




















➔  **Ethnoveterinary Medicine in Asia - Ruminants (IIRR, 1994, 143 p.)**

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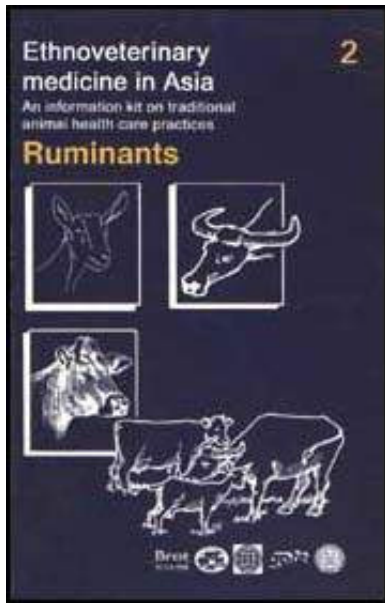
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**1994**

**IIRR**

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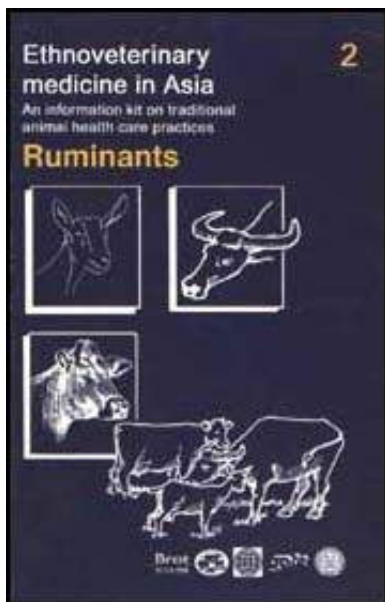
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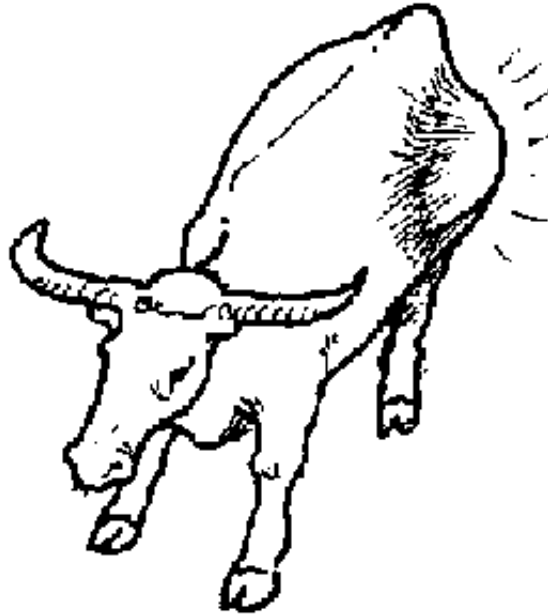
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## **Bloat**



**Animals sometimes have too much gas in their stomach. This is called bloat.**

### **Symptoms**

- **The animal's abdomen is big on the left side. It sounds like a drum when you tap it.**
- **Thick and foamy saliva.**
- **Loss of appetite.**
- **Animal stops eating or chewing.**
- **Fast breathing.**

- **Restlessness.**
- **Kicks with hind legs.**

## **Causes**

**Two main causes of bloat are the wrong type of feed and presence of infectious diseases. An animal may have bloat:**

- **After eating a lot of leguminous plants, young grass, or grass that has been extensively fertilized with nitrogen.**
- **After sudden changes to certain types of feed ration.**
- **After eating ripe fruits and other foodstuffs that ferment easily.**
- **After eating poisonous plants or feed with chemical residues. .**
- **After drinking water contaminated with poisonous chemicals or waste materials.**
- **When something blocks off the passage of food.**
- **When it has constipation.**
- **After eating plastic or other foreign matter.**
- **Because of paralysis of the nerves.**
- **Because of infectious diseases such as hemorrhagic septicemia.**



**Bloat can occur in adult animals, especially cattle, when the weather changes, because this means a change from dry to wet feed.**

## **Sudden bloat**

**Bloat that starts suddenly is very dangerous. It can kill the animal within a few hours if you do not treat it immediately. Watch for these symptoms:**

- **The animal lies down on the ground.**
- **The legs are stiff and spread out when standing. The animal refuses to move.**
- **When you look in its eyes, the pupil (the dark part of the eye) is partly or completely invisible**
- **Green discharge with chewed feed comes out of its nose and mouth.**

**If you see these symptoms, pierce the rumen immediately. Then consult an expert straight away.**

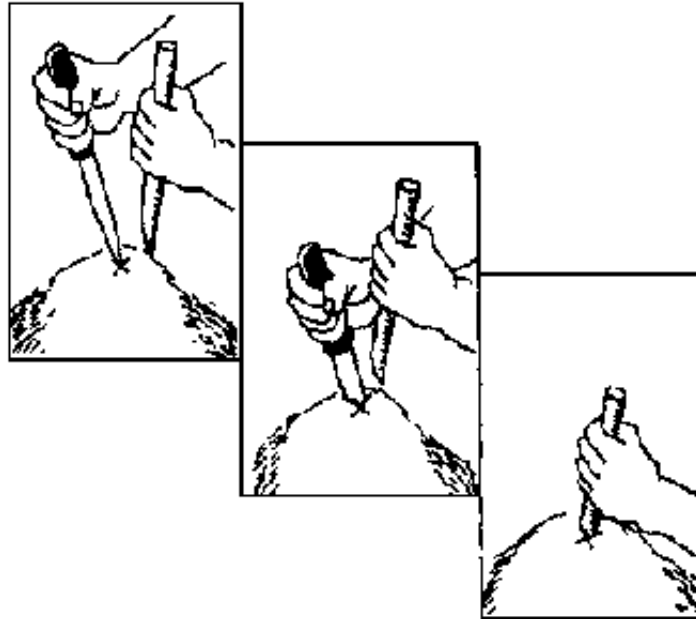


**Sudden bloat**

## **Piercing the rumen**

**You will need a sharp knife (1 - 2 cm wide and 8 - 10 cm long) and a bamboo tube about 30 cm long (the length of a man's foot) and as wide as a man's thumb.**

**Wash these thoroughly with soap and clean water. Disinfect the knife by heating it over a fire and cool it before use. Hold the knife in one hand and the bamboo in the other. On the left side of the animal, stab the highest point of the swollen (bloated) part with the knife. Push the knife blade all the way into the hole. Remove the knife and immediately insert one end of the bamboo into the hole. Gas will come out through the tube. Release the gas for 30 minutes. Then, pour a mixture of 300 ml vegetable oil and 30 ml of turpentine oil into the bamboo tube. The mixture of oil will break up the bubbles in the rumen which cause the bloat and help prevent its recurrence. Remove the bamboo, and the wound will immediately close and heal on its own because the skin of the animal is tight. However, to avoid possible infection, you may apply powdered charcoal, fresh from the stove and cooled.**



**Piercing the rumen**

## **Prevention**

- **Do not give water to the animals before or immediately after they have grazed on wet pasture.**
- **Put grasses that are wet in the sun for 2-3 hours before you give them to the animals.**
- **During the rainy season, feed the animal with dry fodder first before sending it onto wet pasture.**
- **If you are changing the feed ration, mix and feed half of the previous ration with half of the new ration on the first day. Increase the proportion of the new ration while decreasing that of the old ration for the next 2-3 days until you feed the new**

**ration completely.**

- **Do not give too much feed that can cause bloat (such as clover and lucerne).**
- **Keep animals away from contaminated water sources.**

## **Treatment**

- **If constipation is the cause of bloat, see Constipation.**

**If the bloat is not too serious, give any of the following remedies to facilitate the release of gas. The amounts given are for adult cattle or buffaloes. For calves, goats and sheep, use one-third or one-half of these amounts. If the bloat remains for more than 2 days even after treatment, seek professional help.**

- **Drench 300-500 ml of any of these oils: coconut oil, vegetable oil or peanut oil, once a day for 2-3 days. Repeat the treatment once after the bloat is gone. (India, Indonesia, Philippines, Sri Lanka, Thailand. 1, 2, 3, 4)**

## **@ Caution**

**Drenching should be done carefully since the animal's rumen is already full of gas. The animal will refuse to swallow any liquid. Forcing the animal may result in the liquid ending up in the lungs rather than the stomach. To prevent this, give the fluid slowly. Observe if the animal swallows. If it does not, try to stimulate the tongue as you pour the liquid, or massage the rectum to stimulate belching.**

- **Mix 3 tablespoons or 30-40 ml of turpentine oil with any edible oil (see list in the**

**previous remedy). For adult cattle and buffaloes, drench 2-3 cups for the first dose. Repeat for a second dose after 4-5 hours. Give the last dose the next day. (India. 1, 2)**

- **Give 200 ml of castor oil to an adult animal. Do this once only. If the bloat persists, use any of the other remedies. (India. 1, 2)**
- **Drench warm vinegar twice a day. For adult cattle or buffalo, use 1 ½ to 2 cups (½ liter) of vinegar. Force the animal to walk to help release the gas. (Cambodia. 1, 2, 3)**
- **Mix 1 tablespoon of detergent (washing powder) with ½ liter (1 ½-2 cups) of water. Drench once. (India. 1, 2, 3, 4, 5)**
- **In treating mild bloat, you can chop up 2 fresh banana leaves (for calves) or 3-5 leaves (for adult animals). Feed the chopped leaves 2-3 times a day for 2 days. (Philippines. 1, 2, 3, 4)**
- **2 handfuls of fresh leaves of Acacia concinna. 3 tablespoons of dried seeds of Trachyspermum ami. 3 tablespoons of resin of Ferula assa-foetida.**

**Grind or pound these ingredients separately. Mix the powder together and add 50 g of brown sugar to make a bolus. Put into the mouth of the animal, twice a day for 2-3 days. (India)**

- **Mix 2 handfuls of pulp of ripe Tamarindus indica fruit in 1 cup of water. Extract and add the juice to 1-2 matchboxfuls of ground and dried Terminalia chebula fruit. Add 4 more cups of water. This makes enough liquid to dose an adult animal**

**once. Drench the mixture to a sick animal twice a day for 2-3 days. (India. 1, 2, 3, 4, 5)**

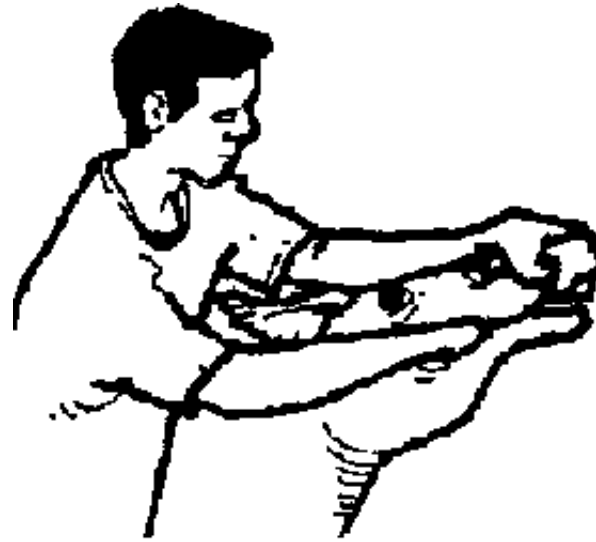
**• Fresh or dried ginger rhizome. Resin of Ferula assa-foetida. Seeds of Peucedenum graveolens. Seeds of Trachyspermum ami. Fruit of Embelia ribes. Resin of Gardenia gummifera. Baking powder (sodium bicarbonate).**

**Take equal amounts of the ginger, Peucedenum graveolens seeds, Embelia ribes fruit and baking soda. Add 1/4 of this amount of Ferula assa-foetida resin and half of the amount of baking soda. Mix all the ingredients and grind them to a powder. Mix 2 tablespoons of this powder with brown sugar and 300 ml water. Feed 2-3 times the first day. Repeat this dosage once a day for the next 2 days. (India)**

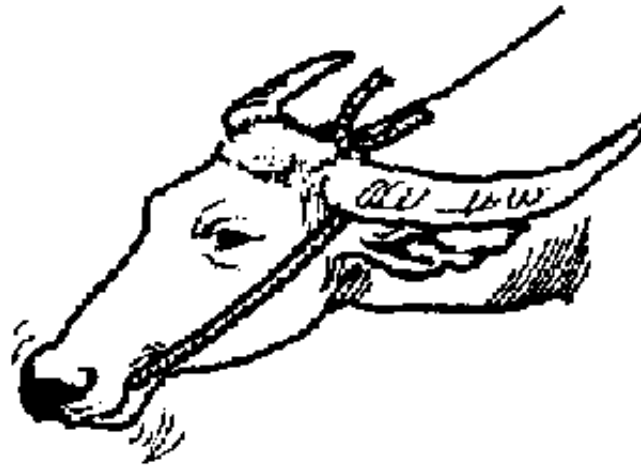
### **After treatment**

**• Open the mouth of a healthy animal until you can fit your hand inside. Take the chewed cud and mix it with 1/2-1 liter (3-5 cups) of water. Drench the diseased animal. This helps the bloated animal digest feed. (India. 1, 2, 3)**

**• Put a rope the thickness of your thumb in the animal's mouth and tie it around the head. The animal will chew the rope. This will stimulate salivation and help release the gas. (Philippines. 1, 2, 3, 4)**



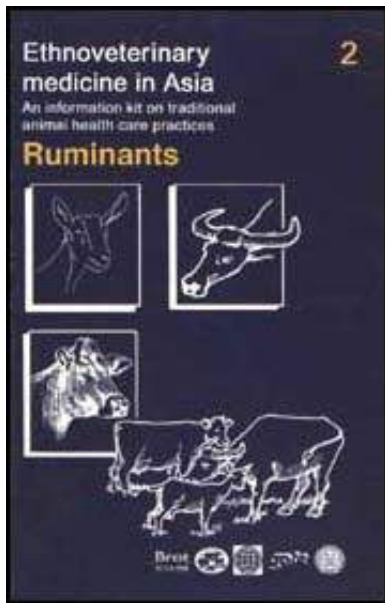
**Applying the treatment**



**After treatment**



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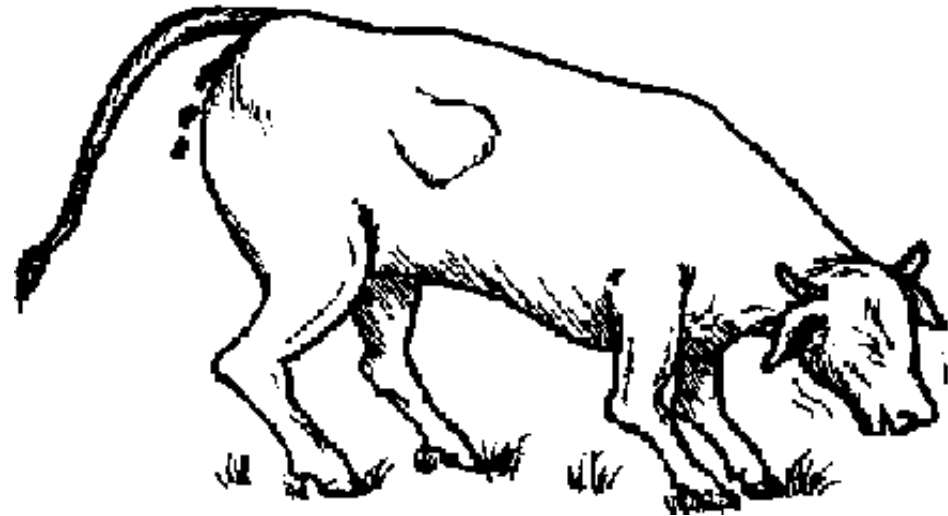
## **Constipation**

**Constipation or impaction usually occurs in the dry season. It can be remedied easily. However, if constipation persists for 4-5 days, it could lead to infection of the bowels.**

## **Symptoms**

- **Straining while trying to pass dung.**
- **No dung or urine found left by the animal in the morning.**

- **Hard dung.**



**Constipation**

### **Causes**

- **Low fiber feeds.**
- **Not enough drinking water.**
- **Illness.**
- **Stress.**
- **Sudden change in diet.**

### **Prevention**

- **Feed animals vegetables, green forages (like maize leaves, lucerne, alfalfa, elephant or guinea grass, etc.) and other high fiber foods.**
- **Give adequate water.**

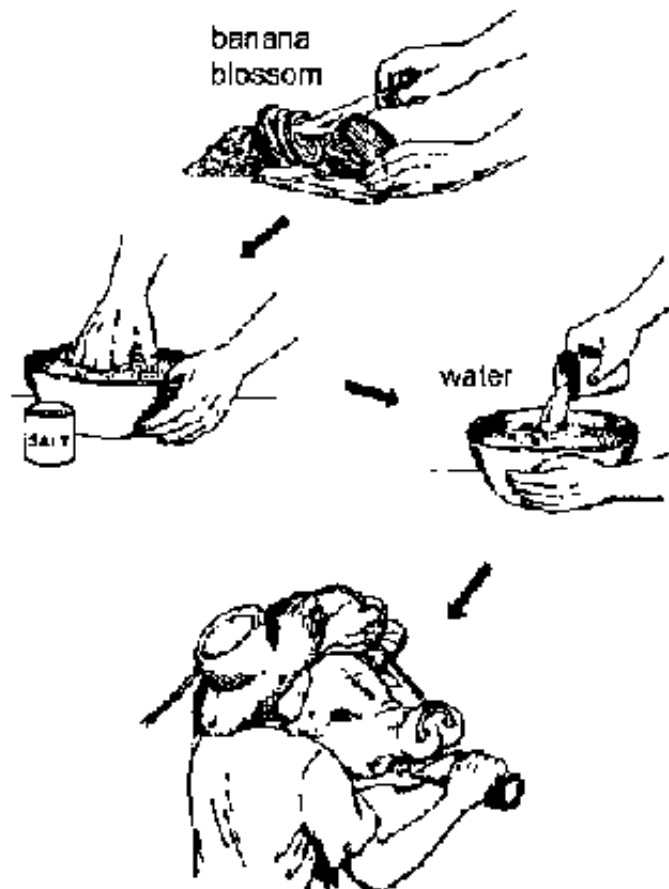
- **Reduce sources of stress.**
- **Keep animal housing clean.**

## **Treatment**

**Select any of the following treatments:**

- **Drench 500-750 ml vegetable oil (coconut, peanut, sesame, etc.) twice a day for 3 days. (All countries. 1, 2, 3, 4, 5)**
- **Use any of these laxatives: castor oil, liquid paraffin oil, raw linseed oil. Drench 300-400 ml a day for 1-2 days. (All countries. 1, 2, 3, 4, 5)**
- **Take 300 g of ripe tamarind (*Tamarindus indica*) fruit. Remove covering, seeds and fiber. Boil in 1 liter of water. Cool. Give the resulting liquid to the animal by drenching once or twice a day. Do this for 1-2 days. (Laos, Thailand. 1, 2, 3, 4, 5)**
- **Feed as many fresh banana (*Musa sp.*) leaves as the animal can eat until it recovers. (Philippines. 1, 2, 3, 4)**
- **Feed 50-100 g of dried Aloe vera leaf pulp until the animal recovers. (Indonesia. 1, 5)**
- **Give 10 to 20 g of powdered henna (*Lawsonia inermis*) leaves with rock salt. (India, Indonesia 1, 5)**

- **Prepare decoction of a thumb-sized turmeric (*Curcuma longa*) rhizome in 1 liter of water. Let the animal drink the decoction once a day for 1-3 days. (Philippines, India. 1, 2, 3, 4)**
- **Grind ¼ kg of *Aristolochia bracteata* leaves. Mix with 50 g of molasses. Feed the animal in the morning, in the evening and again the next morning. (India. 1, 2, 3, 4, 5)**
- **Chop 1 banana (*Musa sapientum* var. *Iatundan*) blossom. Crush with rock salt. Add a little water. Feed this to the animal. (Philippines. 1, 2, 3, 4)**



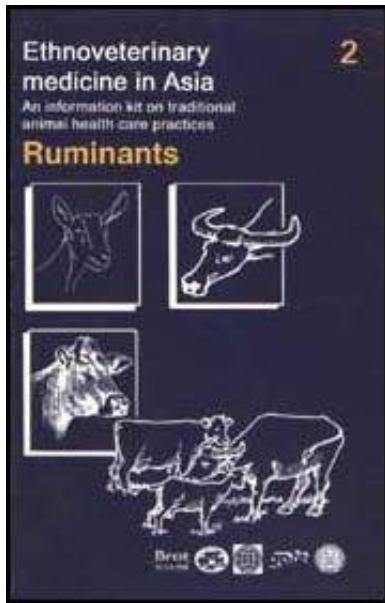
### Treatment with banana blossom

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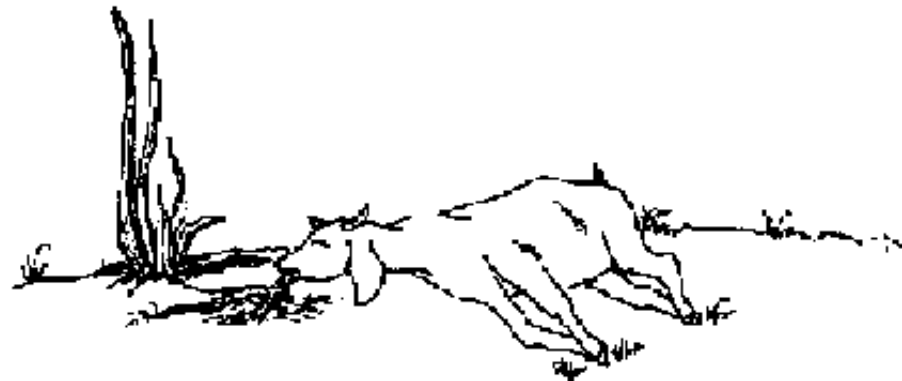


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## Poisoning

**Young calves and kids are curious and may eat poisonous plants. However, young or old, male and female animals, can be poisoned.**



**Poisoning**

## **Symptoms**

- **Bloat.**
- **Abdominal pain.**
- **Groaning.**
- **Kicking the abdomen.**
- **Diarrhea (in arsenic poisoning) .**
- **Constipation (in lead poisoning).**
- **Convulsions.**
- **Salivation.**

## **Causes**

- **Eating or licking toxic plants or plants sprayed with pesticides.**
- **Licking or drinking chemicals, pesticides, or paint containing lead.**

## **Prevention**

- **Store chemicals away from animals.**
- **Do not use lead-based paints, especially where animals can lick.**
- **Do not let animals eat sprayed weeds.**

## **Treatment**

**Use any of the following treatments for adult cattle and buffaloes unless otherwise indicated. Use half the amount for small ruminants.**

- **Drench the cattle and buffaloes once with 1 liter paraffin oil or raw linseed oil or**



**natural vegetable oil. (Thailand, India, Philippines, Sri Lanka. 1, 2, 3, 4)**

- **Drench young animals once with 100 g epsom salts (magnesium sulfate) mixed with 500 ml water. For an adult animal, use 500 g epsom salts with 500 ml water and drench once. (Thailand. 1, 2, 3)**
- **Pound 200 g Thunbergia laurifolia roots. Mix with 1 .5 liter of water used in washing rice. Drench every 30 minutes until signs of poisoning are gone. (Thailand. 1, 2, 3, 4)**
- **Drench with any of the following fluids:**
  - **1 liter of milk. (India. 1, 2, 3, 4, 5)**
  - **200 g charcoal powder mixed with 800 ml water. (India. 1, 2, 3, 4, 5)**
  - **1 liter of coconut water. (Cambodia. 1, 2, 3, 4)**

**Plants that can poison animals**

**Aleurites fordii**

**Poisonous part: Foliage and fruit.**

**Symptoms: Symptoms are not observed until 3-7 days after the foliage has been consumed. Acute poisoning results in death in 3-4 days, while chronic cases linger on for 18-25 days before death ensues. Common symptoms include diarrhea which later becomes watery and profuse, lack of appetite, cessation of rumination, listlessness, depression and unthriftiness. Chronic cases may develop labored breathing, mucus discharge from the nose, salivation, cracking of the skin of**

**muzzle and progressive weight loss.**

**Antidote/Treatment: Emollients (such as vegetable oil) and drugs should be administered to relieve the inflammation in the digestive tract. Tempt the animal with soft feeds to stimulate the appetite.**

**Amaranthus spp.**

**Poisonous part: Young shoots.**

**Symptoms: Abortion, reduction of milk flow and sudden death.**

**Argeratum conyzoides**

**Poisonous part: All parts.**

**Symptoms: Congestion of small intestine, disturbed blood flow and heavy aromatic odor of skin and urine.**

**Cassia occidentalis**

**Poisonous part: Whole plant.**

**Symptoms: Dullness, high temperature, suppression of urine and slowing of breathing. Death occurs with coma after slight convulsion. Also groaning, great pain, coldness of extremities, weakness of the heart and slight stiffness of the limbs.**

**Chromolaena odorata**

**Poisonous part: Young leaves and shoots.**

**Symptoms: Weakness, bloating, diarrhea with blood, weight loss, muscle contractions and loss of consciousness.**

**Antidote/Treatment: Mix 6 eggs and 500 g sugar in 1 liter water. Drench at once. Give half the dose to small ruminants.**

**Crotolaria quinquefolia**

**Poisonous part: Leaves, stems, roots, seeds.**

**Symptoms: Low blood pressure, slow heart beat, depression, loss of appetite, bloody feces, drooling saliva, nasal discharge and finally death.**

**Derris elliptica**

**Poisonous part: Whole plant.**

**Symptoms: Dizziness, staggering and sudden death.**

**Excoecaria agallocha**

**Poisonous part: Gum.**

**Symptoms: Diarrhea and blindness.**

**Hypericum pulogense**

**Poisonous part: Whole plant.**

**Symptoms: Blisters and scabs around the mouth, eyes, ears, nose and feet. In severe cases, difficulty in breathing, rapid pulse, foaming of the mouth and finally death.**

**Antidote/Treatment: Affected animals should be kept in the shade.**

**Lantana camara****Poisonous part: Leaves.**

**Symptoms: Staggering, weakness. Skin becomes hard, swollen, cracked and painful. Sluggishness, partial paralysis and bloody diarrhea. Acute poisoning may cause death within 3-4 days. Lantana also produces lesions and symptoms of severe gastroenteritis.**

**Antidote/Treatment: Affected animals should be kept under the shade. Skin lesions should be treated with healing ointments. Give the animal a mixture of egg white and sugar.**

**Manihot esculenta, Cassava**

**Poisonous part: Fresh leaves and uncooked roots.**

**Symptoms: Bloat with frothing at the mouth, difficulty in breathing.**

**Antidote/Treatment:**

**- Pound 200 g Thunbergia laurifolia leaves with 1-5 liters of water from**

**rice washing. Give 1.5 liters in 1 drench. Repeat dose every 30 minutes till cured.**

**- Pound 2 handfuls of charcoal to powder. Add 500 ml water and drench once. Give half of the dose to small ruminants.**

**- Mix 4 eggs and 250 g brown sugar with 100 g tamarind soaked in 100 ml water to extract the juice. Drench once. Use half of the dose for small ruminants.**

## **Melanorrhoea usitata**

**Poisonous part: Leaves.**

**Symptoms: Itching, leading to wounds and abscesses.**

**Antidote/Treatment: For adult cattle, take 2 kg fresh leaves and 1 kg bark of *Tectona grandis*. Prepare decoction in 10 liters water. Cool. Dip a clean cloth and rub on the itchy part until the itch is gone.**

## **Nerium oleander**

**Poisonous part: Leaves.**

**Symptoms: Nausea, irregular heart beat, bloody diarrhea, respiratory paralysis and death.**

## **Pteridium aquilinum, Bracken fern**

## **Poisonous part: Fronds**

**Symptoms: Blood in urine. High fever, labored breathing, internal salivation, bleeding. Poisoning is often mistaken for anthrax and other infectious diseases of cattle. Also, unsteady gait, nervousness, congestion of visible mucus membrane and constipation; later staggering and dilated pupils. Antidote/Treatment: 500 ml of strong black tea or coffee as drench.**

## **Solanum nigrum**

**Poisonous part: Leaves and fruits.**

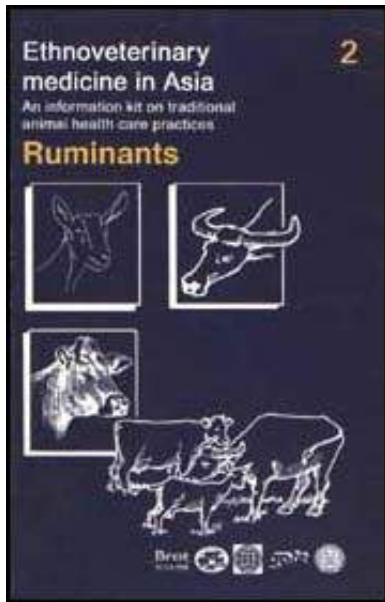
**Symptoms: Paralysis, dilated pupils, vomiting, stimulation of nervous system followed by depression, craving for water, diarrhea, loss of appetite and extreme weakness. Antidote/Treatment: Affected animals should be given general heart and nerve stimulants.**

## **Sorghum vulgare, Sorghum**























**Symptoms: Sudden bloat, salivation, difficult respiration, stretched body, death. Antidote/Treatment: Drench immediately with any vegetable oil. (Note: This remedy is not foolproof and is not validated.) This is only effective when drenching is done immediately, as death can occur within 1/2-1 hour.**





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## **Internal parasites: Stomach and gut worms**

### **Symptoms**

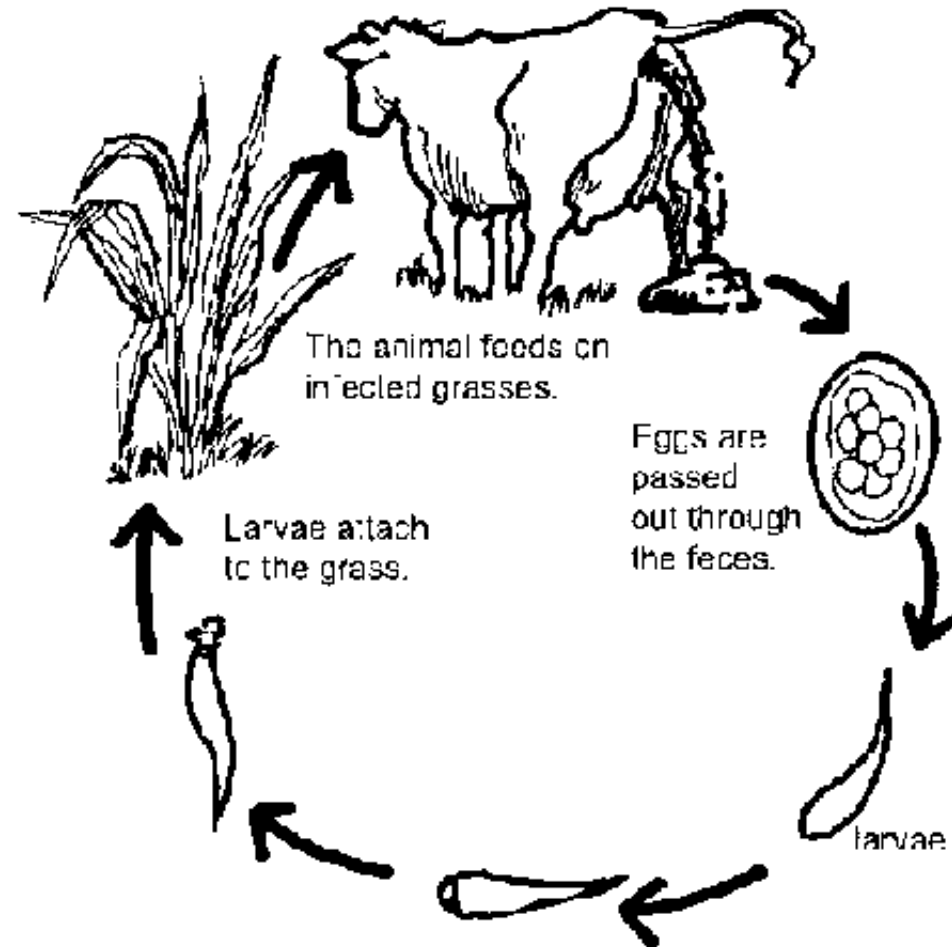
- **Animal is thin and looks weak.**
- **Lack of appetite.**
- **Anemia. The first symptom is a pale color of the skin, snout, nostrils and gums. The flesh is pale.**
- **Diarrhea.**
- **Enlarged abdomen.**



## **Cause**

**Various types of parasites living in the stomach and gut.**

- **Stomach worm (*Mecistocirrus digitatus*). Barber's pole worm or wire worm (*Haemonchus contortus*).**
- **Tapeworm (*Taenia multiceps*).**
- **Whipworm (*Trichuris ovis*).**
- **Hookworm (*Bunostomum* spp.).**
- **Roundworm (*Ascaris lumbricoides*, *Strongylus* spp.)**



### Life cycle of roundworms in cattle, water buffalo and goats

**Young and malnourished animals of both sexes are most susceptible to parasites. The problem is especially common in the rainy season. The animals may become dehydrated and die.**

**The parasites are transmitted when an animal eats grasses or drinks water contaminated with larvae. Less commonly, they can be spread from the mother to its offspring,.**

## Prevention

- **Deworm the animal regularly. Use the herbal dewormers listed in the table. These dosages are for cattle and buffaloes. Use half these amounts for calves, sheep and goats.**
- **Rotate pasture. Do not use always the same pasture area to graze the animals. Rotation will help the grasses to rejuvenate and will protect the animals from infected grasses.**
- **Keep the animals and the surroundings clean.**



## Prevention

## Treatment for internal parasites

Scientific	Common	Dosage	Preparation	Dosage	Application
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Scientific	Common Name	Parts Used	Preparation	Dosage	Application
Areca catechu	Betel nut	Mature, air-dried nuts	Pound nuts and mix in water.	8-10 nuts	Drench. Repeat after 2-3 weeks. (Indonesia, Laos. 1, 2, 3, 4, 5)
Aristolochia bracteata	Worm killer	Fresh leaves	Grind 2 handfuls of leaves and mix with 50 g of brown sugar and a little water and make a bolus.	This is enough for 1 dose. Make a fresh batch for each of the following day.	Administer once in the morning, again in the evening and repeat in the morning (India, Philippines. 1, 2, 5)
Carica papaya	Papaya	Air-dried ripe seeds	Pound seeds and add a little water.	3 g seeds per 1 kg body weight (or ½ kg seeds per small animal and 1 kg seeds per adult animal)	Drench once a day for 6 days. (Indonesia, Philippines. 1, 2, 3, 4, 5)

**Note: Do not use this treatment for pregnant animals.**

Chrysophyllum cainito	Star apple	Air-dried leaves	Decoction of 2 parts of water for 1 part leaves.	40 ml of liquid Drench. for every 30 kg of body weight.	Repeat after 2-3 weeks. (China, Philippines. 1, 2, 3, 4, 5)
Diospyros mollis	Ebony	Fruit	-- Pound 600 g ripe fruit with 80 g salt and 700-800 ml water. Filter the pounded mixture to get the liquid. -- Here is another way to prepare it: Pound 300 g ripe fruit and extract the juice. Mix the juice with 250 ml water and 3 tablespoons epsom salt	Give as drench.	250 ml of the solution to be given once only. Need not be repeated. (Thailand. 1, 2, 3, 4)

**Note: Do not use this treatment for pregnant animals and those with kidney disease.**

Mimosa pudica	Sensitive plant	Air-dried mature	Decoction of 2 parts water for 1 part of leaves. Strain to get	40 ml of liquid for every 30 kg	Drench. Repeat after 2-3 weeks. (China,
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		leaves	the vine.	body weight.	Philippines. 1,2, 3, 4, 5)
Morinda citrifolia	Indian mulberry	Whole mature fruit	Pound 1 mature fruit. Add 50 ml water and a little salt while pounding.	1 fruit and water.	Drench once a week for 3 weeks. (India, Philippines. 1)
Punica granatum	Pomegranate	Fruit	Pound 300 g ripe fruit and add 2 liters of water. Boil the mixture until the liquid is 700 ml. Collect the liquid and allow it to cool.	Give as drench.	700 ml for a mature buffalo and cattle. To be given once only. Need not be repeated. (Thailand. 1, 2, 3, 4)

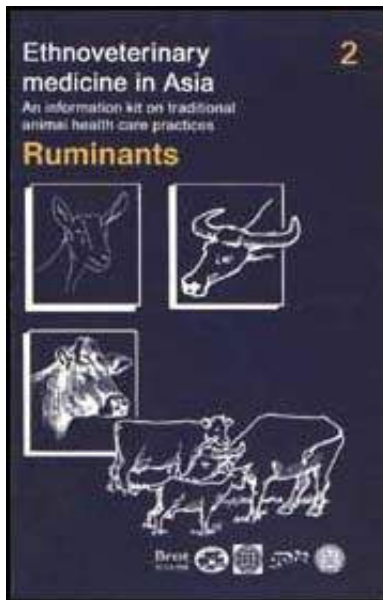
**Note: Do not USE this treatment for pregnant animals.**

Tamarindus indica	Tamarind	Ripe fruit pulp	Pound 300 g pulp of tamarind and 150 g rhizome of ginger. Mix a pinch of salt to the mixture.	Through the mouth.	Give the whole treatment in one application. Need not be repeated. (Thailand. 1, 2, 3, 4, 5)
Zingiber cassumunar	Ginger	Rhizome			
Tinospora rumphii		Mature vine	Decoction of 2 parts of water for 1 part	40 ml of liquid of for	Drench. Repeat after 2-3

vine.

every 30 kg  
of bodyweeks. (China,  
Philippines. 1,  
2, 3, 4, 5)

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 **Bloat**

 **Constipation**

 **Poisoning**

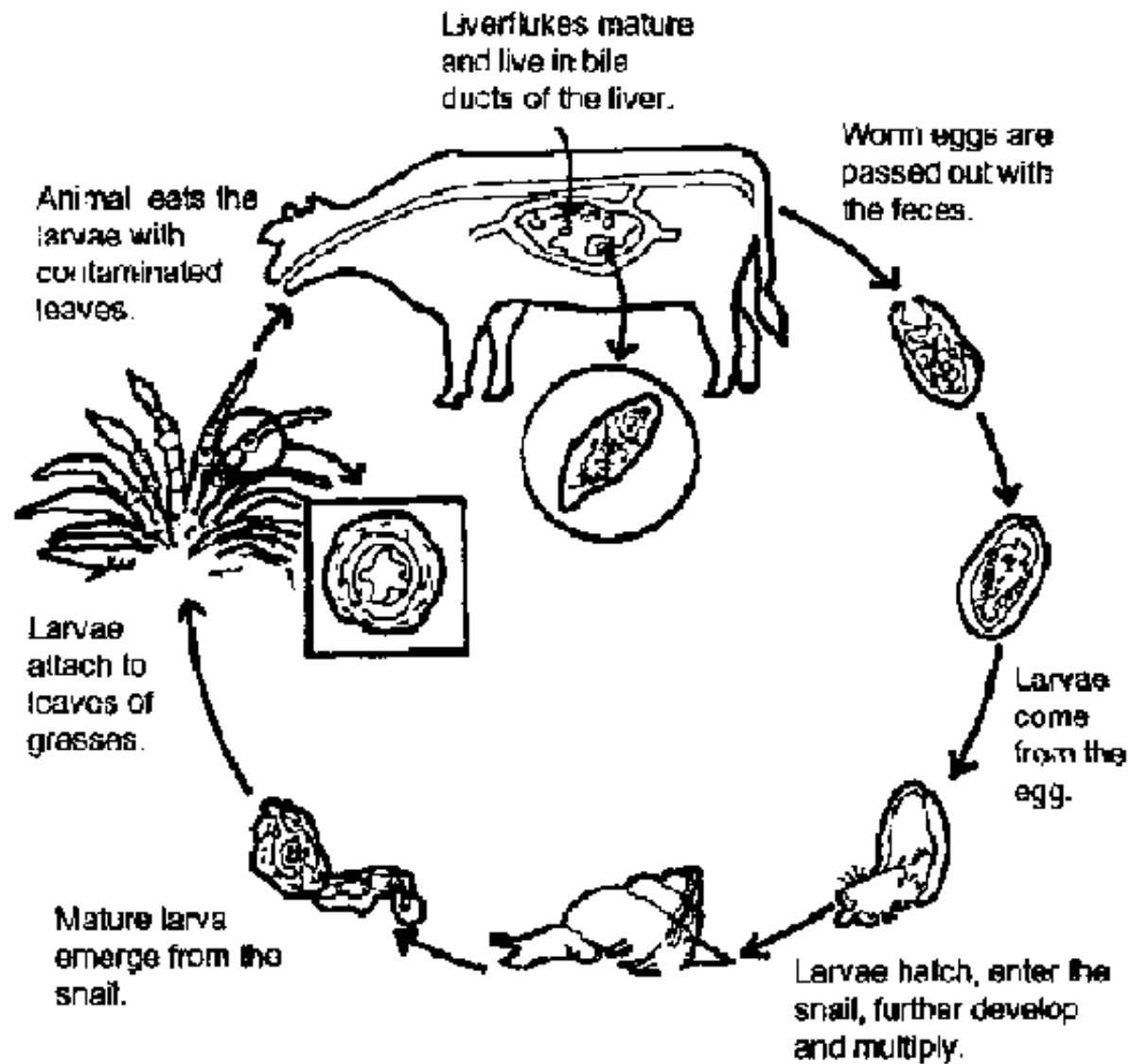
 **Internal parasites: Stomach and gut worms**

 **➔ Liverflukes**

-  **Tick infestation**
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-  **Decreased milk flow**

## **Liverflukes**





**Life cycle of liverfluke**

## Symptoms

- **Anemia.** The first symptom is a pale color of the skin, snout, nostrils and gums. The flesh is pale.

- **Gradual loss of weight.**
- **Repeated diarrhea.**
- **Swollen face ("bottle neck").**
- **Reduced milk production.**
- **Animal gets tired easily.**
- **Animal may die because of internal bleeding and anemia.**

## **Cause**

**Liverflukes are leaf-shaped worms that live in the animal's liver. They are spread by snails that live in the pasture. The liverfluke larvae stick to grasses and are eaten by the animals. The chances of infection are high if snails are common in the area.**



**Liverflukes**

**Animals of all ages can suffer from liverflukes. The disease is common in low-lying, waterlogged areas, rivers, streams and stagnant pools. It occurs in all seasons.**

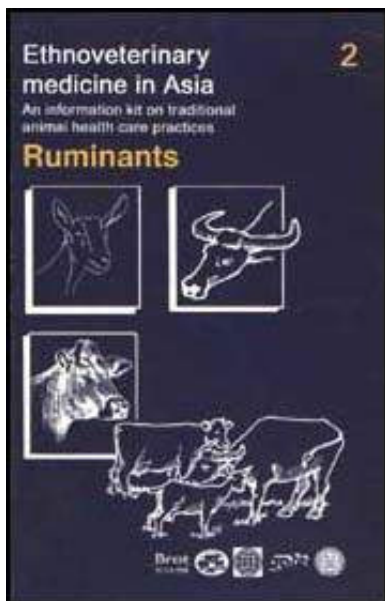
## **Prevention**

- **Deworm the animals at regular intervals, usually 3-4 times a year. Farmers in the Philippines use this remedy: Grind 8-10 mature nuts of Areca catechu. Add ½- 1 liter of water. Give the mixture to the animal as drench in divided doses or part by part for 3 days. Repeat the medication after 3 weeks. (Philippines. 1, 2)**
- **Because animals may have liverflukes without showing any symptom, deworm all animals of a herd if liverflukes are found in an animal when it is slaughtered.**
- **Raise ducks to eat the snails.**
- **Improve the pasture. Cover stagnant pools with soil to prevent snails from breeding.**
- **Keep animals away from areas with many snails and from infested grasses.**
- **If the animal's condition does not improve a week after deworming, seek professional help.**



































Ducks





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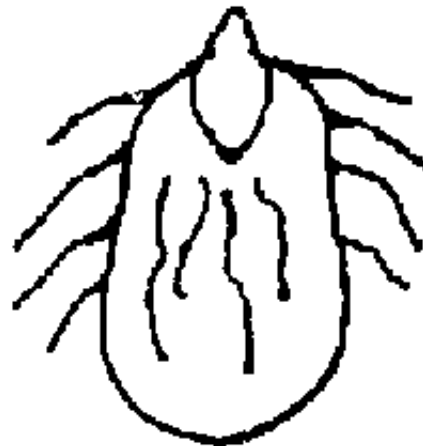
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## Tick infestation

**Ticks are external parasites, dark in color and 2-3 cm in size when full of blood. They attach themselves to the skin of animals and suck blood. Ticks can transmit serious diseases such as "tick fever."**



tick  
**Tick**

## Direct damage

- **Hundreds or thousands of ticks infesting an animal can result in anemia, loss of milk production, weight loss and death.**

- **Some species of ticks cause tick paralysis.**
- **Physical damage to the hide reduces its market value.**

## **Symptoms**

- **The animal shows discomfort.**
- **A large number of ticks may be found in less hairy areas.**
- **The hide has red patches (tick bite-marks).**
- **The animal keeps scratching.**

**Human can be infested with ticks while handling the infected animal.**

**After sucking blood, an adult female tick falls from the animal to the ground. It lays eggs on the ground, in sheltered places, under the stones and in cracks in the wall.**

**After this, the tick dies. The eggs hatch and develop into a new generation of ticks.**

## **Prevention**

- **Remove weeds and bushes from around animal housing.**
- **Clean the housing regularly.**
- **Cut grasses on pasture areas regularly.**
- **Avoid contact with infested animals.**
- **Provide a daily supply of salt for the animals to eat.**
- **Graze more than one species of animals together.**
- **Allow birds to eat the ticks. For instance, keep poultry in and around the animal**

## housing. (Laos)

- **Bathe the animal in the sea whenever possible, or bathe it with salt water.**
- **Raise pest-repellent plants such as neem and marigold near the animal housing.**

## Treatment

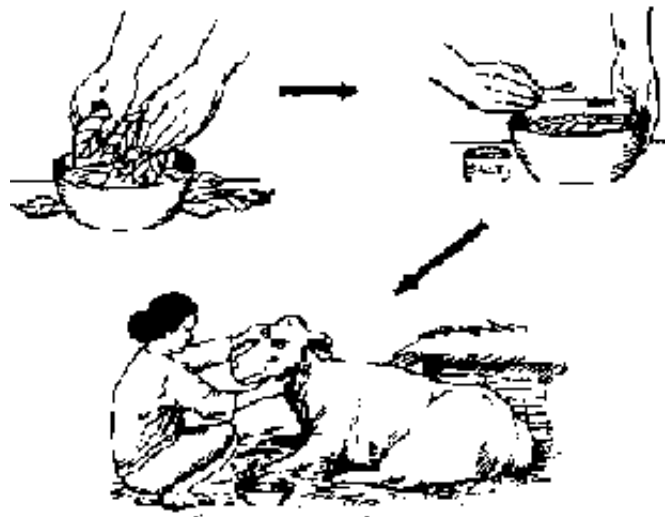
- **Carefully remove the ticks with your fingers. Pull the rear end of the tick upwards and then backwards towards its head. This will avoid leaving the head in the animal's skin. It will also keep the hide from being marred. After removing the ticks, burn them in a fire. Or, you can feed them to your poultry, as people do in Thailand and Laos. In the Philippines, they put the ticks in kerosene. (All countries. 1, 2, 3, 4)**



**Pull the ticks from the animal's skin and burn them.**



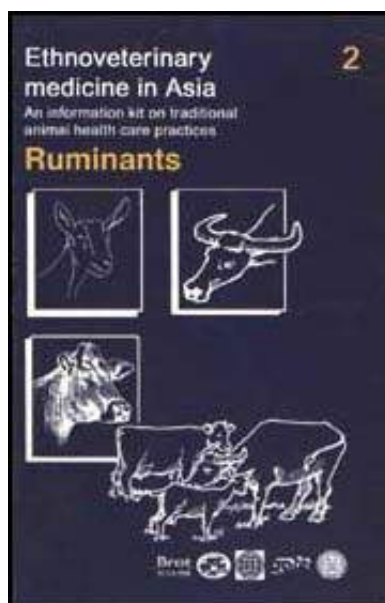
- **Treat with salt water. Regularly bathe the animal in the sea or rub the entire body with a mixture of 200 g of salt and 4 liters of water. (Philippines, Sri Lanka, Thailand. 1, 2, 3, 4)**
- **Boil 100 g of salt in 250 ml of coconut oil. Let it cool and apply all over the animal's body. (Sri Lanka. 1, 2, 3)**
- **Boil 10 g of camphor powder in 100 ml of coconut oil. Let it cool and apply all over the animal's body. (Sri Lanka, Thailand. 1, 2, 3)**
- **Mix 50 ml of coconut oil, 100 g of sulfur and 50 g of turmeric (*Curcuma domestica*). Boil and let it cool before applying all over the body. (Sri Lanka. 1, 2, 3)**
- **Soak 300 g of dried tobacco leaves in 1 liter of water. Add 1 tablespoon of salt. After 3 hours, use the tobacco leaf as a sponge and rub the liquid over infested areas. (Cambodia. 1, 2, 3, 4)**
















## Treatment for ticks























**Take 1 kg of Annorna squamosa (sugar apple) seeds, 1 kg of neem seeds and 200 g of tobacco leaves. Pound all the plant parts. Mix with 2 liters of water and soak for 24 hours. Rub the mixture all over the body. (Thailand. 1, 2, 3, 4, 5)**

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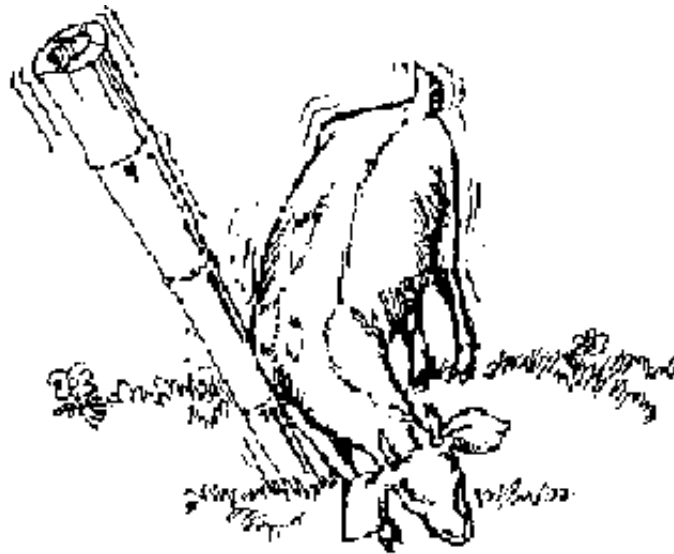
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## **Scabies (mange)**

## Symptoms

- **Scabby patches on the skin, especially on the head and neck, which cause itchiness.**
- **Animal scratches itself.**
- **Hair falls out.**
- **Animal looks weak.**



**Scabies**

## Cause

**Scabies is caused by tiny mites. It can affect all ruminants but is especially common in goats. The mites spread from one animal to another easily. Humans can also easily become infested. Scabies spreads by direct contact with the infected animal or any infected area or object.**

## **Prevention**

- **Keep the animal, pen and surroundings clean and dry.**
- **Isolate the infected animal to protect the other animals from catching the infection.**
- **Do not use infected animals for breeding.**

### **\* Warning**

**Scabies is highly contagious to humans. Avoid touching the infected part of the animal, especially when applying a treatment.**

## **Treatment**

**When applying one of the treatments below, use a brush or coconut husk to rub in the medication so it penetrates deep into the infected skin. Cover your hands with a plastic bag to protect them. After the treatment, clean your hands with soap and water.**



### **Applying treatment**

**The amount of ingredients needed to prepare the medication and the amount of medication to apply depends on the size of the infected area.**

- Grind a handful of young or mature air-dried leaves of *Melia azedarach* or *Cliricidia septum*. Add a little water and continue grinding. Rub the mixture on the infected area daily. Repeat the medication until the infection is cured. (Indonesia, Philippines. 1, 2, 3, 4, 5)**
- Burn a coconut shell and pound it into powder. Add just enough coconut oil to make a sticky paste. Rub the paste on the infected area once a day until the infection is cured. (Cambodia. 1, 2, 3, 4, 5)**
- Mix powdered sulfur with just enough vegetable oil to make a sticky paste. Rub**

**it on the infected area once a day until the infection is cured. (Thailand. 1, 2, 3, 4)**

**• Mix used engine oil and powdered sulfur (for every 100 ml of engine oil, use 30 g of sulfur). Rub the solution on the infected area once a day until the infection is cured. If you have no sulfur, you can use the engine oil alone. (Indonesia, Thailand. 1, 2, 3, 4, 5)**

**• Grind a handful of fresh or dried Cassia alata leaves. Add a little water to make a paste. Apply on the infected area daily until the infection is cured. (Laos. 1, 2, 4)**

### **@ Caution**

**Do not use too much engine oil as this may burn the skin. For severe infections, do not apply oil to the whole body at the same time. Treat one-third of the body in the morning, one-third in the evening and the remaining third the following morning. Apply to the most affected area first, followed by the less affected area the next day, or if whole body is affected, apply part by part.**



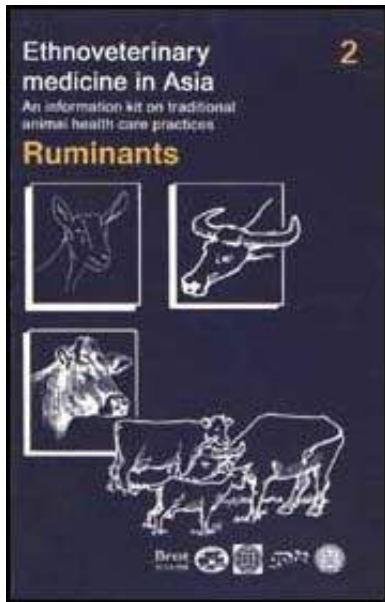
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-  **Difficulty in urinating**





-  **Housing**
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-  **Decreased milk flow**

## Lice



**Lice in ruminants is a result of bad sanitation.**

## **Symptoms**

- **Itchiness.**
- **Animals scratch or rub their bodies against trees or posts, their pens and other objects.**
- **In ruminants, lice eggs concentrate at the tip of the tail, the hair inside the ears and the hair around the eyes.**
- **However, in buffaloes, lice also spreads all over the body.**

## **Prevention**

- **Keep animals clean by washing them.**
- **Allow buffaloes to wallow every day. (All countries. 1, 2, 3)**
- **Drive animals into the sea once a month for about 1/2 hour. (Philippines, Sri Lanka. 1, 2, 3)**
- **Shave the affected parts of buffaloes. (Philippines. 1, 2, 3, 4)**

## **Treatment**

**All of the preventive measures listed above can also be used as treatments. Or you can:**



Lice (A)



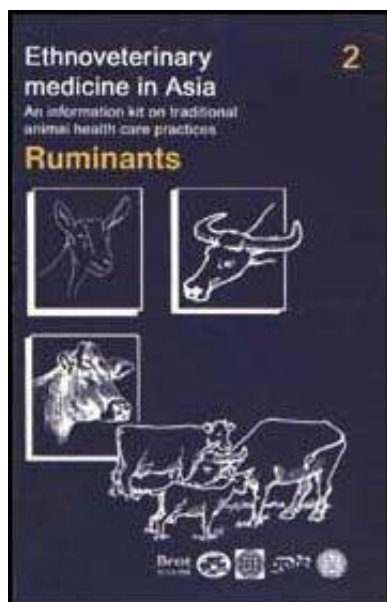
Lice (B)

- **Finely pound together 1 kg of tobacco leaves, 500 g of sugar apple (*Annona squamosa*) seeds and 500 g of neem (*Azadirachta indica*) leaves. Mix all the ingredients together in ½ liter of water. Stir until well mixed. Let stand for 1 hour. Then smear the mixture on the affected areas of the animal's body. After 8 hours,**















## the lice will die. (Thailand. 1, 2, 3, 4)























- Mix powdered chalk, salt and soap with a little water and smear the paste on the affected parts.

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## **Fungus infections of the skin**

## **\* Warning**

**Fungus can affect people. Those who touch the infected part of the animal can become infected. The disease can also spread through the air.**

## **Symptoms**

- **Hair falls out from the infected area.**
- **The infected area is thick and swollen.**

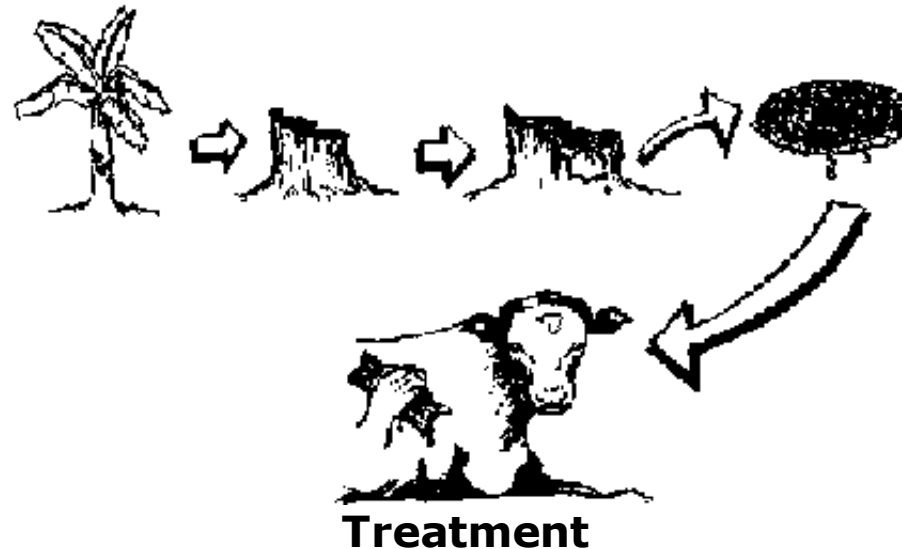
## **Treatment**

**Be sure that the infected skin is clean and dry. Then apply one of the following remedies.**

- **Grind a handful of fresh or air-dried Cassia alata leaves. Make a paste with water or lemon juice. Apply the mixture on the infected skin using a brush or coconut husk. Do this every day until the infection has been cured. (Indonesia. 1. 2. 3. 5)**
- **Grind a handful of fresh or dried Cassia tora leaves or seeds. Make a paste with water and apply as above. (India. 1, 2, 3, 5)**
- **Grind the fresh rhizome of Alpinia galanga. The amount of the ingredient will depend on the size of the infected area. Add a little water and continue grinding. Rub the mixture on the infected skin using a brush or coconut husk. Do this at least once a day until the infection is cured. (Indonesia. 1, 2)**
- **Find a cut banana tree with the stem rotting. You will see water coming out of**

**the stem. Take the water and rub this on the infected area. Do this every day until the infection is cured. (Thailand. 1, 2)**

- **Mix used engine oil with sulfur. The ratio should be 100 ml oil for every 30 g sulfur. Rub the solution on the infected area, using a piece of cloth. Do this every two days until the infection is cured. (India, Indonesia, Laos, Sri Lanka, Thailand. 1, 2, 3)**

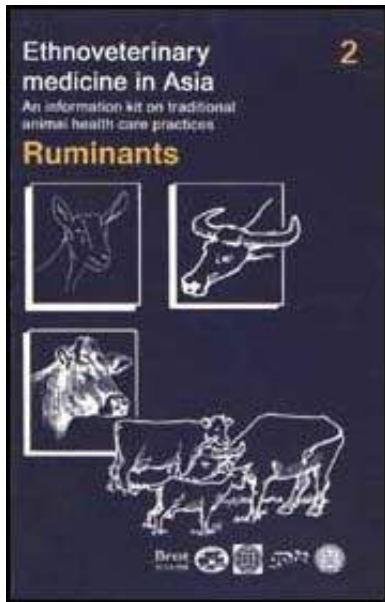


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## **Infectious diseases**

### **Anthrax**

#### **Symptoms**

- **High fever.**
- **Difficulty in breathing.**
- **Bleeding from ears, mouth, nose, anus and vagina.**
- **Blood does not clot.**
- **Trembling and convulsive movements.**
- **Animal collapses and dies quickly.**

**Anthrax is spread by contact with infected materials.**

## **Treatment**

**No treatment is recommended. Sick animals should be killed because of the danger to humans.**

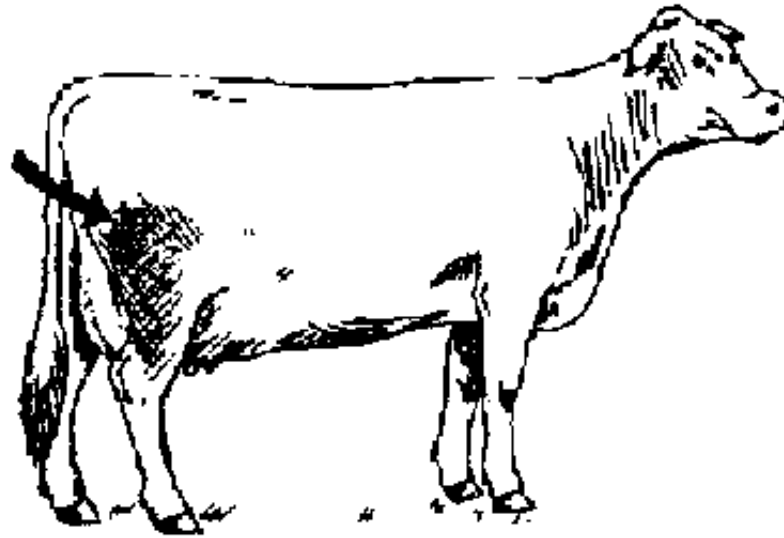
### **\* Warning**

**Anthrax is highly infectious to people. Do not open up dead animals or use the meat. Burn the carcass or bury it in a deep pit (120 -150 cm).**

## **Blackleg or black quarter**

### **Symptoms**

- **Fever.**
- **Lameness.**
- **Muscles swollen in the affected area. Air bubbles can be felt under the skin in the swollen area.**



**Blackleg or black quarter**

**Blackleg affects mostly cattle and water buffaloes. It can also attack sheep and goats. It usually affects well-nourished animals. It often occurs at the change from summer to the rainy season. It spreads by animals eating infected materials in the soil.**

### **Treatment**

**No indigenous treatment is recorded.**

### **Blue tongue**

### **Symptoms**

- **Fever.**
- **Difficulty in breathing.**
- **Reddening of the muzzle, lips and ears.**

- **Ulcers and dead flesh inside the mouth.**

**If no complications occur, the disease takes a week. It often kills young animals.**

## **Cause**

**A viral disease of sheep, cattle, goats, water buffaloes and wild ruminants. It is spread by biting insects.**

## **Treatment**

**No indigenous treatment is recorded.**

## **Brucellosis**

## **Symptoms**

- **Abortion or retained placenta.**

**Spread by contact with aborted fetuses, placenta and uterine discharges.**

## **\* Warning**

**People can get infected through contact with infected materials such as afterbirth, aborted fetuses and milk. Boil milk before drinking. Make a fire on the place where the abortion occurred.**

## **Prevention**

## **Vaccination.**

**Treatment No treatment is recommended. Affected animals should be killed because of the danger to humans.**

## **Caprine pleuropneumonia**

### **Symptoms**

- **Infectious pneumonia in goats.**
- **Rapid breathing and nasal discharge with fever.**
- **Cough, weakness and loss of appetite.**
- **Spread by contact or infected materials in the air.**

### **Treatment**

**To relieve symptoms, see Coughs and colds (page 8) and Fever (page 4).**

## **Ecthyma**

### **Symptoms**

- **Scabs around the mouth and on the nose.**
- **Lack of appetite.**
- **Lameness.**
- **Weight loss.**
- **Skin lesions on the lips, which later may develop into scabs.**

**Disease occurs only in goats and sheep. Spread by contact with infected animals.**



**Ecthyma**

### **Prevention**

**Isolate infected animals from the herd.**

### **Treatment**

**No indigenous treatment is recorded.**

### **Enterotoxemia**

### **Symptoms**

- **Foul-smelling diarrhea with blood.**
- **Abdominal pain.**

- **Convulsions. Enterotoxemia causes many deaths in calves, kids and lambs. It is spread by contact with infected materials.**

## **Treatment**

- **No indigenous treatment is recorded.**

## **Ephemeral fever**

## **Symptoms**

- **Fever.**
- **Stiffness and lameness.**
- **Shivering.**
- **Lack of appetite.**
- **Tears in the eyes.**
- **Discharge from the nose.**
- **Drooling (salivation).**
- **Difficulty in breathing.**

**Affects cattle and water buffaloes. The disease is spread by mosquitoes as mechanical carriers. A sick animal usually recovers within a few days.**

## **Treatment**

**These treatments are for the symptoms only.**

- **Reduce the fever (see Fever, page 4).**

- **Complete rest.**

## **Foot-and-mouth disease**

### **Symptoms**

- **Blister-like sores and ulcers on the udder, teats, feet and inside the mouth, nose and muzzle.**
- **Drooling and smacking of the lips.**
- **Fever.**
- **Lack of appetite, refusal to eat.**
- **The disease lasts only about a week but can take longer. It often kills young animals.**





## **Foot-and-mouth disease**

### **Cause**

**A highly contagious, viral infection of animals with cloven hoofs. The disease is spread by air, usually between animals that are close together. People may serve as mechanical carriers.**

### **Treatment**

**No indigenous treatment to cure the disease is recorded. The remedies below are to treat the symptoms only.**

- **When the animals start to feel ill, give 12 bananas and 1 kg of *Trigonella foenum-graecum* leaves as feed for 45 days. (India. 1, 2, 4)**
- **For wound treatment, see Wounds.**

### **Prevention**

- **Keep infected animals away from other animals.**
- **Avoid contact with infected animals.**
- **Clean and disinfect housing. For disinfectants.**

### **Hemorrhagic septicemia**

### **Symptoms**

- **Swelling of the neck.**

- **Inability to breath properly.**
- **In the last stage of the disease, the tongue sticks out because of difficulty in breathing.**
- **Fever.**
- **Discharge from the nose.**
- **Cough.**
- **Lack of activity.**
- **Lack of appetite.**
- **Bloat.**

**The following can make animals more susceptible to hemorrhagic septicemia: transportation, stress, overwork and a sudden change in the weather.**

## **Prevention**

- **Good sanitation and hygiene.**
- **Good nutrition.**
- **Vaccination**

## **Treatment**

**See Coughs and colds (page 8), Fever (page 4) and Lack of appetite (page 1). These treatments are for the symptoms only.**

## **Paratuberculosis (Johne's disease)**

## **Symptoms**

- **Gradual loss of weight.**
- **Recurrent diarrhea.**

**Can affect cattle, water buffaloes, sheep and goats. Most cases occur in 2-6 year-old cattle. The disease is spread by contact with infected materials.**

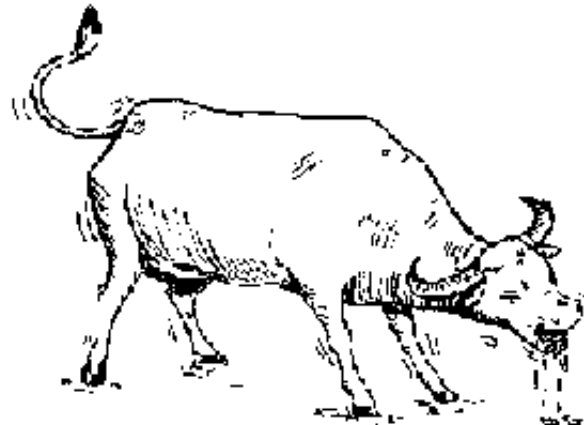
### **Prevention**

- **Clean and disinfect housing.**
- **Rotate pasture.**

### **Treatment**

**No indigenous treatment is recorded.**

### **Rabies**



**Rabies**

### **Symptoms**

- **Animal becomes aggressive.**
- **Bellowing.**
- **Frequent urination.**
- **Salivation.**
- **Constipation.**
- **Animal is viciously aggressive, running at and trying to bite any moving object.**
- **Convulsions.**
- **Death. Spread by bites of infected animals.**

## **Prevention**

- **Vaccination.**

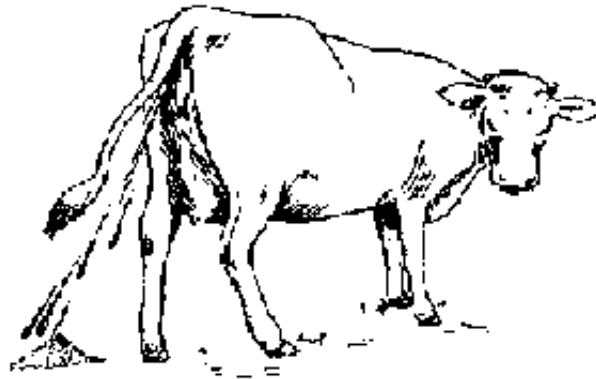
## **Treatment**

**Treatment is not recommended.**

## **\* Warning**

**Rabies can infect people and usually kills them. Avoid contact with animals that might have rabies. They should be killed immediately. See also section on dog bites in Wounds (page 80).**

## **Rinderpest**



## **Rinderpest**

### **Symptoms**

- **Very high fever.**
- **Nasal discharge.**
- **Foul-smelling, shooting diarrhea that contains blood and mucus.**
- **Difficulty in breathing.**
- **Watery eyes. Dehydration.**
- **Bran-like lesions in the mouth and tongue.**
- **Animal cannot eat.**

### **Cause**

**This is the most severe infectious disease in cattle and water buffaloes, but it can also affect other animals. It is spread by direct contact with infected animals. Many animals die.**

### **Prevention**

**Vaccination is recommended.**

## **Treatment**

**No indigenous treatment is recorded.**

## **Tuberculosis**

### **Symptoms**

- **Low, recurrent fever.**
- **Weakness.**
- **Lack of appetite.**
- **Progressive loss of weight despite good nutrition and care.**
- **Enlarged superficial lymph. You can feel them as swellings behind the ears and in front of the shoulders.**

### **Prevention**

- **Keep housing clean. Provide sufficient light and ventilation.**
- **Good nutrition.**

## **Treatment**

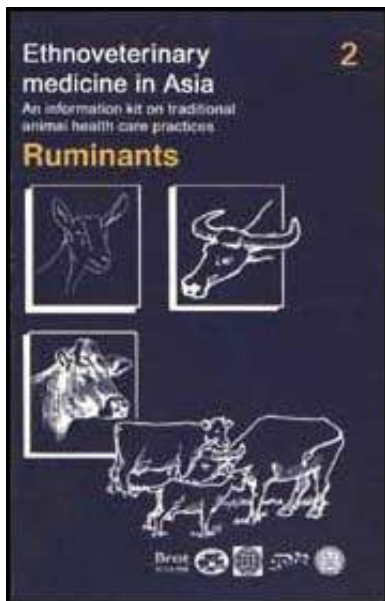
**Treatments are not recommended. Sick animals should be killed because of the danger to humans.**

## \* Warning

**People can catch tuberculosis by drinking milk from infected animals. Boil milk before drinking.**






































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## **Collaborating organizations**



**Brot Bread for the World  
fur die Welt P.O. Box 10 11 42  
D-70010 Stuttgart, Germany**

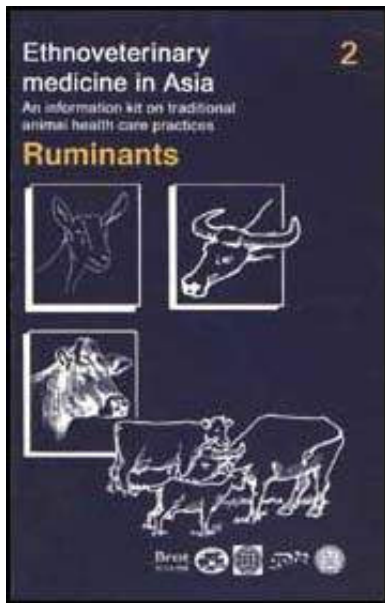
**Heifer Project  
INTERNATIONAL  
1015 South Louisiana  
P.O. Box 808  
Little Rock, Arkansas 72203, U.S.A.**

**THE WORLD BANK  
Small Grants Program  
1818 H Street, N.W.  
Washington, D.C. 20433  
U.S.A.**



















**German Appropriate  
Technology Exchange  
Dag-Hammarskjld-Weg 1  
P.O. Box 5180  
65726 Eschborn, Germany**


















**International Institute of Rural Reconstruction  
Y.C. James Yen Center  
Silang, Cavite 4118  
Philippines**

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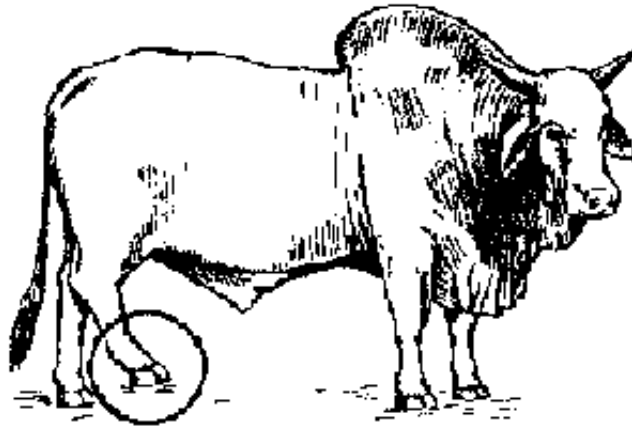
-  **Infectious diseases**
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## **Foot rot**

### **Symptoms**

- **Inflamed foot.**
- **Pus between the two parts of the hoof**

- **The hoof smells bad.**
- **Parts of the flesh may die and turn black.**
- **The animal becomes lame.**
- **The animal does not put its weight on the foot.**



foot rot

### **Foot rot**

**If you see sores in the mouth of animals with foot rot, the problem may be foot-and-mouth disease (see Infectious diseases, page 62).**

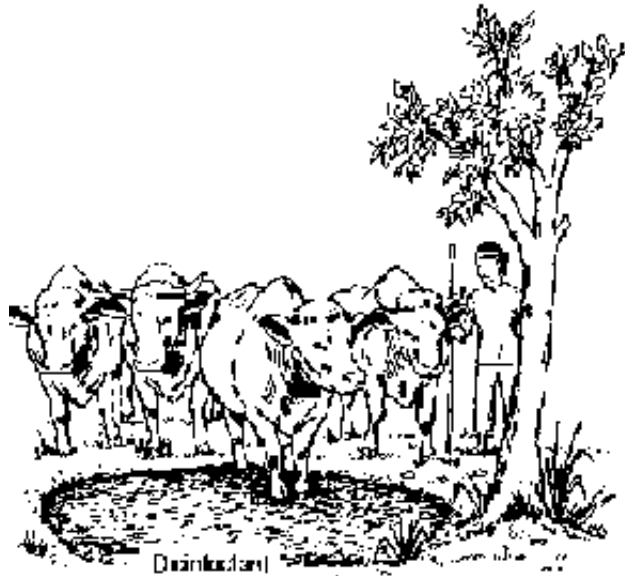
### **Causes**

- **Bacteria, fungi.**

- **Animals that are kept in a wet place often suffer from foot rot.**

## **Prevention**

- **Keep animals in a dry place.**
- **Dig a shallow pit across the road where the herd of animals must pass on its way to and from the pasture. Fill this with water to make a mud-bath. Sprinkle any of the following disinfectants in the pit. Drive the animals through the pit twice each day. You can also put any of these disinfectants in the wet, muddy area near drinking troughs. (Northern and Western India)**

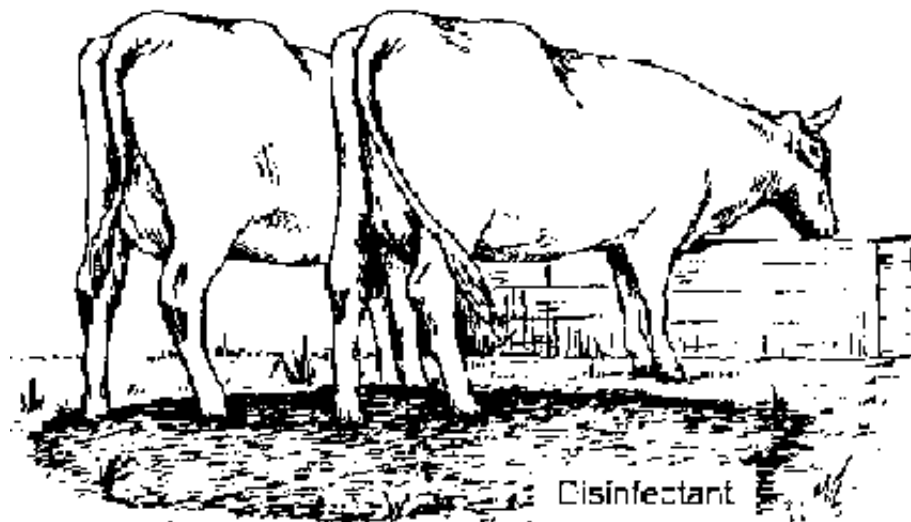


## **Prevention**

### **Disinfectants:**

- **2-3 liters of kerosene. (Cambodia. 1, 2)**

- **200-300 ml of any strong disinfectant, e.g., floor cleaning fluid, lime (calcium hydroxide) water. (Cambodia, India, Indonesia, Sri Lanka, Thailand. 1, 2, 3)**
- **2-3 handfuls of copper sulfate dissolved in a bucket of water. (Sri Lanka)**
- **3-5 kg of pounded fresh neem leaves.**



## **Disinfectants**

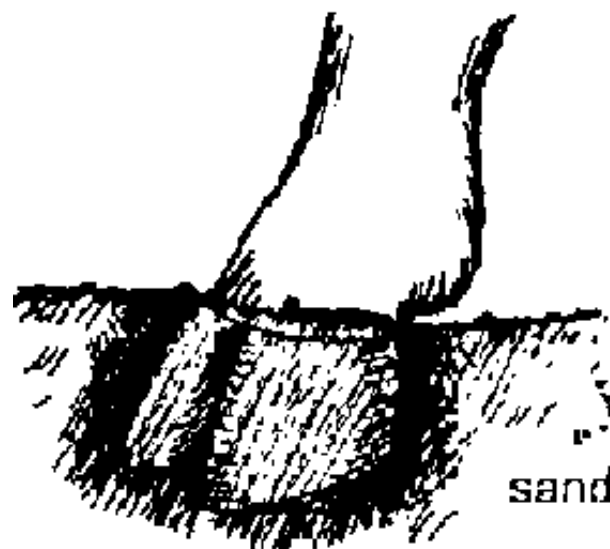
### **Treatment**

**Wash the foot thoroughly with clean water, remove dead tissue and apply one of the following remedies. Move the animal to a dry place.**

- **Pound 3 handfuls of Pterocarpus macrocarpus bark together with 3 fistfuls of small pieces of Eupaorium odoratum (fresh whole plant). Add 1-2 tablespoons of salt. Boil with enough water to make a paste. Apply on the rotten hoof 3 times a**

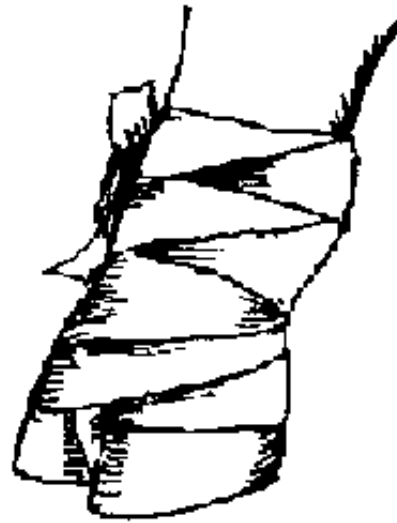
**day for 7 days. (Thailand. 1. 2.3)**

- **Use the A-B-C treatment for wounds (see Wounds).**
- **Dig a small pit in clean, hot sand in a river bed or on the beach. Put the affected hoof in the pit and cover it up to the fetlock with hot sand. Keep it there for 10-20 minutes. The heat will help heal the wound. Do this once a day in the afternoon when the sand is hot, until the hoof is cured. (India. 1, 2, 3)**



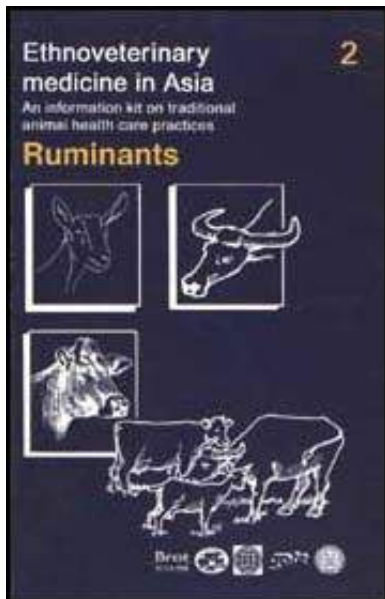
**Treatment**

- **If you see maggots in the wound, take equal amounts of fresh *Annona squamosa* and neem leaves. Pound to make a paste (add a little water if necessary). Apply this to the wound twice a day for 2-3 days. Tie a cloth around the hoof to hold the paste in place. Keep the animal confined for this time. (For other treatments against maggots, see Wounds, page 78). (India. 1, 2)**











Treatment 2

























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## **Eye diseases**

### **Symptoms**

#### **Early stages**

- **Watery discharge from the eye.**
- **Partly or totally closed eye.**
- **Swollen eye.**
- **Eye is reddish.**

#### **Late stages**

- **Yellowish discharge from the eye.**
- **The eye is covered with a thick, whitish film.**



## Eye diseases

### Causes

- **Attack in eye by insects.**
- **Injuries to the eye.**
- **Infectious diseases such as pink eye.**
- **Vitamin A deficiency.**
- **Allergic reactions.**
- **Foreign bodies in the eye.**
- **Snake poison.**

### Prevention

- **Feed green fodder to prevent Vitamin A deficiency.**
- **Separate animal with infectious eye diseases from the rest of the herd.**

## Treatment

**Continue using any of these suggested remedies for 5 days unless the duration of treatment is stated. If symptoms persist after treatment, contact a professional (local expert, respected healer or veterinarian).**

- **Boil 2-3 handfuls of fresh Punica granatum leaves in 56 cups of water for 10 minutes. Wash the eye with the liquid twice a day for 3-4 days. (Sri Lanka. 1, 2, 3, 4)**
- **Squeeze a fresh stem of Euphorbia hirta Put 5-10 drops into the infected eye once a day. (Indonesia. 1, 2, 5)**
- **Wash the eye with Cocos nucifera (young coconut) water 2-3 times a day for 3-5 days. (Indonesia. 1, 2, 3)**
- **Boil 5 leaves of Piper betle (betel pepper) in 500 ml of water and cool. Use as an eye-wash twice a day for 35 days. (Indonesia. 1, 2, 3)**
- **Peel a mature Aloe vera leaf and extract the pulp. Apply the extract as an eye ointment 3 times a day for 3-5 days. (Philippines. 1, 2, 4)**
- **Boil a handful of Jasminum sambac flowers in a glass of water. Put 3-5 drops of the liquid in the affected eye 3 times a day for 3 days. (Philippines. 1, 2, 4)**
- **Pound a handful of Ocimum sanctum leaves. Squeeze the extract and apply 3-4 drops in the eye twice a day. (India. 1, 2, 3, 4, 5)**

- **Squeeze the juice of 10 fresh *Coccinia grandis* leaves. Apply 3-5 drops into the eye twice a day. (Thailand. 1, 2, 3, 4)**
- **Crush 1 medium-sized, dried *Sapindus rarak* fruit Put the powder in a small whisky or Coca-Cola bottle (200 ml) and fill  $\frac{3}{4}$  of the bottle with rain water. Shake well and take the foam out. Blow the foam from your palm into the animal's eye twice a day for 4-5 days. (Thailand. 1, 2, 3, 5)**



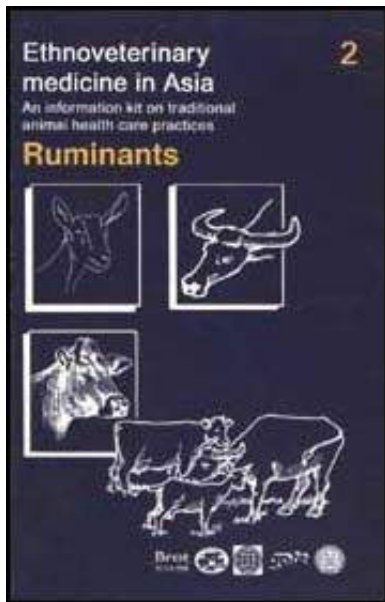
**Treatment with *Sapindus rarak***

### **Treatment for keratitis or opacity of the eye**



















- ***Desmodium triflorum* (fresh leaves). *Acorus calamus* (dried root). *Curcuma domestica* (fine powder of dried rhizome). Egg shell (very fine powder).**



















**Grind the ingredients separately to very fine powder. Mix i/. teaspoonful of each of the ingredients and apply inside the upper eyelid once a day. (Sri Lanka. 1, 2)**

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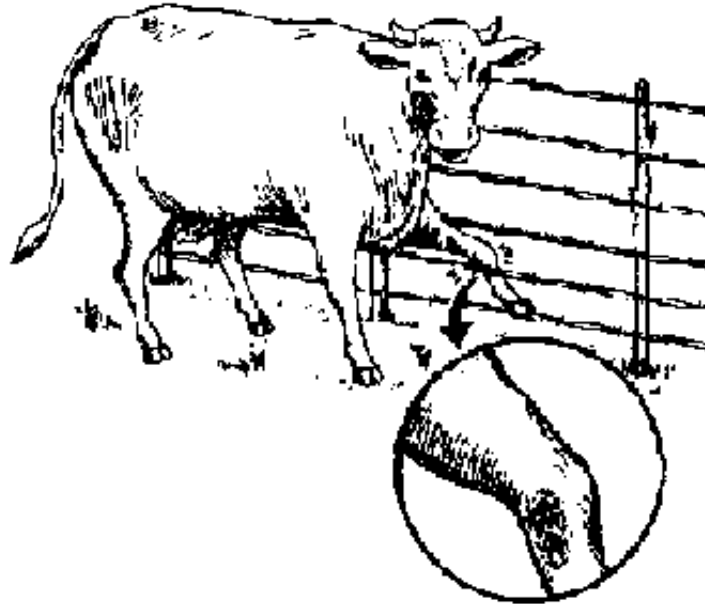
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## **Wounds**

**Wounds can be caused by many things:**

- **Injuries from wire, nails, sharp objects or gunshots.**
- **Bruising, abrasions, trampling or crushing.**

- **Branding and other burns.**
- **Fights and bites.**



**Wound**

**Wounds heal by forming a scar. The scar starts to form in the first 3 days after the injury. The healing process is faster if the skin is brought together and if there is no infection.**

### **Fresh wounds**

**Small wounds may heal by themselves. Tie the animal to a tree or keep it confined to prevent it from moving around and reopening the wound.**

**If the wound needs attention:**



- 1. Stop any profuse bleeding (see Bleeding). Cauterize if necessary: heat an iron sickle in fire till red-hot and apply for 1-2 seconds on the wound.**
- 2. Clean dirt or other foreign bodies from the wound.**
- 3. If possible, bring the skin together to close the wound. Hold the two edges together with a Band Aid, or stitch them together.**
- 4 Protect the wound from dirt and flies using one of the remedies below.**
- 5 Keep the animal quiet and restrained until the wound heals.**

## **Old wounds**

**For old wounds that are severely contaminated, carefully clean the wound and trim away any dead tissue with a sharp knife or razor blade (trim until the flesh starts to bleed). Then use one of the treatments below.**

**If the wound is too serious to treat, seek the help of a professional or slaughter the animal.**

## **Treatment**

**For any of the treatments below, tie a wide (7-10 cm) cloth around the wound if needed to keep the medicine in place.**

- Pound 500 g of fresh Moringa oleifera (horseradish) leaves to make a paste. Apply as a poultice or smear on the wound daily until the wound heals. This stops**

**bleeding and reduces swelling. (India, Philippines, Sri Lanka. 1, 2, 5)**

- **Pound 7 young fresh leaves of Eupatorium odoratum and mix with 1/2 teaspoon of salt (or fresh urine from the same animal). Apply on the wound once a day for 3 days. (Cambodia, Thailand. 1, 2, 3, 4)**
- **Ignite raw cotton wool and allow to burn until it is a black mass and the flame dies. Collect the black part. Put this on the wound and leave it there for 1 day. Replace it each day for 2-3 days. (India. 1, 2, 3)**
- **Pound 2-3 handfuls each of fresh neem and Ocimum sanctum leaves to make a paste. Apply as a poultice. Renew the poultice daily for 3-5 days or until the wound heals. (India. 1, 2, 3)**
- **For wounds that have stopped bleeding, apply vegetable cooking oil around the wound. Then apply wood ash on top of the oil. (Indonesia, Philippines, Thailand. 1, 2, 3)**
- **Boil 250 g of neem leaves in 2 liters of water. Allow to cool and use to clean the wound. (India, Sri Lanka. 1, 2)**
- **A-B-C (avocado-banaba-caimito) treatment for wounds. Collect equal amounts of fresh leaves of avocado (Persea Americana), banaba (Annona muricata) and star apple (caimito, Chrysophyllum cainito). Put in a pot with 10 times as much water as leaves. Boil for 10 minutes and allow to cool. Use a cloth dipped in the water to wash the wound. Do this twice a day until the wound is cured. This treatment can also be used for foot rot. (Philippines. 1, 2)**

- **Wound dressing powder**

**2 parts of neem leaves.**

**1 part of Ocimum sanctum leaves.**

**5 parts of jack (Artocarpus heterophyllus) leaf powder (or talc).**

**1 part of Annona squamosa leaves.**

**Dry the leaves in the shade. Grind them together and sieve them to a fine powder. Sprinkle the powder on the wound two or three times a day. If the powder does not stick to the wound, mix this powder with coconut oil or other vegetable oil to make a paste Apply to the wound. (India. 1, 2, 3, 5)**

- **Grind fresh leaves and fresh flowers of Hibiscus rosasinensis and apply on the wound as a poultice. Replace each day for 3-5 days. (Cambodia, Indonesia. 1, 2)**

- **Grind fresh leaves of Ocimum sanctum and rhizome of turmeric together and apply on the wound as a poultice. (Thailand. 1, 2)**

- **Crush cloves of garlic and store them in vinegar together with chili (Capsicum frutescens) fruits. Take as many cloves as needed and apply them as a poultice. (Philippines. 1, 2)**

- **Pound the bark of Ficus hauli and apply to the wound. (Philippines. 1, 2)**

## **Wounds with maggots**

**Use one of the following treatments to get rid of maggots infesting a wound.**

- **Pour the milky juice from *Ficus bengalensis* into the wound. After a while, the maggots will come out. Repeat once a day until no maggots remain. (India. 1, 2, 3)**
- **Pound fresh leaves of *Annona squamosa* into a paste and apply to the wound. (India, Sri Lanka. 1, 2, 3)**
- **2 g of *Michelia champaca* bark.  
1g of strong chewing tobacco.  
1/2 g of roasted rice.  
150 g of lime (calcium hydroxide).**

**Pound and mix these ingredients and apply to the wound. The lime will kill the maggots. If *Michelia* bark and rice are not available, use the tobacco and lime only. (Thailand. 1, 2)**

- **1 part of oil crushed from *Pongomia glabra* seeds.  
2 parts of sesame oil.  
2 parts of ground, fresh neem leaves.**

**Mix the ingredients and apply to the wound. This mixture soothes the wound, kills the maggots and drives away flies. (Sri Lanka. 1, 2)**

**Wounds or sores in the mouth and vagina**

**For wounds or sores in the mouth or vagina, use one of the following treatments.**

- **Mix 1 tablespoon of alum in 1/2 a liter of water. Apply to the wound. (India, Sri**

## **Lanka. 1, 2)**

- **Terminalia chebula seeds. Terminalia bellerica seeds. Phyllanthus emblica seeds. Glycyrrhiza glabra stem.**

**Take equal parts (100-200 g) of each of these ingredients. Grind and add a little water to make a paste. Apply on the mouth sores once a day. This treatment is also used to treat wounds and sores in the vagina (for instance, after difficult calving) and to treat sores from foot-and-mouth disease. (Sri Lanka. 1, 2, 5)**

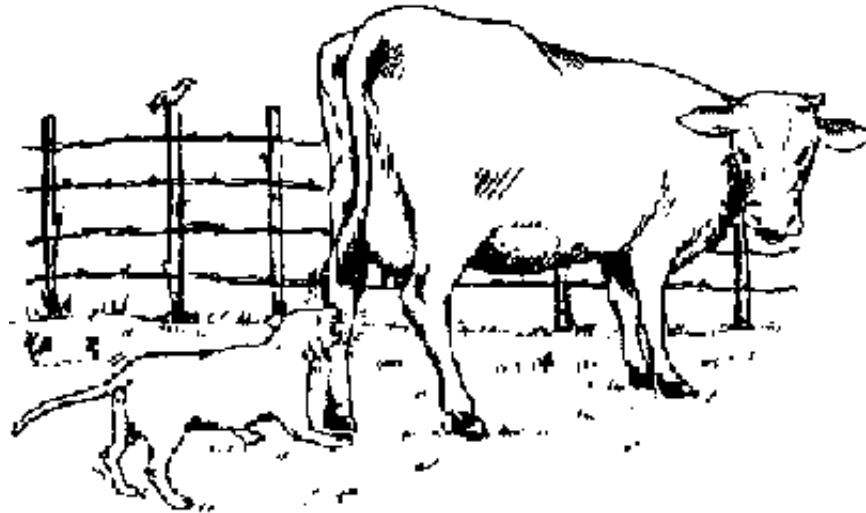
- **Pterocarpus macrocarpus bark. Sesbania grandiflora bark. Xylia kerii bark. Careya sphaerica bark.**

**Make a decoction in water of 1.5 kg of each of the four types of bark. Apply on the mouth and feet. Used to treat sores from foot-and-mouth disease in cattle and swine. (Thailand. 1, 2, 3)**

- **Pound the solid sap from Acacia catechu into a powder. Sprinkle this on ulcers in the mouth twice a day for several days until the ulcer heals. (India, Sri Lanka. 1, 2, 3)**

## **Dog bites**

**Bites of dogs and other animals may be infected with rabies. Rabies can spread to humans very easily and it usually kills infected people. If you know the dog has rabies, kill the dog and the animal it has bitten. Inform a veterinarian immediately.**



### **Dog bites**

**If you are not sure whether the dog has rabies, cover your hand with a plastic bag and clean the wound thoroughly with soap and water without touching it directly. Then treat as for other wounds. An animal with rabies may not show symptoms for several months after being bitten. Watch it carefully and keep it isolated if possible. For symptoms of rabies, see Infectious diseases, page 65. If the animal shows signs of rabies, it should be slaughtered immediately. Do not use its meat for any purpose. Burn the carcass or bury it in a deep pit where it cannot be dug up by dogs.**

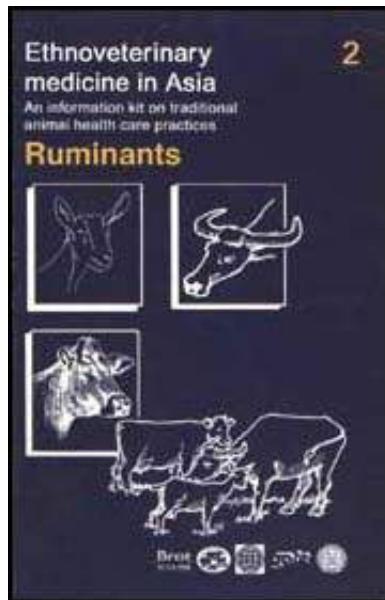
### **Burns**

- **Mix lime (calcium hydroxide, used in chewing betel) with water. Take the water off from the top of the container. Mix equal amounts of this water and vegetable oil to make a white mixture (called "carron oil"). Apply profusely on the burn twice a day. This helps soothe the burn. (India. 1, 2, 3, 5)**
















- **Apply the flesh of Aloe vera leaves to the burn. (Thailand)**
- **Apply vegetable oil on the burn. (Indonesia)**








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## **Bleeding**



**Bleeding can be external or internal. External bleeding is usually a result of wounds due to cuts, bruises, insect bites, ulcers, skin parasites and foot-and-mouth disease infections. Internal bleeding is usually caused by viruses, parasites and bacteria in the udder, uterus, digestive and respiratory systems.**

**Blood in the milk indicates udder infection. Blood in the mucus from the nose may be due to respiratory tract infection.**

## **Treatment**

### **External bleeding**

#### **1. Stop the bleeding.**

**Try any one or more of the following ways to stop bleeding. If bleeding does not stop, apply a tourniquet.**

- **Crush fresh leaves of sweet basil (*Ocimum basilicum*) or holy basil (*Ocimum sanctum*) or neem (*Azadirachta indica*).**

**Apply the pulp to the wound using a tight bandage. Any clean cloth will do. (India. 1, 2, 3, 4, 5)**

- **Fill the wound completely with powdered turmeric (*Curcuma domestica*) rhizome. (India. 1, 2, 3, 4, 5)**

- **Apply alum crystals. (India, Sri Lanka. 1, 2, 3, 4, 5)**

- **Apply powdered tea leaves. (India. 1, 2, 3, 4, 5)**
- **Mix sugar and fresh grated ginger rhizome in equal proportions. Apply on a bandage or cloth and tie the cloth over the wound. (India. 1, 2, 3, 4)**
- **Apply an ice pack. (India, Sri Lanka 1, 2, 3)**
- **Apply a decoction of 1 handful of *Eugenia jambolana* bark boiled in 1 liter of water. Wash the wound with the liquid and hold a clean cloth over it for a few minutes. (India. 1, 2, 3, 4, 5)**
- **Press the flowers of the palmyra tree (*Borassus flabellifer*) to the wound. Hold the flowers in place for a few minutes. (India. 1, 2, 3, 4)**
- **Crush blades of *Cynodon dactylon* grass. Apply the juice to the wounds. (India, Sri Lanka. 1, 2, 3, 4)**
- **Powder mango tree (*Mangifera indica*) bark and place it on the wound. (India. 1, 2, 3, 4, 5)**
- **Powder the bark of a banyan tree (*Ficus bengalensis*). Apply to the wound. (India. 1, 2, 3, 4, 5)**
- **Pound fresh leaves of *Eupatorium odoratum* Apply the pounded leaves to completely cover and fill the wound. (Thailand. 1, 2, 3, 4, 5)**

### **Use of a tourniquet**

**If the wound on the legs or tail is large or continues to bleed, tie a tight bandage or clean cloth above the point of bleeding. Loosen the bandage every 20-30 hours to allow blood to reach the limb below (if you do not do this, the limb may turn black and the flesh may die). If the bleeding does not stop, seek professional help.**

**2. Once bleeding stops, clean the wound. Apply medicine. Suture if necessary. (See section on Wounds, page 75.)**

**3. If the wound has maggots, apply crushed fresh leaves of *Annona squamosa*. (For further remedies, see section on Wounds.) (All countries. 1, 2, 3, 4, 5)**

## **Internal Bleeding**

**If blood is present in the milk or the mucus from the nose:**

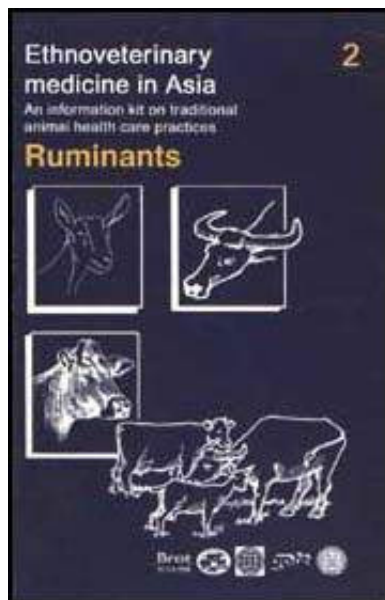
- **See the treatment of udder infection in Udder infection.**
- **Make a cut along the length of a banana and fill this with 1/2 teaspoon of camphor powder. Feed the banana to the animal twice a day for 3-4 days. (India, Sri Lanka. 1, 2, 3, 4)**

**Use blood coagulants such as *Saraca indica* bark, *Actinopetris fennis*, *Jatropha curcas*, *Plumbago zeylanica* or *Terminalia arjuna*.**












<b>Scientific name</b>	<b>Parts used</b>	<b>Preparation</b>	<b>Dosage</b>
Actinopetris fennis	Fresh leaves	Use any of the plants.	Drench 200 ml twice a day for 3-5 days.

Jatropha curcas	Fresh leaves	Take 100 g of the plant part	
Plumbago zeylanica	Dry bark	the plant part specified and	
Terminalia arjuna	Dry bark	prepare a decoction in 1 liter of water.	

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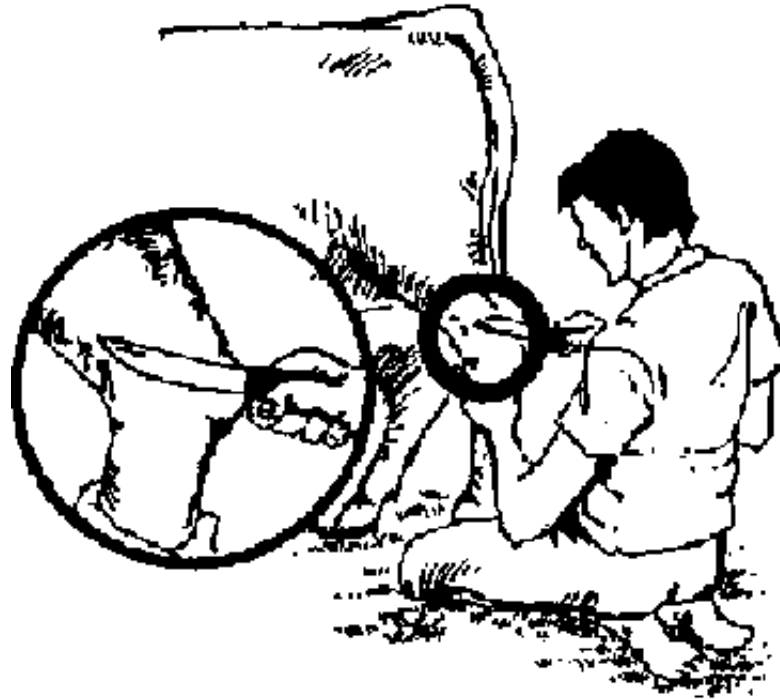
 **Decreased milk flow****Snake bite****Symptoms**

**An animal bitten by a snake may show several signs:**

- **An animal that has just been bitten may bolt or jump suddenly.**
- **You may notice a wound and a swollen area, usually on the leg or face. When the affected area is pressed, blood will seep from the base of the hairs.**
- **The animal appears anxious.**
- **It has muscle contractions.**
- **Its hair stands on end.**
- **The animal stands very tensely, with a curved back.**
- **The animal may bleed from the nostrils.**
- **Its urine may be red.**
- **In an acute case, the animal will die within 30 minutes.**

## **Emergency treatments**

- **Apply a tourniquet above the wound (for leg bites only). See section on Bleeding (page 82) for how to use a tourniquet.**
- **Locate the bite marks, make a deep cut over the mark in line with the muscle tissue and let the wound bleed freely.**
- **Put your mouth to the wound and suck out the poison. Be sure to spit out the poison. (Caution: Do not do this if you have a wound or sore in your mouth.)**
- **Keep the animal still.**
- **In some countries, farmers apply red ants to the bite area.**



## Emergency treatments

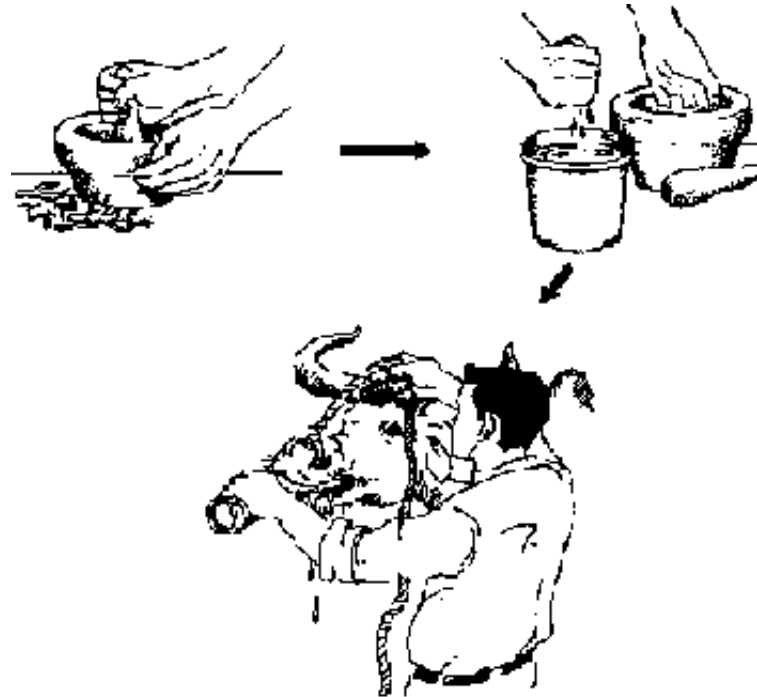
### Treatments

- **Pound, press and strain the juice from a handful of leaves of *Barleria lupulina*, mix with 50 ml of whisky and give as a drench. Also, apply the ground leaf material directly to the wound (Thailand. 1, 2, 3, 4, 5)**
- **Pound and press the juice from 1 root (about 300 g) of *Sansevieria* sp. Mix the juice in 1 liter of water that has been used for washing rice. Give as a drench once only. The pounded rhizome of this plant, mixed with 1 liter of water, can also be used as a drench. (Thailand. 1, 2, 3, 4, 5)**
- **Rub the bite with an alum stone, lubricated with spit. Do this for 2-3 minutes.**



**(1)**

- **Boil about 1 kg of *Ochna serrulata* (multiflora) root in 3 liters of water until only 2 liters remain. Cool and give the fluid as a drench. Once should be enough. (1)**

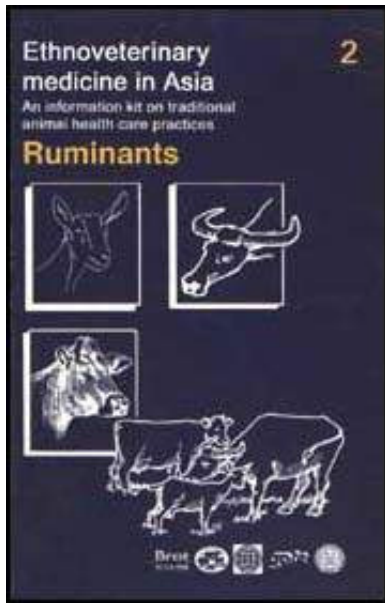


**Treatment for a snake bite**

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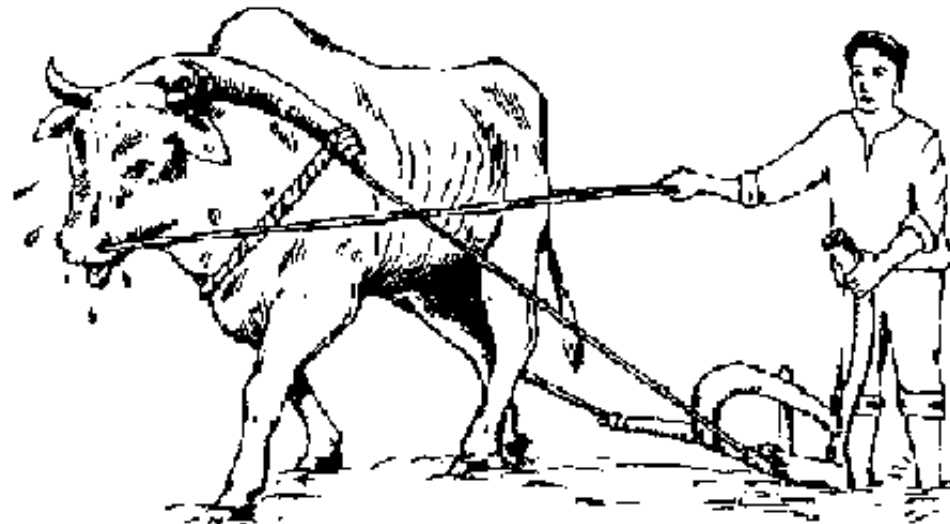
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## Sprains



## Sprains

**Frequent causes of sprains in ruminants are accidents and falls, especially during plowing and pulling heavy carts. Sprains often occur if the animal is tired, overworked or in Door condition. Young animals used for draft work are particularly affected especially at the beginning of the plowing season when feed is scarce. Animals with poorly formed legs are also more likely to get sprains. Sprains are also a problem in hilly areas where the animal must walk up and down steep slopes.**



**Falls**



## Symptoms

### Symptoms

- The animal limps or has an uneven gait.
- It lags behind the rest of the flock or herd.
- It carries or drags the affected leg.
- It does not put its full weight on the leg.
- It has pain and pulls its leg away when you try to examine it.
- The affected joint may be swollen or inflamed.

Before treating the animal, make sure the problem is not:

- A fracture (see Simple surgical techniques in General information).
- Foot rot (see Foot rot).

### Prevention

- **Herd the animals carefully during grazing to avoid accidents.**
- **Use light, nimble animals (not large, crossbred cattle or large buffaloes) in hilly areas.**
- **Do not use young, immature animals for work.**
- **Feed animals well and keep them in good condition.**
- **Do not overload animals.**

## **Treatment**

### **Herbal treatments**

**Use one of the herbal treatments below.**

- **Crush enough fresh leaves of *Cymbopogon citratus* to cover the affected part. Warm over a fire and wrap around the affected part. Tie on with a cloth and leave for 3-5 days. This remedy provides heat by stimulating the blood circulation. (Indonesia. 1, 2)**
- **Finely cut a handful of fresh comfrey (*Symphytum officinale*) leaves. Place on a piece of cloth, fold the cloth and boil in water for 5 minutes. Wring out the water and apply hot to the affected area. Be careful not to burn the skin of the animal. (Cambodia, Philippines, Thailand. 1, 2, 3, 4)**
- ***Cissus quadrangularis* (whole plant). *Hoya ovalifolia* leaves. *Pathos secundens* (whole plant). Turmeric (whole plant). *Ficus racemosa* leaves.**
- **Take a handful of each plant and chop together with 100 g of salt. Put the mixture on a cloth and heat it over a pot of boiling water. Tie the hot mixture**

**around the affected area with a cloth. Repeat this treatment once every 2 days for 3-5 days. Be careful not to burn the skin of the animal. (India, Sri Lanka. 1, 2, 3, 4, 5)**

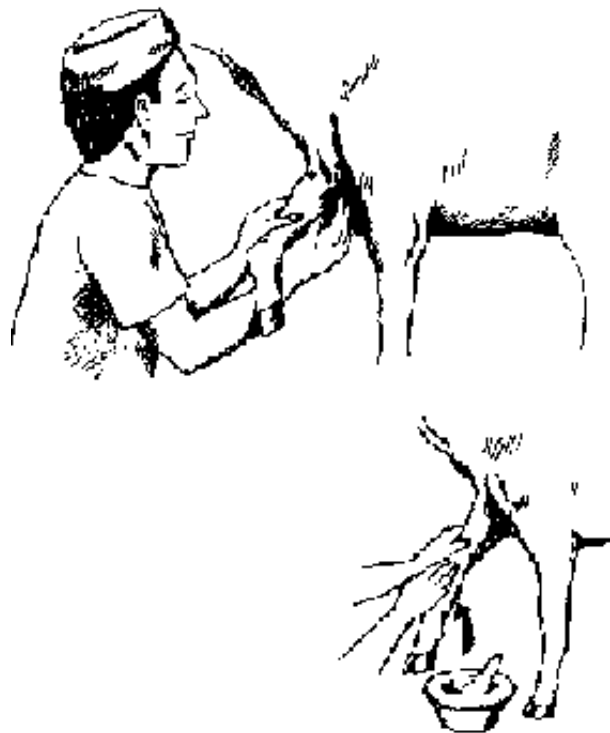
- **Grind enough Brassica nigra seeds to cover the affected area, together with enough water to make a paste. Apply on the affected part twice a day for 3-5 days. (India, Sri Lanka. 1, 2, 3, 4)**

- **Take a sufficient quantity of any of the medicinal plants in the table below to cover the affected area. Pound and add enough hot water to make a warm poultice. Apply it around the affected joint or area 2-3 times a day for 3-5 days. Tie a cloth around the area to support the joint and keep the poultice on if necessary.**

### **Sprain treatments**

<b>Scientific name</b>	<b>Common name</b>	<b>Parts used</b>
Curcuma longa +	Turmeric	Dry/fresh turmeric rhizome, lemon juice (India. 1, 2)
Citrus bergamia + salt	Lime	
	Salt	
Eucalyptus globulus	Eucalyptus	Fresh leaves (India. 1, 2)
Gaultheria fragrantissima	Indian wintergreen	Fresh leaves(India. 1, 2)
Hibiscus rosa-sinensis	Hibiscus	Fresh leaves(Cambodia, India. 1, 2)

Mentha arvensis	Japanese mint	Fresh leaves
Mentha piperita	Peppermint	(India 1, 2)
Vitex negundo	Five-leaved chaste tree	Fresh leaves (India. 1, 2)
Zingiber officinale	Ginger	Fresh rhizome (Indonesia. 1, 2)



### Where to apply the poultice

### Applying heat

**Warming the affected area helps heal the sprain. Use one of the following treatments.**



- **Mix ¼ matchboxful of camphor powder with 100 ml of vegetable oil. Apply on the affected part once a day for 3-5 days. Caution: Do not apply on skin that is grazed or broken. (India. 1, 2, 3, 4, 5)**
- **Put a handful of salt in a cloth, tie the cloth with string to make a small bag, heat and apply on the affected part. Repeat the treatment twice a day for 3-5 days. (India. 1, 2, 3, 4)**
- **Heat a piece of dry clay and apply it on the affected part. Repeat the treatment twice a day for 3-5 days. (Maharashtra, India. 1, 2, 3, 4)**

### **Preventing the sprained limb from moving**

**Keep the animal confined to prevent it from moving too much. Do not send it out for grazing or use it for plowing or other work.**

**If the sprain has not improved within 5 days or so, take the animal to a specialized healer (vet or village healer).**

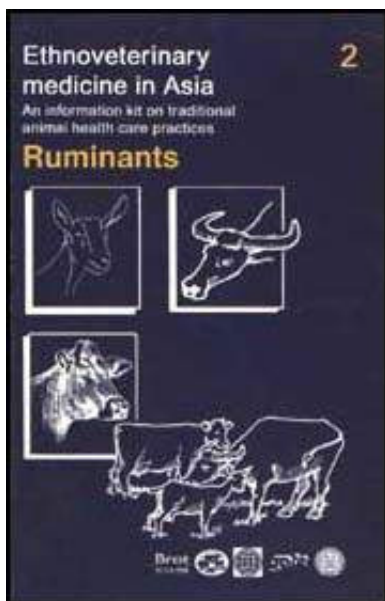
**Use one of the following treatments to warm the affected area and to prevent the limb from moving too much.**

- **Heat any vegetable oil and pour it over newspaper. Wrap the newspaper as a cast around the affected area. Do this every day for 3-5 days. (Philippines. 1, 2, 3, 4, 5)**
- **Tie a wide (7-10 cm) cloth firmly around the affected part. Make sure the cloth is not too tight so it does not stop the blood flow. (Throughout South and Southeast**

















# Asia. 1, 2, 3, 4, 5)























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## **Difficulty in urinating**

**Difficulty in urinating occurs mostly in males. especially bullocks and rams.**

**Bullocks of prime plowing age of 5 -7 years are most affected. After 4-5 days, the bladder may rupture.**



**Difficulty in urinating**

## **Symptoms**

- **The animal strains and grunts.**
- **The coat is rough.**
- **The animal stops chewing cud.**
- **It is restless.**
- **It gets up and sits down frequently.**
- **No or only a few drops of urine may be seen on the bare soil where the animal has been tied up.**
- **A peculiar smell comes from the mouth after 34 days.**
- **The body temperature may rise after 4-5 days.**

## **Causes**

- **Blockage of the urinary tube by stones that form in the bladder and urinary canal.**
- **Swelling of the urinary bladder.**
- **Kidney disease.**
- **Swelling due to castration.**

## **Prevention**

- **Give plenty of drinking water, especially during the dry season.**

## **Treatment**

**Use one of the treatments below. The dosages given are for adult cattle and buffaloes. Use half of these amounts for calves, sheep and goats.**

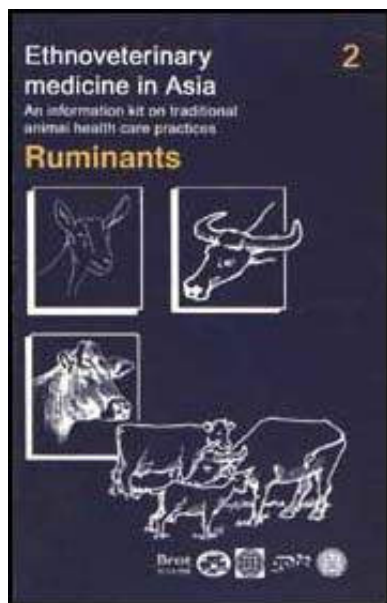
- **Prepare a decoction of the whole plant of any or all of the following: 2 g of Tribulus terrestris, 3 g of Boerhaavia diffusa, 3 g of Cratueva nuravala, 2 g of Hyoscyamus niger, 3 g of Pavetta indica, 4 g of potassium nitrate, 4 g of sodium bicarbonate. Give cattle and buffaloes 200 ml of the decoction as a drench 2-3 times a day for 5-6 days as long as the problem lasts. For goats, sheep and calves, give 100 ml for every drenching. (India. 1, 3, 4, 5)**
- **Mix equal proportions of water and milk with a pinch of baking powder. Drench with 2 liters of this mixture or provide it as drinking water 2-3 times a day until recovery. (India. 1, 3, 4, 5)**

- **Drench with 1 liter of sugarcane juice 2-3 times a day until recovery. (Cambodia. 1, 2, 3, 4, 5)**
- **Boil 100 g of Orthosiphon spicata leaves in 1 liter of water. Cool, then drench. Repeat this treatment 2-3 times a day until recovery. (Indonesia. 1, 2, 3, 5)**










### @ Caution

























- **In case of complete or partial blockage of the urinary tube, surgery is needed.**
- **Do not give the medicinal herbs mentioned above if there is a complete blockage**




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## **Housing**

**Housing practices vary widely from place to place. In general, however, stock raisers do the following:**

### **Protection**

- **People protect their animals from rain, sun, wind, cold, predators and thieves. For example: they may plant thorny bushes around the animal shed to keep predators and thieves away.**
- **They build a shed, house, barn or other structure to shelter the animals. Or sometimes, if people's homes are raised on stilts, they keep their livestock under the home.**
- **In many areas, farmers plant certain trees to provide shade near the livestock shed.**
- **They plant neem, eucalyptus or Ocimum sanctum around the shed to repel insects.**
- **They light smoky fires near or under the shed to drive away ticks, lice and insects.**



- **They do not plant mango, curry leaf (*Murraya koenigii*) or bamboo near the shed, as these species attract snakes and bats. For the same reason, they do not stock large amounts of firewood, hay or straw near the shed.**

## **Space**

- **Farmers provide enough space for each animal to lie down and stand, turn around and defecate without the dung soiling itself or other animals.**
- **They avoid overcrowding.**
- **They provide adequate ventilation and light.**

## **Feed and water**

- **People provide a container with clean drinking water.**
- **In certain areas, farmers build a small feeding manger to hold green or dry fodder.**

## **Hygiene**

- **Traditionally in many areas, farmers slope the floor of the shed so the urine and dung can flow out. This helps keep the shed clean.**
- **They use straw from rice, wheat and other plants for bedding. They replace this regularly with fresh straw.**
- **The farmers clean away dung, urine and mud each morning.**

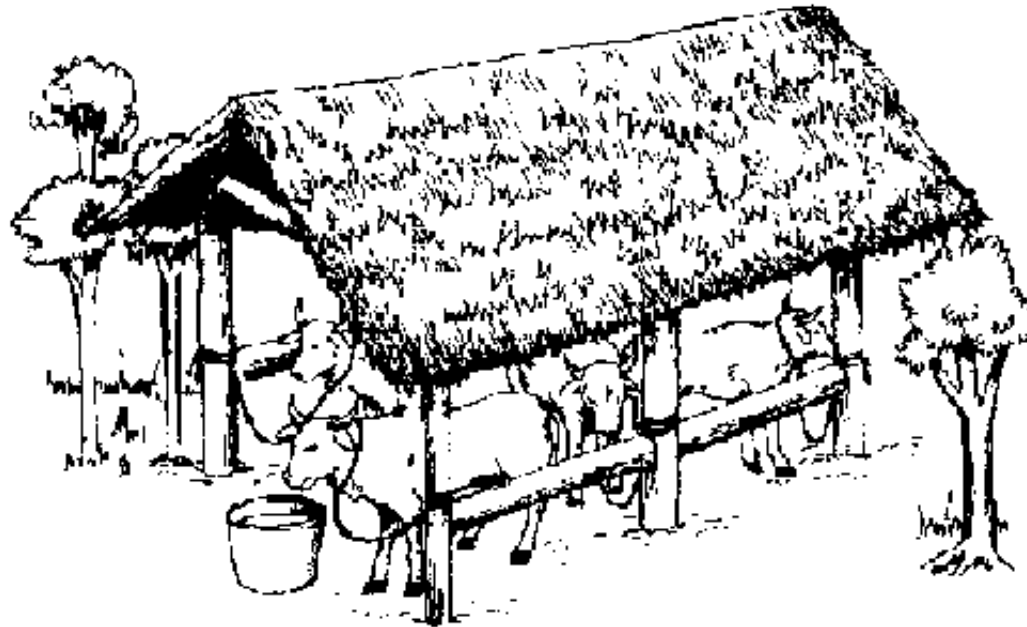
- **In some countries, they apply a layer of fresh mud on the floor of the shed.**
- **They may regularly sprinkle dry lime (calcium hydroxide) or powdered limestone on the floor 2-3 times a week as a disinfectant and to repel flies. Once a month, they wash the walls with limestone powder mixed with water.**
- **In India, farmers mix a handful of dung in a bucket of water and sprinkle this mixture on the floor. Over time, this produces a hard flooring that is easy to keep clean. It also keeps the ground even, so animals will not slip.**
- **They isolate or quarantine sick animals from other animals.**

### **Some examples of ruminant housing**

**Housing types vary widely from place to place. Here are a few examples.**

#### **Tribal areas of India**

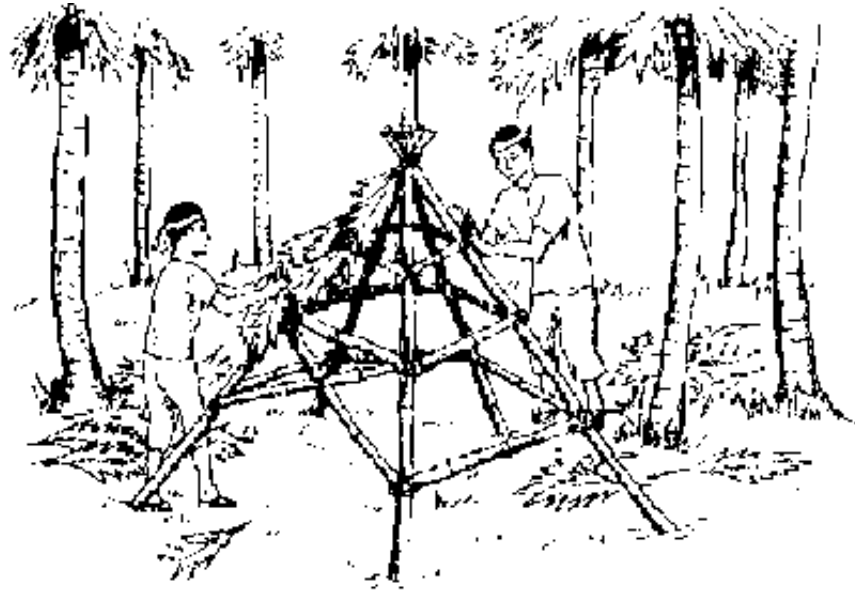
**This shelter, built in the village near the owner's home, houses 10-20 animals. The roof is made of dried palmyra tree leaves (which are rainproof) or dried grasses. The posts are of bamboo, palmyra tree wood, teak, rose wood, or other strong wood. The floor is of mud. The animals are kept in the shed during the night and let out to graze in the forest during the day. The shed is cleaned and fresh mud is put on the floor before the animals return. The shed provides protection from the sun and rain, yet allows sufficient light and air to get in. It is very cool inside.**



**Tribal areas of India**

### **Coastal areas of Andhra Pradesh, India.**

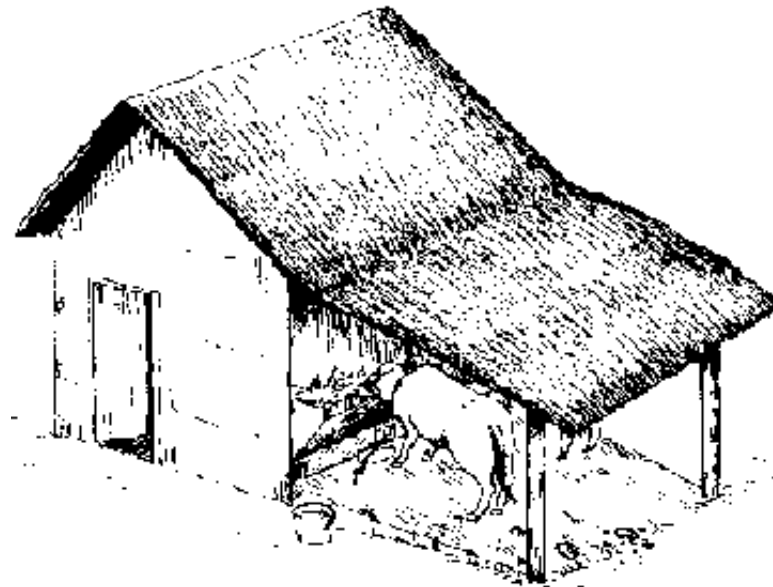
**This area is prone to cyclones and has very heavy rainfall (more than 1800 mm per year). The round, conical shape provides minimum resistance to cyclones and the sloping roof reaching almost to the ground prevents the roof from blowing away. This shelter can house 2-3 animals. It is usually located in the fields. The roof is made of palmyra tree leaves and the frame of palmyra wood. The floor is of mud. The shelter is cool in summer and warm in winter. However, it is dark inside and ventilation is sometimes inadequate. A container of water is placed inside, but there is no manger for fodder.**



**Coastal areas of Andhra Pradesh, India.**

**Deccan (India) and Sri Lanka**

**This shed is attached to the owner's house and is made of bricks, mud, wood or stone. It houses 1-2 animals. The roof is of dried wild hemp stalks or other grasses. The floor is of mud or brick, and it slopes so mud, dung and urine flow out. A feeding manger and a container for water are built in. The shed obviously is well-ventilated and cool.**



**Deccan (India) and Sri Lanka**

## **Philippines**

**Many farmers in the Philippines and Laos keep their animals under the house, or in a room next to their own living area. The house is made of slatted bamboo and/or wood. The roof is thatched with local grasses. The animals body heat helps warm the house. Owners can give care to the animals very easily. However, pests and diseases such as mange, leishmaniasis and flies can spread from animals to humans. On the other hand, farmers in the Philippines say that—although the**

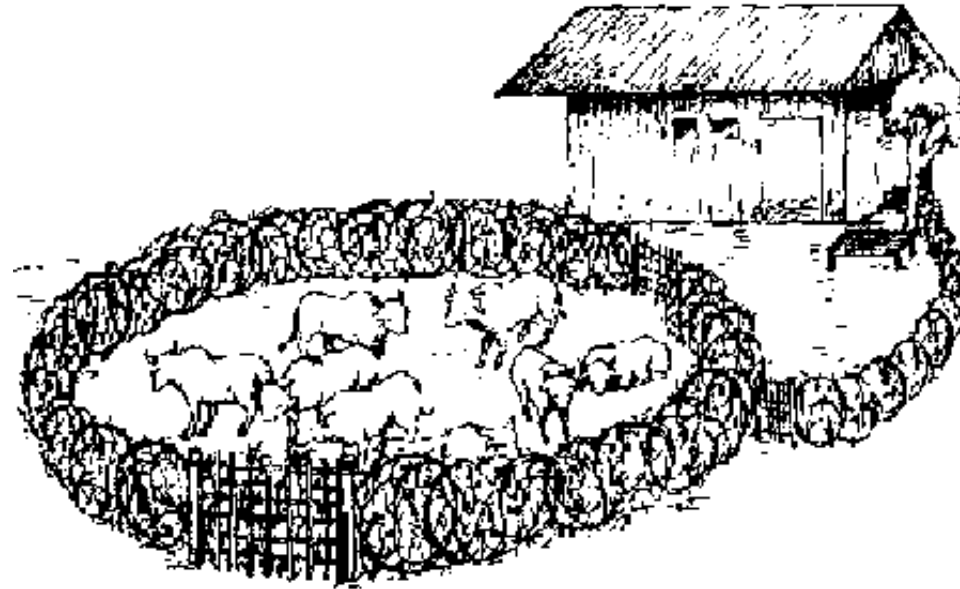
**goats they keep under their houses have a strong and unpleasant odor—the smell helps keep mosquitoes away from the home.**



**Philippines**

### **Gir Forest, Gujarat, Western India**

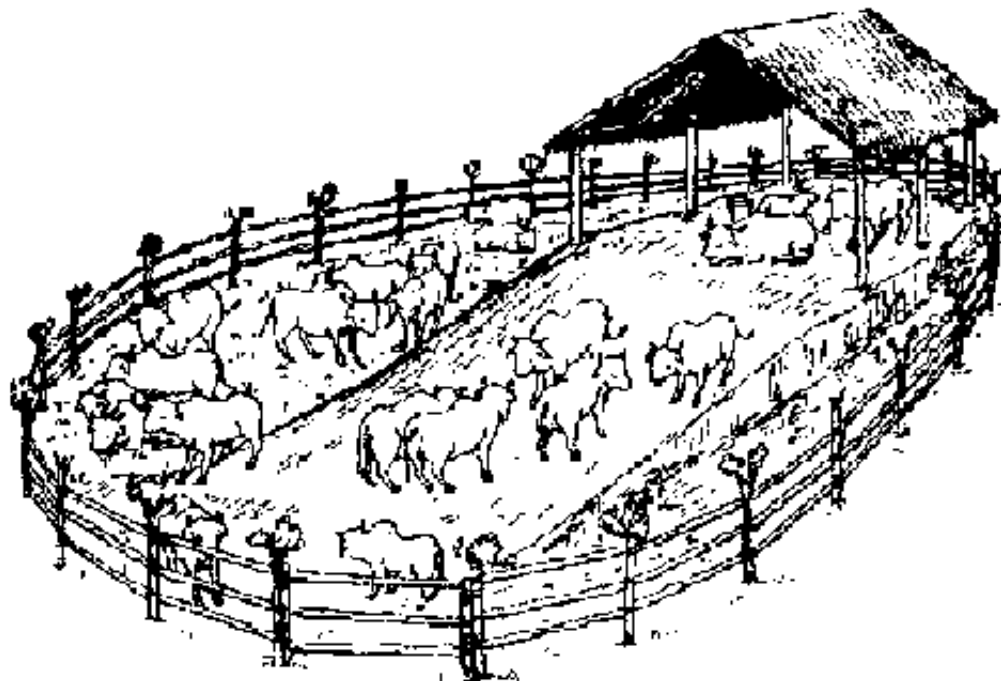
**Farmers in the Gir Forest build a circular, thorny fence of *Acacia arabica* branches. They keep their buffaloes inside during the night to protect them from lions and wolves. During the day, the buffaloes are let out to graze in the forest, where they seek shade under the trees: Farmers throughout India build a thorny fence or plant cacti around their own and their animals' housing to deter predators.**



**Gir Forest, Gujarat, Western India**

## **Sri Lanka**

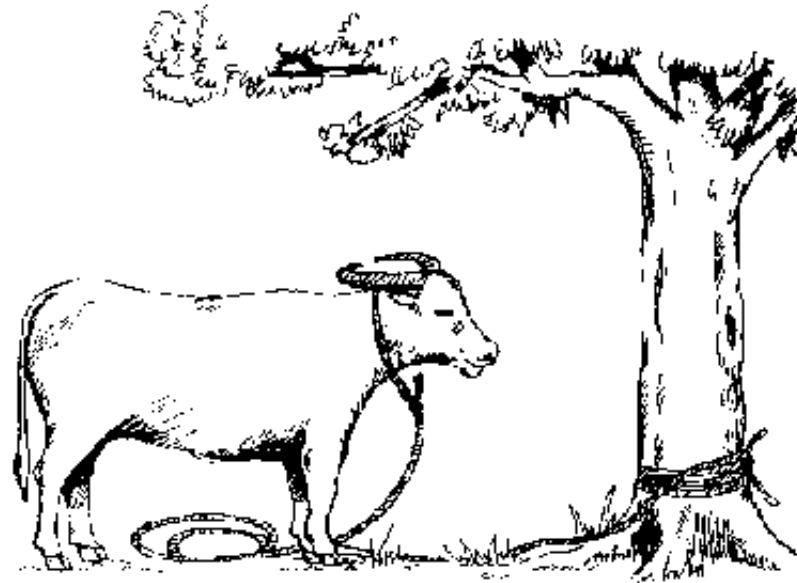
**Farmers build a corral of trees, logs and wire. The animals rest inside the enclosure in a shed made of wood or bamboo, roofed with grass or leaves. This shed is built at the top of the slope, so water and waste materials run out of it.**



**Sri Lanka**

**Sometimes, farmers tie their animals under a tree. In Thailand, they use a special bamboo spring on the tether. This prevents the rope from twisting and becoming tangled.**

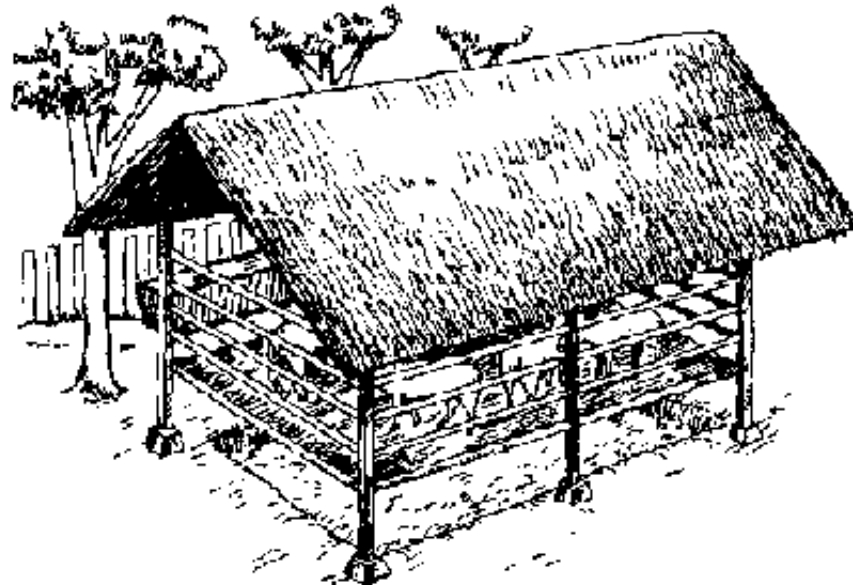




**Throughout South and Southeast Asia**

**Indonesia, India, Sri Lanka and Thailand**

**Sheep and goat pens are often built on stilts. The floor is made of slatted wood or bamboo, so that the droppings and urine fall through. In India and Indonesia, there is a pit below to collect these valuable organic materials. The manure can be removed easily from beneath the pen for spreading in the fields. The roof is thatched with grass. The owners or their children cut grass from roadsides and field boundaries and put it in a manger attached to the pen for the animals to eat. Surplus grass can be stored at one end of the shed. This pen protects the animals from thieves and predators. It is clean and hygienic. In Indonesia and Sri Lanka, animals of different ages and sexes may be kept separate using dividers within the house. Pregnant animals and mothers with newborns are also separated from other animals.**

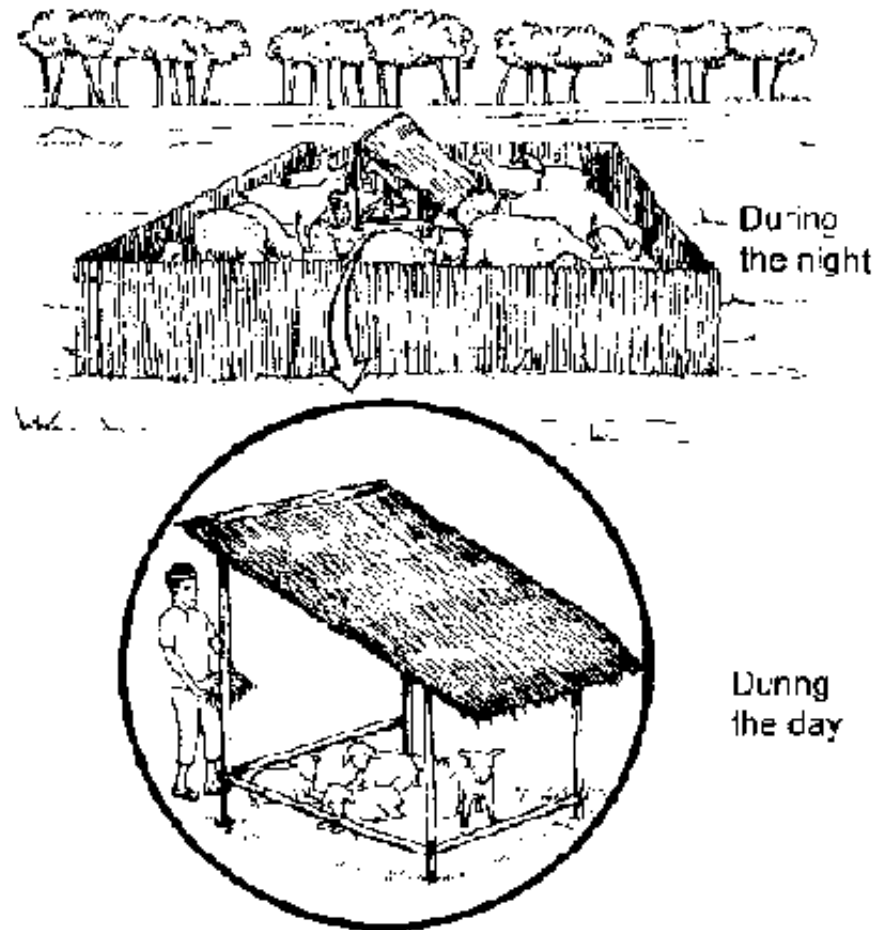


**Indonesia, India, Sri Lanka and Thailand**

**Deccan, India**

**Semi-migratory shepherds use small branches to make moveable, collapsible fences. They erect these in the field to keep their goats and sheep in at night. The shepherd sleeps in the small shed in the center of the enclosure. During the day, the animals are released from the enclosure and allowed to graze. Outside, only animals that are too young to graze are kept inside the shed during the day with a shepherd who guards and feeds them.**

**The shepherd moves the enclosure around the field, so that the entire field is manured at night. The farmer pays the shepherd for this manure.**



**Deccan, India**

## Throughout India

**Farmers build a thorny fence of *Acacia arabica* or *Acacia farnesiana* around their goat houses to deter thieves and predators. The house itself is round and made of bamboo, wood and mud. The roof is thatched with palmyra leaf or grass. The floor is of mud. Animals of all ages are housed together. Some farmers clean out the dung; others use the dung as bedding.**



## Throughout India



Gogor grass  
(*Imperata cylindrica*)

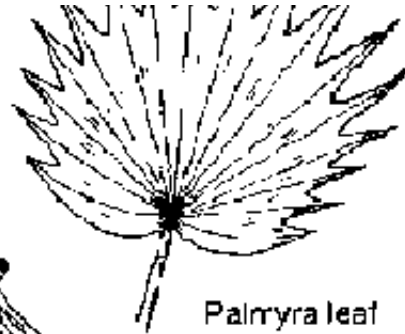


Coccoloba leaves

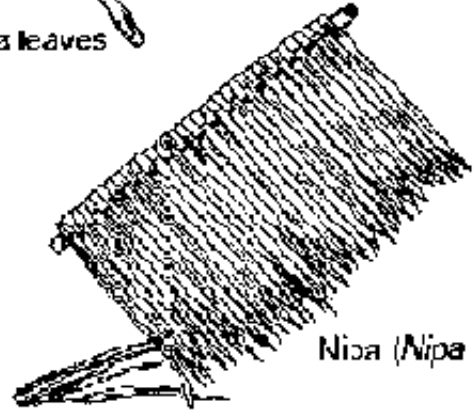




Banana leaves

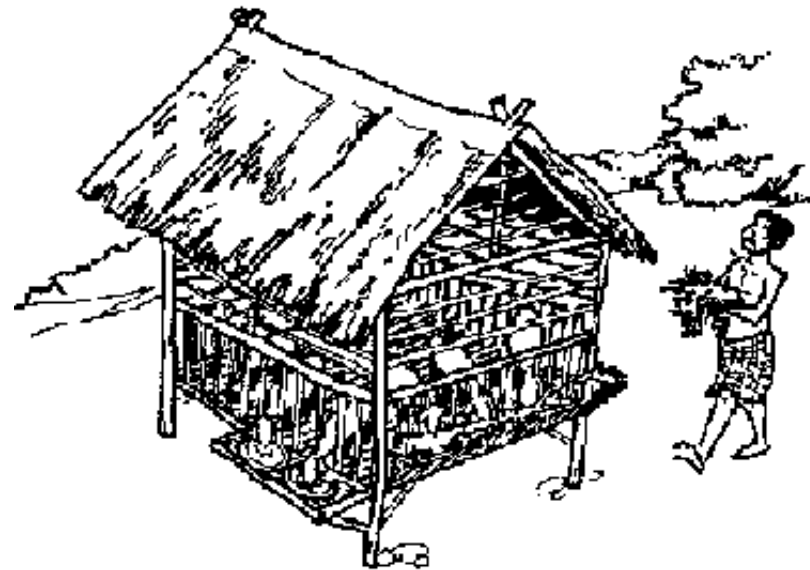


Palmyra leaf



Nipa (*Nipa fruticans*) leaves

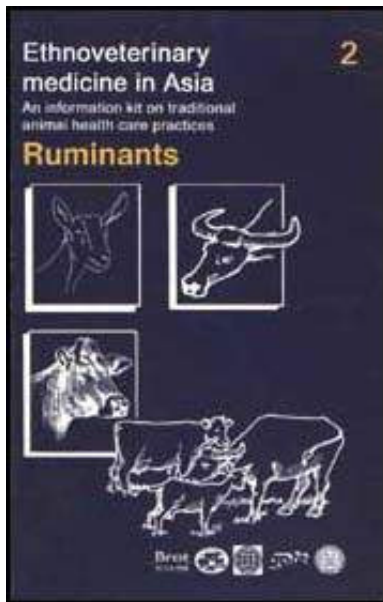
### Various types of roofing materials





















### Various types of roofing materials





















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## **Ethnoveterinary Medicine in Asia - Ruminants (IIRR, 1994, 143 p.)**

-  **(introduction...)**
-  **Collaborating organizations**
-  **Participants and workshop staff**
-  **How to use this manual**
-  **Lack of appetite**
-  **Fever**
-  **Coughs and colds**
-  **Diarrhea**
-  **Dehydration**
-  **Bloat**
-  **Constipation**
-  **Poisoning**
-  **Internal parasites: Stomach and gut worms**
-  **Liverflukes**
-  **Tick infestation**
-  **Scabies (mange)**
-  **Lice**
-  **Fungus infections of the skin**

-  **Infectious diseases**
-  **Foot rot**
-  **Eye diseases**
-  **Wounds**
-  **Bleeding**
-  **Snake bite**
-  **Sprains**
-  **Difficulty in urinating**
-  **Housing**
-   **Feeding**
-  **Mineral deficiency**
-  **Breeding**
-  **Pregnancy and birthing**
-  **Care of mother animals after birthing**
-  **Care of newborn**
-  **Udder infection**
-  **Decreased milk flow**

## **Feeding**

**Follow all these recommendations for improved feeding of ruminants.**

- **Make water freely accessible to the animals all the time. Or give them as much water as they can drink 3 times a day.**



- **Give plenty of roughages such as straw and fresh grasses. In addition to grazing, provide small quantities of roughage at regular intervals. Regularly renew the left-over feeds with clean, fresh feed. Cut fodder and carry it to animals that are confined.**
- **As much as possible, also give quality feeds such as tender, leafy grass, Gliricidia leaves, Leucaena leucocephala leaves, jackfruit leaves and fruits and household or kitchen waste. See the table below of feeds and their nutritive values.**
- **Gather and store enough rice straw for feeding. Keep it for feeding during the dry season when grass is scarce. Keep the straw in a dry, well-ventilated place to avoid fungus and rodents.**
- **Give concentrate regularly, especially to dairy animals and mothers suckling their young. To make concentrate, mix 500 g of coconut cake (or other cake) with 500 g of good quality rice bran. Add about 50 g each of crushed limestone and fish meal. Mix all these materials with 1 cup of molasses and add this preparation to the feed. Use half this amount for sheep and goats. (Philippines, Sri Lanka. 1, 2, 3, 5)**
- **Watch the animals carefully and continuously. Adjust the feed requirements to suit the growth and reproductive stage of the animals. See the table below for good, cheap, and readily available sources of feed. Use these specially for young, pregnant, lactating and working animals.**

Feeds rich in protein	Feeds rich in carbohydrates	Feeds rich in minerals
These help the animal grow faster and	These provide	Minerals are especially

These help the animal grow faster and give more milk. They are also good for working animals and pregnant animals.

These provide energy, especially for work animals.

Minerals are especially important for animals that are pregnant, lactating or growing.

Acacia arabica leaves

Bagasse

Acacia pods

Acacia pods

Broken rice

All lentils and beans

Banyan tree (*Ficus bengalensis*) leaves

Brown sugar

Bone meal

Cassava leaves (dry)

Cane molasses

Centrosema spp. leaves

Chickpea hulls

Brown sugar

Crop fertilizers (Caution: Use only small amounts.)

Taro leaves

Cassava chips

Crushed shrimp and lobster shells

Copra

Castor leaves

Fish meal

Cottonseed cake

Corn

Limestone

Cowpea beans

Corn straw

Oyster shells

*Cynodon dactylon* grass

Fresh coconut

Rice bran

Edible oil cakes

Millet straw

Salt

Fish meal

Millets

Fresh, green grass

Groundnut cake

Horsegram

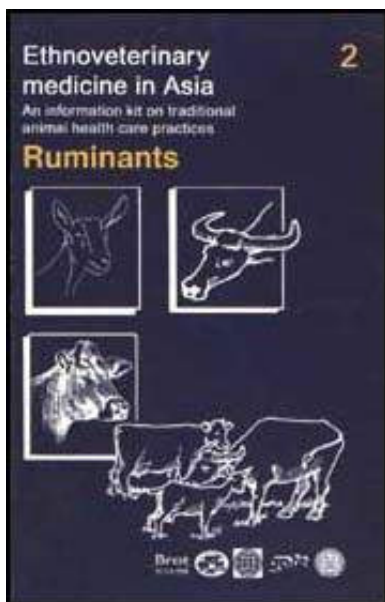
Pigeonpea leaves and pods

Khairi leaves


















Dinnapple waste




















Rhagoletis leaves	Apple waste	
Launaea pinnatifida	Rice leaves	
Legume leaves, pods and straw	Rice straw	
Lentil hulls	Rice bran	
Leptadenia reticulate leaves	Saman pods	
Leucaena	Sorghum stalk (dry)	
leucocephala		
leaves (dry)		
Mango leaves	Sorghum	
Neem leaves	Sugarcane tops	
Palm kernel meal	Sweet sorghum	
Groundnut meal	Wild hemp	
Groundnut seed cake		
Redgram		
Rice bean		
Rubber seed meal		
Sesame seed cake		
Soybean		
Soybean meal		
Sunflower meal		
Wheat bran		

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## **Mineral deficiency**



## Mineral deficiency

### Symptoms

#### General

- **Animal appears starved even when fed abundantly.**
- **Animal loses weight.**
- **Animal scratches the ground.**
- **Loss of appetite.**

#### Specific deficiencies

- **Breeding difficulties—repeated breeding is necessary (phosphorus and selenium deficiency).**
- **Convulsion and staggering (calcium and magnesium deficiency).**
- **Black-coated animals appear to have brown hair (copper deficiency).**
- **Enlarged joint (calcium deficiency, in calves).**

## **Causes**

- **Insufficient minerals available to animals.**
- **Worm infestation.**

## **Prevention**

- **Provide salt or mineral block for lick.**
- **Feed animals fresh grass and leaves.**
- **Supplement the animal's diet with high nutritive value plants such as sweet potato leaves and amaranth and feeds rich in minerals (see Feeding, page 108).**

## **Treatment**

**Give any of the following treatments.**

**The dosages stated here are for adult cattle. For calves, goats and sheep, give half dosages. For further remedies, see Lack of appetite.**

- **Mix 5 liters of urine with 2-5 g yeast. Let stand for 24 hours. Dilute with 5 liters of water and give as drink to the animals. Do this daily until the animal regains appetite. (Cambodia. 1, 2, 3, 4)**
- **Mix 1 liter of palm toddy with ½ liter cattle urine. Drench the animal twice a day until it regains its appetite. (India. 1, 2, 4)**
- **Mix 1 part limestone powder to 1 part water. Sprinkle the mixture on the fodder**

**ration. Do this daily for 3 days. (Philippines. 1, 2, 3, 4)**

