II. Indigenous Coping Mechanism by Farmers and Livestock Keepers against Mortality of Cattle, Fodder Development and making animal husbandry as Profitable Activity

1. "*Korangadu*" – Traditional Dryland Grass Farming System to Earn Income in Drylands

Intoduction :

"*Korangadu*" is a traditional pastureland farming system existing in semi arid tract of Tamil Nadu state of South India viz., Dharapuram, Kangeyam, Palladam, Moolanur and Kallimanthayam areas. This region receives annual rainfall of 600 – 675 mm. The soil is laterite red soil or with gravel type and water will not stagnate on any amount of rainfall. The region situates in rain shadow region of westernghats. The majority of the rural population depends upon livestock; they are settled agro pastoralsits and allow their animals to graze in their own grassland paddocks confined to 2 – 4 ha size.

Korangadu has predominantly 3 major species of flora which are spatially in 3 tiers. The lower tier is grown with grass Cenchrus ; tree species include Acacia leucophloea locally called as *Velvel* and land is fenced with thorny shrub locally called as *Kiluvai* (Commiphora berryii) as live fence.

Korangadu is owned privately by individual farmers and it is roughly estimated that there are about more than 50,000 individuals keeping their own paddocks of about 1-2 ha size of land. Approximately 50,000 ha. of *Korangadu* pasture land is noticed in 500 villages in Erode, Karur, Dindigul and Coimbatore Districts of Tamil Nadu State, Southern India. The size of individual paddocks of *Korangadu* land ranges from 1.5 ha to 10 ha depending upon the wealth status or ownership pattern by farmers. Farmers or landless livestock keepers keep sheep, cattle, buffalo and *Korangadu* provides baseline of livelihoods for them by feeding their animals.

How "*Korangadu*" System Evolved or Story behind *Korangadu*

Many centuries back farmers in Kangeyam, Dharapuram area engaged in farming after ploughing the land followed by sowing of dryland crops. Due to various reason some of the land portion which were not covered by crop farming left as such to have natural vegetation. Such uncultivated lands (but still owned by farmers) have spontaneous growth of natural plant species after the receipt of rains. Among the plant species predominant one was *Kolukattai* grass (Cenchrus sp).

Farmers have no option to allow their livestock in cropped area but allowed only in the uncultivated zones. Later on the utilization of uncultivated land was realized for effective grazing of their own animals. Such habits or practices might have encouraged the farmers to restrict animals of other farmers or individuals and then invention of fencing with "Kiluvai" thorny species around the natural pasture land. Thus grasslands are fenced with live species for confining their animals. It is a typical paddock system with a small bamboo gate to allow the animals to enter inside. The grassland is ploughed once in 2-3 years inorder to break the clod and to enhance aeration and moisture conservation. Hardy legumes like *Naripayaru* (Phaseolus trilobus), *Kollu* (Horsegram) are sown in the grass land in order to enrich nutritional status of grassland. If the stand of grass is poor due to continuous drought over 2 – 3 years them resowing of *Kolukattai* grass seeds is practiced by the farmers.

In Tamil *Korangadu* means left over land (uncultivated /un ploughed / unsown land). In the *Korangadu* land natural vegetation of *Velvel* (Acacia leucopholea) is common in the tract where rainfall is minimal. The thorny tree escapes browsing by animals and dried pods obtained from grown up trees (after 7 – 8 years) are relished by livestock. Farmers by their wisdom arrived out a optimum size of 30 – 40 trees / ha which may not hinder the growth of grass species. In few places other trees like *Usilai (*Albizzia amara) is also grown which also a fodder tree. Finally *Korangadu* has been well structured with sound management practices developed over years and a code to select species, maintenance adopted to suit soil, climate and rainfall conditions of that area might have been accepted. Now a days *Korangadu* means any villager understands about established plant species, number of livestock to be allowed according to the size of paddock, re-seeding practice and even thinning of trees or planting trees and establishing live fencing, grazing system with rotation between paddocks, time of grazing etc.,

Plant Species in *Korangadu*

Korangadu is typically a mixure of grass, legumes and tree species including annual and perennials. During our documentation farmers have mentioned the following species and some have been scientifically identified in Madras Christian College.

1.	Velamaram Tree	*Acacia leucophloea*
2.	Kolukottai Grass	*Cenchrus ciliaris*
3.	Vennampul	*Trachys muricata*
4.	Ottanpul	*Seltaria Vericulata*
5.	Kurutupul	*Cholris barbata*
6.	Cholapul	*Chrysopogon montanus*
7.	Naripayathankodi	*Phaseolus trilobus*
8.	Seppunerinji	*Indigofera enneaphylla*
9.	Savarikodi	*Merremia tridentate*

10.	Poonapudukukodi	*Crotalaria globosa*
11.	Dadara	*Borreria hispida*
12.	Hariali	*Cynodon dactylon*
13.	Hadupudukanam	Rhynchosia rufescens
14.	Moongil grass	?
15.	Seegam grass	?

The flora of paddock can be classified under the follwing heads :

Type	**Species**
A. Trees	Acacia leucophloea (Predominant) Albizia amara Azadirachta indica
B. Grass	Cenchrus ciliaris (Predominant) *Vennampul , Ottanpul, Kurutupul, Cholapul, Cynodon dactylon, Moongil pul, Seegampul*
C. Legume	Phaseolus trilobus, Trychosanthes tricuspidata, *Seppunerinji*
D. Shrub	Commiphora berryii (Predominant Live fence) Agave americana

How to Establish *Korangadu* ?

During summer season the land to be converted for *Korangadu* has to be ploughed. Sowing of *Kolukattai* grass has to be undertaken during Purattasi – Iypassi (Sept – Oct). In order to cover 1 acre about 15 kg of *Kolukattai* grass will be sufficient and such seeds are harvested from the already established pasture land. Harvesting of seeds will be in the month of Thai (Jan – Feb). *Kolukattai* grass can also be mixed with *Naripayaru* seeds (Phillipasera, Phaseolus trilobus) and *Kollu* (Horse gram) seeds at the rate of about 10 kg each for 1 acre. For one year after sowing, no grazing is permitted but allowed in the second year of establishment. In the established *Korangadu,* immediate after rains one month time will be given for not letting the animals and this is only to allow the grass and legumes to attain required growth stage and after that livestock will be allowed to enter inside the land for grazing purpose.

In order to protect the pasture land live fencing is undertaken by planting cuttings of *Mullukiluvai* (Commiphora berryii). About 4' length stumps of *Kiluvai* a thorny weed plant found in wastelands / jungles is cut with a thickness of 3 inches. These stumps or cuttings are planted in 1 feet depth by digging the soil with crow bar. Two rows of planting with such cuttings is completed during the month of Ani, Adi (July – Aug). The survival and establishment of planted stumps will be ensured with the onset of monsoon during Purattasi – Iyppasi (Sept. – Oct.) About 30 laborers are required to plant *Kiluvai* cuttings in 1 acre land to establish live fencing.

Every year the established fence has to be maintained by proper gap filling with fresh cuttings of *Kiluvai* and any such new plantings are to be performed only in the month of Ani – Adi (June – July). Sometimes natural growth of other plant species like "Minnamaram" will also be growing. (Farmers cut the branches (7') of "Minnamaram" and utilize them for making "Tharambu" for constructing sheep shed locally called as "Attupatti".

In the *Korangadu* pasture land "Velvela maram" tree will be growing naturally and usually seeds of "Velvel" germinate from the animal dung. When cattle and sheep relish the pods of "Velvel maram" the seeds are passed undigested and spread through the dung. Farmers usually maintain optimum population of "Velvel" tree ; population will be around 20 – 25 trees in 1 acre or 60 – 70 trees in 2 ha land of "*Korangadu*".

The grown up tree will bear fruits in the 6 – 7 years and pods fall on the ground during Feb – April. A grown up tree will yield 40 – 50 kg of pod and it serves as good feed during summer. During summer season when the rainfall is absent the growth of the grass is poor or almost not existent and at that time falling pods of "*Velvel*" tree will provide good fodder for animals.

Excess Pods will be collected from the field and stored. Such pods will be mixed with sorghum seeds to feed young ones of sheep. Each lamb will take about ½ kg of such mixture and it is fed in the morning time.

Grazing System

The paddock provides grazing field for animals for atleast 5 months in a year. The growth of the grass is noticed immediate after the receiept of rainfall. Rain occurs during 3 distinct seasons as experienced in these places.

Rainy season	**Period**	**Rainfall**
South west monsoon	June – Sept.	191
North east monsoon	Oct – Dec.	330
Summer showers	Feb – Mar.	145
	Total rainfall	**666**

(Source : Trivedi 2007)

About one moth time will be allowed for the grass to germinate and attain required growth and after that animals are taken into paddock for grazing. Grazing will be from morning till evening. Drinking water is taken and filled in the stone / cement troughs within the paddock so that animals will come and drink water as and when it needs. Drinking water is fetched from the village and carried or transported through bi-cycle or bullock cart to the paddocks .

During Dec. – Jan month if there is good growth of *Kolukattai* few farmers harvest them and store it as hay for feeding the animals during off-season. During summer animals are allowed to feed on the pods of *Velvel* trees. Farmers divide their lands into paddocks, and animals are allowed in rotation.

Four hectares of "*Korangadu*" grass land is sufficient to maintain 2 adult cows plus 4 calves or 40 sheep or 6 buffaloes or 20 goats. The animals will not have infertility problems if grazed in "*Korangadu*" pastureland. The "*Korangadu*" pastureland will provide grazing opportunities for the livestock for free grazing during October to January continuously due to growth of grass on the receipt of the north east monsoon. During March to June, when there is no grass in the pastureland the cattle feed upon the pods of *Acacia leucophloea*. Whenever summer rains or unseasonal rains occur this pasture land will have regrowth of vegetation and thereby serve as fodder source for livestock. The growth of different local fodder species also spread in such a manner that it is likely to support the partial grazing of animals at least during 8 -10 months in a year.

Farmers constructed water trough in the individual plots for providing drinking water for the animals. Animals are usually allowed for free grazing.

Tenancy System

Farmers who have lot of paddocks but owning few livestock or no animals lease the lands to landless livestock keepers who in turn pay lease fee of Rs.5000 2 ha paddock / per year. Sometimes *Korangadu* land is given for long term lease basis called "Othi" to live stock keepers for Rs.30,000 whenever the livestock keepers wants to close his grazing contract.
The farmers are mostly belonging to "Gounder'' community and land ownership of individual paddocks ranges from 0.5 ha to 10 ha. The dairy animals provide income to farmers through moderate milk yield. These communities are also maintaining sheep and goats and earn income by selling them. Tenure system of "*Korangadu*" grazing land is also practiced between owners and tenants where landless tenant keep livestock like sheep ; for example a tenant family pays Rupees 50,000/- (approximately US$ 1,120) for keeping 2 ha of paddock and this money can be got back without interest after a period of 2 – 5 years depending upon the contract. The details of ownership pattern of "*Korangadu*" pastureland are shown in the Annexure .

Wealthy farmers who are leaving or reducing the area of agriculture and settling in cities are leasing their lands to livestock keepers on tenancy basis.

Korangadu Pasture Land and Livestock Keeping

Farmers and agricultural labourers are keeping cattle, buffalo, sheep and goat. They depend upon *Korangadu* pasture land for day to day grazing of animals. In the drought prone region livestock keepers are maintaining animals for their livelihood. The area is typical dry land with rainfall less than 700 mm. Now-a-days the erratic rainfall forced the farmers to solely depend upon animal husbandry for the livelihood leaving agriculture which is gamble of monsoon. Therefore there is a good scope for developing pasture land which is insurance against recurrent drought. Due to this many farmers are interested to switch over to animal husbandry activity and convert the dry land agriculture into *Korangadu* pasture land. During our survey with 2564 families we noted that there are 6505 cattle, 1365 buffalo, 30936 sheep are maintained by them. On an average, a farmer in *Korangadu* region owns about 2-3 cattle, upto 1 buffalo and 12 to 15 sheep per landholding of 8 acres of pastureland. Approximately 2 ha of pastureland will support 25 sheep together with 2 cattle. They derive income by selling milk and also disposing male sheep. Rearing sheep is the major source of income; it yields 3 lambs in 2 years.

Cost of Development of Korangadu model of Pasture land

During our discussion with farmers and also our own estimate it has been arrived at Rs.7,500/- per acre for developing new *Korangadu* pasture land in new area. For improving the existing degraded *Korangadu* pastureland the cost will be Rs.5,000/- per acre. We have conducted a survey in 4 panchayats viz Nallampalayam, Kolathupalayam, Moolanur, and Punjaithalaiyur in Dharapuram Taluka of Erode district. A total of 2564 families who are farmers and some are agricultural labourers (on tenancy basis) are interested to undertake developing *Korangadu* pasture land in their own or leased out land.

Development of *Korangadu* pasture land in new areas	–	3,458 acres
Development of pasture land in existing *Korangadu*	–	20,470 acre
Total lands identified for *Korangadu* Development land	–	23,928 acres (9,688 ha)

(Farmers own land = 15,500 acres; tenant land for agricultural labourers 8,428 acres).

Economics of "Korangadu" Pasture land

We have analyzed how farmers / livestock keepers are secured in their life even during the periods of drought or scanty rains. A farmer with 2 ha of pasture land and with animal population of 20 sheep + 2 cows + 1 buffalo is able to derive a net income of Rupees 182,000 or US$ 4000 in 10 years time. The details of income and expenses are given in Annexure 1.

Threats and Challenges

Farmers convert *Korangadu* lands into mono cropping by raising crops like cotton, maize, horticultural species etc., by putting deep bore wells (exceeding 300 meters) and also for establishing industrial units. The announcement of a land ceiling by the government has discouraged some farmers from keeping large areas of grazing land. The pastureland development in private farmer's lands is crucial in sustaining the low input livestock production while conserving indigenous animal breeds; this is question of survival verses environmental degradation. The population size of true to type of "*Kangeyam*" cattle breeding bulls is about 60. This is just 2 percent of the original population of 2,000 bulls during 1950's. These bulls are maintained in Nathakadayur village by Pattayakar families. The total "*Kangeyam*" cattle population is estimated to be about 4, 70,000.

For survival of indigenous animal breeds "*Korangadu*" pasture land is very crucial.

Failure of monsoon continuously for 2–3 years leads to drying of the live fence which in turn facilitates invading of other animals into the pasture land. There exists water scarcity also.

A parasite known as "*Thangakodi*" (Stiga lutea*?*) inhibits the growth of grass and leguminous plants. Severe infestation of "*Thangakodi*" (Stiga lutea*?*) causes reduction in the yield of grasses and legumes which leads to great loss to the owners.

Policy and Development Relevance

The traditional grassland system provides income security to the local livestock keepers, conserves domestic animal biodiversity and the sound management practices are rooted through the indigenous knowledge system. It also conserves ground water table and contribute to the ecology of the region and preserving local culture and life style of livestock keepers. Therefore awareness have to be generated at local, regional, national and international level for initiating or replicating such time tested models in main stream development.

Constraints in *Korangadu* Management

Prolonged dry spell or continuous 2 drought years lead to complete drying of grass. During that time animals are to be necessarily fed with sorghum, straw or groundnut hay purchased from outside farmers or region leading to increase the cost of maintenance of livestock. In such drought affected places resowing of *Kolukattai* seeds are essential. In addition the live fencing there will be more gaps due to drying of *Kiluvai* bushes. Even if such gaps are planted with cutting sof *"Kiluvai",* establishment of newly planted cuttings will be poor. This situation leads to entry of animals from other herds and leads to poor management or create difficulties for the owner of the pasture land.

Nowadays '*Korangadu*' pasture land is slowly converted into industrial purpose or garden land and commercial horticulture or monoculture with cash crops is being encouraged without understanding the fragile ecosystem where groundwater table is very low. So far traditional grassland system has not been incorporated in the mainstream watershed development programme. However if "*Korangadu*" pasture land is promoted it will provide income security to resource poor families while the system enhance conservation of local livestock breeds. Local tenure system encourages landless families' access to grasslands which in turn sustain their livestock keeping / settled pastoral life.

Local Livestock Breeds in the *Korangadu* Pasture Land

The *Korangadu* pasture land is existing in more than 500 villages in a compact or contiguous area (4,000 sq km) and the total grassland area is about 50,000 ha. This grassland area is known for the breeding tract of "*Kangeyam*" cattle, indigenous local cattle which supply good quality plough and draught bullocks; local buffaloes and native breeds of sheep ("*Mayilambadi* and *Meicherry*" breed).. During earlier days, this Kangeyam breed was used for draught purpose to draw water from open wells and for ploughing dry land. Presently they are being used for ploughing and transporting agricultural produce through bullock cart. Now the population of the *Kangeyam* cattle is coming down in a alarming rate due to introduction of tractor in these area. However the *Korangadu* pasture land is well utilized for maintaining sheep and dairy animals. The animals which graze on *Korangadu* pasture land are in good healthy appearance and growth rate. The dairy animals will not usually get infertility problem as seen in other areas where stall feeding of animals is predominant. There are many natural growth of fodder species which provides good nutrition for the animals. The seeds of the fodder species is resown naturally through cow dung as manure is left as such in the field itself. Therefore *Korangadu* pasture land is rich in biodiversity with different species of flora. *Korangadu* is maintained naturally without any artificial fertilizer except dung of the animal left in the field while grazing. This semi arid tract n is also

natural rain water harvesting place and therefore it conserves ground water in the entire tract of *Korangadu* pasture land.

Annexure – 1

Establishment & Maintenance of "Korangadu" pasture land (2 ha) (For one year)

Expenditure

Particulars		Indian Rupees
Land preparation and ploughing	-	5,000
Formation of live fence, maintenance & wages	-	20,000
Sowing of legume seeds	-	5,000
Weeding and other intercultural operation	-	5,000
Lopping of "Velvel" (*Acacia leucophloea*)	-	2,500
Total expenses	**-**	**37,500**

Maintenance Expenses (Cost of land Preparation, sowing, weeding and Intercultural operations)	**-**	**50,000**
For 10 years the estimated expenditure @ 37,500 per year	-	87,500

Income

For 5 acres of land 20 sheep + 2 cows + 1 buffalo can be reared. Rs. 20,000 from sheep, Rs. 5,000 from cows and Rs. 5,000 from buffalo will be obtained in a period of one year. Occasionally few trees will be thinned after 15 - 20 years and it generates an income of Rs. 5,000 – 10,000/- through sale of trees.

Estimated income in 10 years

Income from sheep	-	2, 00,000
Income from cows	-	50,000
Income from sale of trees	-	7,000
Total income	**-**	**2,57,000**
Net income (257,000 – 87,500)	**-**	**1,79,500**

Employment generation in 2 ha plot per year (Number of labourers engaged per operation)

Ploughing	-	5
Sowing grass and legume seeds	-	2
Weeding	-	20

Formation of live fencing	-	30
Maintaining live fencing	-	20
Tree lopping	-	5
Total	**-**	**82**

For the entire area (82 x 50,000 / 2) - 20,50,000 man days

This pasture land system generates an employment opportunities of 20,50,000 man days per year which in turn contribute to the income of landless families through daily wages.

Environmental services:

It is a silvipastoral system of land existing in about 50,000 ha of semiarid tract and therefore conserves moisture in the soil and maintains soil humus and fertility as it is not added with chemical inputs. Animal dung and urine added to the land nourishes soil fauna and flora. Medicinal plants found in the hedges are useful for home remedies.

Annexure – 2

Proceedings of the Two days Workshop held on 29 – 30, May 2004 at Tamilnadu

Two days workshop has been organised in Tamilnadu as a part of Indian Pastoralists Network Meeting on 29 – 30 May, 2004. First day work shop on conservation of "Korangadu" Pasture land was held at Nallampalayam village, Erode District. There were 31 members who attended the workshop include pasture land farmers, Animal Husbandry Department staff, NGOs and volunteers. Field visit has been arranged to visit "Korangadu" pasture land maintained by farmers in near by villages.

Based on discussion with farmers we are showing the recommendations formulated :

Recommendations to Conserve "Korangadu" Pasture land

1 To form new "Korangadu" grassland loan facilities should be made available to the farmers. For procuring seeds of "Kolukkattai Pul" (Cenchrus ciliaris), ploughing, raising live fencing and purchasing of 25 numbers of sheep, the farmers need a minimum of Rs.15, 000/- as loan amount. With this amount 5 acres of "Korangadu" can be raised. The farmers require 7 years to repay the loan amount. First 2 years there is no return from the land and therefore the gestation period will be included. So repayment starts from 3rd year onwards.

2 Under the ongoing watershed development project, bund formation in "Korangadu" should be undertaken; promotion of new "Korangadu" and improvement of already existing "Korangadu" are to be carried out.

3 For the past 3 years due to severe drought the farmers are transferring their rainfed land into "Korangadu" grassland. This is because the livestock keeping will ensure sustainable livelihood to the villagers. In order to promote new "Korangadu" type of grassland, support should be given through policy decision. For example in Nallampalayam village, in the last 10 years, the area under "Korangadu" pasture land increased by 40% by the own initiation by farmers themselves. Such initiatives has to be recognized and encouraged.

4 During drought and summer season drinking water is purchased from Dharapuram (near by Amaravathi river bed area) at the rate of Rs.600/- per lorry tank. Due to this there is more expenses to the "Korangadu" grassland owners for maintaining their livestock. For this, new community bore wells are to be encouraged for every 4 or 5 members on group basis to meet the drinking water requirements of livestock. This water should be used only for livestock drinking purpose and not for irrigation purpose unless excess water is available.

5 In most of the villages there is no verterinary sub centre for insemination. For this Community Bulls Scheme should be introduced. In this programme, indigenous cattle breeds such as Tharparkar, Shahiwal, etc., bull is to be provided to the village community in order to increase the quantity of milk production in dairy animals.

Second day Programme:

On 30th May 2004 Core group meeting was held. In this meeting we have gone through minutes of the Indian Pastoralists Network meeting held on 22 – 23rd at Sadri, Rajasthan. We have also reviewed the constitution and vision draft compiled by Mr.P. Vivekanandan, who are all members, associate members, membership fee, need for including government staff / department representatives, media people as members and need for rotating secretariat for pastoralists network on every 3 years basis. It has been emphasize to include the following activities and incorporating them in the proposal to be formulated:

Arranging policy planners workshop to address Grazing problem, documentation of ethno veterinary practices, breed characterization of native breeds, indigenous knowledge based animal management, survey of pastoralists, pasture land and population of different breeds in different locations, identifying NGOs, community groups working on issues of pastoralists and publication of printed materials based on the outcome of above work.

Annexure – 3

Proceedings of One-day Workshop on "Conservation of *Korangadu* Pastureland (Traditional Dry land Silvipasture System)" organized at Nallampalayam Village, Dharapuram Taluka of Erode District on 10-12-2005

SEVA has organized a one-day Workshop on "Conservation of *Korangadu* Pastureland (Traditional Dry land Silvipasture System)" at Nallampalayam Village, Dharapuram Taluka of Erode District in Tamil Nadu on 10-12-2005. The workshop was presided over by Mr S Kuppusamy Gounder, President of Kamdhenu Traditional Pastureland & Livestock Keepers Association and inaugurated by Mrs Priya Mahesh, Project Associate, Centre for Environment Education, Bangalore. Government officials, representatives of NGOs, SHGs, pastureland farmers and volunteers numbering 41 participated in the workshop. In his welcome address, Mr Nallasenapathi, Field Officer of SEVA appreciated the interest shown by farmers and members of SHGs by participating in the workshop.

Mr Muthiah, Project Officer of SEVA, explained about the *Korangadu* project and the necessity of conserving native grass/fodder species including *Kolukkattaipul*, which is available in Nallampalayam and Kolathupalayam panchayat areas. He cautioned that there may be acute shortage of animal feed if such species are not conserved, and as such, farmers also should come forward to conserve the pastureland. He observed that *Korangadu* pastureland is sold out for the purpose of starting factories and windmills, which will destroy the pastureland, ground water table and thereby lead to disappearance of *Korangadu* pastureland. He suggested that those farmers who want to sell their landholdings, should sell them only to local farmers and not to outsiders including industrialists.

Mr Raja Gounder (Retd Joint Director of Agriculture), AGLASS, Erode Thindal has given key note address on *Korangadu* pastureland as below:There are three varieties in the *Kolukkattaipul* species, namely, white, black, and blue varieties. The blue variety can grow even withstanding severe drought, than the black variety available in this region. The blue variety is cultivated only by the Tamil Nadu Agriculture University. The growth rate is only 30%, and hence it can be simply spread after ploughing is over. The seeds should not go deep in the soil. It contains 7% to 9% of protein. This variety is available only in some areas of Coimbatore and Erode districts, and farmers and government should come forward to conserve this variety. To conserve this variety, *velvel* trees should be planted in *Korangadu* areas. Also if pulses such as *Muyalmasal*, *velimasal* are planted on the fence, it will conserve the *Korangadu* pastureland during drought seasons.

Mr Sangaiah, an experienced veterinarian from LEAD, Trichy: SEVA and LEAD have a longstanding collaboration with each other in implementing projects on conservation of animal breeds. We are organizing training on herbal healing practices in collaboration with SEVA. If the livestock keepers have some knowledge on herbal healing practices, they themselves can give immediate treatment to the ailing animals and save tem without waiting for the veterinarian. Herbal treatment is better than allopathic treatment. *Korangadu* pastureland can be conserved through planting of *Soundal* trees also. It also serves as good animal feed.

NABARD Watershed Development Project Manager, LEAD: We are implementing the NABARD watershed development project. I am proud of being a farmer. The watershed development project is a "dream project of poor". Though the project proposals prepared by the NGOs are aimed for the benefit of all, in reality it is not so. Also, we only should be held

responsible for the leakage of tanks and ponds, which led to the recent flood. “Single tree can not become a garden.” So, government alone cannot implement the projects. Farmers also should come forward to form committees to implement the projects. There is no project, which a farmer does not know. Farmers should cooperate with government and NGOs in implementing the project. Then only there will be agricultural development.

Mr Vellaidurai, DHAN Foundation, Madurai: DHAN Foundation is functioning in 10 revenue villages of Madurai district. Pastureland is vanishing because of converting it into factories and residential plots. Farm level ponds may be constructed in the drainage areas. District level associations can be formed to conserve *Korangadu* pastureland.

Dr Abdul Razack, Joint Director (Retd), Department of Animal Husbandry and Consultant of SEVA: I have served in the villages for quite a long time. Farming and livestock are two eyes of a farmer. The *Jersy* breed of cows cannot withstand hot summer. Cows should be given both dry and green fodder. It should contain protein sufficiently. They should drink at least 20 litres of water daily. The ratio of water intake by milking cow should be at least 3 litres of water for 1 litre of milk. Cows, which yield 10 litres of milk per day if affected by *Komari*, will not yield more than 3 litres of milk per day. Such cows will not yield any milk if given any other treatment. He explained symptoms of the disease *Komari*. As far as possible, pregnant animals should not be bought. Because of change in food system and place, animals will not take food properly. They will not properly conceive. Treatment for cows, which find it difficult to deliver: *Pirandai* should be ground into paste and applied in the cervical opening for 5 minutes. The cow will deliver after half an hour.

Mrs Priya Mahesh, Project Associate, Centre for Environment Education, Bangalore in her address mentioned about CEE activities. There are 32 centres for environment education in the country. They are implementing many projects to protect the environment with the help of media. At present, they have started a project in collaboration with SEVA to protect the native breeds of livestock.

Group Discussion:

The participants were divided into 3 groups for the purpose of group discussion.

Group-1: Development of Pasture land: Pastureland is still in tact and not got destroyed. Willing to enlarge *Korangadu* pastureland. Shed construction should be promoted for livestock. No separate person required for taking goats for grazing. They need support for renovation and strengthening of existing *Korangadu* pasture land by undertaking soil and water conservation practices, tree planting and sowing of fodder species.

Group-2: Livestock keeping and management practices: The group discussed on indigenous practices in animal feeding, management and care of animals.

Group-3: Promotion of Pasture land and Livestock Keepers Association and Capacity Building: The group discussed framework and guidelines to form Peoples Association, Self Help Groups, *Korangadu* pasture land farmers’ association, Livestock Keepers Association and monitoring and strengthening them. This process should have the objectives: to enlarge the pastureland through watershed development; to control livestock diseases through management practices, to improve living standard of the people; and to give training to members.

2. Herbal Formula for Increasing Body Immunity and to Control all Digestive Disorders in Animals

Mr Mookan is a herbal healer and he prepares herbal bolus exclusively for animals for increasing body immunity and to control all digestive disorders. He is living in Melaurappanur village, Thirumangalam Taluk, Madurai District. Mr Mookan's formula is given below:

Mookkan has been fully involved in preparing "bolus" by adding herbal ingredients. He carries about 50 bolus in a box and goes to nearby and distant villages for treating digestive disorders in animals. He goes for a week or so to outside villages and returns to his native place again to prepare more bolus. He claims that he has treated more than 10,000 animals over the last 45 years. He charges about Rs.2 for giving one bolus to an animal which is just through to meet out the cost of preparing the bolus.

He first examines the oral cavity of the animal and punctures the veins underneath the tongue of the animal and allows the black colour blood to ooze out. After this he rubs the tongue with a pinch of salt and tamarind fruit. Then he administers the bolus to the animal 2-3 times.

The method of preparing the bolus is given below.

(a) Plants of Kandankathri (*Solanum surattense*), Thumbai (*Leucas aspera*), Kuppaimeni (*Acalypha indica*), Veeli leaves (*Cadaba farinosa*), Peruthumbai (*Leucas martinicensis*), Usilai (*Albizia amara*), Thulasi (*Ocimum tenuiflorum*), Avarampoo (*Cassia auriculata*), Moongil (*Bambusa arundinacia*), Puliampirandai (*Vitis setosa*), Thuthi (*Abutilon indicum*), Musumusukkai (*Mukia maderaspatana*), Kolunchi (*Tephrosia purpurea*), Manjanathi (*Marinda tinctoria*), Veliparuthi (*Pergularia daemia*),

Nilavembu (*Andrographis paniculata*), Virali (*Dodonaea viscosa*), Mavilangam (*Crateva adansonii*) – 50 grams each of the above materials are taken, dried in shade and pound well and stored.

(b) Thippili (*Piper longum*), Seeragam (*Cuminum cyminum*), Sombu (*Foeniculum vulgare*), Perungayam (*Ferula asafoetida*), Valmilagu (*Piper cubeba*), Sukku (*Zingiber officinale – dried*), Pepper (*Piper nigrum*), Chillis (*capsicum annuum*), Kasakasa (*Papaver somniferum*), Lavangam (*Cinnamomum zeylanicum*), Fenugreek (*Trigonella foenumgraecum*), Omam (*Trachyspermum ammi*), Seeds of coriander (*Coriandrum sativum*) – the above materials are taken 10 grams each and pound well.

(c) Banana (*Musa paradisica*) one infloresence, Kaleathi unripe fruits (*Ficus tinctoria*) 100 grams, Guava bark (*Psidium guajava*) 100 grams, Sotru katralai (*Aloe vera*) 100 grams, Pirandai (*Cissus quadrangularis*) 500 grams, Onion (*Allium cepa*) 250 grams, Coconut (*Cocos nucifera*) one, Garlic (*Allium sativum*) 100 grams, Kollankovaikilangu (*Corollacarpus epigaeus*) 100 grams.

All the above materials are ground and mixed along with other items mentioned above (a) and (b) and made into boluses each of 100 grams. Finally the boluses are to be dusted with turmeric powder. This bolus can be used instantly or can be stored for 3 days. This bolus is to be given twice daily for three days in the morning and evening. Before giving this bolus, venous puncture can be made with the help of sterile needle in the dark green vein visible in the ventral side of the tongue. Later using common salt and fruits of tamarind (*Tamarindus indica*) rub the upper surface of the tongue. (This can be practiced with the help of expert healer.)

Testing of Herbal Bolus by SEVA:

We have selected breeding tracts of *Katchakatti* black sheep, *Vembur* sheep, *Umbalachery* cattle in Madurai, Thoothukkudi and Nagapattinam Districts respectively for administering the herbal bolus.

Treatment for Umbalachery Cattle: In Nagapattinam district of Tamil Nadu, *Umbalachery* cattle breed is noticed in Vedaranyam taluka. We have administered herbal bonus for 750 cattle in Umbalachery, Vattakudi, Perumalai, Vadugoor and Sembiamanakudi villages. Cattle have been treated during July 2004, December 2004 and April 2005.

Training: In all these places we have given exposure cum training to the live stock keepers on preparation of herbal bolus for deworming the animals as well as to provide immunity against infectitious diseases. This has given an opportunity for the herders / livestock keepers to learn and administer this medicine even after our programme is over.

Results and Discussion

Internal parasites in the intestine cause less feed intake, diarrhea, lethargy and loss of body weight gain in sheep and cattle. Immediately after next day of treatment, animals started taking grasses or feed vigorously. Intake of drinking water has also increased considerably. In sheep, they noticed normal weight gain. The dung of sheep becomes solid and watery diarrohea has stopped.

In cattle, the droppings of animals become normal and solid; loose motion arrested. Intake of water and feed increased after the treatment. Grazing by animals becomes vigorous. In few cases, the repeat breeding problem has been overcome and the animals conceived after natural crossing or artificial insemination. The milk yield has increased upto 3 litres per day in the cows which had earlier characterized with poor digestion or less feed intake before the treatment.

At present, more than 20 farmers continue preparing this herbal formula themselves and administering the same at 2-3 months' interval in Umbalachery village.

Conclusion

By administering herbal bolus in more than 2800 animals and repeated 3 times, confirm the effectiveness of the formulas. It is cheaper than the chemical treatment and many livestock keepers developed the skill of preparing and administering the herbal medicine even after our programme is over. This traditional practice existed for many centuries. Now this can be revitalized. SEVA has published this practice in local language for wider dissemination.

3. USING "DAINCHA" AS FODDER FOR SMALL RUMINANTS

Mr.Vasanth Vazhavanthan (30 years) studied up to 8th standard and involved in rearing of goats for his livelihood in Nathathupatti village . This village is atypical black cotton soil area and farmers usually raise rainfed crops. He is regularly procuring young goat kids from nearby sandies and rear them for a period of three months and dispose them for selling on profit basis. He is earning good income. He sells a goat of 10 kg body weight around Rupees 2500/-. Each time he rears about a batch of 20 goats. His management practices of goat rearing are low cost especially feeding the goats with nutritious green fodder.

Using Daincha as fodder crop

He has been observing his father about using the daincha as fodder crop. Daincha crop(*Sesbania acculeata*) is locally known as *Thakkai poondu*, was introduced by his father in this village about 2 decades back. Earlier this crop was used as a green manure crop. By seeing the palatability of the plant to animals, ha was feeding his goats without any harmful effects. He also tried raising daincha crop as a rain fed crop in the tank bed (when the water in the tank dries up he is using the tank bed for sowing daincha during summer season).

He observed that the animals are attaining good body weight / growth rate after feeding daincha fodder. In course of time he standardized the feeding practice using daincha crop for goats. When daincha crop is first introduced to animals it will feed with difficulties /little hesitation for few days. After 2 to 3 days it will relish the feed quickly. He is tying the fodder in a rope and hang it under the roof of goat shed so that goats will feed on them without any wastage . He is also using the feed for buffalo, sheep and dairy animals. If animals feed more quantity it will not lead to loose motion (*Perunchani* is the local term to denote bigger size dung from sheep /goat when animals are fed with Agathi – *Sesbania*

grandiflora). After feeding by goats the left over stubbles / waste is used as fuelwood for cooking.

Raising Daincha crop in Tank bed

In Naththathupatti village, there is a tank which is used as a common property resource and tank water is used for irrigating paddy crop during monsoon season viz .September to December. Once the water is exhausted the dried tank bed is used by villagers for raising vegetables, fodder crop etc., Mr.Vasanth has been sowing daincha seeds in the tank bed during the month of January. Daincha grows well by utilizing the sub soil moisture. Once daincha crop starts growing, he cuts the crop 5 times at 40 to 45 days interval and feed his goats. He cuts the crop about half to one feet from ground level and ensure cutting is above the branch or nodes. Other wise cutting leads to death of the plant. Immediately after cutting the fresh foliage are to be fed to the animals. Cutting has to be performed in the morning before 8.00am or in the evening after 6.00pm so that the foliage is green fresh and relished by the animals very much . By raising one acre of daincha 15 goats can be fed without any shortage of feeding materials. Mr.Vasanth is maintaining 20 goats by growing daincha fodder in 2 acre of land.By seeing his goat rearing with daincha fodder about 50 farmers in his village adopted the same method. Now the tank bed is full of daincha fodder during January to July. This practice also spread to near by village Kalingalmettupatti.

(During the growth of daincha plant, they observed a larval pest which destroys the crop. To control this larva, they go for spraying the crop with a chemical. The chemical sprayed daincha crops are not fed for the animals for few days).

Feeding Goats with husk of cluster bean :

In Nathathupatti village cluster bean is raised as irrigated vegetable. The matured pods will be harvested and seeds removed and sold. The remaining husk of beans was usually sent to manure pit or left as such in threshing floor. This was relished by animals and nowadays the villagers started using the husk and procure them and store them in their shed to feed for sheep, goats and dairy animals during rainy season. Now one gunny bag of cluster beans weighing 60 kilos is sold at Rs 100. For a group of 10 young goats daily 2- 3 kilos of husk is fed to them as supplement feed by Mr Vasanth .

Treatment for animal disease

Mr. Vasanth's curiosity in his animal rearing invoked to find solutions for various animal diseases.

1) Rhinitis (oozing of pus from nasal region or nasal discharge) :

During summer season sheep and goat develop continuous nasal discharge due to excess heat. In few cases, death of animals is inevitable. Once this case is noticed, local farmers rush to vetenarians for vaccination or for administration of antibiotics etc., In spite of this, animals will not be rescued from death. Mr.Vasanth once tried exposing the goats to benzoin fumes (*Dhubam*). It was successful. He is taking 100 grams of benzoin and sprinkles it over fired wood / charcoal and the fume is exposed for the animals to inhale. This treatment has to be continued for few days till the point of cure.

2) For HCN poisoning

After the harvest of Sorghum plants the ratoons will grow. The ratoons if not irrigated it will be drying. During that time if animals browse ratoon sorghum and it will obstruct throat region (alimentary canal?) and lead to death due to hydro cyanic poisoning. For this traditional farmers usually give jaggary diluted water. But this method is not guarantee from death of animals. Mr.Vasanth was thinking giving tamarind will invoke salivation and there by animal can be saved. He administered tamarind soaked water (250 gm tamarind is procured and cleaned by removing the seeds and soaked in water).

After administering tamarind water he tied up 4 legs of animals for few hours in order to prevent falling of animals if allowed for free walk. By this method he has saved one cow, and one buffalo from their death.

Address of the Innovator :

Mr.Vasanth Vazhavanthan,
S/o S.Shanmuga Vel,
Vadaku street, Naththathupatti post,
Sathur taluk.
Virudhunagar district,
TamilNadu.
Ph : 9786769509

4. Enema Treatment for Animals

In human those who suffer due to constipation or less bowl movement, enema is a well known naturopathy method of treatment . Mr. Rajamanickam a herbal healer for animals has adopted the enema treatment for animals against bloat, constipation, fever, urinary problem, rinderpest and intestinal worms. Mr. Rajamanickam is a youth disseminating herbal healing for animals through practice for cattle disease in Tamil Nadu for the past 7 years and he has been awarded with Sristi sanman during 2004. He has seen few cattle died due to severe constipation and he thought of trying enema method of treatment. After seeing good result he has standardized the practice. Now he has treated more than 25 cattle or goats. His method of enema treatment is given below.

Materials required

Water 20 lit , Enema can with rubber hose, Coconut Oil 50 ml, Srianangai (Androgaphis paniculata)-10 gm ..

Methodology:

Water has to be boiled along with srianangai powder 10 -gm - and cooled. Water has to be filled in the enema can. Coconut oil has to be smeared over the rectal region of the cattle (both inside and outside). The tip of the hose is to be inserted in to the anus. The water filled can has to be lifted with the hands. Then the water will enter in to the anus through natural flow. After this we have to press the hands over the anus region for few minutes so that the water will not come out. Then the animal can be walked for few metres. After taking out the hand from the anus region the water along with faucal matter will be ejaculated.

This method will cool the intestinal system and liberate waste impurities from the body. It will also expel parasitic worms from intestine. The herbal powder will act as a worm killer. This practice can be followed for goats, sheep and other animals. It controls blood tinged diarrhea, blood tinged urine, fever, indigestion, constipation, wheezing, animals not conceiving.

The address of the Innovator:

Mr. Rajamanicakam,
Meinithampatti, Saptur Via,
Peraiyur Taluk, Madurai Dist.

5. Conservation of Malaimadu Cattle and using "Malaimadu" bulls for upgrading exotic cross breed animal

Sri. Bhaskaran and Sri. Mohan are brothers living in Krishnapuram village in Watrap block, Virudunagar district. Their family members originally migrated from Rajasthan some 300 years back; they had been under the patronage of local king – of that Srivilliputhur region for serving as priest for the temples. Now the inheritors are living jointly with more than 25 members together. They look after temple lands and also they are maintaining local 'Malaimadu' non – descriptive (?) cattle. Earlier they maintained 300 animals, which are now reduced to mere 50. They use this animals mainly penning in farmers lands.

Now days the exotic crossbred animals are maintained by many farmers. Even though the milk yield are higher they face problems like cost of feed, disease treatment and problems of regular fertility / conceiving problems etc., Mr. Mohan and Bhaskaran have also been maintaining jersey crossbred animals with more than 50 per cent jersey blood yielding more than 10 lit. of milk per day. They crossed the existing jersey crossbred animals by sing a good pedigree of "Malaimadu" bull. (They maintain the Pedigree of Malaimadu by years of good selection). The resultants off spring have many good characters.

Mohan brothers feel that such type of crossing is giving benefits to the small farmers and also herders; the off spring also climb steep hills for hill grazing and yield 5 lit. of milk without any difficulties. Mohan brothers have been involved in this crossing for the last 7 years and continue their breeding work. In order to upgrade the existing jersey. Crossbred animals the need for conserving the locally adopted cattle (Malaimadu cattle) are important as per small experiment attempted by Mohan brothers.

The off spring obtained by crossing with Malaimadu as bull with that of jersey crossbred cows are known for the following qualities :

- Disease resistance to foot & mouth disease. (Both the jersey cross mother and "Malaimadu" bull are susceptable to foot & mouth disease).
- Milk yield is up to 5 lit. (milk yield is more th
- an the "Malaimadu" breed but less than the jersey crossbreed animal).
- The males are sturdy and can be used for draught purpose.

Uses

The off spring obtained by crossing with Malaimadu as bull with that of jersey crossbred cows are known for the following qualities :

1. Disease resistance to foot & mouth disease. (Both the jersey cross mother and "Malaimadu" bull are susceptable to foot & mouth disease).
2. Milk yield is up to 5 lit. (milk yield is more than the "Malaimadu" breed but less than the jersey crossbreed animal).
3. The males are sturdy and can be used for draught purpose.

Name & Address of the Farmer :
Mr. Baskaran & Sr. Mohan
S/o. Uthayagiri
T. Krishnapuram village
Maharajapuram Post
Srivilliputhur Taluk
Virudhunagar District.

6. To Improve Health of Weak Cattle by Herbal Medicine

When cattle are very weak with loss of body weight the following herbal treatment will be useful.

‘Sempirandai ‘ stem (Grewia flavescence)
White purasam bark (Chloroxylon swieteia)
‘Seruppadi saranai’ (Trianthema decandra)
Cumin seed (Cuminum egminum) – 50 gm
“Sombu” seed (Foeniculum vulgare) – 50gm
Roots of Aloe vera – 100gm

All are ground well and mixed with neem oil made into bolus and fed to the animal orally twice a day in the morning and evening till complete recovery.

Healer Address : Thiru S. Muthusamy,
(Via) Tharagampadi,
Kottakarai village,
Kulithalai Taluk,
Karur District.

7. Herbal cure for Poisonous Bite in Cattle

The affected cattle with bloated stomach has to be first confirmed whether it is due to poisonous bite by snake. Make a small incision in the ear lobe with a sharp knife. If there is no bleeding then it is ascertained only due to poisonous bite. The following preparation has to be administered immediately.

'kollankovai' tuber (Corallocarpus epigaeus)
'Vandu kadi bark (Vateria indica)
Juice of 'Urincham' vine (Albizia amara)

All are crushed together and mixed with hot water – 200 ml, cooled and given orally to drink by the affected cattle twice a day till it recovers completely.

Healer Address : Thiru. S.P. Krishnasamy gounder,
Former Village President,
Mela Chockanathanpuram,
Bodinaickanur Post
Theni District.

8. Natural cure for Eczema - a skin disease

Eczema is a skin disease and frequent itching leads to ooze out of watery substance and in severe case it affects the body part especially the legs. A child who had eczema on both the legs was treated by a skin specialist. There was only temporary relief and the disease re-appeared again. For this a nature cure method was adopted. In this method neem leaf extract was given through anus for cleaning the rectum. The neem leaf extract will act as deworming agent.

During the course of treatment drinking of milk and chocolates or sweets was stopped. In the diet papaya fruits was included regularly. By following this method the skin disease was totally cured.

Healer Address: Smt. Padma Ammal,
Gandhi Musuem,
Madurai – 20

9. Control of Blue Tongue disease in Sheep

Mr.N. Ponnusamy is 64 years old farmer. He studied upto 5th standard. For the last 40 years he is pursuing Siddha tradition of herbal treatment by contacting Siddha practitioners. When he was 10 years old boy he suffered acute pain in his legs due to wounds. He suffered for 20 days. When he was 15 years old he thought of finding a simple cure so that no person suffers due to pain caused by wounds / swellings. He owned about 15 acres of lands which he sold for pursuing his research. At present he owns few acres of lands and 20 sheep which are grazed by him. Occasionally he disposes one or two sheep to meet his family expenses and to meet expenses related to his herbal research. His spirit of research in his old age is exemplary.

During rainy season, sheep farmers in Tamil Nadu face economic loss due to sudden death of sheep by a new disease called as blue tongue disease. So far no vaccination has been developed for this disease. If disease occurs to one sheep it spreads to other animals in the flock. Therefore it is a serious disease and sheep herders are unable to do anything.

Mr. Ponnuchamy is maintaining about 40 sheep in Odaipatti village near Oddanchathiram, Dindigul district. Three years before he found a sheep in his herd has been infected with blue tongue disease. The symptoms of the disease are: Ulcer in the mouth, oozing of fuzz like substance from the mouth and limping while walking and sometimes in the lying position. If the animal is lifted the hairs in the body will fall off. Animals will not take feed but drink little water. In the severity of the disease the animal will die on 15th day or so. This disease is caused by a virus and mosquitoes or insects acts as vectors.

Treatment for the diseased animal

Since the animal is not taking any feed the starvation may lead to death. So te animal has to administered orally the following food. Banana fruits smeared with gingelly oil for 2 to 3 times. By this animal will recover little. However this will not control the disease fully. Next the leaf pulp of Aloe vera has to be administered daily. Administering of Aloe vera has to be continued for more days till the animal fully recovers from this disease.

By this treatment the infected animal will recover from the disease. The disease will not spread to other animals is all animals are administered with Aloe vera as a preventive treatment.

Administering Aloe vera also increases the body weight of animals as it is against all intestinal parasite.

Thiru.Ponnuchamy,
Odaipatti Village,
Oddanchatram Taluk,
Amblikkai Via
Dindugal district.

10. Animals not Conceiving / Infertility Problem

Mr. Joseph is a 86 years old and learned traditional healing practices from his mother. He is agricultural labourer and keeping cattle. He has treated many cattle which were not conceiving or fertility problem and also against poisonous bite.

Dairy animals especially cross bred animals will not conceive after second or third lactation. Such animals are to be disposed because of repeat breeding. The animals will not come to heat at definite intervals. Main reason is nutritional deficiency, hormonal deficiency and uterine disorders.

Treatment

Mr. Joseph takes ½ litres of neem kernels and ground or pulverize it in a country pounding unit called 'Ural'. Then it is soaked in 5 litres of water. In the next day morning it has to be filtered and administered orally. It should be administered in the empty stomach. During that day only dried fodder or straw in fed. No green fodder is given. When soaked with water care is taken that already existing solution (previously soaked water) is mixed to an extent of 100 ml as a fermenting inoculum.

One time administration is sufficient against animals not conceiving or repeat breeding. Those animals which are not properly yielding milk after calving can also be treated in this way. This treatment also takes care of indigestion, anorexia and against less intake of water. He collects Rs.50/- from each animal owner after giving this treatment.

Address of the Healer :

R.Joseph

4/6/74. Devipattinam

Sivagiri Taluk

Tirunelveli District

11. Poisonous Bite in Cattle

Mr. Joseph is a 86 years old and learned traditional healing practices from his mother. He is agricultural labourer and keeping cattle. He has treated many cattle which were not conceiving or fertility problem and also against poisonous bite.

Poisonous snakes, insects, “Aranai” / (Lizard type) will sting the animals and animals show symptoms of falling of hair, wounds with eruptions, swollen eye lids, hypothermia, body surface chilled and in severe cases the animal will die. Animals suffering due to poisonous bite is treated with human urine, pepper, garlic and betel vine leaves. He takes 50 gm of betel vine leaves and ground it well along with 10 gm pepper and 50 gm of garlic and diluted in 100 ml of human urine. This has to be administered orally. Alternatively he uses “Kannupoolai chedi” (Aerva lanata) , betelvine leaves, garlic, pepper and human urine to make it more effective. He has treated more than 50 animals suffered with poisonous bite.

Address of the healer :
R.Joseph
4/6/74. Devipattinam
Sivagiri Taluk
Nellai District

12. For Emaciated Cattle

Mr. Joseph is a 86 years old and learned traditional healing practices from his mother. He is agricultural labourer and keeping cattle. He has treated many cattle which were not conceiving or fertility problem, emaciated cattle and also against poisonous bite.

Bullocks are used by farmers for transport, ploughing and for drawing water from wells for irrigation purpose. If bullocks are not properly maintained with nutritious feed they will become weak and susceptible to disease. Such animals will not be fit for work purpose and they have to be culled. Mr. Joseph has developed simple herbal formula to treat the emaciated cattle so that it will recover. Those bullocks which are weak and emaciated are given with neem bark decoction. 500 gm of bark of neem tree is taken and boiled in 5 liters of water and the decoctions administered twice a day and continued for 3 days. He has treated more than 100 animals.

Address of the Healer :

R. Joseph
4/6/74. Devipattinam
Sivagiri Taluk
Tirunelveli District.
Tamil Nadu.

13. Herbal Healing practices to prevent Animal Disease followed by Sri. Soorappa Naicker

Soorappa Naicker studied upto 5th std living in Koilnatham village situate in Burgur Forests in Andhiyur block of Erode district. He learned many herbal healing practices from his grandfather and he is also well versed the flora in the forest area situated in Karnataka, Tamil Nadu border. His treatment methods are given below.

For All Poisonous Bite

Animals suffering due to poison bite show symptoms of discolouration of skin, hypothermia. For treating the affected animals roots of Calotropis, root of Pandava erukku (?), bark

of *Athandangai* (?) are to be ground and administered internally. Alternatively leaves of Nochi (Vitex negundo), Gandhari milagai (small size chilli capsicum) fruits with high pungency) to be ground in hot water and administered internally.

Diarrhoea in Calves

Bark of *Suduvenai maram* (?), *Vengai maram* (Pterocarpus marsupium), *mathimaram* (Terminalia arjuna), *Negamaram* (?), *Vagai* (Albizia lebbeck) and garlic (Allium sativum), ginger (Zingiber officinale), black pepper (Piper nigrum), cumin (Cuminum syminum) are to be taken in 2 litres of milk in a mudpot. This will lead to precipitation and become curd. After that daily butter milk and onion are to be added. From the whole lot of 50 ml of liquid is taken and administered orally for 8 days. This practice arrest watery diarrhea and the dung will become solid state.

For Management of Servicing Bulls

In this forest village farmers maintain, indigenous type of cattle called 'Bargur' and 'Malaimadu'. 'Bargur' breed has white tinges in red coloured background locally called 'semmari'. For grey coloured type they call "Malaimadu" type. For developing good quality animals bulls are carefully selected and maintained. In order to increase the vigour and maintaining its servicibility the following treatments are followed.

i) For 'Semmari' type (Bargur cattle breed) of bulls, flowers of *Senbagam* (Michelia champaca) (3 numbers), matured coconut (3 numbers), raw rice (1 kg), jaggery (500 gm) are to be ground and then banana ('monthan' variety 3 numbers), grapes (500 gm), cow ghee (100 ml) are to be added in 3 litres of milk and thoroughly mixed together and administered orally. This has to be performed on Sunday and once in a year.

ii) For grey coloured bull (Malaimadu cattle type) flowers of Kattamalli alias sendumalli, Athamakkarai, Kamsakkarai (1 rhizome of tuber), Mathamasakkarai (3 rhizome), Bhoomi sakkarai (1 rhizome), matured Coconut (3 numbers), raw rice 1 kg, Jaggery 500 gm, cow ghee 100 ml are added in 3 litres of milk and mixed together thoroughly. This has to be administered orally only once in a year in a Sunday.

While giving this treatment the bull should not be allowed for service on the day of treatment.

For Ectoparasites

Ecto parasites like 'Unni' (mites) are treated with exposure to smoke / fumigation made out of leaves / bark of Purasu (Chloroxylon swietenia), Vidathalai (Dichrostachys cinerea), Doopamaram (Boswellia serrata) (the bark exudates of the tree is used as incense stick or used for good odour smoke) and performed on new moon day.

For Sappai disease / Black Quarter

This disease is noticed during June, July. The disease is characterized with swellings in hind quarters, crepitating sound on pressure. The animal will die suddenly. For this *Kadukkai* (Terminalia chebula) (20 numbers), seeds ground after removing the kernel and to be mixed with lime (Calcium hydroxide), castor oil, latex of *Kalli* (Euphorphea tirucalli), are to be mixed together and branded over the sappai region (in the front of back quarter).

For "Kundisilai" disease

The cattle affected with "Kundisilai" have symptoms with nasal discharge and will not take feed and die within 3 days.

This disease is noticed after drying of grass due to long dry spell. For this animal is treated with grinding of “Veliparuthi (Pergularia daemia), black pepper, garlic, hot water and mixed in milk and administered orally.

Address

Soorappa Naicker,
S/o. Katta Naicker,
Koil Natham, Thamaraikarai Post,
Burgur Via, Anthiyur Block, Bhavani Taluk, Erode District.
Documented by : P. Vivekanandan, SEVA.

14. Control of Hemorrhagic Septicaemia in Cattle

Hemorrhagic Septicaemia is locally known as “Thondai adaipan” and the affected animals are subject to mortality in severe cases.

Clinical signs

Sudden onset of fever, profuse salivation, hot painful swelling under neck region, dewlap, brisket, perineum, congested eye and death of animal.

Treatment


Cassia auriculata

Tender leaves of “Avaram” (*Cassia auriculata*), flowers of 'Avaram 'and garlic *(Allium sativa)* are taken 250gm each and are pound well and then ground. This has to be administered orally for 3 times a day and continued for3-5 days.

Address of the Healer:

Dr. Raju,

Veterinary Officer,

Vasudevanallur

Tirunelveli District.

15. Traditional Practices for Preventing Mortality of cattle due to Black quarter

Black quarter disease is locally called as “Sappai noi” . This disease occurs during rainy season and affects the heifers and young bulls. This disease spread through the gracing ground of animals.

Symptoms

Fever, Lameness, Crepitating sound on pressure, swelling on hind quarters, Sudden death

Preventive Medication

1) The disease is commonly seen in robust young heifers, and it is prevalent in July and August months. Hence the following measure is to be taken up in the month of May / June every year.

Thirugukalli (*Euphorbia tirucalli)*	exudate
Kodikalli *(Sareostemma brevistigma)*	exudate
Aththi (*Ficus racemosa)*	exudate
Banyan tree *(Ficus bengalensis)*	exudate
Erukku (*Calotropis gigantea)*	exudate

The above exudates are taken at the rate of 1 to 15 drops each in a stainless steel vessel and mixed with 50 ml of gingelly oil and ragi flour are added and made into a paste. This paste is applied as dot in each animal in the groin region. (The above material may be used for about 50 animals).

Address of the Healer :

Mr. Ramu,
Illuppakudi
Sivagangai District

2.

Kodiveli (*Plumbago zeylanica)* roots	10 g
Erukku (*Calotropis gigantea)*unripe fruits	5 nos. (Smoked)
Kavilthumbai (*Trichodesma indicum)*	50gm
Sirukumatti (*Ccucumis trigonus)* leaves	50gm
Peykumatti (*Citrullus colocynthis)* leaves	50gm
Betel leaves *(Piper betel)*	25gm
Pepper (*Piper nigrum)*	50 gm
Dried ginger *(Zingiber officinale)*	50 gm

The above materials are ground and mixed with warm water and administered orally.

Address of the Healer:

Mr. Ramu Thevar,
Ponnampadugai,
Varushanadu
Theni District.

3. Kilukiluppai *(Crotolaria verucosa)* leaves 1000 gm pounded and ½ measure extract is taken and it is mixed with 20 gm of turmeric powder and given orally.

Or

Cow or Buffalo ghee (Clarified butter) may be given orally for adults 600 ml and for calves 200 ml. The ghee should be warmed before administration.

Address of the Healer:

Mr. Duraichamy,

T.Kalathur

Perambalur District.