern science, cow milk is beneficial in the following reasons:

- Cow milk helps blood circulation
- Cow milk has laxative properties thus clears the bowels and fat does not accumulate in the arteries
- Amino acids and proteins in cow milk are easy to digest and help kidney functions
- Cow milk increases immunity due to vitamin B-2 and B-3 it contains
- Cow milk does not cause acidity as it is considered 'cold'
- Provides protection against breast and skin cancer, diabetes, and cholesterol
- Cow milk is naturally anti-oxidant
- Cow milk is considered best alternative for mother's milk
- Due to its low-fat content, it does not cause obesity

4. USE OF BY-PRODUCTS OF LIVESTOCK

Besides the milk we get from the cow, even urine and cow dung have many uses which the goshaalaas discard. Instead, they should make use of it to make fertilizers, gobar gas (fuel) and remedies.

Cow dung supplies organic fertilizer. Crops grown with organic fertilizers are not only good for our health but also make the soil more fertile. Burning of cow dung is believed to destroy plague bacteria. Cow urine and dung are used for crop protection, and as fuel. Cow produces 750 liters of urine per year. The dried urine contains nitrogen, potash, phosphoric acid, and other organic elements.

Cow urine has many medicinal qualities; it is used as a pesticide as it has elements which destroy poisonous elements. The father of Ayurveda, Charak, has written '*mutraashtak*' – a thesis on use of cow urine. Fresh cow urine is odourless, slightly salty, bitter, pungent, sweetish, and sour – a mixture of five tastes. A chemical reaction starts after fifteen minutes of passing of urine, giving it the typical unpleasant smell. Boiling one litre of cow urine and condensing its vapour to makes arrack (essence) produces 50 gms of solid material.

According to 'Sushruta Samhita', cow urine has medicinal properties which neutralizes kapha and vata, effective in treatment of eye problems, leprosy, diarrhea, white skin spots, constipation, worms, anemia, heart problems, high blood pressure, cancer and several other illnesses. (The central concept of Ayurvedic medicine is that health exists when there is a balance between the three fundamental bodily bio-elements called doshas called Vata, Pitta and Kapha). Its arrack is considered beneficial for 108 illnesses. Taking this arrack after mixing it with honey or cow milk is beneficial for good health. Cow urine essence

or arrack can be used for massaging for three months. One has to ensure that cow urine is from a healthy cow.

There is also a false reasoning that a waste product thrown out of the body cannot possibly be beneficial for growing crops. In some parts of the world, excreta, urine and other garbage are processed to produce fuel, energy and fertilizers. This process removes the odour and is cheaply available. The processing units can be small or large depending on the local circumstances. Bio-gas, in addition to producing fuel, also gives slurry as a by-product which is an excellent fertilizer.

In the year 1975-76, per hectare 51.6 kgs of chemical fertilizers were being used which increased to 170 kgs per hectare in the year 2001-2002. This trend of increasing use of chemicals continues. What is the result? Local Indian species of wheat grown on organic fertilizers require 12 rounds of watering while crop using chemical fertilizers require 30 to 35 rounds of watering. This also causes salinization of soil reducing the fertility of the land, increasing costs and need for more labour. This has in turn, results in shortage of water.

Oil cake and chaff of groundnut and compost fertilizers are used by the farmers, but if it is systematically and scientifically used along with cow dung and cow urine, it would be more beneficial. Each cow goshaala can install its own bio-gas plant and learn to produce fertilizers and medicines.

If farming and cow rearing can be properly combined, the results would be amazing. If we improve the quality of progeny and milk producing cows and utilize them properly, the farmer can grow 3 to 4 crops per year. It is necessary to encourage this kind of cow-based agriculture as a practical solution for our unemployment and poverty issues.

* * *

5. PROTECTION OF COW

Just worshipping the cow or talking about its sacredness or sloganeering about saving the cow is not going to help. No amount of shouting about the greatness of cow by milk lovers or counter arguments by those who oppose the consumption of milk is going to lead anywhere. Protecting our forests is not possible without protecting the cow. The ancient Vedas not only banned the slaughter of cows, but protected them by giving her the status of a mother and referred to them as Kaamdhenu, one who fulfills all our desires. Care of cows is linked to the survival and existence of Indian culture and any solution to this problem has to be tackled from this angle.

Circumstances today are causing the destruction of our cattle population due to their slaughter and other reasons. Many forces are responsible for this situation. There were 300 abattoirs in India before independence which in 50 years after that increased to 40,000. Before independence we had a cattle population of 70 crores which has now reduced to only two crores but fortunately, it is not too late, and we have started to restore the highest position to the cow and its relation with our diet, nutrition, health, medical treatment, agriculture, energy, and environment. Not only in our country, the western countries are also waking up to the utility of cow-based agriculture and medical treatment.

In Mahabharat, a caretaker of nine lakh cows was called Nand. Krishna Gopal means a protector of cows. The residence of lord Krishna, considered even more sacred than heaven, is called golok (world of cow). Lord Krishna is always seen with a cow and Lord Shiva with a bullock (nandi). Lord Rama's ancestor, Maharaj Dilip, used to worship a cow called Nandini. Lord Mahavir had said that human survival is not possible without cow protection. The Muslim

saint Raskhan said that if he were to be reborn, he would choose to be born among the cows of Nandbaba (Lord Krishna's foster father). Mohamad Paigambar considered cow milk an elixir, ghee as amrut (nectar) and meat as poison. Shivaji in his childhood had cut off the head of a person who had slaughtered a cow. During the reign of Kesari Maharaj Ranjit Singh, those killing a cow were awarded death penalty. Lokmanya Tilak used to say kill me instead of harming the cow. Long ago, Gandhi said the problems of cow slaughter and cow protection are more difficult and complex than the problem of self-rule (swarajya).

On the one hand, there is a serious problem of cow slaughter and on the other, a section of the population has become active wanting a ban on cow slaughter. The latter section of people is quoting 48th article of the Constitution in support of their cause. [Article 48 of the Constitution of India prescribes the state to prohibit the slaughter of cows and calves and other milch and draught cattle]. The difficulty is that this article is only a guiding principle and not a directive. The reason to introduce this article in the constitution was to deceive the people and silence those who were demanding a total ban on cattle slaughter. Going by experience, cow slaughter has continued over the years even after the introduction of article 48. When Uttar Pradesh, Madhya Pradesh and Bihar, implemented section 48 in their respective states and announced a total ban on cow slaughter, the Muslim butchers, with the help of some invisible mysterious powers, challenged the implementation in the Supreme Court. With the intervention of international agencies like FAO and UNO, the Supreme Court made the changes in the laws in these states meaningless. Today cattle destruction and slaughter continue unabated in these three states and also the rest of the country. On a larger scale, foreign powers are eagerly working to capture the Indian market for milk, ghee, grain and pharmacy which is the largest in India and second largest in the world. International conspiracy is at play to destroy our cattle wealth and bind us in

slavery. Under these circumstances, the Indian cow has become an international issue and India has become a target of World Bank and powerful organizations.

Some people put forth the argument that rearing cows is not a profitable activity. If the Gir cow sent to Brazil gives 60 litres of milk per day, why does the same breed cow in India give only on an average 4 litres of milk? With a scientific approach and better care, quantity and quality of milk production can be increased. Drum sticks, herbs (jeevanti, Kharkhodi, satavari), carrots, and two or three types of green fodder, Indian jaggery, wheat grass, tender shrubs, and grazing in a free environment under the sun will certainly improve the health of the cow, increase the quantity and enhance the quality of milk, both cows and calves will live longer, produce more progeny, and upgrade the medicinal properties of cow urine and cow dung. So that the future generations understand the importance of cow, our ancestors introduced the use of cow milk, curd, ghee, butter, buttermilk and cow dung in religious practices and social customs.

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6. WHAT CAN THE GOVERNMENT DO TO STOP COW SLAUGHTER?

- Sale of cows should be done through government agencies
- Run dairies to sell milk at cheaper rates
- Run leather factories to make proper use of dead cattle
- Set up model goshaalaa and sanctuaries to act as a model for the people
- Draft simple and effective policies for this purpose
- If we want to make the best use of cow dung, it is better to use it as fertilizer rather than fuel.

Gandhiji used to say we need to protect all animals, but we are not even able to protect a useful animal like the cow. If we are not able to take care of useful animals, then where does the question of having compassion for other animals arise? The humanist, the economist, politicians, and communalists all see the problem of cows from different angles. However, organizations involved in this activity should refrain from looking at the problem with tinted glasses.

The non-lactating cows still give dung and urine. Since we do not know what to do with dung and urine, we think these cattle are useless. Cow protection houses are run by people who have no experience or knowledge of this subject. Government should make fundamental changes in this field.

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7. GAU VIGYAN (science of cow breeding): REJUVINATION OF ANCIENT INDIAN KNOWLEDGE

For centuries, we have been calling the cow our mother. Gau-vigyan, that is Gau Ayurveda, is a special branch of knowledge which has researched on subjects like cow milk, cow urine, cow dung (gomay), and ghee. Use of these elements give convincing results in treatment of various illnesses. It would require a big anthology if we were to compile all the medical benefits that we can derive from this science. The full impact and importance of the cow can be understood only when we consider the benefits for agriculture, human health, cleanliness, and commerce related to cow rearing. We should be grateful to our ancestors who understood the importance of the cow and passed on the knowledge to us and linked this knowledge with religion so that we do not forget it.

COW MILK:

In the Mahabharata, when Yaksha asked Dharmaraj Yudhishtir, which is the elixir on earth, he replied 'milk'. Of all the types of milk available, mother's milk is the best, and the second best is cow milk. Cow milk is sweet, has a high density, provides strength and is a cure for several health disorders. Milk should be heated and allowed to cool to room temperature before drinking.

CURD FROM COW MILK:

Curd can be of five types depending on its taste. It could be mild, sweet, slightly acidic, sour, or very sour. Each type of curd has its own healing properties and quality. Venom of snake bite is said to be neutralized by taking a mixture of curd, honey, butter, in specific proportion, mixed with other herbs and spices. It is said to reduce swelling and soothes burns.

BUTTER FROM COW MILK:

Butter made from cow milk is cooling, has vital minerals, has curative properties, helps improve eyesight.

BUTTERMILK FROM COW MILK:

Butter milk helps in cases of sour belching, mouth blisters, and leprosy. Butter milk is tasty, sweet, strength provider, reduces obesity, neutralizes cough and vaat and helps bile formation which acts on diarrhea, jaundice and other disorders. Buttermilk can be had before removing the butter content or can be consumed with the butter content. The consistency of buttermilk can be changed depending on how one wants to consume it; it can be thick without adding water or can be diluted with water. Depending on the length of time it has remained at room temperature, it can be sour or bland. Each type has different qualities and effects on our body.

GHEE MADE FROM COW MILK:

Ghee made from cow milk is tasty, cooling, improves hunger, slightly aromatic, improves eyesight, good for skin and has many other healing properties. Ghee which is 10 years old is called 'old ghee'. Ghee preserved for 111 years is called 'kumbhasarpi' and older than that it is called 'mahasarpi'. A wound can be healed by applying cotton wool dipped in old ghee. Aged ghee has remedial properties and used for treatment of headaches, ear aches, fever, fainting spells, and is used to remove the ill effects of poisoning.

COW URINE:

Cow urine has an astringent taste, pungent, light, salty, hot. As mentioned elsewhere, it is a good fertilizer and has remedial properties.

COW DUNG:

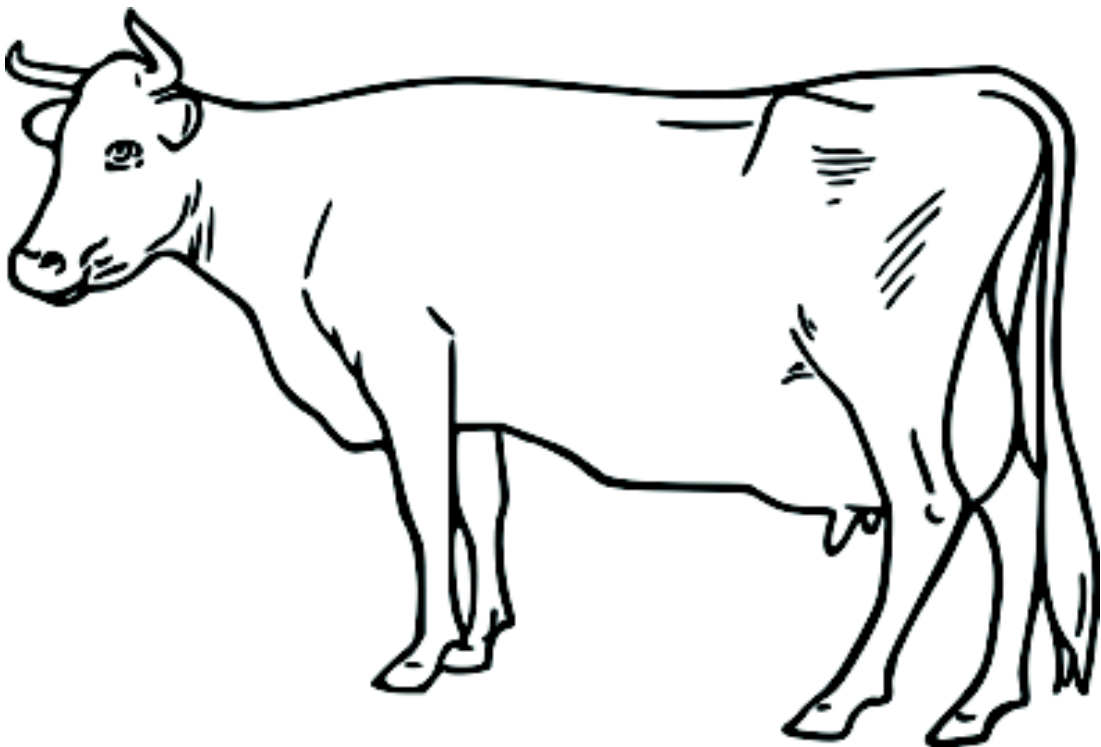
Even though it has its own unique odour, dung acts as a cleanser. Uses of cow dung are mentioned in relevant chapter.

ASH FROM COW DUNG:

In addition to its pesticidal qualities, this ash is used as a dusting powder for measles outbreak. For this, one should spray cold water on burning ash and then strain it through a fine mesh cloth. This fine powder can also be used for all kinds of dental problems.

In addition, with the knowledge of science of cow breeding, trees, earth, cows, water sources, and seeds are protected, one can balance the climate cycle and environment, unemployment, poverty, inflation, pollution decreases, assets increase. This science helps in generating self-employment, makes people self-dependent, and encourages self-governance.

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8. GODHAM (Cow Sanctuaries) – A FOUNT OF ALL-ROUND DEVELOPMENT

Cow shelter is a symbol of compassion and non-violence. Godhaam is a larger version of goshaaala and is the only solution to promote cow breeding and should be designed with the help of experts. Godhaam functions as a joint unit. The first step towards this goal is creating a grazing ground. This will make us self-dependent in our requirement of green fodder. The next step is to ensure that the water resources of the village remains in the village and do not drain away. For this, it is necessary to build wells, check-dams, household tanks, farm ponds and plant as many trees as possible on fallow land. Depending on the need of the village and quantity of crops grown, co-operative godowns should be constructed and managed by the village. In the third stage, following the pattern of the cow shelter in Luni (Kutch), develop centres for production of cow urine arrack, medicines, panchgavya, and produce items of everyday use without causing pollution, run skill development centres, research of development of cow-based agriculture. If this kind of development is attempted, there is no doubt that one day these godhaams will become the true fount of a superior culture and non-violent cow revolution.

When planning the production of remedies, following factors need to be kept in mind:

- Obtain permission from the food and drugs department and ensure all rules and regulations are followed
- List remedies proposed to be manufactured and their price
- Ensure availability of ingredients, panchgavya and other herbs required for production of remedies based on the weather and prepare a timetable of manufacturing

- Use good quality ingredients
- Decide the quantity of production after studying the demand in the market
- Prepare a suitable place for production of remedies
- Appoint an experienced Ayurveda practitioner and other trained manpower who are familiar with panchgavya remedies
- Maintain a properly equipped laboratory for testing the remedies
- Ensure good packing and proper storage of products and sell them in the market before the expiry date of the remedies

The food and drug department's rules and regulations with respect to information to be given to the patient, type and size of facilities required, quality of ingredients used, proper storage, labeling, training and hygiene with respect to manpower, and many such issues should be studied properly before starting production.

Timetable of production has to be prepared since the medicine production is season-based. To produce remedies round the year, prepare a timetable based on the season since specific remedies are manufactured in specific season suitable for that product, for example, if one is manufacturing tooth powder from the ash of the *gomay*, it has to be done in the summer time. The time after Diwali is best to make kaamdheni bath soap. Monsoon is suitable time to manufacture drugs from cow urine. At this time the arrack of the cow urine required for the whole year can be stored to be used round the year.

Production of remedies from panchgavya does not require much machinery. Small hand-held instruments should suffice. One of the goals for the production of remedies is to encourage village industries. Small domestic and large grinders, pulverizers, electrically operated sieves, filling and sealing machines can be purchased if electricity is available. A distilling machine is required

for manufacture of arrack. Machines running on alternative energy are also available.

It is difficult for managers to keep these cow shelters running and at times they have bitter experiences. One has to take into consideration the present situation and circumstances and make necessary adjustments to keep the work going for a noble cause. If cow shelters are to be successfully developed into godhaams, then the institutions of cow shelters have to be strengthened and work of cow breeding has to be accelerated. Instead of depending on donations and charity, this activity can be converted into a profitable business.

There are more than 3,600 cow shelters in about 6 lakh villages in India and more than 256 shelters for eighteen thousand villages in Gujarat taking care of abandoned cows. Most of these cow shelters have cultivable land, sufficient livestock, yet they find themselves in a desperate and helpless situation. Government help is like a patch on a torn cloth. The only permanent solution is self-dependency through self-help and for that what is required is efforts towards a co-operative movement.

Even though the shelters now active all over the country receive the best of help, one hardly sees any one of them matching up the work of godhaam in Pathmeda, Rajasthan. The management of the cow shelter at Wadhwan, with commendable help from donors, cleared 1,330 acres of land and built a pond. To prevent soil erosion and provide protection to the livestock from the sun, they planted thousands of trees. Similarly, Morbi cow shelter following the example of Wadhwan, improved their 2,200 acres of land. All the cow shelters in Gujarat together have 75,000 acres of land. This vast land holding has to be used more judiciously.

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9. UNDERSTAND THE COW

It is very important for the personnel working in the cow shelters to understand the behavior of cows. They should keep the following factors in mind.

- The cow can use all its five senses. She has her own way of understanding the individual in front of her. She comprehends the best when the person approaches her from the front. She tries to recognize the person by bending her head. She does not like anyone approaching her from the side.
- Cow likes daylight and likes to stay in places where there is daylight. If you keep her in a dark area, she will make efforts to move towards daylight.
- Cow does not like heavy loud voices, gets disturbed with sudden unfamiliar noises, unfamiliar smell and sudden movements around her.
- Cow has a keen sense of smell. She keeps away from the smell of urine and cow dung; therefore, care should be taken to keep the cow in a clean environment.
- Cow can experience only four types of taste but this sense is keen: sweet, salty, bitter and pungent.
- She easily gets used to daily routines in the family, but if this routine is broken, she gets disturbed.
- Cow has a good memory. She gets disturbed if she is forcibly shifted to another place and takes a long time to get used to the new situation. It also increases the chances of her falling and getting hurt.
- It is not necessary to shove or push her, she easily walks if she is made to go in the direction she likes and is allowed

to walk at her natural speed. She never makes an effort to overtake others in the herd.

- Cow does not express her pains openly and therefore it is necessary to understand the unexpressed pains and aches the cow experiences. For example, when the cow is in pain, she
 - (a) Lowers her head, tucks her tail between the hind legs or walks on rear limbs
 - (b) she tries to hold the part of the body in pain away from the ground
 - (c) she makes strange noises when she senses danger and tries to warn other cows and the cow herd
 - (d) when in severe pain, she strikes her legs on the ground and moves her tail violently
 - (e) she moves her jaws, grinds her teeth or reduces her food intake
- If the cow is ill or uncomfortable, or if there are more cows than the capacity of the shelter, then she puts her tongue out frequently, tries to climb over other cows or even attacks humans.
- If she is given more fodder or is bored with that fodder, she throws out the fodder from her mouth and starts throwing the fodder around.
- The movement of her tail indicates many of her feelings, for example, she raises her tail when urinating. If she is scared, she tucks her tail between her hind legs. During her monthly periods she lifts her tail every once in a while. She uses her tail to remove foreign material on her body like sand and flies. She also expresses her displeasure by moving her tail around.
- When resting, she prefers to keep her stomach level with the ground and her head held in a higher position.

- It is necessary that each cow has sufficient physical space in the cow shelter. A new entrant into the shelter takes 24 to 72 hours to get used to the new environment.
- The cow's size and age decide the leader in the cow herd.
- The cow is quite an understanding animal beyond our imagination.
- Even if she is slow in her movements, and appears almost lethargic at times, she adjusts to her new environment very quickly.
- Cow has a very sharp memory; she recognizes and never makes a mistake in identifying the other cows in the herd and also the cowherd.
- Cow can recognize her calf's voice, and the calf too recognizes its mother. If the calf dies or is separated from her off spring, she will grieve and wail.
- Cow sleeps for about four to five hours, but after grazing / feeding she rests sitting down.
- Cow in a herd learns very fast.
- A cow staying in a herd eats more fodder than a cow who lives alone and isolated.
- Cow's behavior is directly related to the behavior of the cowherd. If the cowherd is a pleasant and happy person, the cow too reflects the same personality and it is easier to take care of her. If the cowherd has a negative personality and is a grouchy person, the cow becomes uncomfortable and lives in fear.
- Negative behavior of the cowherd like beating her or twisting her tail or shouting at her scares her resulting in negative effects on her health which decreases the amount of milk production but with a positive attitude on the part of the cowherd like caressing the cow, calling her name out, stroking her helps keep the cow in better

health so also in a happy mood which in turn increases milk production.

Things for the cowherd to keep in mind:

- If there are any changes in the daily routine, the cow has to be given time to adjust to the new routine
- Pampering her or stroking her with love gives a positive outcome
- Do not stare at the cow
- Treat her with care, love and patience while milking her
- Instead of grazing the cow alone, it is better to keep her in a herd
- Cowherd should take care of each cow personally; even the slightest change in her behavior should come to the attention of the cowherd
- The quantity of milk a cow gives is directly related to the cow's behavior, her resting pattern, her diet, the quantity of her feed and the like
- Cow is a good imitator. She imitates other cows' eating habits, and even personal activities.
- Many times, cows experience a sense of stress for some reason. It could be due to change in the temperatures, fodder, or even the place of her dwelling. When in stress, the cow eats less and gives less milk.

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10. WHAT WE CAN DO

There is nothing in nature that is useless or redundant. The issue is our ability, skill and creativity to make use of it. It is a mistake to think about cattle only from the economic or profit and loss point of view.

Cow is not just a religious thought or symbol. Rather it is a confluence of utility, virtue of excellence, and culture. Without opposing the existing technological progress and without wasting much time and energy, we need to demonstrate that there are many doable alternatives we can implement which would illustrate the possibilities of benefits in cattle rearing.

If we talk only about cattle per se, the cow gives milk and the rest of the cattle (bullocks, calves) give urine and dung throughout the life. Bullocks are used for tilling land for agriculture. Instead of pitying the cow, if we constantly remind ourselves about her valuable qualities, we would indeed be doing ourselves a favour.

Not only does the livestock give us benefits in their life time, but even after its death, it gives us things that are useful, tradeable, and profitable, such as leather, lard, bones, horns, tails, and after burying it, the soil is enriched. We are not able to take care of our wealth in an appropriate manner and running along blind alleys directionless.

While Brazil imported around a hundred Gir breed cows and increased their number to lakhs, we allowed their annihilation. In the final analysis, cross breeding has resulted in demeaning our livestock. Thousands of years of agricultural practice of farming based on cow dung and cow urine was destroyed. Chemical fertilizers made the soil unfertile. The natural cycle was broken, cost of farming increased, and pests attacked the crops. We forgot that the cow is not only a means for income but our

support system, our life line. Our native knowledge says we need one cow for every four acres of farm land.

We have not understood the true meaning of cow protection and cow sewa. It is a misconception to think that taking care of discarded herds of cows is gosewa. Understanding the reason behind the state of the cows today and making efforts to remedy the situation is real gosewa and cow protection. The cow shelter in Idar, Gujarat, produces electricity from gobar gas. The one in Dharmaj grows grass for cattle feed on water from the gutter. One cattle shelter in Luni, Kutch, manufacturing medicines from cow urine and panchgavya, has now become financially self-sufficient.

It is easy to rear and domesticate a cow. She can survive on a little food and can adjust to change of residences. Additionally, she gives birth to bullocks for agriculture. Aged cows reduce their food intake on their own. If the owner is frugal, he will be able to feed two or three old cows from the hay otherwise considered as waste. In any case, old cows continue to give urine and cow dung, which can be utilised as compost.

Everyone cannot do everything for the cow. If everyone starts doing everything, it would create a jamboree at best or chaos at the worst. Yet every social being should contribute their bit to the cause. A well-off cow lover could have a book prepared and published on cow service or could gift such books which are already published. Others could do anything that would help the cow or the livestock. Some of the ideas are mentioned below:

- Donate time and energy for the service of the cow at the nearest cow shelter
- Use only commodities prepared from cow elements
- Financially help cow herd community and milk producers to purchase fodder or lend interest free money or purchase milk from them
- Explain the importance of co-operative movement to the farmers

- Instead of giving cash donations to the cow shelters, the educated donors should help them by constructing buildings, water tanks, wells, bore wells, drip irrigation system, giving them useful implements, bio-gas plants, solar energy equipment and the like
- Stray cattle are a problem for vehicles on the roads. However, transporting them to the nearest cow shelter is also a major problem. You could help in this activity
- Government departments and voluntary agencies should supply information and literature regarding cows and its relevant issues presented in an interesting manner. For example, the costs involved in mechanical farm equipment, harm caused by chemical fertilizers, benefits of using cow-based farming techniques, science behind use of cow and related methods. Practical useful information about knowledgeable farmers and the latest research findings should be given to the farmers from time to time to keep them posted with latest updates to help them perform their best
- Special camps and seminars should be organized from time to time
- Keep aside the first roti and part of the meal for the cow
- Vegetable waste from the kitchen, used tea leaves, left overs, etc. should be given to the cow
- If possible, adopt or domesticate a cow, give her a name, and treat and look after her like you would a family member
- Encourage the use of milk and ghee of desi cow and medicines and cosmetics made from panchgavya
- Instead of wasting left-over food after a party or a function, send it to the cow shelter
- Donate for the welfare of the cow on important days of your life or that of your friends' or family members'

- Keep a container filled with water outside the house for cows. Keep the container clean and add some salt to the water
- Do not carry plastic bags to the cow shelter. Do not let the cow consume plastic bag with the food or it is best to avoid taking food in plastic bags to cow shelters
- Do not dispose of leftover food on the road sides in plastic bags
- Keep yourself informed about science on cow breeding and encourage others to do so
- Do not ignore cows in helpless conditions. Take her to a safe place and take appropriate steps to make the cow comfortable
- Keep aside some funds from your salary for the cow and also give your children piggy bank to save for the cow
- Co-operate with authorities to include the subject of cow in the syllabus
- Consider involving livestock in agricultural activities. Many countries have given up tractors and have started using bullocks for tilling land for agriculture
- Many urban residents have a village home in their native rural areas; one can consider using cow dung plasters for the floor and walls for such houses. Dung plaster keeps the rooms cool and provides protection against atomic v-rays
- If possible, use gas released by gobar gas plants as fuel and to generate electricity which can be used for lighting. Use the byproduct from the gobar gas plant as organic fertilizer
- Encourage vegetarianism

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11. SELF-SUPPORTING GOSHAALAA

It is a good development that in the last few years people's attention has been drawn towards the poor condition of the cows and efforts are being made to improve the situation. But all this is being done out of sentiment or pity. It is necessary to think about the issue in a more practical and scientific manner.

Most goshaalas are dependent on donations and charity. They either go out asking for donations or depend on the corpus to manage their expenses. The cost of maintaining goshaalas keep increasing and when they run out of funds and donations dry up, the condition of the cows and the goshaalaa become pitiable. In some places there is no shed, some places no fodder, sometimes no funds are available for medical treatment of the livestock and sometimes there is a shortage of manpower. Most goshaalaas are overcrowded and have more cows than they can cope with. A goshaala in Kurukshetra, dependent on charity, houses 600 cows in a shelter made for only 250 cows. Of these only 4 cows are lactating. This kind of situation is taken for granted due to lack of better solutions. But this cannot be tolerated anymore and we have to change our mindset. If goshaalas do not try to become self-supporting, then their existence itself would surely be in danger and our livestock would become destitute.

Steps we can take to make the goshaalas self-supporting

- Produce gas and electricity from cow dung
- Make fertilizers from mixture of cow dung and waste fodder
- Take care of the health and diet of the cows
- Ensure profits from sale of cow milk, curd, butter, cheese, paneer and the like

- Generate electricity from bullock power
- Make efforts to create awareness among the general population, collect funds, take government help
- Bring the members of panchayat samitis, MLAs, MPs, students, and policy makers together and inspire them to work for the goshaalas in every possible way they can; such as physical, financial, through collection of funds or in any other way. Help can be taken from Rotaries, Lions, NGOs or other organizations working for a noble cause
- In today's digital age, SMSs, emails, Facebook, twitter, WhatsApp, social media can be used to spread knowledge and to create awareness for the welfare of the cow. The best way for making use of social media is to involve school and college students in their individual capacity. Well-known industrialists, businessmen, and celebrities from different fields such as film industry, sports, world of Advertising, Journalism, Politics can also make important and significant contributions by making short films, statements at public functions or on television, running a series of write-ups
- Donations boxes can be kept in schools and colleges, temples, mosques and such public places

Files and paper work of the goshaalas should be properly maintained and should be registered so that it becomes simpler to avail government aid. Funds should be used judiciously and there should be no wasteful expenditures. Accounts should be transparent and properly maintained and sent to the relevant authorities. It should also be displayed on the notice board for the visitors and donors to see which would not only help win their trust and confidence in the management of the cow shelter but also increase the credibility and trustworthiness of the goshaalas. All this would make people come forward to help.

12. DECLARE COW AS A NATIONAL ANIMAL

India honoured the lion as the national animal of the country. In 1972, it was replaced with the tiger. On what basis were these decisions taken? The question that arises is why does a national animal have to necessarily be a wild animal? Why not a domestic animal? Why can one not give importance to the socio-cultural ethos and see which animal is traditionally and emotionally linked with the people of this country? If one is to reflect on the culture of this country and the emotional bonding of the people, then it is the cow which should get the honour of being the national animal.

Nepal's national animal is the cow and Spain's national animal is the bull. We metaphorically consider the cow our mother and make a profitable business from a lactating cow, then why can we not give the honour of a national animal to the cow?

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13. OTHER BENEFITS FROM COW BREEDING

TECHNOLOGICAL PROGRESS

VS

AN ECONOMY BASED ON COW BREEDING

Attributes of technological progress	Attributes of a culture of cow breeding
Progress and processing are fast and keeps up with the times	Growth is slow and follows a traditional pattern
Human created forces at work	Works on nature’s forces
Gives gross material benefits and conveniences	Improves finer capabilities
Depends on money power	Depends on human power
Based on and encourages competition and is exploitative and leads to inequality	Requires co-operation and brings people together and nurtures equality
Breeds individuality	Leads to a culture of partnership and comradeship
Results in urbanization and centralization	Keeps villages alive and helps rural development and requires decentralization
Dependency on experts, is insensitive and benefits the owner, generating employment for educated class	Requires manual labour and wider participation leading to sensitiveness and empathy and benefits the whole society and employment even for the illiterates

Uses man made energy and causes pollution and disturbs nature's cycle	Energy generated from excreta of cows leading to clean growth and maintains balance in nature
Generates waste which creates a nuisance and destroys natural resources	Uses waste to make organic fertilizers and generates energy preserving natural resources
Conducive environment for diseases causing health problems	Cow products are healthy giving medicines and remedies
Advocates packed and junk food	Encourages consumption of healthy, fresh food intake
Dependent on outside financial help giving a feeling of helplessness	Strengthens local economy and leads to a life of self-dignity

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14. AVERAGE INCOME AND EXPENDITURE ON COWS

- Average life span of cows is 20 to 24 years and that of a bull is 20 to 21 years
- A calf comes of age at the age of 3 to 4 years. A male calf is ready as a stud by the age of three and a half to four years of age.
- Till the cow and bull come of age, the investment for the first six months is of about Rs.2,500. Thereafter this investment comes down to Rs. 18,000/- for the next 12 months, and after that it comes to Rs.24,000/- per year. This works out to a total of Rs.68,500 for the first three and half years. $(2,500+18,000+24,000+24,000)$
- The average **monthly** expenditure after that, comprising green and dry fodder, other feed and wages of cow herd would be Rs. 4,500/- Feeds consist of jaggery, maize, pulses (black gram) wheat, etc.
- Taking into account the lactating and dry period of the cow, and time between two deliveries, on an average a cow gives 6 liters of milk per day. With better feed and care, the cow can give more milk. Even if we consider the income from milk alone, it comes to Rs 300 per day i.e. Rs. 9,000/- per month, without counting the income from dung, urine and an offspring every one and a half year.
- One cow gives 14 to 15 kgs of dung and eight to 10 liters of urine daily. If the farmer has four cows, he can build a gobar gas plant for which subsidy is available which would result in saving of fuel cost.
- Investment in a low horsepower tractor is about Rs. four

lakhs which ploughs 15 bhiga land for a crop season with a cost of Rs. 1,000/- for fuel (diesel / oil). Compare that to a bullock owned by you (offspring of one's own cow). A pair of bullocks valued at Rs 1.5 lakh and daily feed cost of Rs. 250 would till 10 to 12 bhiga land. The wages of tractor driver are more than that of a farm labour. The wear and tear and repair cost of the tractor also has to be added. While the bullock's dung and urine will generate income, the tractor will remain idle when there is no tilling work, or at best be used for transport. The advantages of bullock tilling are obvious.

- The slurry from bio-gas plant makes very good organic fertilizer.
- If cow breeding is done scientifically, we can live a life of dignity, good health, clean and pollution free environment and non-exploitative life style. The nutritional needs of the individual, the family, and the society at large would be taken care of.

* * *

15. PROJECT 'GIIST'

GIIST stands for Global Institute of Indigenous Science and Technology or Global Institute of Indigenous Skills and Training and is related to agriculture and cattle breeding.

Anyone who has 10 acres of land can implement this scheme. Of these 10 acres, five acres is meant for agriculture and cattle propagation, and the other five acres is for plantation and construction required to run the organization. Anyone interested can learn this skill and business if he or she wants to do something useful for society. There are different certificate courses which include topics such as cow care, solar energy, agriculture, tree planting, season-based crops to grow, Ayurveda, and other related subjects. Those interested and want more information can get in touch with Jitubhai Bhatt on 98209 69607.

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16. LIST OF GOSHAALAS

According to an internet search, there are 678 goshaalaas in Rajasthan, 162 in Haryana, 84 in Maharashtra, 22 in Karnataka, 18 in Odisha, 4 in Assam, 148 in Bihar, 15 in Delhi, 24 in Himachal Pradesh, 167 in Punjab, and 23 in Andhra Pradesh.

There are about 200 goshaalaas in Gujarat. The well-known among them are:

- Shri Jalaram Mandir Trust Goshaalaa, Paldi-Kankrej, Ahmedabad
- Jalaram Gosewa Kendra, Taluka Disa, Dist. Banaskantha
- Shri Radhanpur Khoda Dhor Panjrapol Goshaalaa, Taluka Saami, Dist. Patan
- Shri Manekba Vinayvihar Goshaalaa, Post Adalaj, Dist. Gandhinagar
- Shri Bansi Goshaalaa, Post Pirana, Ahmedabad
- Shri Gopinathji Goshaalaa, Kundaal, Tal. Barwalaa, Ahmedabad
- Shri Swami Narayan Gurukul Vishwavidyalaya, Post Chordi, SG Highway, Ahmedabad
- Shri Lokbharati Gramvidyapeeth Goshaalaa, Post Sanosaraa, Dist. Bhavnagar
- Shri Bochasanwasi Aksharapurushottam Mandir Goshaalaa, Post Gadhada, Dist. Bhavnagar
- Shri Monghiba Goshaalaa, Post Sihor, Dist. Bhavnagar
- Shri 108 Purushottamlalji Gausewa Trust, Post Vaadlaa, Tal. Wanthali, Dist. Junagadh
- Shri Ramroti Ashray Goshaalaa, Gaam Kothariya, Tal. Vadhvan, Dist. Surendranagar

- Shri Kabir Ashram Goshaalaa, Limbdi, Dist. Surendranagar
- Shri Bhuvneshwari Peeth Goshaalaa, at Gondal, Dist. Rajkot
- Shriji Goshaalaa, Rajkot
- Aryavan Vikas Trust Goshaalaa, Tal. Talod, Dist. Sabarkantha
- Shri Swaminarayan Mandir Goshaalaa, at Vadataal, Tal. Nadiad, Dist. Kheda
- Shri Satkeval Goshaalaa, at Saras, Dist. Anand
- Shri Anandbawa Sewa Samarth Goshaalaa, Jamnagar
- Shri Umiya Goshaalaa Trust, Post Sidsar, Tal. Jaamjodhpur, Dist. Jamnagar
- Shri Vardhman Jivdaya Kendra, Luni, Tal. Mundra, Dist. Kutch

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Contact following organizations/person for additional references and detailed information on the subject:

- Gomimansha, Venishankar Murarji Vasu
- Gaushala (English), Dr. Sanjay Khanna, Maneka Sanjay Gandhi and Meenakshi Awasthi
- Goved, Mansukh Suvagiya
- Godham, Vinubhai Gandhi
- Gay aadhaarit kheti, Go Krishi Gram Sanwardhan
- Govanshi Vikas, Vinubhai Gandhi
- Bharaitteya Godarshan, S. Sureshkumar Sen

USEFUL WEBSITES:

1. A comprehensive database about Cow, *Gaushalas*, cow-products etc.
<http://www.indiancattle.com>

2. Cow's milk v. buffalo's milk, cows ghee v. buffelows ghee
https://www.mkgandhi.org/health/diet_reform/32cowmilk.html
https://www.mkgandhi.org/health/diet_reform/32ghee.html

3. Cow slaughter and cow protection
https://www.mkgandhi.org/g_comunal/chap14.htm

4. Cow Protection (Goraksha)
<https://www.mkgandhi.org/health/indiadreams/chap32.htm>
https://www.mkgandhi.org/vinoba/pranav_bk/letter40.htm
<https://www.mkgandhi.org/vinoba/cow.htm>
<https://www.mkgandhi.org/momgandhi/chap81.htm>

5. Dairy
<https://www.mkgandhi.org/ashramobservance/10dairy.htm>

6. Other links
https://en.wiki/cow_protection_movement
https://en.wikipedia.org/wiki/cattle_slaughter_in_India
<https://indiankanoon.org/doc/1452335>

There are nine cow-based industries:

Milk (dairies)

Cow dung (fertilizer)

Cow urine (pest / insect control)

Cow dung gas (energy, also called gobar gas)

Bullocks (farming, transport)

Panchgavya (remedial medicines)

Some terms related to cow and her progeny do not have appropriate English words and therefore, Indian words are used and these are explained below:

Goshaalaa, Gaushaalaa, Godhaam is a shelter home for abandoned cows, called cow pen in English. Godhaam can be translated as cow sanctuary.

Gobar - means cow dung

Ghee—meaning clarified butter. The process involves conversion of fermented milk into curd by a chemical reaction between the lactic acid bacteria and casein. This curd is churned to separate the butter. Butter, called makkhan in Indian language, is heated until the water evaporates and milk solids settle at the bottom. What you get after this process is pure clarified butter or ghee.

Panchgavya— is made by mixing equal quantity of cow milk, curd, ghee, butter milk, and cow urine. Some medical practitioners mix darbh (a sacred grass known as Halfa grass) juice /water.

Panchamrut – Mixture of milk, curd, sugar, ghee, honey

Gosewa – working for the protection of the cow

Gomay – another name for cow dung

Hindus consider the cow as their mother and worship her. Cow supports life. Her milk is considered elixir which provides essential nutrients to keep people in good health. Agriculture is dependent on cattle, provides the family with a livelihood and fulfills the daily basic needs of family. Hence, service to the cow is as good as serving the God because Hindus consider cow as a sacred symbol of life and by protecting the cow, we protect the human race.

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