



Cow Universe



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Volume 2 No 1 January 2008

Cow universe

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The New Year has brought great promise and hope for the revolution. The first mark of that is the recognition of atrocities mete out to bulls. No, we are not discussing the pros and cons of Jallikattu (similar to the Spanish running of the bulls), but we are just emphasizing on the point that somewhere, people are consciously becoming aware and hence are questioning that whatever looks inherent in our culture need not be so. Our beliefs must be ruthlessly questioned and all that is biased must be thrown to fire and whatever remains, unbiased and can stand on its own right is truth. Every civilization is built on a long history and one common value and whichever generation disregards that value ends up ruining the very basis on which the superstructure stands. This whole battle is to clear up that moss which we gathered midway, the reason for our current state of confusion.

The revolution does not ask anyone to be a blind believer in its mission, because a blind man can take us nowhere. Knowledge is power and hence all the Cow lovers should know and understand rationally, the reason to which they stand for. Strength and courage is an extension of conviction that comes out of realization and not mere hearsay. Enquiry is the basis of all knowledge and hence everyone is encouraged to ask and disregard whatever explanation is irrational. It is for this one reason that the editorial team consciously avoids publishing even supporting arguments for saving cows if it has no convincing reference or proof. Having said that, one must not forget that truth is at times stranger than fiction and if we stumble at a piece of a stranger fact, it is the responsibility of the observer to unearth the reason behind the strangeness.

It is no use speaking everyday unless new men are hearing you. Cow Universe has been speaking for four months now but to the same crowd. If the spark has to turn to an overwhelming fire, then one needs to fan it. What greater medium in this contemporary world than internet to reach a wider mass? It is the responsibility of those with the most advanced weapon to lead their men in the battle and we are vested with such an uncompromising leadership. Oh! Sons of Mother Cow raise your weapons and announce "Beware, we are coming".

Hail Mother Cow

Cowpathy Part –IV

In the last two series we discussed the beneficial properties of Cow's urine and dung. In this edition we shall throw light on the well known and widely used product from Cow, its milk. In India, much of the traditional knowledge percolated from one generation to another orally. Orally or written, all the medicinal schools emphasize on the rejuvenatory health protecting and promoting properties of Cow's milk. Known as the best among vitalizers, it is low in calorie, cholesterol, fat, calcium and phosphorous content and high in carotene, thiamine, riboflavin, vitamin C, sodium and potassium when compared to Buffalo's milk. In India Cow's milk has always been an integral part of our diet.

It is one thing to follow one's tradition and yet another to appreciate and understand the reason behind it. Hence it is becomes mandatory that understand the role cow's milk plays in our health building. Enriched with substances like Vitamin A, Vitamin of B Complex group and also with flavones, sterols and phenols, it delays the ageing process. The presence of fatty and amino acids play a major role in the growth of infants and children. It is also known that a 250 ml serving of Cow's milk contains riboflavin equivalent to 50% of the daily requirement of a pre-school child.

Even the proteins present in Cow's milk are of a different kind that their digestibility is as high as 96% whereas plant proteins fall in the range of 74-78%. The high digestibility factor is attributed to the presence of amino acids in milk. It also acts as brain tonic and maintains the health of kidney. Lactose favors the absorption of calcium and phosphorus and as the principal milk sugar, promotes the growth of lactic acid bacteria in the intestine that helps in the whole calcium absorption process. It is the Cow's milk proteins that are useful for patients suffering from liver and gall bladder diseases. Because of its easy digestibility, the milk fat is also a valuable dietary constituent in the diseases of stomach, intestine, liver, gall bladder, kidney and disorders of fat digestion. Milk fat also fights tooth decay due to adsorption on the enamel surface and the

antimicrobial effect of its fatty acids. Even for infants and people with renal disorders the high biological value in Cow's milk protein relieves strain on the excretory function of the kidney.

The presence of B Vitamins and Vitamin A increases immunity. It is also a source of zinc that helps in increasing immunity. The presence of immunoglobulins which cannot be broken down by enzymes also accounts for its antimicrobial activity and prevents absorption of foreign proteins. Presence of several peptides prolongs gastrointestinal transit time exerting anti-diarrhoeal effect. Constituents of milk also stimulate the macrophages and hence enhance resistance against certain bacteria. The role of Vitamin A in vision building is not new. A 250 ml serving of Cow's milk contain Vitamin A sufficient to meet 75% daily vitamin A requirement of pre-school child. It also reduces acidity thus reducing the chances of peptic ulcer.

Not only Cow's Urine, but its milk also displays anti cancer properties. The fat component in Cow's milk is a potential anti-carcinogenic agent and reduces chances of colon, breast and skin cancer. The Conjugated linoleic acid in cow milk inhibits cancerous growth. In mouse models this has shown to protect against the induction and proliferation of chemically-induced skin, stomach, colon, prostate and mammary tumors. Research suggests that CLA can decrease the amount of fat in blood and hence also helps in the fight against heart disease and obesity.

Low fat content in Cow's milk reduces the risk of heart diseases and obesity. It also reduces the formation of serum cholesterol and a regular intake helps keep the blood vessels healthy. The presence of calcium which acts as a signaling agent to cells to figure out what they need to do is very significant. When there is plenty of calcium in blood, the fat cells start burning the stored fat. As a natural anti-oxidant it reduces the oxidative stress produced in the body through the action on free radicals. It also fights diabetes and yet provides the required sugar for diabetic patients. Hence

consumption of milk enables a diabetic patient to obtain the biologically highly valuable milk proteins without running the risk of high blood glucose levels. The presence of Vitamin K also prevents hemorrhagic disease of newborn. Folic acid prevents anemia and neural tube defects.

Apart from being used as a health enhancer, research on Cow's milk also has led to its use in agriculture. Plant beneficial bacteria from cow milk have been isolated and inoculation of seeds or soil with these beneficial microorganisms has led to crop improvement. Milk of Sahiwal cow was found superior to human, Holstein cow and buffalo. Three strains of Bacillus isolated from Sahiwal cow milk have the ability to control phytopathogenic fungi and promote plant growth. Along with fermented press mud (a waste from sugar manufacture), the bacteria isolated from Sahiwal cow milk enhances growth of economically important plants in horticulture, floriculture and agronomic crops in the range of 10-60%. CSIR has even filed a patent on this.

Though culture and tradition differs from place to place and country to country, milk surpasses all such barriers. It is the only food accepted all over and has no adequate substitute. With such high nutrients, Cow's milk scores over all others and hence the rationale behind its usage must be popularized. Indian children suffer from malnutrition and prevalence of underweight children is among the highest in the world. World Bank reports indicate that micronutrient deficiencies may alone cost India US\$2.5 billion annually. Its time that we understand the need for milk in our everyday diet and hence protect Cows that supply us with it. Darker days may not be far if we turn a blind eye now.

Govind Gaudham – Gaurav Chauhan

During our childhood we always used to say "Gau hamari MATA hein-Humko kuch nahi aata hein" which was to reiterate our negligence towards studies (which always have been a nightmare at least for me). Today the same phrase reminds me of our negligence towards Gau (Cow) and why is it called our mother as per the mythologies. Still in our ancestral homes the first chapatti is cooked for Cow that shows the importance of Cows in our lives.

Intensely realized by Mr Sundar Das Dhamija, one day when he saw a blind cow wandering on the road side getting hit by vehicles or beaten by roadsiders. The scene opened his eyes and affection towards our mother cow-PRERNA (inspiration) as they all called her even after years of her passing by.

Here comes GOVIND GAUDHAM, not a new concept in north India but certainly with a difference. The Gaushala is situated in Ludhiana and when almost all Gaudham's use to admit only milch cows, the Gaudham in here is strictly for the non milch, disease prone wandering cows-a big differentiating factor by any means.

The Land for this Gaushala was acquired on 30th June, 2000 and construction started almost immediately from 1st of august. Mr Dhamija along with some of his business partners/friends started it off. Spread over 7 acres, the GAUDHAM has several features worth noticing. A total of 10 halls for more than 1500 cows. 125 Employees, 2 managers, 12 junior doctors with 4 specialist doctors visiting daily.

The Gaushala also houses a big dispensary for treating all kind of diseases and disabilities and a Laboratory ensuring each cow scrutinized for disease/problem at the time of admission. The Gaushala also has a pharmacy for making medicines with cow waste (that is supposed to be a life healer) using minimum chemicals. These medicines are made available to visitor at a minimal charge and the dispensary is a big resource to public considering the immense footfalls it receives.

The water pots are white washed twice every week to check algae formation. Cows are made to take shower every day during summers and every alternate day in winters. Insect curtains are raised on the sides of each hall during winters so as to block chilly wind considering the excessive coldness in northern India. Adequate numbers of fans are placed in each hall so as to ensure proper cooling during summers which again is extreme in northern India.

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Cow Insight - Ongole

Origin

The Ongole breed, like other breeds of cattle in India, takes its name from the geographical area in which it is produced. It is also called the Nellore breed for the reason that formerly Ongole Taluk, a division of a district, was included in the Nellore district, but now it is included in the Guntur district. The area is part of the Andhra Pradesh in India.

This breed is included among the gray-white cattle of the north, having white or gray color, stumpy horns and a long coffin-shaped skull. It has a great similarity with the Gaolao breed of Madhya Pradesh and also has a resemblance to the Bhagnari type of cattle in the north of India. This similarity is not surprising in view of the fact that these breeds lie along the path taken by the Rig Vedic Aryans in their march from the north to the south of India.

It is claimed that the finest specimens of the breed are found in the area between the Gundalakama and Alluru rivers in the Ongole and Kandukur taluks, and also in the villages of Karumanchi, Nidamanur, Pondur, Jayavaram, Tungtoor and Karvadi and along the banks of River Musi. They are also famous from the taluks of Vinukonda and Narasraopet.

Characteristics

The Ongoles are large-sized animals with loosely knit frames, large dewlaps which are fleshy and hang in folds extending to the navel flap, and slightly pendulous sheaths. They have long bodies and short necks; limbs are long and muscular. The forehead is broad between the eyes and slightly prominent. Eyes are elliptical in shape with black eyelashes and a ring of black skin about 1/4 to 1/2 inch wide around the eyes. Ears are moderately long, measuring on an average for 9 to 12 inches, and slightly drooping. Horns are short and stumpy, growing outwards and backwards, thick at the base and firm without cracks. In some animals the horns are loose; this is probably due to the horn core not growing well.

The hump in the males is well-developed and erect and filled up on both sides and not concave. The skin is of medium

thickness, mellow and elastic and often shows black mottled markings. The popular color is white. The male has dark gray markings on the head, neck and hump and sometimes black points on the knees and on the pasterns of both the fore and hind legs. A red or red and white animal of typical conformation is occasionally seen. They have a white switch of the tail, white eyelashes, a flesh colored muzzle, light colored hooves, dark gray marking on the hindquarters and dark mottle appearance on the body.

Ongole cattle are efficiently used in their native home for both work and milk production. They are usually docile and the bulls are very powerful, suitable for heavy plowing or car work but are not considered to be suitable for fast work or trotting purposes. The cows are fair milkier.

All animals currently used for food and agriculture and the result of Domestication from wild progenitor species like their wild relatives. These Domestic species are continuously evolving albeit at an accelerated rate due to human activity. In general the history of cattle followed the history of man, where even either primitive or modern. Man has migrated he has tended to bring with him his own breeds of cattle. During vedic period many of the useful animals have been brought under service of man, particularly

Milk became useful since Rigvedic period. The selected those animals species that are having vigor, inborn nearness, social ability and docility. The evolutionary process has been accelerated in the domestic species particularly cattle, as a consequence of 10,000 years of selection by human, during this period with in the species genetic variation which is essential for the survival of all species, has been partially redistributed in the formation of the large number of unique cattle breeds now exists.

These breeds have adopted too many environments as the breeds spread and have been used to produce different types and combinations. A major group of mammals to be domesticated after caprinae were the large ruminants (Bovinae), which included the humped (*Bos indicus*) and hump less

(Bos Taurus) cattle, yak, mithun, banteng and buffalo. This range of species in the family Bovinae make a very large number of important contributions to food and agriculture, providing just under 30% world meat and 87% world milk. This Bovinae provided the planet with a means of digesting via fermentation. Same types of zebu animals are present from the time of Indus Valley civilization dating back to 3000 BC Indian subcontinent is a treasure house of Bos-Indicus Cattle.

Farmers in the breed tract has selected and preserved each successive variation, with the distinct intention of improving and altering a breed, in accordance with a preconceived idea, and by thus adding up variations, often so slight as to be imperceptible to the uneducated. He has effected wonderful changes and improvements in the direction he desired as we see here under in Ongole Breed from 1880. There is a tendency in the breed to grow leggy with sparse light carriage, but their form, temper and endurance earned nearness to the breeders.

Effect of heat loads on Ongole cattle

Radiation:

Solar radiation received from sun is through solar terrestrial. The amount of radiation emitted for a particular location depends on global positioning, latitude, and longitude. Infrared radiation is intense in tropics, having sterilizing effect, stimulates tissues, increases metabolic processes. Non-pigmented skin has a definite hazard. 85% of solar radiated heat is sent back to the environment by the Ongole animal through its white, reflective coat. Diurnal variations such as seasons, humidity, latitude, altitude, influences variation in radiant heat loads. The rest 15% of heat immediately absorbed by the under lying black skin. When the animal has nine blacks, total body skin will be black these cattle reduces heat load through behavioral means, and postural adjustments, also orientation towards sun make it protect its own parts through shade and thus reducing heat loads. Long legs of this breed helps in minimizing absorption of solar

radiated heat. Light carriage also helps are exposed to sun.

Conductive and convective heat loads on these cattle transfer between surroundings and direct contact through soil and bedding, drinking water, feeds and fodders. Avoiding lying down stretching its body parts also helps.

Light is the most constant factor having vigor. Light influences on pituitary, shedding of hair on seasons, increase in metabolism, vision. High light intensity decreases cell wall content and increases water-soluble carbohydrates in vegetation and thus influences livestock.

Relative Humidity:% of moisture in air is humidity. Air moisture content influences animals heat balance particularly in warm climates where evaporative cooling is crucial to homeothermy. High humidity associated with high temperature favors less nutritive value of feeds and fodders, of ten the stock are light colored, with pigmented skins, and shade lovers. These influence humidity aerial movement, transpiration, rainfall and temperature.

Characters associated with hardiness and thriftiness:

- Has the ability to reverse down metabolism during extremes of scarcity.
- Efficient forager and does not force the calf for foraging.
- Fruitful in milk with exact fat percentage to keep the calves at rapid growth.
- Tight sheath and small teats to avoid injuries of grazing animals.
- Sloppy rumps are suitable for quick and hard work, having 4 sacral vertebrae.
- Have more number of bigger, functional, sweat glands per unit area of the skin.
- Having white or light colored, short, sleek, densely, reflecting and glistening coat, which will not attract vectors and dislodge them with insulting character.
- Skin, pigmented, black, mellow, loose, thick and presence of

subcutaneous panniculus carnosus muscle, which repels vectors by twitching.

- Highest heat tolerant coefficient.
- Basal metabolic rate low.
- Nutritional uniqueness, ability to convert low protein, high fiber roughage materials into high-grade foodstuffs with the aid of Omasal symbionts, such as thrives and performs well on inferior fodders.
- Crude protein utilization is highest.
- Perform well where even pastures are seasonal, scanty, and sparse.
- Spent much time in grazing even during daytime, seek shade only 3% of their total grazing time.
- Slow to cycle, when under nutritional stress or lactation stress, but response to cycle is immediate when nutrients are plenty.

Ongole Breed Tract:

Originally the breed tract comprises areas where there is no assured or commercial crops, leaving cattle raising as the only profitable proposition by selling bull ghee (Clarified butter), since crops and cultivation are not profitable. The farmers are quite aware of the food, investment, manure, forage, draught animal power and employment linkages, improving through subsistence security, transfer of nutrients, modification of vegetation and finally increasing the human support capacity of the land through Ongole breed of cattle. These cattle raising formed a part of risk education strategy with agriculture, as livestock is a saving account and their calves are interest. The farmer is quite conscious of the herd management policy options on direct costs and indirect costs, breeding, off take, purchase and culling. It clearly indicates this breed is originally dairy, later transformed as dual purpose i.e., dairy and draft animals, presently mostly a draught animal.

The breed tract comprised between rivers Krishna on Northern side, Pennar River on Southern side, nalamalai range of forest on Western side and Coromandai coast on Eastern side lying between 15.00 to 16.10' east latitude and 79.04' to 80.02' north

longitude. The rivulets Gundlakamma, Madigandi, Paleru, Muneru, Musi, Chilakaleru. Whose extensive banks became excellent grazing areas. With population growth and consequent demand for cereals the Brahmini bull selection system has been oriented towards draft characters. The soils are black loam to black clay having large quantities of lime with soil pH of 6.9 to 7.2 most favorable for notification bacteria and luxuriant growth of legumes. Annual rain fall of about 900mm with about 50 rainy days out of which 2/3 roads are from southwest monsoon and 1/3 from northeast monsoon supporting most of the cereal crops. The average ambient temperature of maximum 32 degrees Celsius and minimum of 23.5 degrees Celsius and average relative humidity of 79%.

After formation of Krishna and Godavari Ayacuts during 1850's with assured irrigation and increased demand for draft services, the breed tract extended to Krishna, Godavari and northern circars. Original tract is for breeding and extended tract for breeding and rearing, further ceded districts and Nalgonda and Mohaboob Nagar districts as rearing tracts. Extension of breed tract forced for 2 reasons. The demand for draft services from the area and generally the same species need the same resources and thus are bound to complete for the same, except when they are colonizing a new habitat, as such expansion of the tract.

(to be continued ...)

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Article extracted from
<http://www.ansi.okstate.edu/breeds/cattle/ongole/>

Indigenous Breeds: Ingenious Indeed

Farmers have to choose animals which can survive and perform optimally under the existing agro climatic conditions by utilizing the locally available feed and fodder resources in a sustainable way with least health problems. The breed suitable to one area may not be suitable for another area. The nature of small production and marketable surpluses of these farming units essentially depend on live stock draught power right from village to transportation of produce to the market as a viable and cost effective model. The use of draught animals has implications for fuel requirements, conservation of fossil fuel and ecology. The animal draught power is a renewable, nonpolluting, environment friendly source of energy.

Livestock enterprise, complementing the crop production is perhaps the only hope for the economically fragile population in the post-liberalization era. The small and marginal holdings have very little marketable surplus of the crop output but their cash needs for both purchased inputs and family needs have been increasing in leaps and bounds. Livestock enterprises have the potential to generate surplus by not only utilizing the by-product of crop farming, but also to supply valuable manure for crop farming and provide productive employment to the family labor during off-season. One cannot deny the fact that the Indian livestock industry can boast of its "White Revolution" to match the much acknowledged "Green Revolution" on the agricultural front. Nevertheless, the development focused more towards dairy farming with an emphasis on improving the quality of milch animals. However, the benefits have once again eluded the marginal and small farmers because of high maintenance cost compared to local breeds of cattle. Though crossbreeds have the high genetic potential of production, they are unable to express fully due to environmental stress, low quality feed and fodder and high susceptibility to diseases. With the introduction of exotic breeds, many new diseases like Theileriasis, Tuberculosis and Infectious Bovine Rhinotracheitis (IBR) etc also

emerged. Due to soft hoof, many of the pure exotic cattle and crossbreeds are suffering from foot rots. They are unable to survive and produce optimally under low input conditions of the majority of the rural areas. The increased use of modern techniques in animal production without desired level of veterinary health care and feed and fodder resources have resulted in sub optimal performance of crossbreeds. In contrast, our indigenous breeds of cattle are bale to convert available poor qualities roughages like paddy and ragi straw into milk whereas exotic breeds like Holstein Friesian and Jersey require concentrates and quality fodder. Indigenous cattle also produce better milk yield by improving the feeding and management. Some Deoni cows at NDRI, Bangalore are producing about 9-11 kg's of milk per day. With improved care and management one can increase milk production in indigenous cattle substantially. According to surveys, the average milk production of crossbreeds in Karnataka is less than 5 litres in spite of feeding concentrates, though in milch shed areas like Bangalore, Kolar, Tumkur and Mysore many crossbreeds produce more than 15 litres per day. Exotic breeds struggle to adapt to Indian climatic conditions. With the introduction of exotic cattle crossbreeds milk production increased but resulted in need for high level of management and inputs, increased demand for balanced feed which benefited the feed manufacturers, emergence of new diseases resulting in demand for new medicines and vaccines which benefited pharma giants. Indiscriminate crossbreeding led to loss of biodiversity. Livestock genetic diversity represents one of the most neglected as well as threatened aspects of biodiversity; a recent estimate of FAO indicates that one third of world's 6379 documented livestock and poultry breeds are in danger of extinction. It is reported that with the practice of intensive animal production in India, survival of 20% cattle breeds, 50% of the goat breeds, 30% sheep breeds and all the 18 breeds of poultry are threatened with extinction. (Balain and Nivasrkar, 1991) For example, the best of Ongole cattle with the

characteristic features are found in large numbers only in Brazil and not in its home tract in India. If we have to cite one single factor which has contributed to the loss of animal bio-diversity, it is the deliberate crossbreeding of native livestock with exotic breeds carried out indiscriminately in order to increase milk yield or other animal products. The focus on maximizing immediate financial returns has alarmingly threatened the breeds bred for a variety of domestic purposes. The Deoni breed ideally suited for the climatic conditions of semi-arid hilly regions of Maharashtra and parts of Karnataka is being pushed out by 'high' milk producing crossbreeds and exotics. There is a drastic reduction in the number of milch breeds of Indian cattle like Sahiwal, Tharparkar, Gir and Red Sindhi. Similarly, the famous draught breeds like Amrithmahal cattle have declined in number, and Khillari and Hallikar breeds are facing genetic dilution over the years. The factors responsible include indiscriminate crossbreeding, loss of grazing land, globalization of economy, catastrophes, conflicts, legal restrictions on mechanization of agriculture and transport, changing cropping patterns, degradation of forests, shrinking grazing and water resources, state driven afforestation and silvipasture programs, total negligence of healthcare services etc. Under these circumstances it is imperative to improve and conserve these valuable germplasm for posterity. However, conservation efforts cannot be initiated for all the breeds because of high costs involved.

In spite of all these adversities many local breeds continue to survive, support and sustain the rural economy. These local breeds are not able to compete with "improved breeds" in terms of production per se; on the other hand they fulfill a much wider range of functions and support farming community with wider range of products. These animals thrive at lower level of inputs; maintenance is nature friendly and ecologically sustainable especially under scarce resource conditions. Expenditure on their health care and management is minimal and possible with locally available resources. It is now

becoming increasingly evident that these livestock can produce specialty products useful in maintenance of soil fertility, manufacture of indigenous medicines and other products.

At a localized agro-climatic zone, loss of breed means loss of livelihood strategy and loss of indigenous knowledge. Distinctive animal rearing systems, dominant species and breeds characterizes each zone/region. The draught prone semi-arid regions are characterized by a major animal component, as animals can exploit resources that cannot support intensive crop cultivation on a sustainable basis. The hilly regions are characterized by the predominance of smaller livestock including dwarf breeds of cattle. As per FAO records, one third of all Indian breeds of livestock and poultry are threatened with extinction and require conservation. Maintenance and protection of remaining livestock breeds is mandated by UN convention on biological diversities (CBD). This legal instrument emphasizes need for the conservation of agro-biodiversity in the surroundings, essential to support the system. It also emphasizes active involvement of indigenous communities, their knowledge and active participation in conservation. But so far no initiatives are visible in large scale and organizations that maintain domestic animals biodiversity are only now beginning exploration. Experiences with truly community based approaches to the conservation of local livestock breeds are also lacking.

National Dairy Research Institute (NDRI), Bangalore with financial support from Department of Biotechnology, Govt. of India carried out molecular genetic characterization of indigenous breeds of southern India. Studies indicated that Hallikar breed is the originator of many present-day south Indian breeds. Krishnavalley is closely related to Ongole breed and Amrithmahal breed is closely related to Hallikar and Khillari. The Malnad Gidda cattle were found to be genetically distinct from other breeds. NDRI, Bangalore is maintaining a herd of about 200 Deoni cattle with the aim of their

improvement and maintaining 20,000 doses of Krishnavalley semen from elite bulls and providing them to farmers. NDRI, Bangalore with the support of Centre for Technology Development, Bangalore, People's Trust, Bangalore, Livestock Heritage trust, Bangalore, Ramachandrapura Math Hosanagara and other NGOs etc., is trying to conserve the Krishna valley cattle. The survey carried out by the scientists of NDRI, Bangalore indicated that Krishna valley breed is threatened with extinction while important draft Amrithmahal, Hallikar, Khillari breeds are facing genetic dilution. The work carried out by institutions like NBAGR, Karnal, NDRI, Karnal, Andhra Pradesh Agriculture University, Tamil Nadu Veterinary and Animal Science University and IVRI, Izathnagar also indicated that many other indigenous breeds are also facing Genetic dilution.

Role of Indigenous breeds in the next millennium:

Most of the agricultural operations and transportation in rural India still depend to a large extent on animal's power. Out of a total of 81.5 million operational land holdings in India, 72 percent are small-holdings whose owners can hardly afford even a single pair of bullocks. Under these circumstances Indian agriculture will continue to depend upon draught animals for a long time to come. Further, the increasing costs and limited availability of fossil fuels make it impossible to completely dispense with draft animal power for agricultural and rural transportation in the near future. Besides these, the animals also provide dung, which is used for fertilizing the fields as well as fuel in the form of dung cakes in villages. It is reported that fermentation of 75 per cent of the animal dung collected would yield an estimated 195 million MW energy and nearly 236 million tonnes of organic manure would provide around 35 million tonnes of nitrogen, more than the existing nitrogen chemical fertilizer manufacturing capacity in the country. In view of this the local animals will continue to contribute substantially to the economy of the country and there is a need

to make use of their capabilities in an effective manner.

The local breeds of cattle are well known for their draft efficiency, heat tolerance and resistance to diseases. Inherited resistance to (or tolerance of) disease and parasites in livestock has always been a valued trait among stockowners. Understanding the mechanism of genetic basis of disease resistance and identification of genes associated with adaptability and disease resistance in cattle will greatly benefit in improving the productivity of animals.

In view of the fact that the local animals are reputed for these unique characteristics, there is an urgent need to take up studies on genetic characterization of these animals, to evaluate genetic basis of these traits and identify genes responsible for them. The information on the performance of local cattle is more or less nonexistent. Hence there is an urgent need to evaluate their performance in all respects and take up programs for their overall improvement.

Despite the fact that the local animals are extensively used for draught purposes, no serious efforts are made to evaluate their draft efficiency. The information on the inheritance of draft efficiency and its association with other important traits of production and reproduction is also lacking. Hence, there is an immediate need to take up studies in this respect so that effective programs could be initiated for the improvement of draught capacity in local breeds of cattle.

The latest molecular genetic techniques will come handy in genetic characterization of local breeds of cattle and in identification of genes responsible for their unique character. This will help in combining the characters associated with adaptability with high productivity of exotic animals so as to enable production of dairy animals with better production and adaptability for tropical conditions. Identification of genes for disease resistance, heat tolerance, ability to survive and thrive under stressful and low input

conditions etc. in local breeds of cattle will go in a long way not only in the advancement of science and livestock production, but also pave way for patenting of genes for these traits.

The wide variability in the genetic resources of cattle of India and their unique qualities will be not only a boon to improve the cattle in our country but also world wide in this millennium.

The description of indigenous breeds has been gratefully excerpted from "ANIMAL GENETIC RESOURCES OF INDIA" by A.E.Navasarkar, P.K. Vij & M.S.Tantia, published by Indian Council of Agricultural Research, New Delhi in 2000.



Govind Gaudham

Govind Gaudham – continued

Separate cubicles are meant for pregnant cows or cows infected by communicable disease. Each one is identified by a code plate tied to their neck and routine checkups are monitored strictly.

The number of footfalls is in hundreds per day going upward of thousands during weekend. Visitors are not allowed to donate money – if you want to contribute you are requested to buy cowfeed and other eatables for cows so that the donation can be effectively utilized. The cows are fed twice daily and there is a big storehouse for storing cow-feed. Every morning more than adequate feed is received from nearby villages and checked for quality measures.

Such is the dedication of this trust that they send their own ambulance almost immediately whenever any report of stray cow is reported; it may be 12 in the night or 5 in the morning. There is a big Krishna temple in the Gaushala's premises in which a procession is performed twice daily so as to reiterate the significance of Cow in Indian culture.

Innovations are not only restricted to profitable business ventures; it's very much a part of GOVIND GAUDHAM also. Few months back they have started a school for underprivileged children who are given free education here. The school dresses, morning breakfast, afternoon meal, accessories like pen, pencils, copies, and books are all free of cost. Here also one is not allowed to donate money-if you have the zeal to help you can come and sponsor one or more children as per your capacity and can even monitor their growth.

The success of this Gaushala can be realized when one knows that the administration is considering another land acquisition of approx 14 acres for constructing the same setup with further modern facilities at a nearby place and a big GAUDHAM coming up at Vrindavan-the birth city of Lord Krishna. The board members of Vrindavan Gaudham boast names of celebrities like Hema Malini, big industrialists and politicians.

This initiative have motivated many socially conscious souls as the trust now has 12 board members in total and many more willing to contribute in some or the other manner.

Having gone there on the request of a friend, now I can request almost innumerable times for people to come and visit this temple of humanity. Mother cow PRERNA have truly inspired a section of society that otherwise generally is negligent of worthy things like this, as I was negligent of the importance of MOTHER COW.