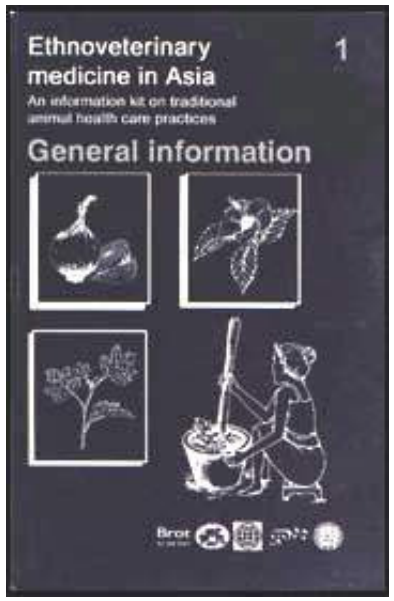
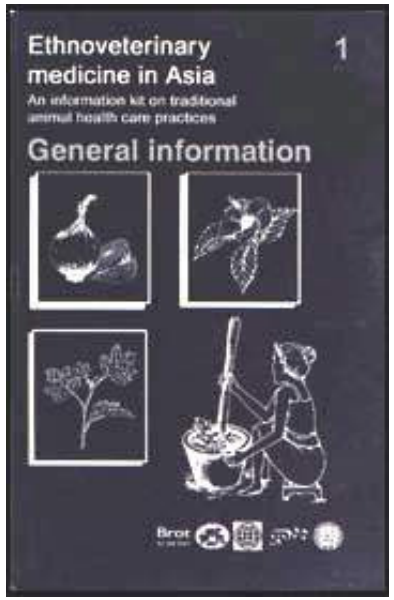


- Ethnoveterinary Medicine in Asia - General Information (IIRR, 1994, 145 p.)
  - *(introduction...)*



1994

IIRR

The International Institute of Rural Reconstruction is a nonprofit, nongovernment organization that aims to improve the quality of lives of the rural poor in developing countries through rural reconstruction: a sustainable, integrated,

people-centered development strategy generated through practical field experiences.

Correct citation: IIRR. 1994. Ethnoveterinary medicine in Asia: An information kit on traditional animal health care practices 4 vols. International Institute of Rural Reconstruction, Silang, Cavite, Philippines.

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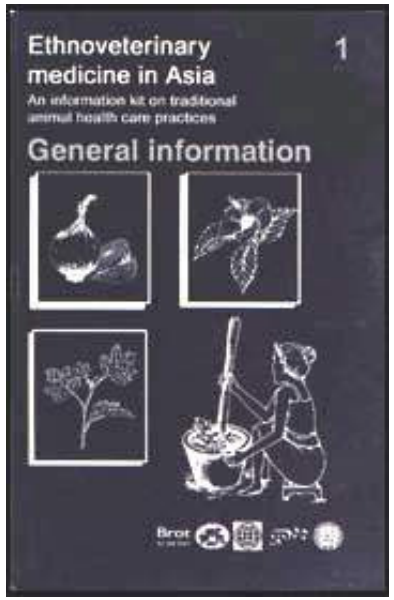
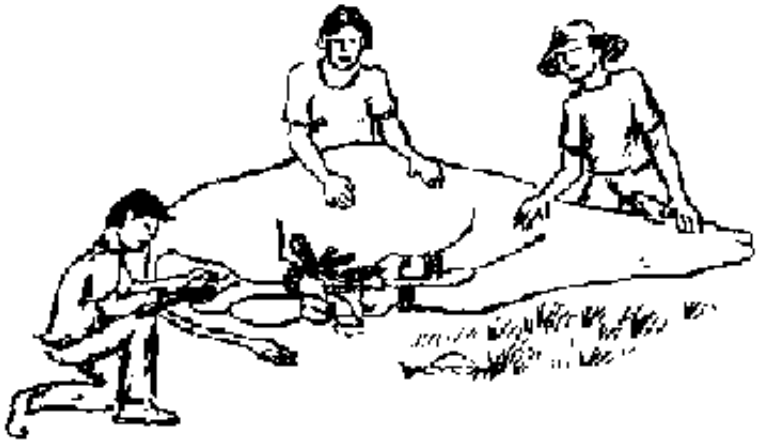


Treating castration wounds

The practice of castration is very old. Castration checks unwanted breeding, prepares young male animals for draft work, fattens males for good meat production and makes the animal docile. Farmers castrate their animals using various methods. In the Philippines and in Sri Lanka, some farmers use a sterilized blade and two long forceps.



Treating castration wounds

Antiseptics to prevent infection

After castration, apply any of the following remedies:

- **Wash the wound with water boiled with guava leaves that has been allowed to cool. Do this for 3 consecutive days. (Philippines. 1, 2, 3, 4, 5)**

- **Chop and pound 1 to 3 mature, fresh banana leaves (depending on how big the wound is). Extract the latex by straining the chopped leaves through a clean cloth or gauze. Apply latex on the wound after the animal's wash in the early morning and the evening. Do this every day until the wound heals. (Philippines. 1, 2, 3, 4, 5)**

- **Apply 2 handfuls of hot, cooked rice to the wound. This will stop bleeding. (Philippines. 1, 2, 3, 4)**

- **Mix 1 part brown sugar and 1 part coconut oil and apply on the wound.**

(Cambodia. 1, 2)

- **Mix 1 part lime (calcium hydroxide) powder and 1 part brown sugar and apply to the wound. (Cambodia. 1, 2)**

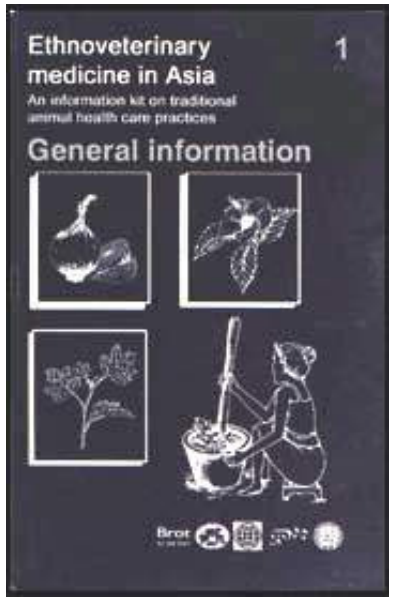
If swelling occurs

- **Splash 2-3 cups clean, cold water on the swollen part 23 times a day. (India. 1, 2, 3, 4)**

- **Pound dry turmeric (Curcuma domestica) rhizome with water to make a paste. Apply on the wound till the wound heals. (India, Philippines. 1, 2)**

- **Crush 5-10 comfrey (Symphytum officinale) leaves. Apply to the wound. (Philippines. 1, 2, 3, 4)**

- **Boil a handful of neem or guava leaves in 1 liter of water for about 15 minutes. Let cool down and sprinkle on and around the wound. (India, Philippines. 1, 2, 3, 4)**

Glossary of english and botanical names

This glossary lists plants mentioned in the manuals that are known widely by their common English name. Further information on each plant and a full list of other plants mentioned in the manuals can be found in the Glossary of medicinal plants, page 49.

avocado
Persea americana

banana

Musa sp.

barley
Hordeum sativum

betel
Piper betle

camphor
Cinnamomum camphora

cassava
Manihot esculenta

castor
Ricinus communis

chickpea
Cicer arietinum

chilli
Capsicum annum

coconut
Cocos nucifera

cotton
Gossypium sp.

cowpea
Vigna sinensis or Vigna unguiculata

cumin
Cuminum cyminum

fennel
Foeniculum vulgare

fenugreek
Trigonella foenum-graecum

finger millet
Eleusine coracana

garlic
Allium sativum

ginger
Zingiber officinale

greengram
Phaseolus aureus

groundnut (peanut)
Arachis hypogaea

guava

Psidium gunjava

hemp
Cannabis sativa

horsegram
Dolichos uniflorus

jackfruit
Artocarpus heterophyllus

lentil
Lens esculenta

linseed
Linum usitatissimum

maize
Zea mays

mango
Mangifera indica

millet
Pennisetum typhoideum

mungbean
Phaseolus radiatus

mustard
Brassica nigra

neem
Azadirachta indica

nipa
Nypa fructicans

nutmeg
Myristica fragrans

onion
Allium cepa

palmyra palm
Borassus flabellifer

papaya
Carica papaya

pepper
Piper nigrum

pigeonpea
Cajanus cajan

pineapple

Ananas sativus

pomegranate
Punica granatum

rice
Oryza sativa

ricebean
Phaseolus calcaratus

rosewood
Dalbergia nigra

rubber
Hevea brasiliensis

sandalwood
Santalum album

sesame
Sesamum indicum

sorghum
Sorghum vulgare

soybean
Glycine max

sunflower
Helianthus annus

sweet potato
Ipomoea batatas

tamarind
Tamarindus indica

tard
Colocasia esculenta

tea
Camellia sinensis

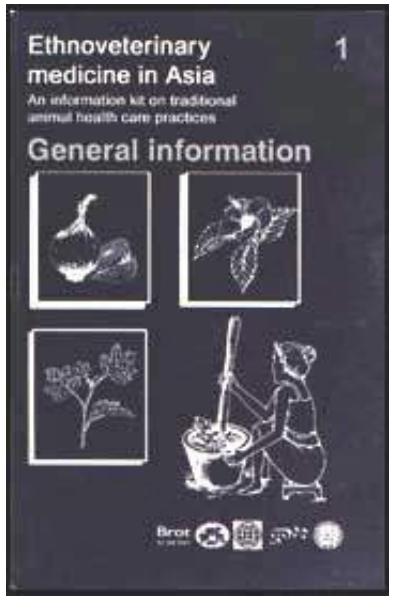
tobacco
Nicotiana tabacum

turmeric
Curcuma longa or
Curcuma domestica

water hyacinth
Eichhornia crassipes

watermelon
Citrullus lanatus

wheat
Triticum aestivum



- **Ethnoveterinary Medicine in Asia - General Information (IIRR, 1994, 145 p.)**
  - ***(introduction...)***
  - **Collaborating organizations**
  - **Introduction to the workshop process**
  - **How to use these manuals**
  - **Identification, collection and preparation of medicinal plants**
  - **Application of herbal medicine**
  - **Common units of measurement**
  - **Estimating live weight**
  - **Simple surgical techniques**
  - **Treating castration wounds**
  - **Glossary of english and botanical names**
  - **Glossary of medicinal plants**
  - **Ethnoveterinary question list**
  - **Glossary of technical terms**
  - **Participants' profile**
  - **References**

Glossary of medicinal plants

This glossary lists all ethnoveterinary plants that are mentioned in the manuals. It does not include poisonous plants described in the section Poisoning in Ruminants.

The plants are ordered alphabetically by their botanical name. In addition to the botanical name, each entry provides the English name if known, the various plant Parts used and the known uses for each plant part mentioned in the manuals. The only exception is bamboo because it consists of several different genera and species. Therefore, it was not always possible to determine which genus or species was meant when farmers use "bamboo." Therefore, only the English name is given.

To make it easy for the reader to find the section in the manuals that corresponds to each use, the wording of the "known uses" closely follows or includes the headings of the chapter titles where the plants and treatments are mentioned.

In a few cases, a reference in [ ] is added after a specific plant part and known use. It refers to the publication which contains the scientific validation for the plant's efficacy in treating the problem in the livestock species in question (marked in the corresponding chapter and treatment with code No. 6). The complete citation of the reference appears in the section on References.

Abelmoschus esculentus
Ladyfinger, Okra

Parts used

Leaf, root and seed

Usage
Decreased milk flow

Booklet
Ruminants

Abelmoschus esculentus

Abrus precatorius
Prayer beads

Parts used
Leaf

Usage
Fowl pox

Booklet

Poultry

Abrus precatorius

Acacia arabica

Parts used

Bark
Leaf and pod
Whole plant

Usage

Vaginal bleeding (Pregnancy and birthing)
Feed
Fencing (Housing)

Booklet
Ruminants
Ruminants
Ruminants

Acacia arabica

Acacia catechu
Catachu

Parts used
Sap

Usage

Wounds and diarrhea

Booklet
Ruminants

Acacia concinna

Parts used
Leaf

Usage
Bloat

Booklet
Ruminants

Acacia farnesiana

Parts used
Whole plant

Usage
Fencing (Housing)

Booklet
Ruminants

Acacia insuavis

Parts used
Branch

Usage
Diarrhea

Booklet
Poultry

Acacia rugata

Parts used
Pod

Usage
Coughs and colds

Booklet
Swine

Acacia spp.

Parts used
Whole plant

Usage
Fencing (Housing)

Booklet
Poultry

Acorus calamus

Parts used
Root

Usage
Eye disease

Booklet
Ruminants

Acorus calamus

Actinopetris fennis

Parts used
Leaf

Usage
Bleeding

Booklet
Ruminants

Adhatoda vasica

Parts used
Leaves, rhizome

Usage
Coughs and colds

Booklet
Ruminants

Aegale marmelos
Indian Bael

Parts used
Bark, flower, fruit, leaf, root, stem
Fruit

Usage

Dehydration
Diarrhea

Booklet
Ruminants
Ruminants

Aegale marmelos

Albizzia myriophylla

Parts used
Bark

Usage
Coughs and colds

Booklet Swine

Allium cepa
Onion

Parts used
Bulb

Usage
Coughs and colds, fungus

Booklet
Poultry

Allium cepa

Allium sativum
Garlic

Parts used

Bulb

Usage
After birth, coughs and colds, newborn's navel, wounds
Retained placenta (Breeding)
Appetizer, coughs and colds, feed, fungus, wounds
Diarrhea
Intestinal worms
Warts (Surgery)

Booklet [Reference]
Ruminants
Swine
Poultry
Poultry[Rao et al. 1983]
Poultry [Yebron 1994]
General information

Allium sativum

Aloe vera
Aloe

Parts used
Leaf

Usage
Constipation, eye disease, pregnancy and birthing difficulties, wounds
Wounds

Booklet
Ruminants
Poultry

Aloe vera

Alpinia galanga
Greater galangal

Parts used
Rhizome

Usage
Appetizer, coughs and colds, fungus

Booklet
Ruminants

Alpinia galanga

Alstonia scholaris

Parts used
Bark, leaf and stem

Usage
Appetizer

Booklet
Swine

Alstonia scholaris

Amaranthus gracilis

Parts used
Leaf

Usage
Care during pregnancy (Breeding), constipation

Booklet
Swine

Amaranthus spinosus

Parts used
Leaf

Usage
Care during pregnancy (Breeding), constipation

Booklet
Swine

Amaranthus spinosus

Ananas sativus
Pineapple

Parts used
Fruit wastes

Usage
Feed

Booklet
Ruminants

Ananas sativus

Andrographis paniculata
Bitters

Parts used
Stem
Juice
Whole plant

Usage
Diarrhea

Newcastle disease (Infectious diseases)
Coughs and colds

Booklet
Poultry
Poultry
Poultry

Andrographis paniculata

Andropogon annulatus
Marvel grass

Parts used
Leaf

Usage

Decreased milk flow

Booklet
Ruminants

Andropogon citrates
See Cymbopogon citratus

Annona muricata
Sour sop

Parts used
Seed
Leaves

Usage
Lice
Foot rot, wound.

Booklet
Swine
Ruminants

Annona muricata

Annona reticulata

Parts used
Seed

Usage
Lice

Booklet
Swine

Annona squamosa
Sugar apple, custard apple, sweet sop

Parts used
Fruit

Leaf
Seed

Usage
Wounds
Bleeding, foot rot, wounds
Eye, disease, internal parasites
Lice, scabies
Tick and lice
Wounds

Booklet
Poultly
Ruminants
Swine
Swine
Poultry, ruminants
Poultry

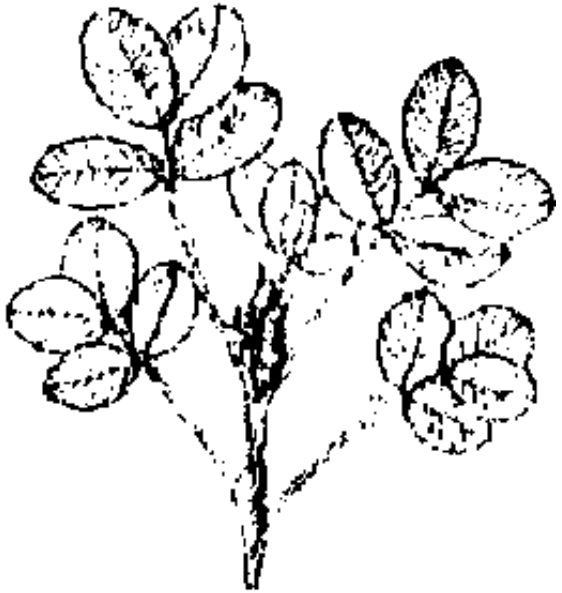
Annona squamosa

Arachis hypogaea
Ground nut, peanut

Parts used
Seed

Usage
After birth
Feed
Decreased milk flow

Booklet
Ruminants
Poultry, ruminants and swine
Ruminants



Arachis hypogaea

Areca catechu
Betel nut

Part used
Nut

Usage
Internal parasites
Intestinal worms
Liverflukes

Booklet
Ruminants, swine
Poultry

Ruminants

Areca catechu

Aristolochia bracteata
Worm killer

Parts used
Leaf

Usage

Constipation, internal parasites

Booklet
Ruminants

Artemisia vulgaris

Parts used
Leaf
Root and stem

Usage
Internal parasites, scabies
Scabies

Booklet
Swine
Swine

Artemisia vulgaris

Artocarpus heterophyllus
Jack fruit

Parts used
Leaf and fruit

Usage
After birth, feed, wounds

Booklet
Ruminants

Artocarpus heterophyllus

Azadirachta indica
Neem tree

Parts used
Bark
Leaf
Seed
Whole plant

Usage
Diarrhea, ticks and lice, wounds
Abscesses (Surgery), castration wound
Bleeding, feed, fever, foot rot, lice, udder infection, wounds
Wounds
Ticks

Insect repellent (Housing)

Booklet
Poultry
General information
Ruminants
Swine
Ruminants
Ruminants

Azadirachta indica

Azima tetracantha

Parts used
Root or leaf

Usage

Diarrhea

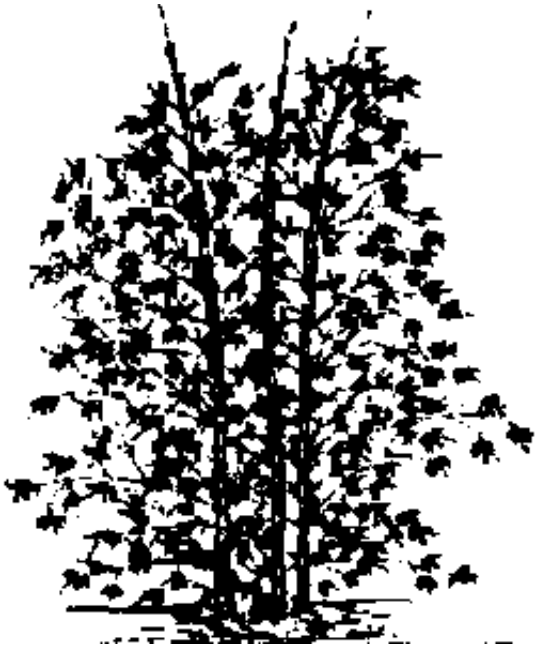
Booklet
Poultry

Bamboo (Bambusa sp. and other genera)

Parts used
Leaf, shoot
Stem

Usage
Retained placenta (Pregnancy and birthing), feed (After birth)
Housing

Booklet
Ruminants
Poultry, ruminants, swine



Bamboo

Barleria lupulina
Mahua

Parts used
Leaf

Usage
Snake bite

Booklet
Ruminants

Bassia latifolia

Indian butter tree

Parts used
Flower

Usage
Feed (After birth)

Booklet
Ruminants

Berberis aristata

Parts used
Leaf, stem

Usage
Eye disease

Booklet
Ruminants

Bixa orellana

Parts used
Seed

Usage

Intestinal worms

Booklet
Poultry

Bixa orellana

Blumea balsamifera

Parts used
Leaf

Usage
Fever

Booklet
Swine

Blumea balsamifera

Boerhaavia diffusa

Parts used
Whole plant

Usage
Difficulty in urinating

Booklet
Ruminants

Borassus flabellifer
Palmyra tree

Parts used
Flower

Leaf, wood

Usage
Bleeding
Housing

Booklet
Ruminants
Ruminants, swine

Brassica integrifolia

Parts used
Seed

Usage
Coughs and colds

Booklet
Ruminants

Brassica nigra or juncea
Mustard

Parts used
Seed

Usage

Appetizer
Feed, ticks and lice
Sprains

Booklet
Swine
Poultry
Ruminants

Breynia patens

Parts used
Bark, leaf

Usage
Decreased milk flow

Booklet
Ruminants

Cajanus cajan
Pigeon pea

Parts used
Leaf and pod

Usage
Feed

Booklet
Ruminants and swine

Cajanus cajan

Calendula officinalis
Calendula

Parts used
Flower, leaf and petal

Usage
Warts (Surgery)

Booklet
General information

Camellia sinensis

Tea

Parts used
Leaf

Usage
Bleeding, dehydration, diarrhea, poisoning
Eye disease

Booklet
Ruminants
Swine

Camellia sinensis

Cannabis sativa
Hemp

Parts used

Stalk

Usage
Housing

Booklet
Ruminants

Cannabis sativa

Capsicum annum or frutescens
Chilli

Parts used
Fruit, seed

Usage
Appetizer

Fowl pox

Booklet
Ruminants, poultry
Poultry

Capsicum annum or frutescens

Careya sphaerica

Parts used
Bark

Usage
Dehydration, wounds

Booklet
Ruminants

Carica papaya
Papaya

Parts used
Fruit
Leaf
Latex of fruit or stem
Seed
Latex of trunk, fruit and leaf

Usage
Constipation
Intestinal worms
After birth
Intestinal worms
Internal parasites
Warts (Surgery)

Booklet
Swine
Poultry
Ruminants
Poultry [Mursof, 1990]
Ruminants
General information

Carica papaya

Cassia alata
Ringworm bush

Parts used
Leaf
Stem, bark, fruit

Usage
Scabies
Fungus infection
Scabies

Booklet
Swine, ruminants
Ruminants
Swine

Cassia alata

Cassia siamea

Parts used
Leaf

Usage
Appetizer

Booklet
Ruminants

Cassia siamea

Cassia tora

Parts used Leaf, seed

Usage
Fungus

Booklet
Ruminants

Centrosema spp.

Parts used
Leaf

Usage
Feed

Booklet
Ruminants

Chromolaena odorata

Parts used
Leaf

Usage
Wounds

Booklet
Swine

Chrysanthemum indicum
Chrysanthemum

Parts used
Leaf

Usage
Scabies

Booklet
Swine

Chrysanthemum indicum

Chrysophyllum cainito
Star apple

Parts used
Leaf

Usage
Diarrhea, foot rot, internal parasites, wounds
Diarrhea

Booklet
Ruminants
Swine

Chrysophyllum cainito

Cicer arietinum
Chick pea

Parts used
Seed hulls

Usage
Feed

Booklet
Ruminants

Cicer arietinum

Cinnamomum camphora
Camphor

Parts used
Wood

Usage
Coughs and colds

Booklet
Ruminants

Cinnamomum camphora

Cissampelos pareira
Velvet leaf

Parts used
Leaf

Usage
Fractures (Surgery)

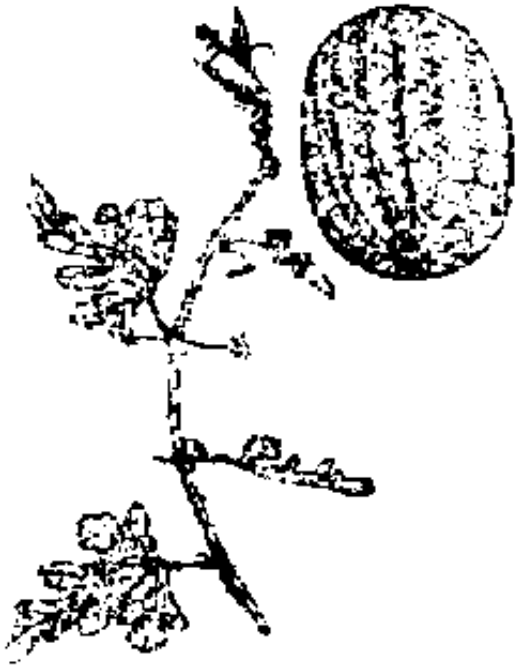
Booklet
General information

Citrullus lanatus
Watermelon

Parts used
Rind of fruit

Usage
Water source (Feeding)

Booklet
Swine



Citrullus lanatus

Citrus acida

Parts used
Bark

Usage
Ticks and lice

Booklet
Poultry

Citrus bergamia
Lemon

Parts used Fruit

Usage
Sprains

Booklet
Ruminants

Citrus madurensis

Parts used
Leaf

Usage
Fever

Booklet
Swine

Citrus medica
Citron tree

Parts used	Usage	Booklet
Leaf	Fever	Swine
	Coughs and colds	Ruminants

Citrus medica

Coccinia grandis

Parts used
Leaf

Usage
Eye disease

Booklet

Ruminants

Cocos nucifera
Coconut

Parts used	Usage	Booklet
Husk	Lice, diarrhea Scabies, fungus	Swine Ruminants
Leaf	Housing	Ruminants, swine
Meat	Appetizers	Ruminants
	Feed	Swine, poultry
	Internal parasites	Swine
Oil	Castration wounds	General information
	Constipation, scabies, ticks	Ruminants
	Scabies, udder infection, diarrhea	Swine
	Wounds	Poultry
Shell	Diarrhea	Ruminants, swine
	Lice, scabies	Swine
Water	Appetizer	Ruminants, poultry
	Diarrhea	Swine
	Diarrhea, dehydration	Ruminants
	Eye disease, poisoning	Ruminants, swine
	Heat stress	Poultry
Wood	Housing	Poultry

Cocos nucifera

Colocasia esculenta
Taro

Parts used	Usage	Booklet
Leaf	Feed	Ruminants
Corm	Feed	Swine

Colocasia esculenta

Couroupita guianensis
Cannon-ball tree

Parts used
Fruit

Usage
To stimulate heat

Booklet
Ruminants

Crataeva nurvala

Parts used

Whole plant

Usage
Difficulty in urinating

Booklet
Ruminants

Crotolaria juncea
Sun hemp

Parts used
Fresh leaves

Usage
Feed (After birth)

Booklet
Ruminants

Crotolaria juncea

Cuminum cyminum
Cumin

Parts used
Seed (dried)

Usage
After birth, diarrhea

Booklet
Ruminants

Curcuma longa or domestica
Turmeric

Parts	Usage	Booklet

used		
Rhizome	Abscesses (Surgery), castration wounds	General information
	Coughs and colds	Poultry, ruminants
	Fungal diseases, diarrhea, intestinal worms, feed	Poultry
	Ticks, constipation, udder infection, bleeding, eye disease, sprains	Ruminants
	Wounds	Ruminants, swine, poultry
Whole plant	Cough and colds, sprains	Ruminants
	Swine pox	Swine

Curcuma longa or domestica

Cymbopogon citratus
Lemon grass

Parts used	Usage	Booklet
Leaf	Ticks, lice and mites	Poultry
	Sprains	Ruminants

Cymbopogon citratus

Cynodon dactylon
Bermuda grass

Parts used	Usage	Booklet
Grass stalk	Bleeding	Ruminants
Leaf	Bleeding, wounds, decreased milk flow	Ruminants

Dalbergia nigra

Rosewood

Parts used	Usage	Booklet
Wood	Housing	Ruminants

Desmodium triflorum

Parts used	Usage	Booklet
Leaf	Eye sidease	Ruminants

Dioscorea alata
Yam

Parts used
Tuber

Usage
Feed

Booklet
Swine

Dioscorea alata

Dioscorea esculenta
Tugui

Parts used
Tuber

Usage
Feed

Booklet
Swine

Dioscorea esculenta

Diospyros ebenum

Parts used
Leaf

Usage
Ticks and lice

Booklet
Poultry

Diospyros mollis

Parts used	Usage	Booklet
Fruit	Cough and colds	Swine
	Internal parasites	Swine, ruminants

	Internal parasites	Swine, Ruminants

Dolichos uniflorus
Horsegram

Parts used	Usage	Booklet
Seed	Feed	Poultry
	After birth	Ruminants

Dolichos catjung
See Vigna unguiculata

Eichhornia crassipes
Water hyacinth

Parts used
Leaf

Usage
Feed

Booklet
Swine

Eleusine coracana
Finger millet

Parts used
Seed

Usage
After birth

Booklet
Ruminants

Embelia ribes

Parts used
Fruit

Usage
Bloat

Booklet
Ruminants

Erythrina indica

Parts used
Leaf

Usage
Cough and colds

Booklet
Ruminants

Eucalyptus globulus
Eucalyptus

Parts used	Usage	Booklet
Leaf	Fever, sprains	Ruminants
	Wounds	Poultry
Whole plant	Insect repellent	Ruminants
		(Housing)

Eugenia caryophyllus
Clove

Parts used
Root clove and bark

Usage
Diarrhea

Booklet
Swine

Eugenia caryophyllus

Eugenia jambolana
Jambul or black plum

Parts used
Bark

Usage
Bleeding

Booklet
Ruminants

Eupatorium odoratum

Parts used	Usage	Booklet

Leaf	Bleeding, wounds	Ruminants
	Wounds	Swine
Whole plant	Foot rot Ruminants	

Euphorbia hirta

Parts used
Latex from stem

Usage
Eye disease

Booklet
Ruminants

Euphorbia hirta

Euphorbia neriifolia
Common milk hedge

Parts used
Latex

Usage
Fractures and warts (Surgery)

Booklet
General information

Euphorbia neriifolia

Ferula assa-foetida
Asafoetida

Parts used
Resin

Usage
Bloat, after birth

Booklet
Ruminants

Ficus bengalensis
Banyan tree

Parts used	Usage	Booklet
Bark	Bleeding	Ruminants
Latex	Wounds	Ruminants, poultry
Leaf	Feed	Ruminants

Ficus hauili

Parts used
Bark

Usage
Wounds

Booklet
Ruminants

Ficus minahassae

Parts used
Leaf

Usage
Udder infection

Booklet
Swine

Ficus racemosa

Parts used
Leaf

Usage
Sprains

Booklet
Ruminants

Foeniculum vulgare
Fennel

Parts used
Seed

Usage
Appetizer, after birth

Booklet
Ruminants

Fumaria officinalis

Parts used
Leaf

Usage
Udder infection

Booklet
Ruminants

Gardenia gummifera

Parts used
Resin

Usage Bloat

Booklet
Ruminants

Gardenia jasminoides

Gardenia

Parts used
Stem

Usage
Fever

Booklet
Ruminants

Gardenia jasminoides

Gaultheria fragrantissima

Parts used
Leaf

Usage
Sprains

Booklet
Ruminants

Gmelina arborea

Parts used Leaf

Usage
Coughs and colds

Booklet
Ruminants

Gmelina arborea

Gliricidia septum
Gliricidia

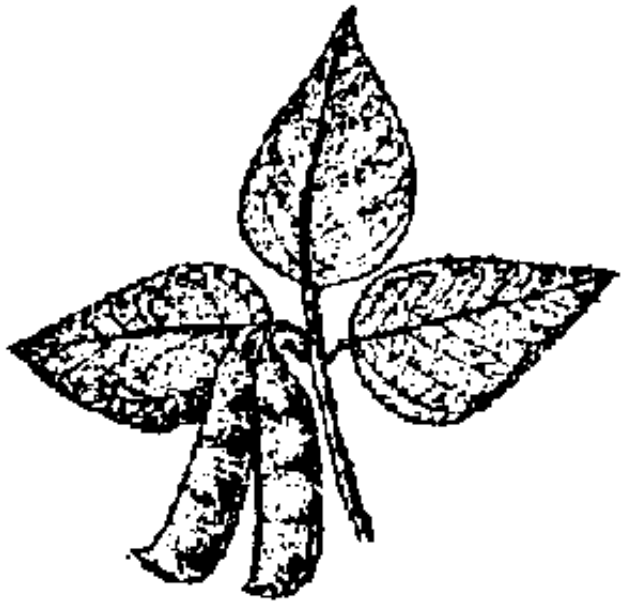
Parts used	Usage	Booklet

Bark and root	Scabies, sprains	Swine
Leaf	Lice	Swine
	Feed scabies	Ruminants. swine

Gliricidia septum

Glycine max
Soy bean

Parts used	Usage	Booklet
Seed	After birth	Ruminants
	Constipation, sprains	Swine
	Feed	Poultry, swine, ruminants



Glycine max

Glycyrrhiza glabra
Liquorice

Parts used	Usage	Booklet
Stem	Wounds	Ruminants
Whole plant	Coughs and colds	Ruminants

Gossypium sp.
Cotton

Parts used	Usage	Booklet
Leaf	Retained placenta (Breeding)	Swine

Seed	Decreased milk flow	Ruminants
	Feed	Poultry, ruminants

Gossypium sp.

Helianthus annus
Sunflower

Parts used
Seed

Usage
Feed

Booklet
Poultry, ruminants

Helianthus annus

Heliotropium indicum
Indian heliotrope

Parts used
Mature leaf

Usage
Coughs and colds

Booklet [Reference] Poultry [Fernandez, 1990]

Heliotropium indicum

Hevea brasiliensis
Rubber

Parts used
Seed

Usage
Feed

Booklet
Ruminants

Hevea brasiliensis

Hibiscus rosa-sinensis
Hibiscus

Parts used	Usage	Booklet
Flower	Fever	Swine
	Wound	Ruminants
Leaf	Sprains, wound	Ruminants
	Fever	Swine

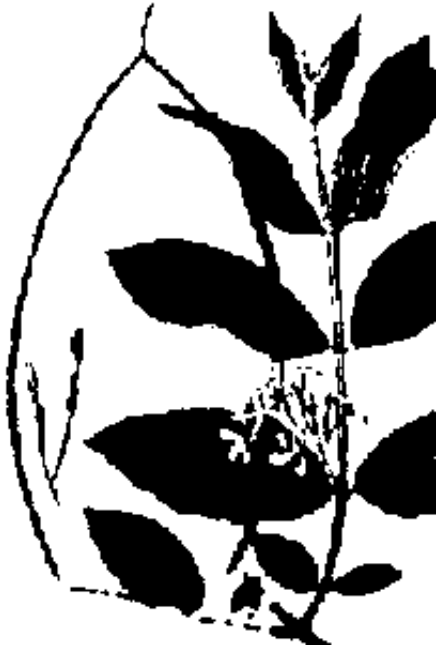
Hibiscus rosa-sinensis

Holarrhena antidysenterica

Parts used
Seed and bark

Usage
Diarrhea

Booklet
Ruminants



Holarrhena antidysenterica

Hordeum sativum
Barley

Parts used
Grain

Usage
Feed

Booklet
Poultry

Hoya ovalifolia

Parts used
Leaf

Usage
Sprains

Booklet
Ruminants

Hyoscyamus niger
Black or common henbane

Parts used
Whole plant

Usage
Difficulty in urinating

Booklet
Ruminants

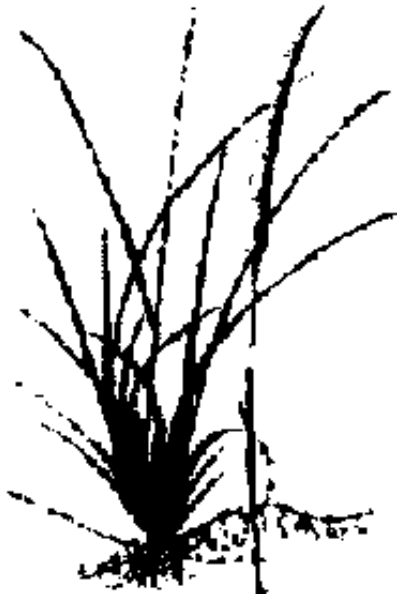
Hyoscyamus niger

Imperata cylindrica
Cogon grass

Parts used
Leaf

Usage
Housing

Booklet
Ruminants, swine



Imperata cylindrica

Ipomea aquatica
Swamp cabbage, water spinach

Parts used
Leaf and stem

Usage
Care during pregnancy (Breeding)

Booklet
Swine

Ipomea aquatica

Ipomea batatas
Sweet potato

Parts used
Leaf
Leaf and stem
Root

Usage
Appetizer, constipation
Feed
Care during pregnancy (Breeding)
Feed

Booklet
Swine

Swine and poultry
Swine
Swine

Ipomea batatas

Jatropha curcas

Parts used
Leaf

Usage
Bleeding

Booklet
Ruminants

Jatropha curcas

Jasminum sambac
Arabian jasmine

Parts used
Flower
Whole plant

Usage
Eye disease
Ticks and lice

Booklet
Ruminants
Poultry

Jasminum sambac

Lagerstroemia speciosa
Banaba

Parts used
Leaf

Usage
Wounds

Booklet
Ruminants

Lansium domesticum

Parts used
Seed

Usage
Intestinal worms

Booklet
Poultry

Lansium domesticum

Launaea pinnatifida
Pathri grass

Parts used
Leaf

Usage

Decreased milk flow

Booklet
Ruminants

Lawsonia inermis
Henna

Parts used
Leaf

Usage
Constipation

Booklet
Ruminants

Lens esculenta
Lentil

Parts used
Husk

Usage
Decreased milk flow, feed

Booklet
Ruminants

Leucaena leucocephala

Parts used
Leaf
Seed

Usage
Feed
Internal parasites

Booklet
Ruminants, swine, poultry
Swine

Leucaena leucocephala

Leptadenia reticulata

Parts used
Bark
Leaf
Whole plant

Usage
Decreased milk flow
Decreased milk flow, feed (After birth)
Eye disease
Decreased milk flow, antiabortion, to stimulate heat

Booklet
Ruminants
Ruminants
Swine
Ruminants

Linum usitatissimum
Linseed

Parts used
Seed

Usage
Feed
Poisoning, constipation retained placenta

Booklet
Poultry
Ruminants

Litsea sabifera

Parts used
Leaf

Usage
Udder infection

Booklet
Ruminants

Mangifera indica
Mango

Parts used
Bark
Peel, kernel, leaf, fruit pulp

Usage
Bleeding
Feed (After birth)

Booklet
Ruminants

Ruminants

Mangifera indica

Manihot esculenta
Cassava

Parts used
Leaf
Root

Usage
Feed (After birth)
Feed

Booklet
Ruminants
Ruminants, swine

Manihot esculenta

Marantha arudinacea
Arrowroot

Parts used
Root

Usage
Feed

Booklet
Swine

Melia azedarach
Persian lilac or common bead tree

Parts used
Leaves

Usage
Scabies

Booklet
Ruminants

Melia azedarach

Mentha arvensis
Japanese mint

Parts used
Leaf

Usage
Sprains

Booklet
Ruminants

Mentha arvensis

Mentha cordifolia Opiz
Marsh mint

Parts used
Leaves

Usage
Abscesses (Surgery)

Booklet
General information

Mentha cordifolia Opiz

Mentha piperita
Pepper mint

Parts used
Leaf

Usage
Abscesses (Surgery)
Sprains

Booklet
General information
Ruminants

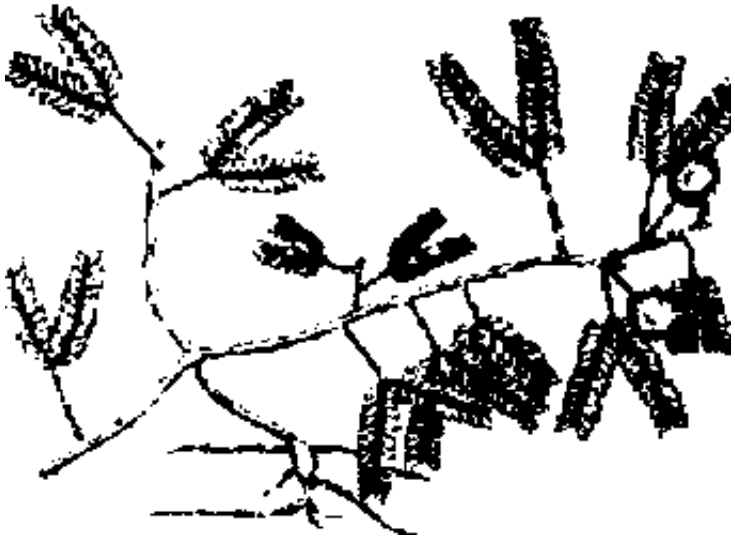
Mimosa pudica

Sensitive plant Touch-me-not

Parts used
Bark
Leaf
Root

Usage
Sprains
Internal parasites
Sprains
Castration wounds pain (Surgery)

Booklet [Reference]
Swine
Ruminants
Swine [Tan 1981]
General information



Mimosa pudica

Mimusops elonga

Parts used
Seeds

Usage
Cough and colds

Booklet
Ruminants

Mitragyna speciosa

Parts used
Leaves

Usage
Dehydration

Booklet
Ruminants

Michelia champaca

Parts used
Bark

Usage
Wounds

Booklet
Ruminants

Momordica charantia
Bitter gourd

Parts used
Leaf
Fruit and root

Usage
Anemia
Internal parasites
Diarrhea

Booklet [Reference]
Swine [Micu and Mateo 1986]
Swine
Ruminants

Momordica charantia

Morinda citrifolia
Indian mulberry

Parts used
Fruit
Leaf

Usage
Internal parasites

Appetizer

Booklet
Ruminants
Ruminants

Morinda citrifolia

Moringa oleifera
Horseradish tree or drumstick

Parts used
Leaf
Stem bark
Seed

Usage
Anemia, feed

Wounds, cough and colds, after birth
Coughs and colds
Internal parasites

Booklet [Reference]
Swine [Micu and Mateo 1986]
Ruminants
Ruminants
Swine

Mucuna pruriens
Cow-witch

Parts used
Seed

Usage
To stimulate heat

Booklet
Ruminants

Murraya koenigii
Curry - leaf tree

Parts used
Leaf

Usage
Appetizer

Booklet
Poultry

Musa sp.
Banana

Parts used	Usage	Booklet
Blossom	Constipation	Ruminants
Fruit	Bleeding, foot-and- mouth disease (Infectious diseases), udder infection	Ruminants
Latex	Castration wounds	General information
Leaf	Bedding (Breeding, care of newborn), wounds	Swine
	Bloat, constipation, housing	Ruminants
Stem	Fungus	Ruminants
Trunk	Water source (Feeding)	Swine

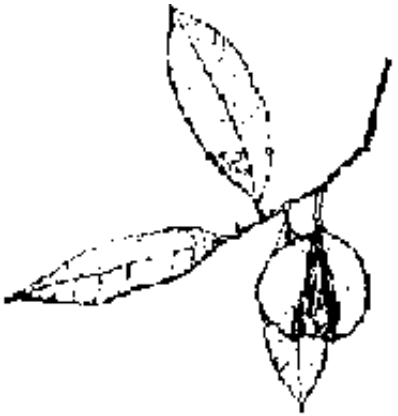
Musa sp.

Myristica fragrans
Nutmeg

Parts used
Fruit

Usage
Diarrhea

Booklet
Poultry



Myristica fragrans

Nephelium lappaceum
Rambutan

Parts used
Leaf, bark

Usage
Fever

Booklet
Ruminants

Nephelium lappaceum

Nicotiana tabacum
Tobacco

Parts used
Leaf

Usage
Ticks and lice
Ticks, wounds
Udder infection

Booklet
Poultry
Ruminants
Swine

Nicotiana tabacum

Nigella sativa
Black cummin

Parts used
Seeds

Usage
Decreased milk flow
Retained placenta
(Pregnancy and birthing)

Booklet
Ruminants
Ruminants

Nypa fructicans
Nipa

Parts used
Leaf

Usage
Housing

Booklet
Ruminants, swine

Ochna serrulata

Parts used
Root

Usage
Snake bite

Booklet
Ruminants

Ocimum sanctum
Holy basil

Parts used	Usage	Booklet
Leaf	Bleeding, coughs and colds, eye disease, udder infection, wounds	Ruminants
	Coughs and colds, ticks and lice	Poultry
	Mosquito control	Poultry

	(Infectious discuses)	
	Mosquito control (Housing)	Ruminants

Ocimum sanctum

Ocimum basilicum
Sweet basil

Parts used	Usage	Booklet
Leaf	Bleeding, cough and colds, udder infection	Ruminants
Pulp	Bleeding	Ruminants

Ocimum basilicum

Odina wodier
Besharam

Parts used
Leaf

Usage
Abscesses (Surgery)

Booklet
General information

Orthosiphon spicata

Parts used

Leaf

Usage
Difficulty in urinating

Booklet
Ruminants

Oryza sativa
Rice

Parts used	Usage	Booklet
Bran	Decreased milk flow (After birth)	Ruminants
	Feed	Ruminants, swine
Seed	Appetizer, decreased milk flow, dehydration, snakebite, wounds	Ruminants
	Care during pregnancy	Swine
	Castration wounds	General information
	Coughs and colds	Poultry
	Diarrhea	Poultry, swine
	Feed	Poultry, ruminants
Straw	Bedding (Housing)	Ruminants

Straw	Bedding (Housing)	Ruminants, poultry
	Bedding (Care of newborn)	Swine
	Feed	Ruminants

Oryza sativa

Panicum isachne

Parts used
Leaf

Usage
Decreased milk flow

Booklet

Ruminants

Papaver somniferum
Poppy

Parts used
Fruit gum

Usage
Diarrhea

Booklet
Swine

Papaver somniferum

Pathos secundes

Parts used
Whole plant

Usage
Sprains

Booklet
Ruminants

Pavetta indica

Parts used
Whole plant

Usage
Difficulty in urinating

Booklet
Ruminants

Pedalium maurex

Parts used	Usage	Booklet
Leaf, stem, fruit	After birth	Ruminants
Bark	Retained placenta (Pregnancy and birthing)	Ruminants

Pennisetum typhoideum
Millet

Parts used	Usage	Booklet
Seed, straw	Feed	Ruminants
Seed	Feed	Poultry
	After birth	Ruminants

Persea americana
Avocado

Parts used
Leaf

Usage
Wounds, foot rot

Booklet
Ruminants

Persea americana

Peucadenum graveolens

Parts used	Usage	Booklet
Seed	Appetizer	Swine
	Bloat	Ruminants
	Retained placenta (Pregnancy and birthing)	Ruminants

Phaseolus aureus
Green gram

Parts used
Bean

Usage

Feed

Booklet
Poultry

Phaseolus calcaratus
Rice bean

Parts used
Seed

Usage
Feed

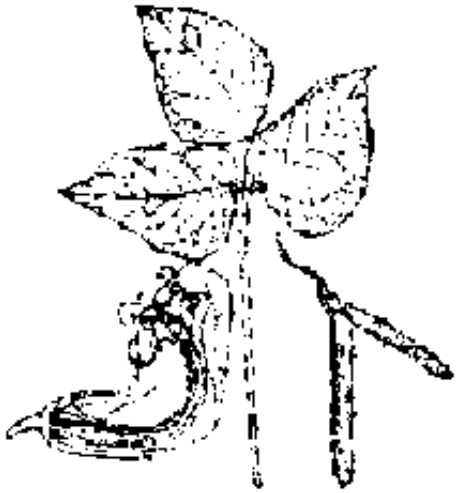
Booklet
Ruminants

Phaseolus mungo
Black gram

Parts used
Bean

Usage
Feed

Booklet
Poultry



Phaseolus mungo

Phaseolus radiatus
Mung bean

Parts used
Seed

Usage
Feed

Booklet
Ruminants, swine, poultry

Phyllanthus emblica

Parts used	Usage	Booklet
Fruit	Appetizer	Ruminants

Seed	Wounds	Ruminants

Picrorrhiza kurrooa

Parts used	Usage	Booklet
Root	Appetizer	Swine
	Fever	Swine, ruminants

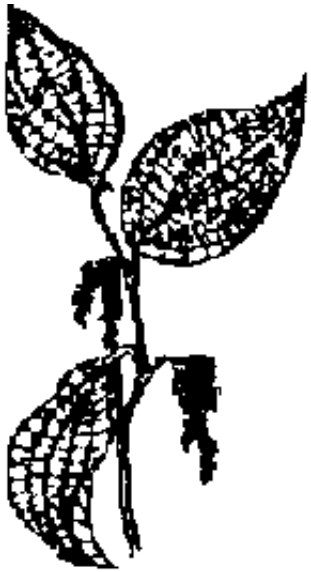
Piper betle
Betel pepper

Parts used	Usage	Booklet
Leaf	Abscesses, warts (Surgery)	General information
	Eye disease	Ruminants
	Housing, retained placenta (Breeding), udder infection	Swine

Piper betle

Piper nigrum
Black pepper

Parts used	Usage	Booklet
Seed	After birth, coughs and colds, decreased milk flow	Ruminants
	Fowl pax	Poultry
	Retained placenta (Breeding)	Swine



Piper nigrum

Plumbago zeylanica
Ceylon leadwort

Parts used
Bark

Usage
Bleeding

Booklet
Ruminants

Plumeria acuminata
Temple flower

Parts used
Leaf, bark

Usage
Internal parasites

Booklet
Swine

Pongomia glabra

Parts used
Seed

Usage
Wounds

Booklet
Ruminants

Premna odorata
Alagau

Parts used	Usage	Booklet
Leaf	Ticks and lice	Poultry
	Lice	Swine

Premna odorata

Psidium guajava
Guava

Parts used	Usage	Booklet
Leaf	Castration wounds	General information
	Retained placenta (Pregnancy and birthing)	Ruminants
	Udder infection, diarrhea	Swine, ruminants
	Wounds	Swine

Psidium guajava

Pterocarpus macrocarpus

Parts used
Bark

Usage
Foot rot,
wounds

Booklet
Ruminants

Pterocarpus santalinus
Red Sanderswood

Parts used	Usage	Booklet

Wood	Abscesses (Surgery)	General information

Punica granatum
Pomegranate

Parts used	Usage	Booklet
Bark	Intestinal worms	Poultry
Fruit	Intestinal worms	Poultry
	Eye disease	Swine
Leaf	Eye disease	Ruminants
	Diarrhea	Swine
Root	Internal parasites	Ruminants
Stem	Diarrhea	Swine

Punica granatum

Quisqualis indica

Parts used
Leaf and seed

Usage
Intestinal worms

Booklet
Poultry

Quisqualis indica

Ricinus communis
Castor

Parts used	Usage	Booklet
Leaf	Feed (After birth)	Ruminants

Seed (oil)	Bloat	Ruminants
	Constipation	Swine and ruminants

Ricinus communis

Saccharum officinarum
Sugar cane

Parts used	Usage	Booklet
Juice from stem	Decreased milk flow	Ruminants
Leaves or juice from stem	Difficulty in urinating	Ruminants
Stalk, top, molasses	Feed	Ruminants

Saccharum officinarum

Sansevieria sp.

Parts used
Root

Usage
Snake bite

Booklet
Ruminants

Santalum album
Sandalwood

Parts used
Wood

Usage
Wounds

Booklet
Swine

Sapindus rarak

Parts used
Fruit

Usage
Eye disease

Booklet
Ruminants

Saraca indica
Ashoka tree

Parts used	Usage	Booklet
Bark	Bleeding	Ruminants
	Retained placenta	Ruminants
	(Pregnancy and birthing)	

Sauropus androgynus
Katuk

Parts used
Leaf

Usage
After birth

Booklet
Ruminants

Semen nelumbinis
Lotus

Parts used	Usage	Booklet
Seed	Breeding	Swine
	Nutrition	Piglet

Sesamum indicum
Sesame

Parts used	Usage	Booklet
Seed	Constipation	Swine
	Feed	Poultry, ruminants

	Vaginal bleeding (Pregnancy and birthing)	Ruminants
	Wounds	Ruminants

Sesamum indicum

Sesbania aegyptiaca

Parts used
Seed and bark

Usage
Diarrhea

Booklet

Poultry

Sesbania grandiflora
Katurai

Parts used
Bark

Usage
Dehydration, wounds

Booklet
Ruminants

Sida cordiofolia
Country mallow

Parts used
Whole plant

Usage
To stimulate heat

Booklet
Ruminants

Sorghum vulgare
Sorghum

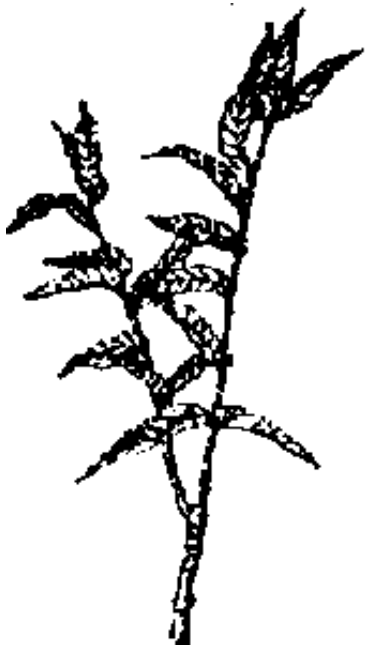
Parts used
Seed

Usage
Feed, after birth

Booklet
Ruminants

Spondias pinnata or Spondias mangifera
Indian wild mango

Parts used	Usage	Booklet [Reference]
Leaf	Abscesses (Surgery)	General information
	Coughs and colds	Poultry [Fernandez, 1990]
	Tapeworm	Swine
Whole plant	Wounds	Swine



Spondias pinnata or Spondias mangifera

Stachyta jamaicensis

Parts used
Leaf

Usage
Udder infection

Booklet
Swine

Sterculia foetida
Wild almond

Parts used
Pod

Usage
Eye disease

Booklet
Swine

Swertia chirata

Parts used	Usage	Booklet
Whole plant	Appetizer, fever	Swine
	Fever	Ruminants

Symphytum officinale
Comfrey

Parts used	Usage	Booklet
Leaf	Castration wounds	General information
	Fractures (Surgery)	General information
	Sprains	Ruminants

Symphytum officinale

Tamarindus indica
Tamarind

Parts used	Usage	Booklet
Bark	Internal parasites	Swine
Fruit	Appetizer, bloat, fever, internal parasites	Ruminants
	Constipation	Ruminants, swine
	Cough and colds	Swine
Leaves	Fever, cough and colds	Ruminants
	Fractures (Surgery)	General information
	Internal parasites	Swine

Tamarindus indica

Tectona grandis Teak

Parts used	Usage	Booklet
Leaf, bark	Poisoning	Ruminants
Wood	Housing	Ruminants

Terminalia arjuna

Parts used
Bark

Usage

Bleeding

Booklet
Ruminants

Terminalia belerica

Parts used
Seed

Usage
Wounds

Booklet
Ruminants

Terminalia chebula

Parts used	Usage	Booklet
Fruit	Appetizer, bloat	Ruminants
Seed	Wounds	Ruminants

Terminalia chebula

Thunbergia laurifolia

Parts used
Root

Usage
Poisoning

Booklet
Ruminants

Tinospora spp.

Parts used	Usage	Booklet
Whole plant	Scabies	Swine
Vine	Appetizer, internal parasites	Ruminants

	Diarrhea	Poultry

Trachyspermum ami
Bishop's weed

Parts used	Usage	Booklet
Seed	Appetizer	Swine
	Diarrhea, bloat, appetizer	Ruminants
	Retained placenta (Pregnancy and birthing), after birth	Ruminants

Tribulus terrestis

Parts used
Whole plant

Usage
Difficulty in urinating

Booklet
Ruminants

Trigonella foenum-graecum
Fenugreek

Parts used	Usage	Booklet

Leat	Foot-and-mouth disease (Infectious diseases)	Ruminants
Seed	Appetizer	Swine
	Coughs and colds, coryza	Poultry
	Diarrhea	Ruminants, poultry
	Retained placenta(Pregnancy and birthing), after birth	Ruminants

Triticum aestivum
Wheat

Parts used	Usage	Booklet
Bran	Feed	Ruminants
Seed	Decreased milk flow (After birth)	Ruminants
	Diarrhea	Poultry
	Feed	Ruminants, poultry
Straw	Bedding (Housing)	Ruminants

Veronica anthelmintica

Parts used	Usage	Booklet
Seed, leaf, whole plant	Appetizer	Swine
Seed	Diarrhea	Ruminants

Vigna sinensis or unguiculata
Cowpea

Parts used
Seed

Usage
Feed

Booklet
Ruminants, poultry

Vigna sinensis or unguiculata

Vitex negundo
Five-leaved chastetree

Parts used	Usage	Booklet

Leaf	Sprains, fever	Ruminants
	Wounds, ticks and lice	Poultry

Vitex negundo

Withania somnifera
Winter cherry

Parts used
Root

Usage
Decreased milk flow

Booklet
Ruminants

Xylia kerii

Parts used
Bark

Usage
Dehydration, wounds

Booklet
Ruminants

Zea mays
Maize

Parts used	Usage	Booklet
Grain	Feed	Swine, poultry
Straw, seed	feed	Ruminants

Zea mays

Zingiber cassumunar
Common ginger

Parts used	Usage	Booklet
Rhizome	Diarrhea	Swine
	Internal parasites	Ruminants

Zingiber officinale
Ginger

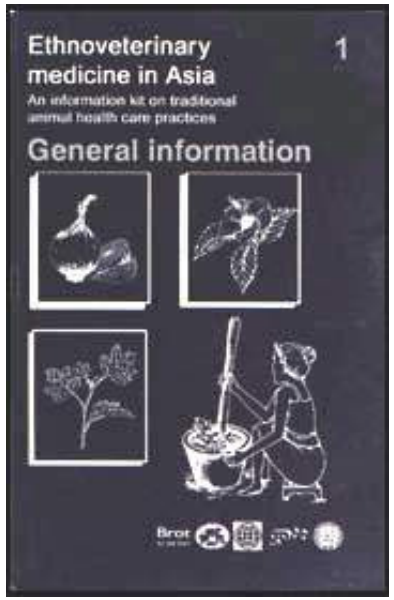
Parts used	Usage	Booklet
Rhizome	Appetizer, coughs and colds	Poultry, ruminants

	Appetizer, eye disease, retained placenta (Breeding)	Swine
	Bloat, diarrhea, retained placenta (Pregnancy and birthing), sprains	Ruminants

Zingiber officinale

Zingiber zerumbet

Parts used	Usage	Booklet
Rhizome	Coughs and colds	Ruminants
Rhizome	Diarrhea	Swine



Ethnoveterinary question list

If you work on livestock production in villages, it is important to know and understand local animal health care practices. Here is a list of questions to ask

livestock raisers when recording information on ethnoveterinary medicine. The questions are for guidance only; they should be adapted to local conditions and the situation of each livestock raiser.

Background information

- **Who in the household is responsible for, manages, or treats sick animals?**
- **What are the local seasons of the year? How do they affect livestock diseases?**
- **What species of livestock are kept? What breed, age or other categories are considered relevant for animal health?**

Disease names

- **Elicit the names of all livestock diseases in the area, by species, seasons and other locally relevant variables.**
- **Cross-check all terms for duplications, overlaps, confusions and omissions.**
- **Decide which diseases warrant further investigation in the question list below.**

The question list

Ask these questions for each disease you have identified above.

1. What species, breeds, ages and sexes of animals are affected by this disease?

2. Is there seasonality or other timing to the appearance of the disease?

3. Does it usually affect one animal or a group of animals at the same time? Does it spread from animal to animal (i.e., is it contagious or infectious)?

4. What causes the disease natural/physical causes, supernatural/non-physical causes, or both? Describe.

5. Are there ways to prevent/avoid this disease? If so, what are they?

6. Describe the main symptoms, if possible, in order of progression and timing, i.e., what is the first symptom seen and when? What is the second symptom seen and when? etc. Also, what is the symptom, if any, that makes you decide it is this specific disease?

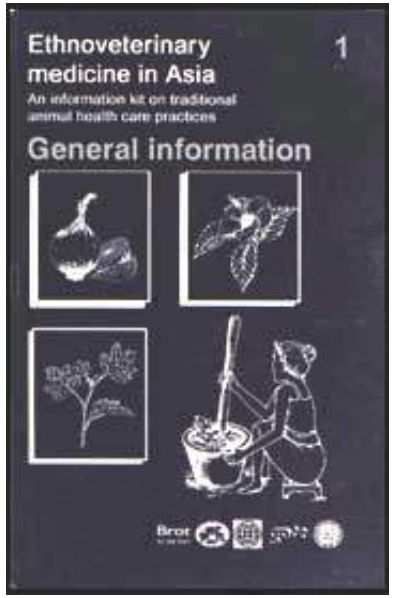
7. Are traditional treatments available? What are they? Where/how are they obtained? What happens when they are used? (Please be as specific as possible.)

8. Are modern treatments available? What are they? Where/how are they obtained? What happens when they are used? (Please be as specific as possible.)

9. What usually happens if the animal is not treated?

10. When did you last have (or for areas with few livestock per household, hear of) an animal with this disease? What did you do and what happened to the animal?

Source: Based on Grandin and Young (forthcoming).



Glossary of technical terms

These manuals avoid using technical terms if at all possible. Sometimes, however, using a technical word is unavoidable. This glossary contains such words and other terms found in books on veterinary medicine.

A

Abortifacient. Causes abortion or miscarriage.

Abscess. A collection of pus in the tissue.

Acaricide. Chemical used for tick (external parasite) control.

Active principle. Ingredient or the chemical component of a crude drug which has a therapeutic effect.

Acute. Condition which is critical, sudden and of short duration.

After birth. Placenta and other membranes expelled after birth.

Allergen. Substance capable of inducing an allergic response.

Allergy. Hypersensitivity of the body cells to specific substances such as antigens and allergens, resulting in various types of reactions.

Alterative. A substance which alters a condition by a gradual change toward restoration of health.

Analgesic. Pain-reliever or pain-killer.

Anaphrodisiac. A drug that represses sexual desire.

Anemia. Number of red blood cells and quantity of hemoglobin in blood reduced below normal.

Anesthetic. An agent which causes total or partial loss of sensation.

Anhidrotic. An agent that suppresses perspiration.

Anodyne. A soothing agent which eases pain.

Anthelmintic. An agent that removes intestinal worms from the host animal.

Antibiotic. A chemical substance produced by a microorganism that has the capacity to kill or inhibit the growth of other microorganisms.

Antibody. Immunoglobulin molecule that is found normally in the body but is elicited after contact with an antigen.

Anticoagulant. Agent preventing or retarding blood clotting.

Anticolic. Agent that relieves abdominal pain by expelling gas from the stomach and intestines.

Antidote. A treatment which counteracts or destroys the effect of poisons or other medicines.

Antidyspeptic. Acts against nausea due to indigestion.

Antiemetic. An agent that relieves vomiting.

Antigen. A substance capable of inducing an immune response.

Antiherpetic. Drug for skin inflammations.

Antipyretic. Substance that lowers body temperature to the normal level; used against fever.

Antirheumatic. Medicine for rheumatism.

Antiseptic. An agent for destroying or inhibiting diseasecausing bacteria.

Antisialic. Checking the flow of saliva.

Antispasmodic. Prevents or relieves muscular spasms or cramps.

Antitussive. An agent that relieves coughing.

Aphrodisiac. A drug that arouses sexual desire.

Aperient. A gentle purgative.

Aromatic. Emits fragrant odor; used to make medicinal preparations more palatable.

Ascariasis. Infestation by the intestinal parasite Ascaris.

Ascarid. A roundworm (nematode parasite) found in the intestine of pigs, birds,

ruminants, horses and humans.

Astringent. Shrinks tissues and prevents secretion of fluids from wounds.

B

Bacteria. Microscopic organisms.

Balm. A soothing or healing medicine.

Balsam. A semifluid, resinous vegetable juice.

Balsamic. Healing or soothing agent.

Bladder. The organ which is reservoir for urine, or gall, in body.

Boil. Infected, painful, hard swelling of the skin.

C

Carminative. An agent that relieves flatulence.

Catarrh. Inflammation of nose and mucous membranes.

Cathartic. Causes cleansing of the bowels.

Chronic. Condition which is recurring and of long duration.

Colic. Gas pain.

Collyrium. An eyewash or lotion for the eyes.

Colostrum. Viscid yellow milk, high in protein and micro-nutrients, produced by mothers after birth.

Compress. A wet, folded cloth soaked in a solution and applied firmly to a part of the body.

Congestion. Abnormal accumulation of blood in a part.

Concoction. A preparation from crude materials, made by combining different ingredients.

Constipation. Infrequent or difficult bowel movement with hard stools caused by functional or organic disorders or improper diet.

Contagious. Diseases which are readily passed on to others.

Contamination. The soiling or making inferior by contact, as by introduction of organisms into a wound.

Contusion. Injury to tissues caused by blunt force which did not disrupt or lacerate the skin.

Convulsion. A violent involuntary contraction of a muscle or muscles.

Costive. An agent that produces constipation.

D

Decoctions. Solutions representing the water-soluble constituents of plant drugs prepared by boiling the drug in water.

Decongestant. An agent that reduces congestion or swelling.

Demulcent. A soothing medicine or application.

Depressant. Agent that reduces functional activity.

Depurative. Purifying agent; normally applied to bloodpurifiers.

Dermatitis. Inflammation of the skin.

Detergent. Cleansing agent.

Diagnosis. The determination of the nature of a case of disease. Includes: (1) the name, (2) the cause and (3) the prognosis.

Diaphoretic. An agent that promotes profuse perspiration.

Diarrhea. Abnormal frequency and fluidity of stool discharges.

Digestant. Aids or promotes digestion.

Disease. Any departure from a state of health.

Diuretic. A drug or preparation that promotes urine production.

Dosage. The determination and regulation of the size, frequency and number of

doses.

Dose. The quantity of a specified medication to be administered at one time that cures or mitigates illness.

Drench. Giving medicines in liquid form by mouth and forcing the animal to drink.

Dysentery. Inflammation of the large intestines with evacuation of liquid and bloody stool and painful straining.

Dyspepsia. Indigestion characterized by nausea.

Dysuria. Difficult discharge of urine.

E

Eczema. Inflammatory skin disease characterized by redness, itching and formation of scales and crusts.

Edema. Abnormal accumulation of fluids in the tissues.

Emetic. Causes vomiting

Emollient. An agent that softens or soothes the skin, or soothes an irritated internal surface.

Encephalitis. Inflammation of the brain.

Enema. Any liquid preparation introduced into the rectum.

Enteritis. Inflammation of the intestines.

Epidemic. A sudden outbreak of disease in a relatively small area.

Estrus. Heat, the condition of being receptive to breeding.

Etiology. The study or theory of the cause(s) of any disease; the sum of knowledge regarding causes.

Eupeptic. Promotes good digestion.

Expectorant. Promotes ejection of fluid from the lungs and trachea.

F

Febrifuge. A remedy for fever.

Fever. Increase in the body temperature; an abnormally high body temperature.

Flatulence. Gas formation in the alimentary canal.

Fluid extract. Liquid preparation of vegetable drug containing alcohol as a solvent or as a preservative or both.

Fomentation. Application of warm, moist substances such as wet cloth to ease pain and inflammation.

Fracture. Breaking of a bone.

G

Galactagogue. An agent that promotes milk flow.

Gastroenteritis. Inflammation of the stomach and intestines characterized by pain, nausea and disease germs.

Germicide. Destroy disease germs.

Gestation. Period of pregnancy term of life of offspring within womb.

H

Health. A normal condition of body and mind.

Hematoma. A swelling filled with blood.

Hemorrhage. Excessive bleeding.

Hemorrhoid. Painful swelling formed by dilation of a vein in the anus; usually accompanied by bleeding and constipation; piles.

Hygiene. The science of health and its preservation.

Hypnotic. Induces sleep.

I

Immune. Resistant to a disease due to the formation of antibodies.

Immunity. The body is defense against disease; can be passed on to offspring through colostrum, or through exposure and naturally developed defenses (vaccinations/inoculations).

Infectious. Disease conditions which can be passed on to others (see Contagious).

Inflammation. The reaction of living tissues to injury infection or irritation; characterized by pain swelling, redness and heat.

Infusion. Herbal remedy preparation which involves adding hot or cold water to plant part(s) and allowing to stand (with cover), usually for about 15 minutes; an infusion can be either hot or cold.

Internal medicine. Branch of medicine not involving surgery.

Invigorant. Strengthening, energy-giving agent.

L

Larva. An independent, immature stage in the life cycle of an animal or insect in which it is unlike the parent and must undergo changes in form and size to reach the adult stage.

Laxative. Encourages defecation.

Lesions. Alterations of skin due to skin disease.

Liniment. A medicated liquid, usually containing alcohol, camphor and an oil,

applied to the skin to relieve pain or stiffness.

M

Macerate. Cold water extract of a plant or crude drug, also, to soften or separate by soaking.

Massage. Rubbing or kneading the muscles.

Mastitis. Inflammation of the udder due to infection.

Medicine. (1) any drug or remedy (2) the art or science of healing diseases—the diagnosis and treatment of a case of disease.

Milk fever. Critical condition after calving when cow cannot stand and may quickly die unless given calcium therapy.

Mixture. A combination of different elements or ingredients.

N

Narcotic. A drug, which, in moderate doses, alleviates pain, reduces sensibility, produces sleep; in large amounts, induces stupor, coma or convulsions.

Nausea. Upset stomach, with the inclination to vomit.

Nervine. Soothing to the nerves; provides nervous relaxation.

Nutrient. Nourishing substance.

O

Obstuent. Any agent that causes obstruction (e.g., in the wind pipe or intestine).

Ointment. Combination of juice or plant part with oil (e.g., coconut oil) and starch.

P

Pandemic. An outbreak of disease occurring over a very wide area, affecting a large percentage of the population.

Paralysis. Inability to move a muscle or group of muscles, often coupled with loss of sensation in the affected area.

Parasites. Any organisms which have a harmful effect or cause a disease condition; usually refers to worms, ticks, fleas' mites, lice, leeches, etc.

Parturient. Giving birth or pertaining to birth.

Parturition. The act of giving birth; calving.

Pathology. The science that deals with the study of disease.

Pelvic. The area around the anus and the hips.

Pharmacognosy. The study of the biology, chemistry and pharmacology of plant drugs and species.

Pharmacology. The study of the action of chemicals and drugs in the body.

Placenta. The sac inside which the fetus grows and is attached to the mother's womb through which it is nourished.

Plaster. A mixture of materials that hardens; used for immobilizing body parts.

Preventive medicine. Branch of study and practice which aims at prevention of disease.

Poison. A substance that, in relatively small amounts, may cause structural damage or functional disturbance.

Post partum. After a birth.

Poultice. A soft, usually heated preparation spread on a cloth and applied to a sore or inflammation.

Prognosis. A forecast as to the probable result of a case of disease; the prospect as to recovery from a disease afforded by the nature and symptoms of the case; may be: (1) favorable, (2) guarded, (3) unfavorable.

Prolapsed rectum. The lower portion of the intestinal tract comes out of the anus.

Prolapsed uterus. The uterus descends into the vagina and may be seen at the vaginal opening.

Prophylactic. Preventing against disease.

Pulmonary. Pertaining to the lungs.

Purgative. Causing evacuation from the intestines.

R

Refrigerant. Relieving fever and thirst. Rejuvenator. Causes renewed vitality. Repellent. An agent that repels or drives off other organisms.

Resolvent. An agent that promotes the subsidence of an inflammation or the softening and disappearance of a swelling.

Restorative. Aids in regaining normal vigor.

Retained placenta. A disease condition in which the placenta is not expelled after calving, requiring treatment.

Revulsive. Diverts disease from one part of the body to another.

Rinse. To wash out with water.

Rubefacient. An external skin application causing redness of the skin.

Ruminant. An animal that has a stomach with four complete cavities and regurgitates undigested food from the rumen and masticates it when at rest (e.g., cattle, buffalo, sheep, goat).

S

Secretion. The liquid products of glands.

Sedative. An agent that calms the nerves.

Sign. Any objective evidence of a disease.

Soak. To thoroughly wet or saturate with liquid.

Soporific. An agent that induces sleep.

Specific agent. Remedy that has a special effect on a particular disease.

Sporadic. An outbreak of disease in a single or scattered location.

Sprain. A violent and sudden twist of a joint.

Starchy water. Water full of starch.

Steam. The vapor which rises from boiling water

Sterile. Free from living germs or bacteria.

Stimulant. Increases or hastens body activity.

Stomachic. Stimulates activity of the stomach.

Stomatitis. Inflammation of the mouth.

Styptic. Stops bleeding with an astringent.

Sudorific. An agent that causes sweating.

Symptom. Any functional evidence of disease or of a patient's condition.

Syndrome. The aggregate of symptoms associated with a particular disease.

T

Therapeutics. Branch of medicine associated with the use of remedies and the treatment of diseases.

Tincture. Alcoholic extract of a plant drug.

Tonic. Produces healthy muscular condition and reaction.

Treatment. Application of therapeutic measures.

U

Ulcer. A superficial inflammation or sore of the skin or mucus membrane discharging pus.

V

Vagina. The portion of the female reproductive tract through which the baby animal must pass. It is separated from the uterus by the cervix.

Vermicide. An agent lethal to worms or intestinal animal parasites.

Vermifuge. An agent that expels the worms or intestinal animal parasites; anthelmintic.

Vesicant. An agent that produces blisters.

Virus. A minute organism which causes disease.

Vulnerably. An agent that promotes the healing of wounds.

Vulva. The opening below a female animal's tailhead to which the urinary and reproductive tracts are attached, which swells at time of estrus and more so at calving time.

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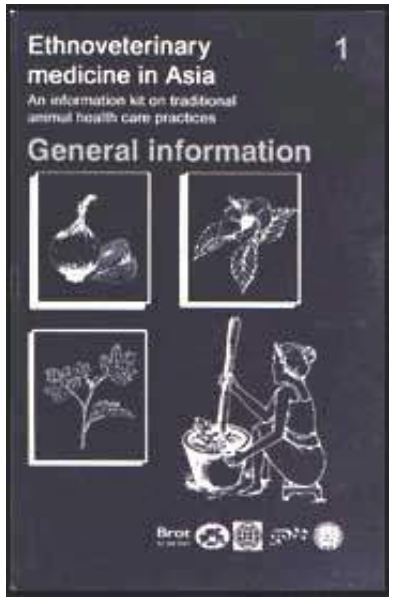

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Dr. Mathias holds a Dr. med. vet. degree (equivalent to Ph.D.) in veterinary medicine and a D.V.M. degree, both from the University of Giessen in her native Germany and an M.S. in international development from Iowa State University, USA. She has performed field research on goats' feeding behavior in Tunisia, the reproductive physiology of swamp buffaloes in Thailand and ethnoveterinary medicine in Indonesia. She has conducted extensive literature reviews of

ethnoveterinary medicine and indigenous tree management worldwide. From 1981 to 1985, she was a visiting lecturer at Bogor Agricultural University in Indonesia. From 1988 to 1992, she was a research associate with the Center for Indigenous Knowledge for Agriculture and Rural Development (CIKARD) at Iowa State University. Currently, she is the coordinator of the Regional Program for the Promotion of Indigenous Knowledge in Asia at IIRR. There, she works on the retrieval and application of indigenous knowledge in development and promotes regional networking.

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Dr. McCorkle holds an M.A. in linguistics and an M.A. and a Ph.D. in anthropology from Stanford University. Currently, she works as a consultant in agriculture, environment and rural development worldwide. She previously served as director of USAID's staff environmental training program and as director of research for USAID's global gender-in-development project. From 1985 to 1990, as a faculty member in the University of Missouri's Department of Rural Sociology, she coordinated the Sociology Project of the Small Ruminant-Collaborative Research Support Program (SRCRSP). Dr. McCorkle began work in ethnoveterinary medicine in 1980 while conducting the SR-CRSP research in Peru. In 1986, she published the first article describing the field of ethnoveterinary research and development (Journal of Ethnobiology, 6: 129149). She has since designed and conducted research and published several articles on ethnoveterinary medicine, traditional

healers and paraveterinary extension in Latin America and Africa. She is currently editing a multi-author volume (with Schillhorn van Veen and Mathias) on ethnoveterinary medicine worldwide. She is a US citizen.

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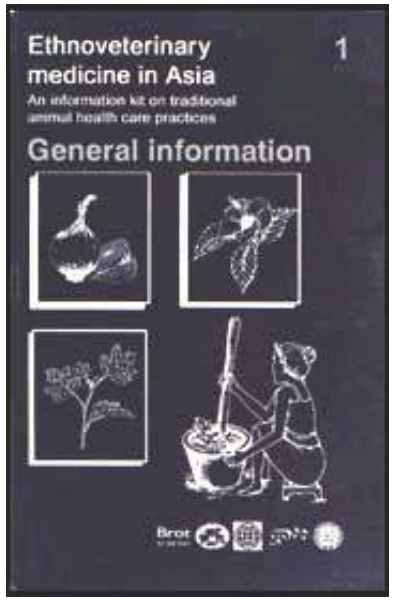

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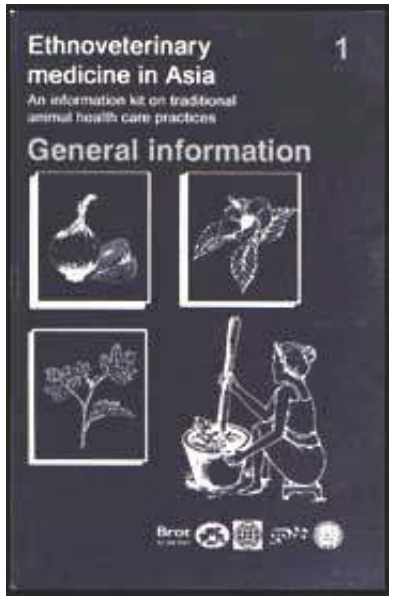

- **Ethnoveterinary Medicine in Asia - General Information (IIRR, 1994, 145 p.)**
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  - **Common units of measurement**
  - **Estimating live weight**
  - **Simple surgical techniques**
  - **Treating castration wounds**
  - **Glossary of english and botanical names**
  - **Glossary of medicinal plants**
  - **Ethnoveterinary question list**

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THE WORLD BANK

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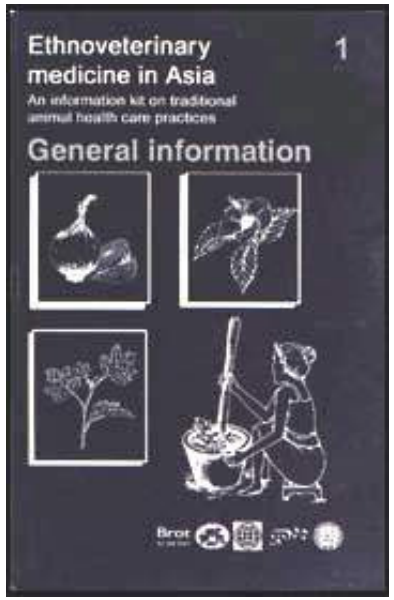

- How to use these manuals
- Identification, collection and preparation of medicinal plants
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- Glossary of english and botanical names
- Glossary of medicinal plants
- Ethnoveterinary question list
- Glossary of technical terms
- Participants' profile
- References

Introduction to the workshop process

Introducing Western technologies in developing countries can have side effects and disadvantages that may outnumber their benefits. Western veterinary medicine is no exception. Drawbacks include:

- **Drugs are unavailable in rural areas or their supply is erratic.**
- **Imported drugs are expensive.**

- **Many stockraisers either underdose to save money, or overdose because they do not understand the instructions for use.**

Stockraisers would often be better off if they knew ethnoveterinary remedies and practices for the most common animal diseases. Such remedies and practices reflect centuries of experience and trial and error, they are adapted to the local culture and environmental conditions, and they are inexpensive and locally available.

Local veterinary practices have been systematically recorded and documented for more than a decade, but the results have found little application in development efforts. There are two reasons for this:

- **Many international and national organizations have not yet recognized the role and potential contribution of ethnoveterinary medicine in development. This contrasts with the case in human ethnomedicine, which has been widely recognized and used by development organizations.**

Little written information exists on practices that work and can be recommended. Without any guidelines on what to use and what not to use, development professionals hesitate to integrate ethnoveterinary practices into project design and implementation.

These manuals aim to overcome the latter constraint. They will facilitate the use of ethnoveterinary medicine and enable project designers and field personnel to tap this valuable resource. They are a ready-to- use package on ethnoveterinary remedies and practices that can be implemented and recommended in villages.

The manuals demonstrate that ethnoveterinary science contains many valuable, traditional practices which can serve as low-cost and practical alternatives for rural communities throughout the world. However, much remains to be done to document, assess and understand the wide range of ethnoveterinary practices used across the globe. We hope that the compilation of these practices will serve as an inspiration to the veterinary science and pharmacology research community to undertake studies to validate traditional livestock practices. We also hope that the simple, practical and low-cost practices outlined in these manuals will benefit rural households and communities whose livelihood involves livestock production.

How these manuals were compiled

The International Institute of Rural Reconstruction (JIM) has pioneered a rapid, efficient way to produce information materials through the use of participatory workshops. Such workshops bring together academics, officials, nongovernment organization staff, extension personnel and farmers, together with editors and artists in intensive, one- or two-week sessions to write, edit, illustrate and critique the materials. A complete set of materials can be drawn up within this brief period. Only minor editing and refinement are necessary to obtain material that is ready to print. This workshop process has two major advantages: it reduces the total amount of time needed to develop information materials and it profits from the expertise and resources of a wide range of participants and their organizations.

This approach was used to compile the ethnoveterinary manuals. Preparations for the workshop started several months before the actual workshop date. A steering committee composed of staff members of IIRR and the Philippine Program of

Heifer Project International contacted organizations and asked them to recommend individuals who had experience in the application of ethnoveterinary medicine at the field level or had tested such remedies in farm animals. The steering committee also developed a list of tentative topics and sent it to recommended candidates for two purposes: (1) to ask them to verify suggested topics and suggest additional ones and (2) to discover in which areas they could contribute.

Finally, some 20 participants were selected on the basis of the following criteria: (1) country (no more than four per country in tropical Asia), (2) regional distribution within country, (3) extensive field or laboratory experience with ethnoveterinary medicine; and (4) potential contributions of the participant to avoid overlap and ensure a broad coverage of topics.

Based on the participants' responses to the topic list, the steering committee assigned six or seven specific topics to each participant and asked him or her to compile first drafts along guidelines provided. Participants brought these drafts as well as other resource materials to the workshop.

For the workshop proper, some 20 participants from Cambodia, India, Indonesia, Laos, the Philippines, Sri Lanka, Thailand and the USA met at IIRR on July 11-24, 1994. They included scientists, staff members of NGOs working at the field level and farmers.

During the workshop, the participants presented the drafts they had prepared, discussed these and critiqued them in plenary sessions. After each presentation, participants named additional remedies used in their countries for the disease or

problem under discussion. Thus, the original drafts were enriched with remedies from several other countries in Asia.

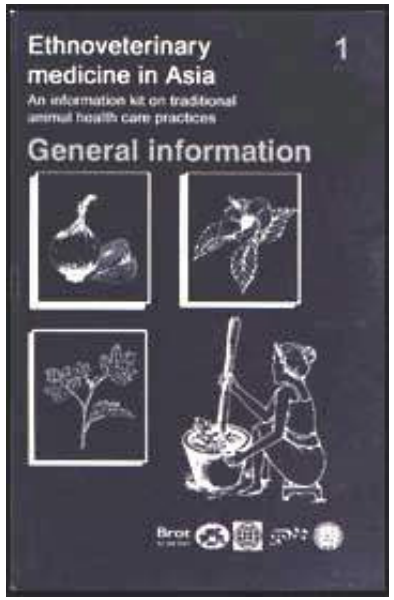
All remedies were discussed and either accepted against a commonly agreed upon set of criteria, or rejected by the group if participants regarded them as harmful, dangerous or ineffective according to their professional judgement. Some topics were dropped, others combined or added. Editors and artists from IIRR helped each participant make the suggested changes in his or her topic. Through this process, second drafts of about 80 topics were developed and discussed.

The second drafts were again presented in three groups, one each for ruminants, swine and poultry. Each group discussed the drafts in detail, editing and checking the validity of each remedy. Again, editors and artists integrated the revisions to text and illustrations. The resulting third drafts then underwent a final review by the IIRR editorial team and were prepared for printing.

Because the final version of the topics reflected the inputs not only from those who had originally drafted the text but also from many other participants, it was decided not to name specific authors for each topic but to identify the entire group as authors for the complete set of manuals.

The initial stimulus for these manuals came from Dr. Julian Gonsalves of the International Institute of Rural Reconstruction (IIRR). We would like to thank him for his support. IIRR would also like to thank the workshop participants for their hard work and invaluable contributions during the workshop. Without them, producing this set of materials would not have been possible.

The workshop and the printing of these manuals were supported by Bread for the World, Heifer Project International (HPI), the World Bank's Small Grants Program, the German Appropriate Technology Exchange Service (GATE) of the German Agency for Technical Cooperation (GTZ) and IIRR. The Research Institute for Veterinary Science in Bogor, Indonesia, supported the participation of the participant from Indonesia.



How to use these manuals

Audience and content

The ethnoveterinary information in this set of manuals is intended for use in the field by animal husbandry and agricultural extension personnel (both government and NGO), paraveterinarians, local livestock healers and veterinarians. The manuals can serve as reference materials for livestock care and treatment, can be used to validate or cross-check existing practices and experiences from throughout Asia and can be a source of inspiration to further test ethnoveterinary practices.

The manuals describe indigenous practices which have been shared by the workshop participants. They focus on the tropical region of Asia because areas across this similar agro-climatic zone will have similar flora. This helps to ensure that the plantbased ethnoveterinary remedies recommended in the manuals will be widely available and equally applicable.

Structure and organization of the manuals

The set is divided into four Booklets, three of which are species-specific: ruminants (small and large), swine and poultry. This fourth Booklet contains topics which are general in nature, are not species-specific and are. therefore,

applicable to any of the species presented in the manuals.

The topics in the species-specific manuals are not necessarily divided along disease categories, but rather have been broadly presented to include the whole spectrum of "conditions" which a field practitioner may encounter in the care and management of livestock. Additionally, the manuals do not solely present a curative perspective to livestock care, but also include a range of traditional practices (e.g., housing, feeding, breeding, etc.) that focus on maintaining animal health and preventing diseases.

Cross-references (e.g., "see Housing") refer the reader to other relevant sections of the manuals. The References section contains publications that were consulted during the workshop to validate any particular remedy or that contain information on ethnoveterinary medicine.

Because of linguistic diversity across the region, the various remedies list the ingredients by their botanical (or Latin) name and a common English name. Many widely practiced remedies use commonly available and widely known species (e.g., garlic, ginger, coconut, banana, guava), so will be widely applicable. For such species, only the English name may appear in the text. The corresponding Latin name can be found in the Glossary of English and botanical names (page 46 in this manual). The Glossary of medicinal plants (page 49) provides the botanical name, the various plant Parts used and the known uses for each of the plants mentioned in the manuals.

@ This symbol highlights precautions to heed when using a treatment.
 # This symbol highlights reminders.

$ This symbol marks diseases that can affect humans.

Topics which describe a disease or condition present the following information:

Symptoms	key symptom(s) by which the disease can be identified.
Causes	primary cause(s) of the disease.
Prevention	appropriate preventive measure(s) to avoid disease onset.
Treatment	a detailed description of the treatment(s).

The treatments or remedies which require multiple ingredients are presented in a step-by-step "recipe" format which lists all ingredients to be used and describes how to prepare them. Many remedies which require only a single ingredient are presented in tables. Each remedy is identified by the "·" mark; where several remedies are presented, the choice of the remedy is left to the user. The specific socio-religious context of any given remedy has not been included, even though this may be critically important within the culture where the remedy or practice originates.

Intellectual property rights

All remedies and most dosages are based on local stockraisers' practices. Most treatments are widely used within a country or region and cannot be attributed to a single person or village. In a few cases, a remedy is known to be used by a certain individual. For such remedies, the individual's name and village are given.

Validation of practices

After each treatment, the countries where the treatment is practiced (as validated by the workshop group or through references) are presented in boldface. Immediately after the names of the countries is a series of numbers that reflect the validation criteria used in the workshop:

1 Workshop participants agreed that the treatment would be useful.

2 Treatment is widely used in a region or a country (some remedies were also validated against practices from outside Asia).

3 Workshop participants had first-hand knowledge of the remedy's use on-farm.

4 Traditional healers are known to use the remedy.

5 The remedy is cited in the literature in one of two ways: (1) it is used to treat the same problem in humans or another animal species; or (2) this plant has proven pharmacological activity to treat the problem in question. For instance, laboratory tests have shown that Nicotiana tabacum (tobacco) leaf extract is effective against Staphylococcus aureus bacteria in vitro (Syat 1990). This tends to support the use of tobacco leaves in treating wounds.

6 The remedy has been scientifically validated as effective to treat the problem in the livestock species in question. Relevant references are given under the corresponding plant name in the Glossary of medicinal plants.

As can be seen from the validation codes after each remedy, relatively few

treatments have been scientifically validated in the species in question (code 6). The wide use of some other plants or remedies in several locations or countries, however, lends support for the farmers' claim that these remedies are effective. It also suggests the need for careful scientific evaluation of these remedies, both in the laboratory and in clinical trials.

Because of the lack of scientific testing, it is not possible to vouch that every ingredient in every remedy acts directly to solve the problem in question. There may be additive, synergetic or nutritional effects that help alleviate the problem. It must be stressed again that these are remedies used by farmers and stockraisers. The workshop participants and IIRR have made every attempt to ensure that the remedies are effective and are not harmful. However, they cannot guarantee this or be held liable for any problems that arise from applying these practices.

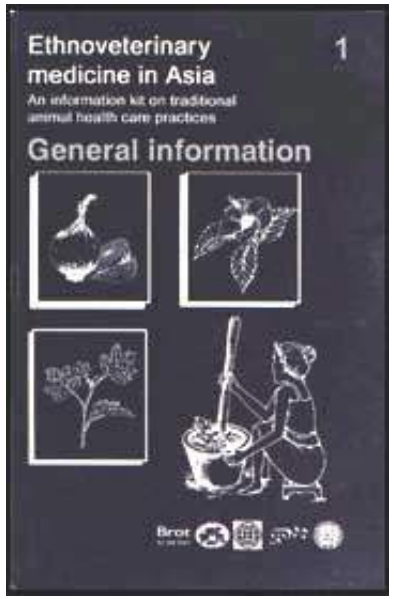
Dosages

Dosages and preparation methods in indigenous practice are often imprecise and vary widely between individuals and regions. The dosages and methods given are those that, according to the professional judgement and experience of the workshop participants, are most suitable, are easy to prepare and are likely to be effective.

Unless noted to the contrary, all dosage quantities for treatments are for single dosage applications; in other words, each treatment should be prepared at the time of application according to the quantities specified. Dosages for treatments in swine are usually given in terms of live body weight (a simple calculation procedure for estimating live body weight for all species is explained on page 31).

Remedies for ruminants are generally stated in terms of dosages for adult cattle or buffaloes. It is important to use appropriate dosages: for instance, a dose for an adult cow could kill a goat; on the other hand, a dose suitable for a goat may have no effect on a cow. Dosages for poultry are usually the amount needed to treat 10 adult birds.

Where possible, simple measurements (handful, cup, etc.) have been given for ease of use by field practitioners. More detailed measurements (milliliters, etc.) are also given to allow a practitioner to be as precise as the particular conditions may allow. The section on Common ''nils of measurement (page 28) gives approximate equivalents for various measures used.



Identification, collection and preparation of medicinal plants

Identification

Make sure that you know exactly which plant to use to treat a problem. The names of plants vary from one place to another. Different plant species may have the same local name. The botanical name of each plant used in these manuals is given with each remedy, except for the most common plants. Here are some things to check to make sure you use the right plant.

Type of plant

- **Approximate size of the plant.**
- **Type: tree, woody, shrub, vine, grass.**
- **The position of flower or fruit in the plant (such as on the ton of stem. in the branches).**

Leaves

- **Approximative size**
- **Shape (number of leaflets or lobes, with ridges or not) and color.**
- **Texture (smooth or rough, with hair or not).**
- **Position and arrangement of the**

Leaves

Flowers

- **Type of flower; type of inflorescence.**
- **Size, color and shape of flowers and bud.**

Flowers

Fruits

- **Approximate size.**

- **Shape, color when young or ripe.**
- **Seed present or not.**
- **Size, shape and color of seeds.**

Fruits

Bark

- **Present or not.**
- **Color and texture (smooth or rough).**

Collection

Know which materials to collect and what time to collect them. The content of the active ingredient may depend on the plant part, stage of growth, season of harvest, method of handling during collection, physical condition of its collection place and storage.

Leaves and stems are best collected during daytime and when the plant is about to bloom.

Flowers that have a smell are best collected when the flower buds are just about

to open and in the morning when the sun is still low. Other flowers should be collected when they are in full bloom. Sometimes, collection should be done in batches since flowers do not bloom at the same time.

Unless the recipe says that unripe fruits will be used, fruits should be collected when they are ripe. Fleshy fruits which deteriorate rapidly should be gathered when they are somewhat ripe, preferably in the early morning or at nightfall.

Seeds are usually collected from thoroughly ripened fruits. Some dry-textured fruits fall off the plant or split open easily when fully ripened. As a result, seeds are easily scattered and lost. It is advisable to collect such fruits as soon as they start ripening.

Barks should be collected when the plants are in bloom or in vigorous growth. Barks should be collected from the trunk and branches.

Roots and other underground parts (e.g., rhizome, rootstock, stem tuber, bulb and stolon) are best collected when the plant is in full growth.

 # Reminder

Avoid collecting plants in a way that kills the plant or damages its surroundings. Before collecting any, determine first how much of the plant and what parts are needed to prevent wastage. Collect only the plant parts you need. For instance, if you need only the leaves, take only the leaves and only the number that you need. Medicinal plants should be conserved to ensure their continuous supply.

After collection

Sorting and cleaning

Clean plant parts of soil and dust.

Plants that may have been exposed to pesticides should not be used. If you have no other choice, they should be washed properly in clear water. Clean and wash plants as quickly as possible to avoid damaging them.

Drying

Air-drying is the best way of drying herbal plants. Drying at high temperatures will destroy plant ingredients. Spread the plant materials thinly and evenly over an old newspaper, a bamboo mat, or chicken-wire screen. Put in the shade until the materials are dry. Drying can be done through artificial heat, especially in the rainy season. Heating devices vary from one place to another.

Cutting, trimming, grinding, chopping

These are done for various reasons:

- **To increase the efficacy of the plants materials.**
- **To allow more active ingredients to go into the preparation.**
- **To reduce the toxicity or adverse effects of certain drugs.**
- **To shorten the duration of drying.**
- **To make the plant material more convenient to store.**

Storing

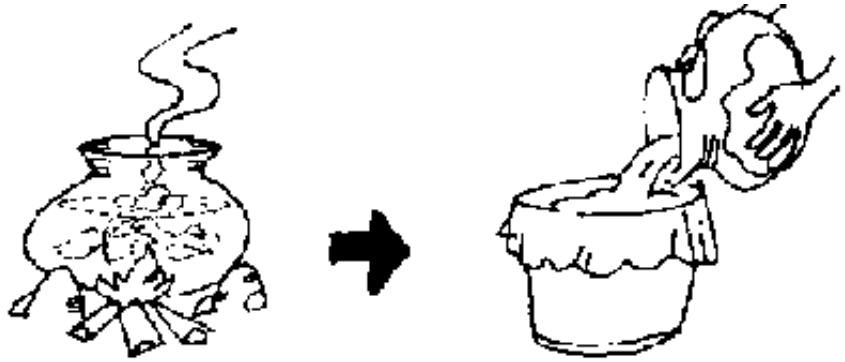
Medicinal plants should be properly stored to preserve their quality. Otherwise, they may be attacked by insects, mites and fungus. Storage can also ensure the continuous supply and availability of the materials whenever they are needed. Dried plants should be kept in covered plastic containers or bottles. These should be covered tightly and kept in a cool, dry place away from sunlight. Label the container properly with the name of the plant and the date when it was collected. Do not use any stored herbal plant which has molds or is discolored.

Preparing herbal medicine

Plant materials can be either fresh or dry, depending on the need and preparation. If dried plants are to be used as a substitute for fresh parts, adjust the quantity or the weight since water is lost during drying.

Decoction

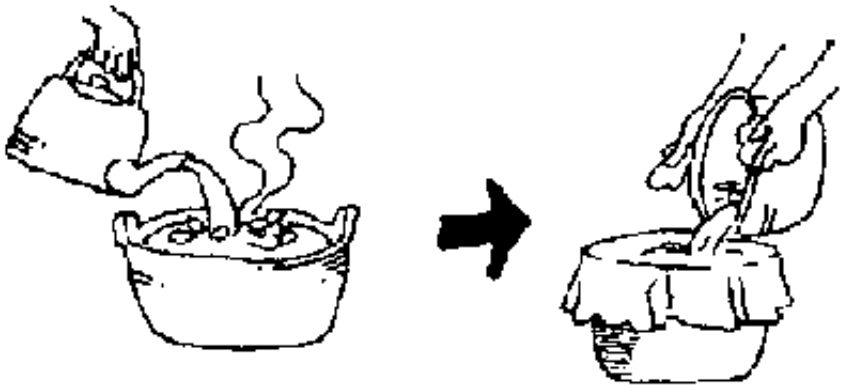
Boil the plant parts in water, preferably for 15-20 minutes from the time the water has started boiling. Some healers recommend boiling the plant materials until the original volume of the water is reduced to one half. Some plants are soaked or moistened. Ideally, plant materials should be decocted twice in order to extract their active ingredients thoroughly. Strain or filter the liquid either while it is still hot or after cooling.



Decoction

Infusion

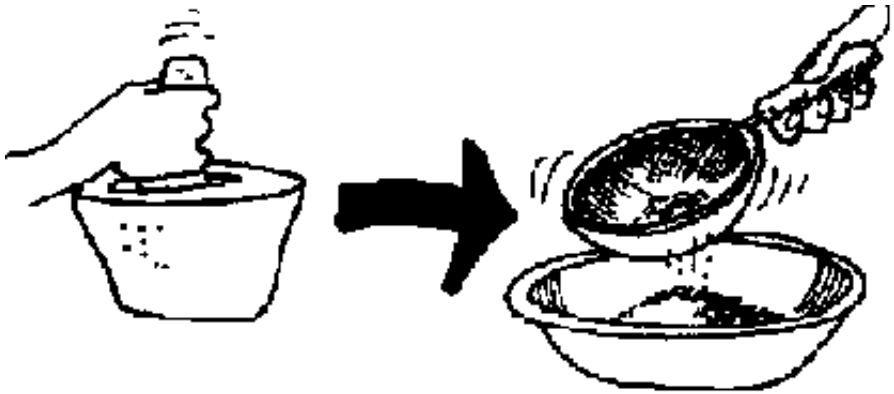
Pour hot or cold water onto the fresh or dry plant material and allow it to stand. Cover the preparation tightly to stop important ingredients from being lost. The length of time needed to prepare an infusion depends on the type of plant material and whether the water is hot or cold. In general, hot infusions need to stand for only 5-15 minutes; cold infusions may require up to 24 hours. Filter the preparation (and allow hot liquid to cool) before administering to the sick animal.



Infusion

Powder

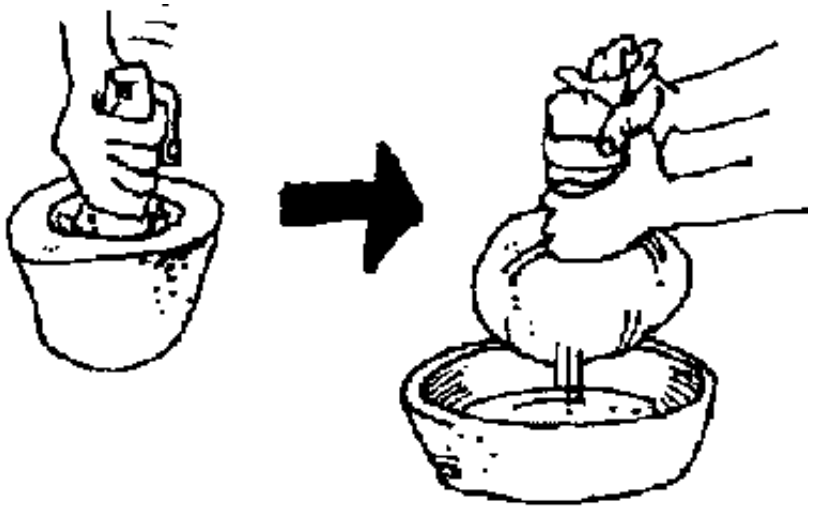
Pound and grind the dried plant materials into coarse, intermediate or fine particle sizes. Sift the powder (once or several times) through coarse or fine sieves to get the required particle size.



Powder

Juice

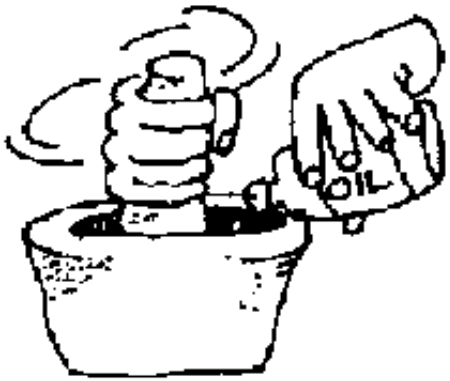
Pound the fresh plant materials, then pass them through a cheesecloth or any fine piece of cloth in order to get the juice. Or you may just squeeze the plant parts to extract the juice.



Juice

Poultice or paste

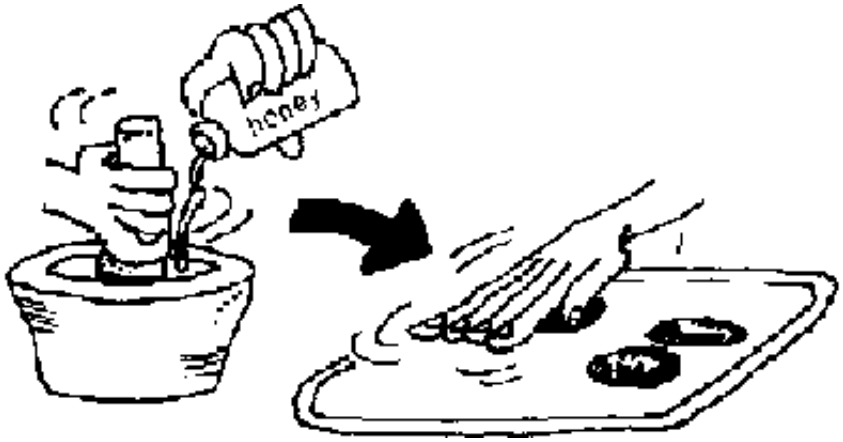
A poultice is a moist, semisolid preparation which is applied directly on the skin. Prepare it by grinding the plant materials (either fresh or dry), sometimes with a little oil, water, molasses, honey, or other liquids.



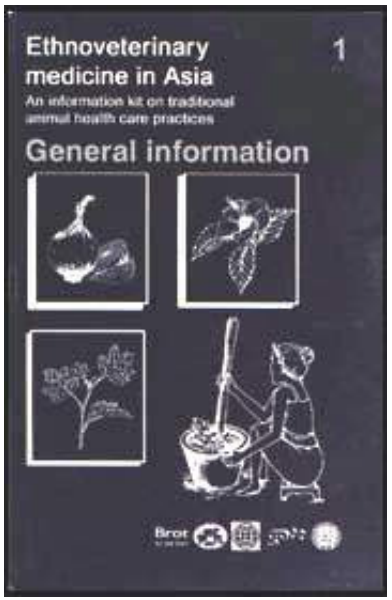
Poultice or paste

Bolus

A bolus is made by pounding fresh or dried plant material' and adding sufficient binding agent such as honey or molasses. Roll it or shape it with your hand to make a round or oval ball



Bolus



Application of herbal medicine

Drenching

The application of liquid preparation through the mouth is called drenching. It can be used for swine, ruminants and poultry. Hold the head level so that the medicine does not an into the lungs. For swine and ruminants, use a bamboo tube, a softdrink bottle, a wine bottle or a bottle gourd. Use a dropper or straw for poultry.

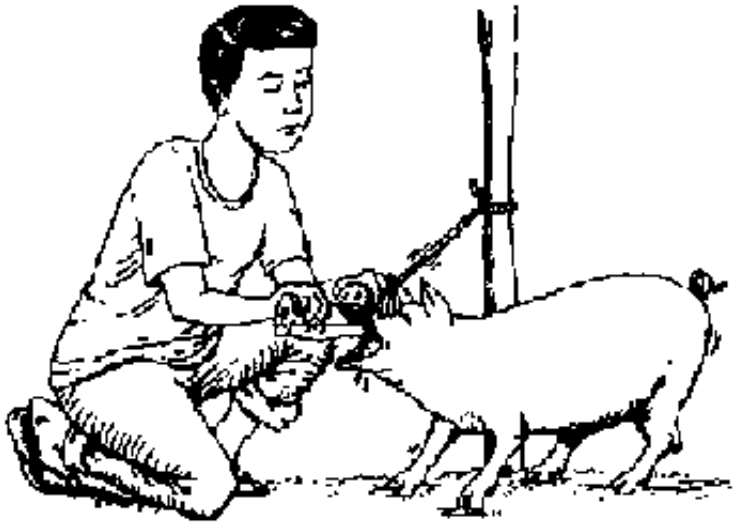
Drenching

Swine

- **Lie the animal on its front on the ground and tie it down or ask someone to hold it.**

- **Tie the snout with a piece of rope. Hold one end of the rope tightly or tie it to a post so the animal's mouth is open and it cannot bite your hands or the bottle. Put the end of the bottle into the mouth and slowly pour the liquid into the mouth. Make sure the animal swallows the liquid.**

Swine



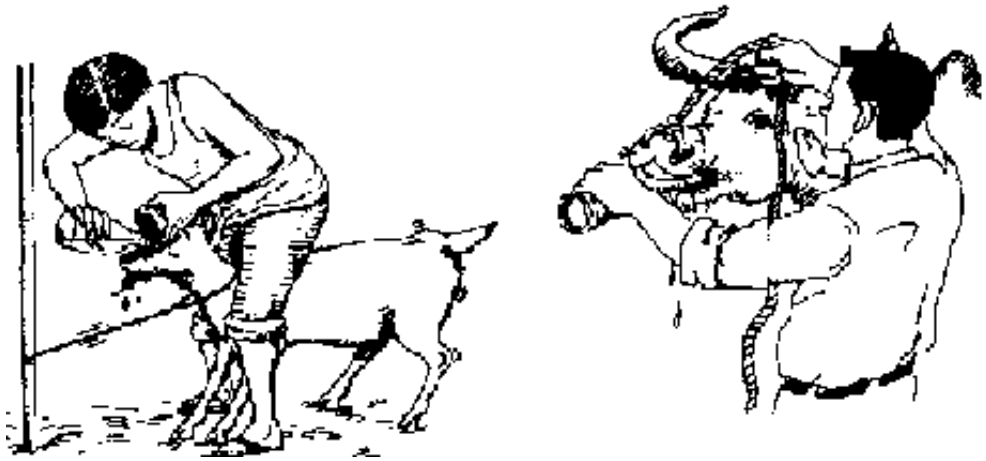
Swine - continue

Ruminants

1 Tie the animal to a tree or pole.

2 With small ruminants, mount the animal and hold it between your thighs.

3 With one hand, hold the upper jaw so that the animal opens its mouth. With cattle and buffaloes, you can use a rope through the nose ring to hold the mouth open. With the other hand, put the end of the bottle in the side of the animal's mouth and slowly pour the liquid into the mouth.



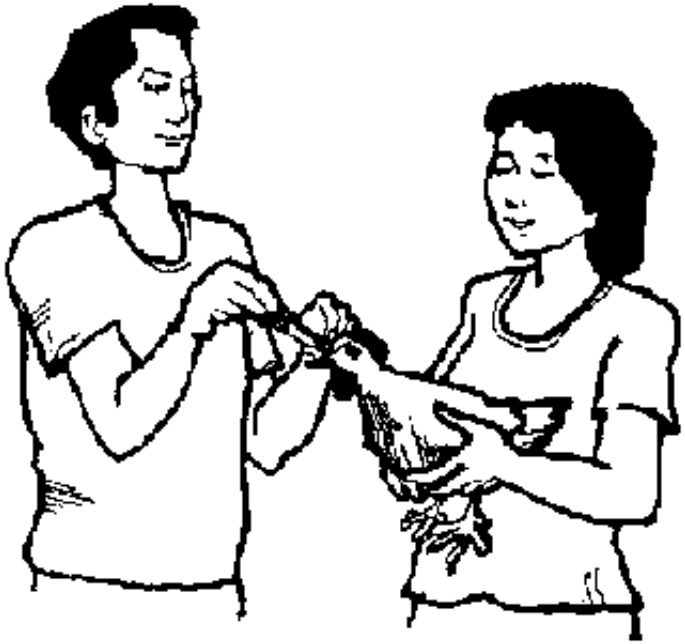
Ruminants

Chickens

Birds can be held by the person who will administer the medicine or by someone else. Use a syringe or dropper or you can use a rice or sorghum straw.

Hold the upper beak with the left thumb or first finger. Push the lower beak down with your finger or the medicine dropper. Hold the head level so the medicine does not go into the lungs.

Drop or squirt the medicine into the mouth.



Chickens

Force-feeding

The application of solid preparations through the mouth is called "force-feeding". It is used for ruminants, swine and poultry. The procedure is similar to that for drenching. After you have put the solid medicines into the mouth, make sure that the animal swallows them. In ruminants, this can be done by massaging the throat. An easy way to force-feed animals is to put solid medicines either into a banana or cooked sweet potatoes and feed this to the animal.

Force-feeding

Medicine mixed with feed and water

In all species, both liquid and solid medicines can be given with feed and water. They can be:

- **Mixed thoroughly with the feed.**
- **Mixed with some of the feed; give the remaining feed only if the animal has eaten all of the medicated part. To treat individual poultry, put the bird and the medicated feed together under a basket until the feed has been eaten.**
- **Dissolved in drinking water. Use only as much water as the animal can**

drink at one time.

- **Sprinkled on the feed ("top-dressing").**

Topical application

Poultice

- **A poultice is a soft, usually heated preparation that is applied to a sore or inflammation.**

- **If necessary, keep the poultice on if necessary by tying a cloth or strip of banana trunk or coconut leaves over it.**

Poultices are used for swine, ruminants and poultry.

Fomentation

A fomentation is a warm, moist substance (such as a wet cloth) applied to the affected parts of the body. It is used to ease pain and inflammation in swine and ruminants.

Compress

A compress is similar to a fomentation, but is always dry.

This is used for swine and ruminants.

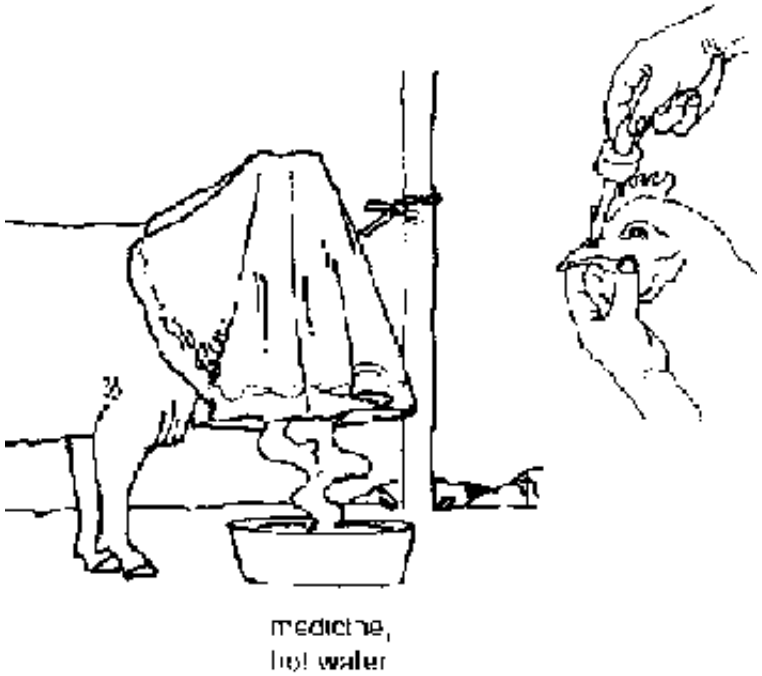
Direct application

Rub the preparation directly on the affected part.

This is used for swine, ruminants and poultry.

Nasal application

Drop medicine directly into the nostril or apply it as vapor as shown in the illustrations. This is used in all species.



Nasal application

Vaginal application

This application is used in cows and sows that have an infection of the birth canal, for example: after retained placenta or other birthing difficulties.

To apply solid medicines

1 Clip your nails, clean your hands thoroughly and apply vegetable oil to them as a lubricant.

2 Clean the animal's vulva with soap and warm water.

3 Take the medicine in one hand and cup this hand into a cone-shape.

4 Insert this hand into the vagina when the muscles of the birth canal are relaxed (for instance, between contractions during birthing). Leave the medicine in the vagina and slowly pull your hand out.

To flush the vagina with liquids

1 Clean and wash the stalk of a papaya leaf and lubricate its tip with vegetable oil.
2 Insert the stalk slowly about 10 cm deep into the vagina.
3 Pour the liquid medicine into the vagina through the hollow stalk until the liquid flows over.

Anal application

This can be used for ruminants and swine.

1 Shape the medicine into a small ball.

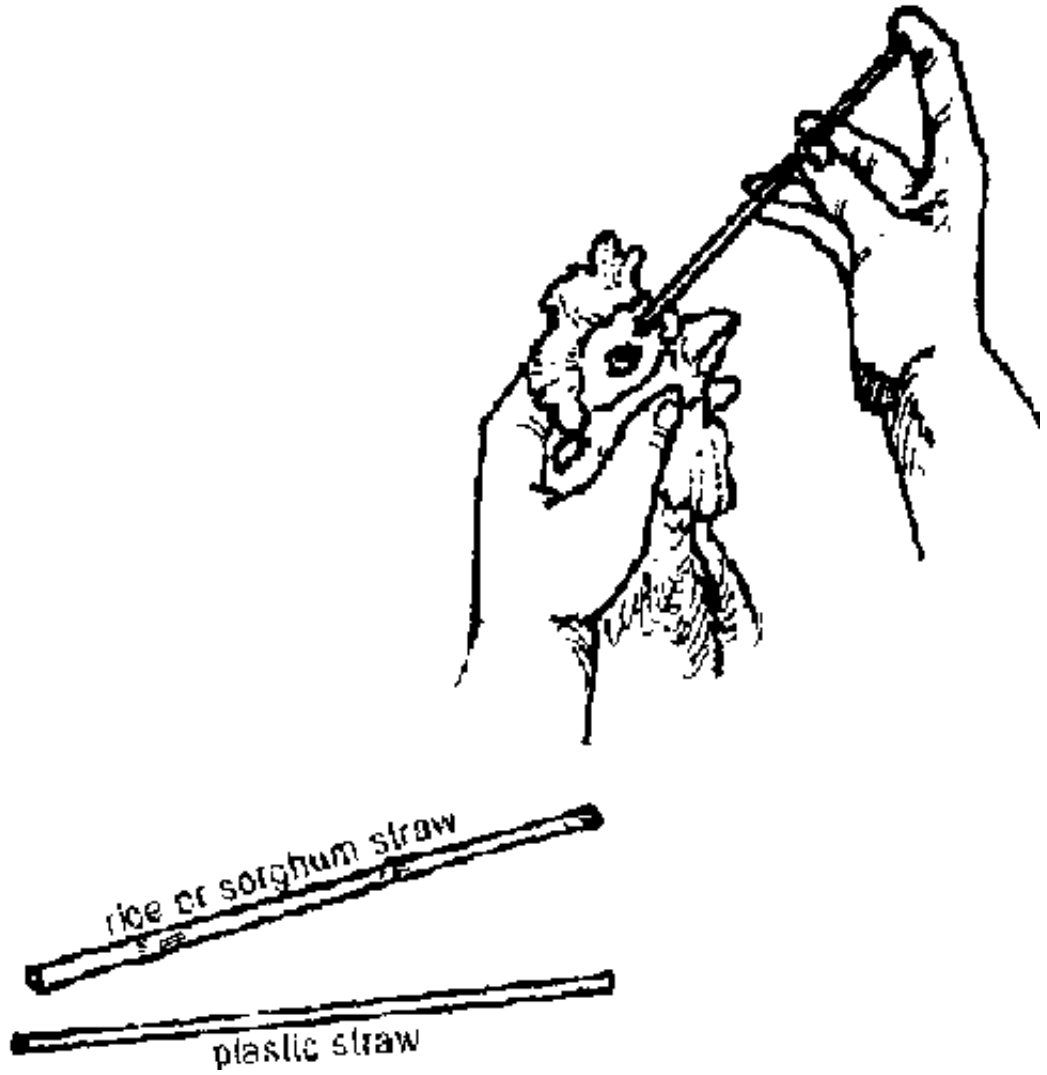
2 Carefully push it into the animal's anus. If this is difficult, dip the ball into

the water or oil before inserting it in the anus.

In the eye

This can be used in all species.

Use a rice straw, sorghum straw, medicine dropper or plastic dropper. Apply remedy directly into the eyes.



In the eye

Fumigation

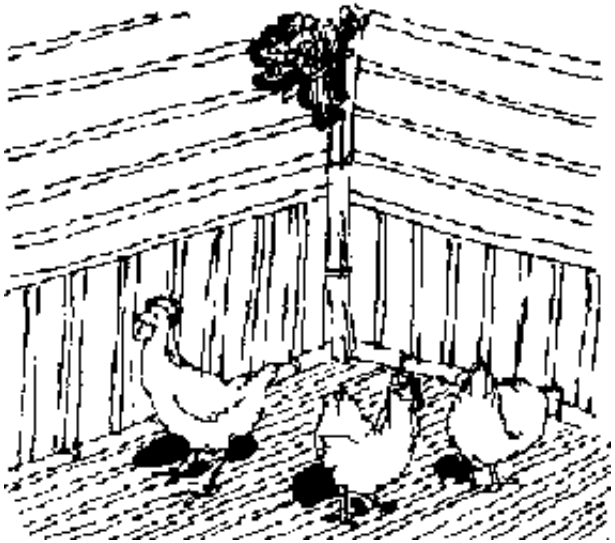
Fumigation is the use of smoke to drive away insects.

Burn dried leaves. Cover the fire with fresh banana leaves to make a lot of smoke.

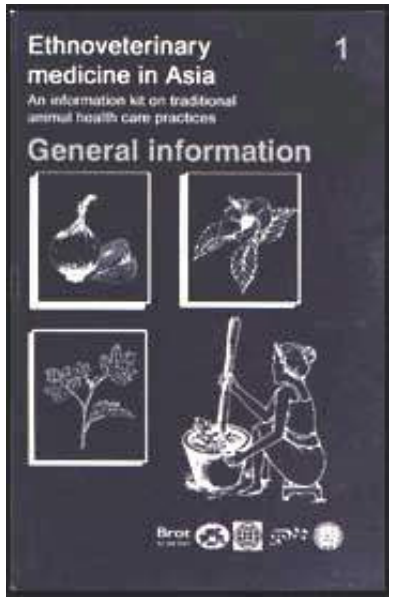
Fumigation

Hanging bouquet

Bind plants into a bouquet and hang inside the houses. This can be used for poultry, swine and ruminants.



Hanging bouquet



Common units of measurement

Many farmers do not have accurate ways of measuring ingredients for medicines. For many of the remedies in these manuals, accurate dosages are neither

appropriate nor possible. This section gives some approximate equivalents for commonly available measures. Common containers, such as glasses, cups, spoons and bottles, may vary from country to country or even within countries. You should check that these equivalents are correct for your area before using them.

Liquid

- **Cup (Philippines)**
- **Cups (teacup, India)**
- **Spoons**

- Cups (Philippines)

 = 16 tablespoons = ¼ liter approximately

 = 1 pint = ½ liter approximately

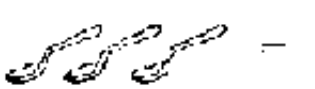
 = 1 quart = 1 liter approximately

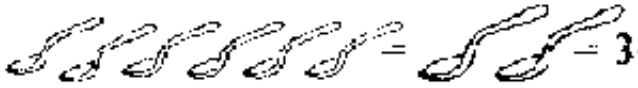
- Cups (teacups, India)

 = 30 ml = 6 teaspoons

- Spoons

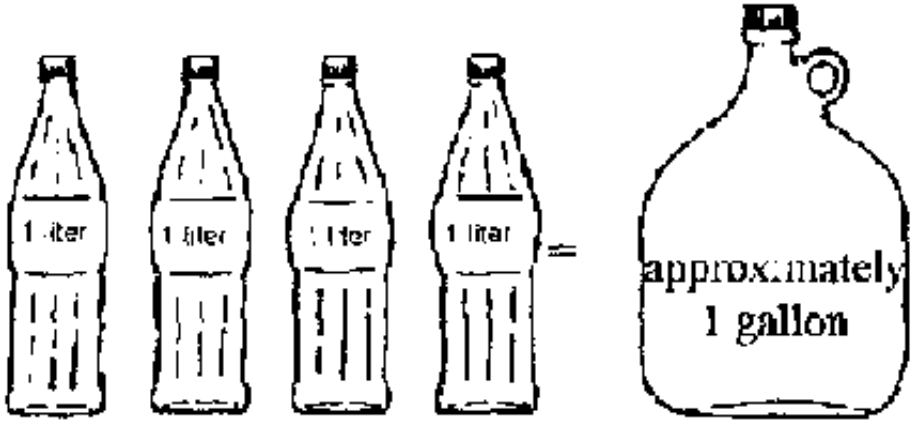
 = 5 ml (1 teaspoon)

 = 15 ml (1 tablespoon)

 = 30 ml (2 tablespoons)

Common units of measurement

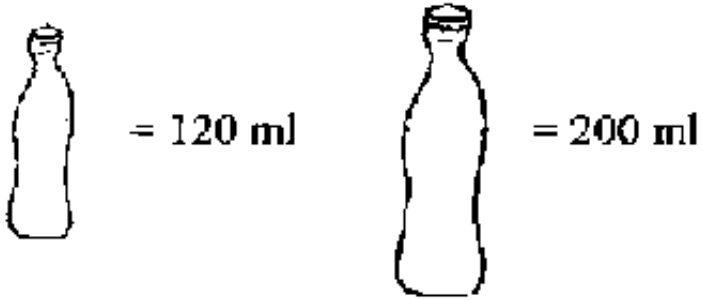
Bottles (Philippines)



4 liters

Common units of measurement

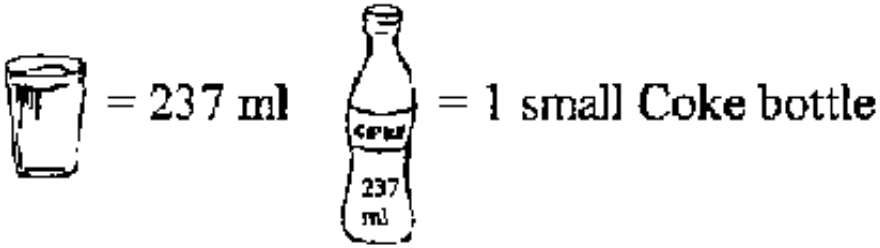
Bottles (India)



Common units of measurement

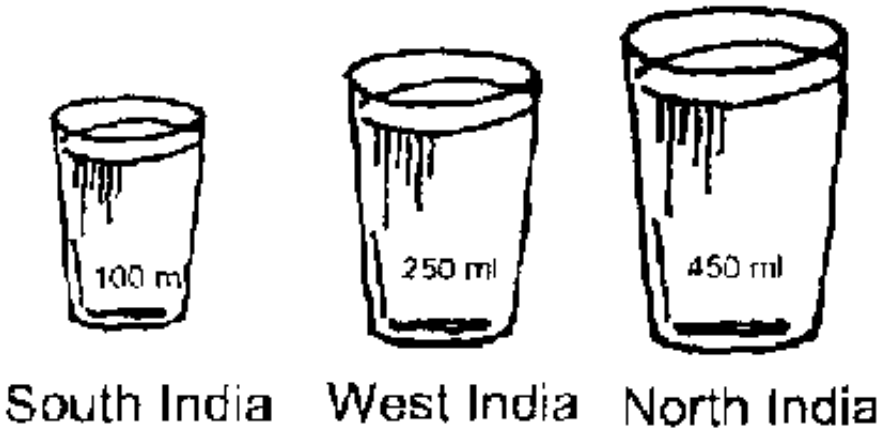
Bottles are often marked with their volume. Common sizes are 1 liter, 750 ml, 375 ml and 320 ml.

Drinking glass (Philippines)



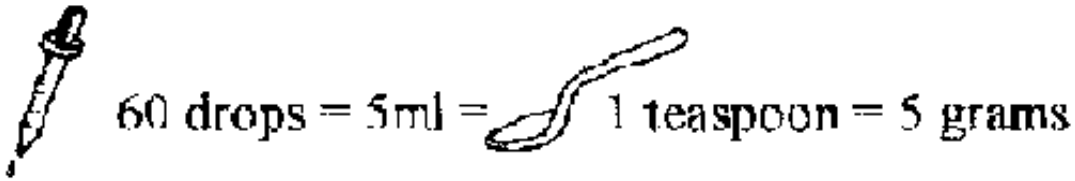
Common units of measurement

Drinking glass



Common units of measurement

Dropper



Common units of measurement

Powder

1 small matchbox = 50 grams

= 5 grams

= 25 grams

= 10 grams

= 50 grams

= 10 grams

20 peanuts

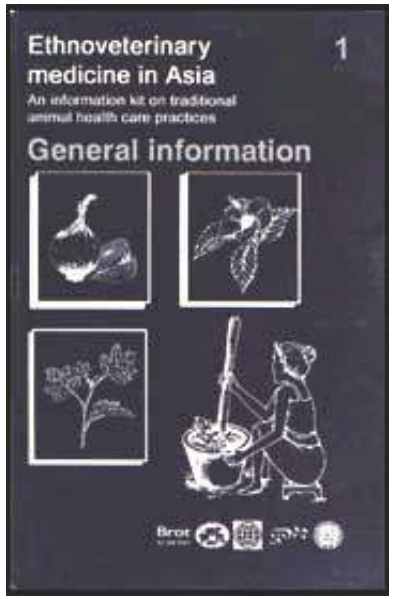
Powder

Figure

Figure

Chopped leaves

150-200 leaves of Azadirachta indica = 1 handful
300 leaves of Ocimum sp. = 1 handful
15-25 leaves of Eucalyptus tereticornis = 1 handful
10 leaves of Areca catechu = 1 handful



Glossary of technical terms
Participants' profile
References

Estimating live weight

Cattle and buffaloes

Measure the chest girth of large ruminants with a tape measure or a string. Use the table below to estimate the weight.

Girth (cm)	Weight (kg)	Girth (cm)	Weight (kg)	Girth (cm)	Weight (kg)
65	35	125	170	185	508
70	40	130	190	190	552
75	45	135	210	195	598
80	50	140	230	200	648
85	59	145	252	205	698
90	69	150	272	210	748
95	79	155	295	215	798
100	89	160	325	220	850
105	103	165	360	225	905
110	118	170	392	230	969
115	134	175	427		

120	150	180	467		

Source: Veterinary Research Institute, Sri Lanka

Small ruminants

Measure the heart girth of small ruminants (goats or sheep) using a tape measure or string. Pull the tape tight. Use the table below to estimate the weight.

Heart girth		Body weight		Heart girth		Body weight	
(in)	(cm)	(Ib)	(kg)	(in)	(cm)	(lb)	(kg)
10 ¾	27.3	5	2.3	18 ¾	47.6	25	11.3
11 ¼	28.6	5½	2.5	19¼	48.9	27	12.2
11 ¾	29.9	6	2.7	19 ¾	50.2	29	13.2
12 ¼	31.1	6½	3	20 ¼	51.4	31	14.1
12 3/	32.4	7	3.2	20 ¾	52.7	33	15
13 ¼	33.7	8	3.6	21 ¼	53.9	35	15.9
13 ¾	34.9	9	4.1	21 ¾	55.3	37	16.8
14 ¼	36.2	10	4.5	22 ¼	56.5	39	17.7
14 ¾	37.5	11	5	22 ¾	57.8	42	19.1
15 ¼	38.7	12	5.4	23¼	59.1	45	20.4
15 ¾	40	13	5.9	23 ¾	60.3	48	21.8
16 ¼	41.3	15	6.8	24¼	61.6	51	23.1

16 ¾	42.7	17	7.7	24 ¾	62.9	54	24.5
17¼	43.8	19	8.6	25¼	64.1	57	25.8
17 ¾	45.1	21	9.5	25 ¾	65.4	60	27.2
18 ¼	46.4	23	10.4	26 ¼	66 7	63	28.6

Heart girth		**Body weight**	
(in)	**(cm)**	**(lb)**	**(kg)**
26¾	67.9	66	29.9
27¼	69.2	69	31.3
27¾	70.5	72	32.7
28 ¼	71.7	75	34
28¾	73	78	35.4
29 ¼	74.3	81	36.7
29 ¾	75.6	84	38.1
30¼	76.8	87	39.5
30¾	78	90	40.8
31 ¼	79.4	93	42.2
31¾	80.7	97	44
32 ¼	81.9	101	45.8
32 ¾	83.2	105	47.6
33¼	84.5	110	499
33¾	85.7	115	52.2

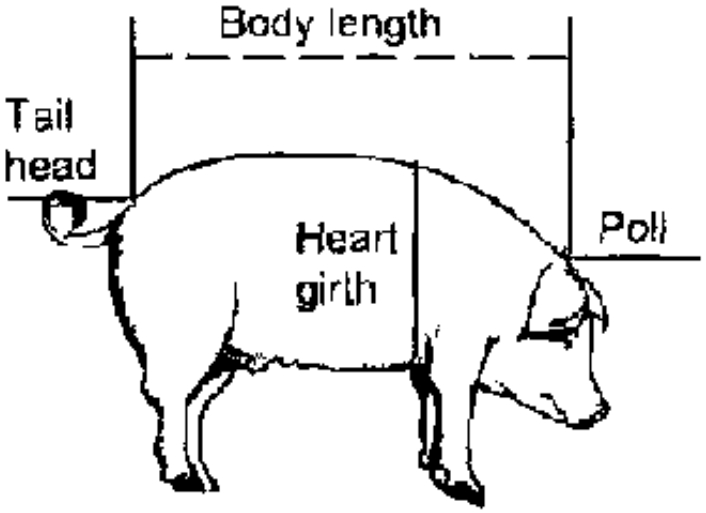
34 ¼	87	120	54.4
34 ¾	88.3	125	56.7
35 ¼	89.5	130	59
35 ¾	90.8	135	61.2
36¼	92.1	140	63.5
36 ¾	93.4	145	65.8
37 ¼	94.6	150	68.1
37 ¾	95.9	155	70.3
38 ¼	97.2	160	72.6
38 ¾	98.4	165	74.8
39¼	99.7	170	77.1
39 ¾	101	175	79.4
40¼	102.2	180	81.6
40 ¾	103.5	185	83.9
41 ¼	104.8	190	86.2
41¾	106.1	195	88.4

Source: Sinn (1983)

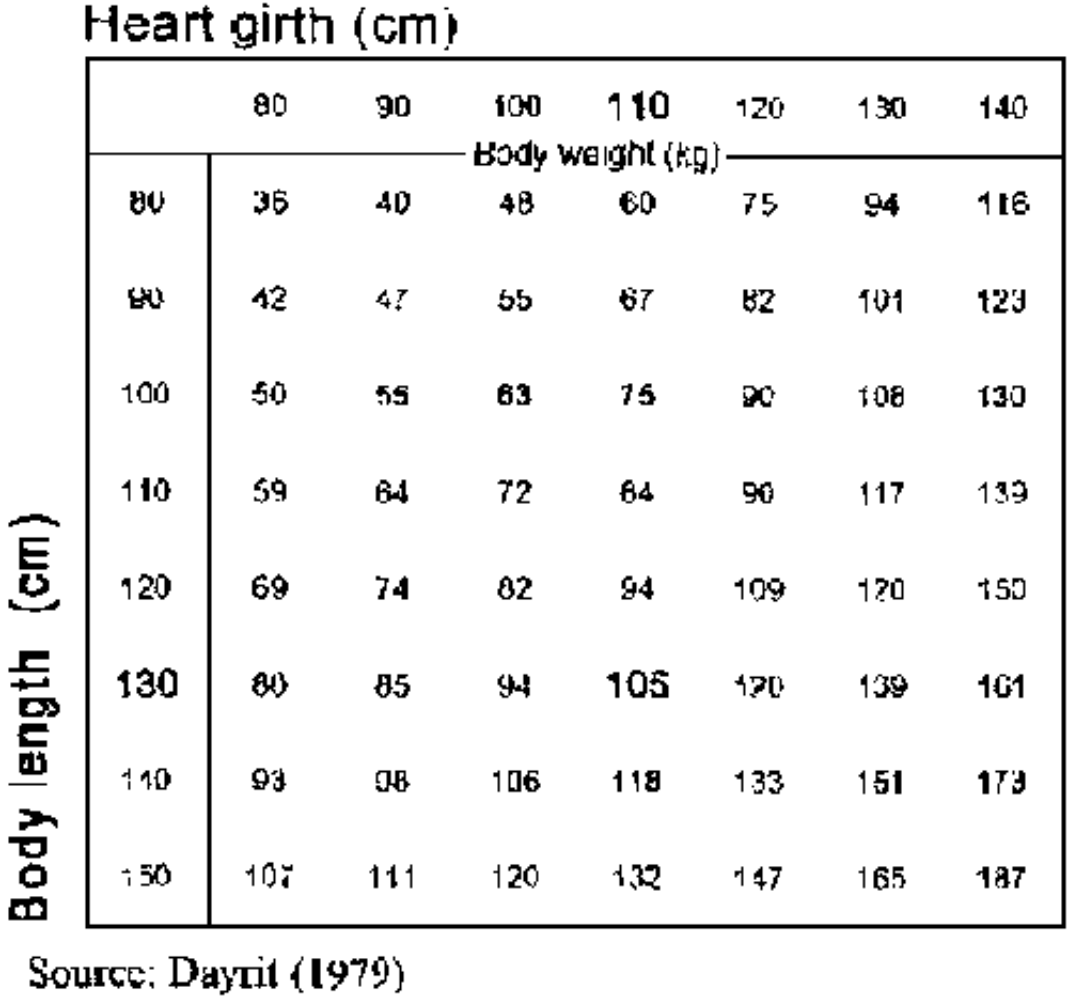
Swine

Live weight of swine can be estimated by measuring the body length (from the back of the head to the tail head) and the heart girth of the animal with a tape

measure. Using the table below, an approximate weight can be calculated. For example, if the body length is 130 cm and the heart girth 110 cm, the swine weighs about 105 kg.



Swine



Heart girth (cm)

Body length (cm)	Body weight (kg)						
	80	90	100	110	120	130	140
80	36	40	48	60	75	94	116
90	42	47	55	67	82	101	123
100	50	55	63	75	90	108	130
110	59	64	72	84	96	117	139
120	69	74	82	94	109	120	150
130	80	85	94	105	120	139	161
140	93	98	106	118	133	151	173
150	107	111	120	132	147	165	187

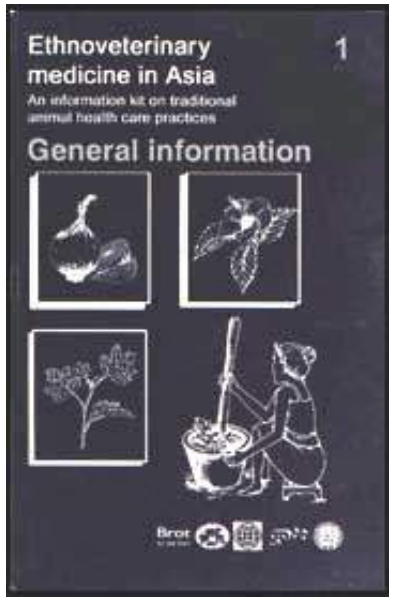
Source: Dayrit (1979)

Body length

Ethnoveterinary Medicine in Asia - General Information (IIRR, 1994, 145 p.)

(introduction...)

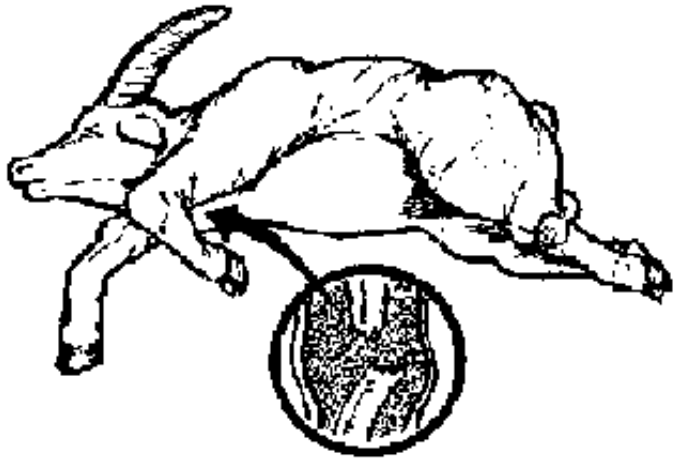
Collaborating organizations



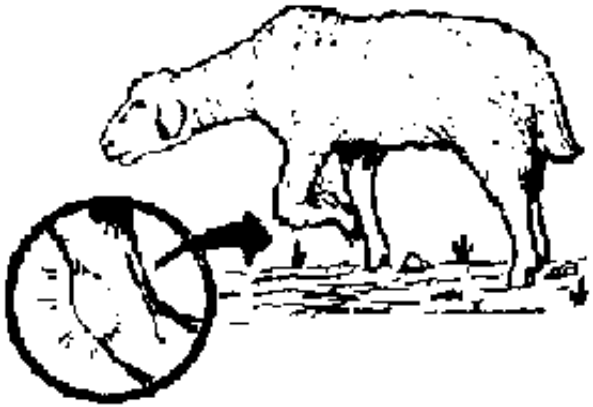
Simple surgical techniques

Fractures

A fracture is a crack or a break in a bone. Fractures are caused by accidents or falls. If a fracture is not treated immediately, the affected area may not regain its normal function.



Fractures



Symptoms

Symptoms

- **Swelling at the site of fracture which does not subside.**
- **The fracture site is painful.**
- **You can hear a crackling sound when you touch or move the fracture.**
- **The animal has difficulty using the affected area.**

The fracture site is painful

Prevention

- **Avoid accidents or falls of your livestock while using draft animals or when sending them out to graze in hilly areas.**

- **Take extra care with pregnant animals. Their bones are much weaker than other animals'.**

Treatments

To treat pain

Boil 4-7 tablespoons of fresh, mature roots of Mimosa pudica (sensitive plant) in 500 ml of water for 10 minutes. For adult cattle and buffaloes, drench this amount of the liquid once a day for 3 days. Caution: prolonged use of Mimosa pudica can be dangerous.

For minor fractures and cracks in the bone

Grind a handful of fresh Symphytum officinale (comfrey) leaves and use as a poultice. Change the poultice once a day for 1 week until the animal regains the use of its limb.

For more serious fractures

Follow these steps:

1 Put the animal in a comfortable position.

2 Boil 1 kg of fresh leaves of Cissampelos pareira in 1 liter of water for half an hour. Drench adult cattle and buffaloes with 200 ml of the decoction (give 100 ml to calves, goats or sheep). This will relax the animal's muscles an hour after drinking.

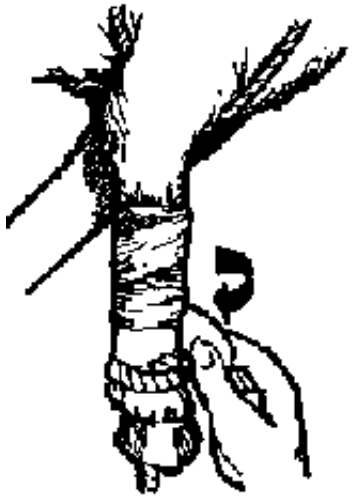
3 Position animal carefully and comfortably, with the affected area facing upwards.

4 Using a rope, straighten the affected limb and align the bones. Be careful not to hurt the animal.

5 Shave the hair and clean the affected area with clean water.

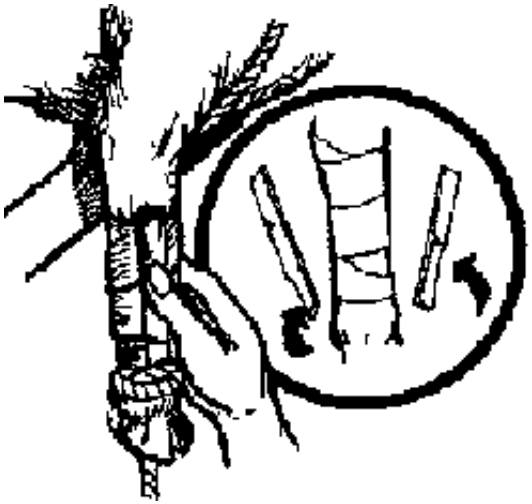
6 Pour vegetable oil on newspaper. Wrap several layers of newspaper around the joint as a cast to keep the joint from moving. This helps reduce the swelling slightly. Leave on for one day.

7 The next day, remove the newspaper. Tie a clean cloth around the area to cover the fracture and protect the skin.



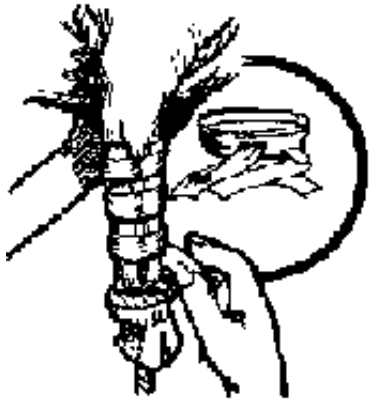
Wrap several layers of newspaper

8 Position splints to keep the joint from moving. Normally, four splints are needed around the leg.



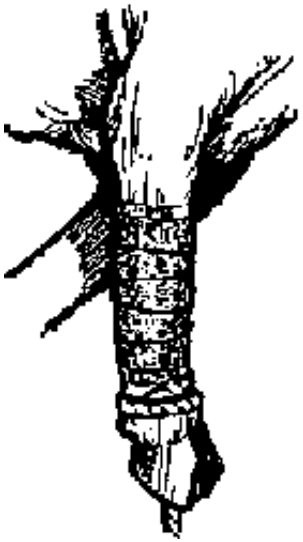
Four splints are needed around the leg.

9 Dip strips of clean cloth in one of the plaster mixtures (see box) and bandage firmly around the limb. The bandage must not be too tight; you should be able to insert your finger under it.



The bandage must not be too tight

10 Leave the cast on for 710 days in young animals. Depending on the type of the fracture, it may take 3-4 weeks in adult animals before the cast can be removed.



Depending on the type of the fracture

How to make plaster

Use one of the following mixtures to make plaster. Make enough of the mixture to cover the fracture site. Dip strips of cloth in this mixture.

- **Grind 2 bricks and mix with a sufficient quantity of egg white to make a smooth plaster. (Western India. 1, 2, 3, 4)**
- **Mix 10 egg whites, 3 teaspoons of latex from Euphorbia neriifolia and 2 teaspoons of red oxide of mercury. (Western India. 1, 2, 3, 4)**
- **Grind a handful of Tamarindus indica (tamarind) leaves and mix it with anthill mud. Add a little water to make a fine paste. (Western India. 1, 2, 3, 4)**

- **Mix equal amounts of fresh goat milk, fresh goat droppings (from a goat stall), ash and egg whites. (Western India. 1, 2, 3, 4)**

Splints

Splints support fractures and prevent the broken bone from moving. Splints must be made of stiff but light material, such as bamboo, the stalk of coconut or palmyra palm leaves, or the bark of Areca catechu.

After treating the fracture

The bone takes approximately 3-6 weeks to heal, depending on the age of the animal and its health. Bones of young animals heal faster. Too much movement of the affected part will delay healing.

- **Allow the animal to rest.**
- **Give the animal easily digestible and nutritious feed.**
- **Add a handful of ground limestone, chalk or eggshells to every 10 kg of feed.**
- **If the cast falls off, replace it immediately with a fresh one.**

Bone fractures in very large ruminants are difficult to treat. This is especially true for fractures in the upper limbs. Such animals may develop sores. In this case, consult a professional (a local expert, respected healer or veterinarian).

Working animals may never regain the full use of the affected part. They may not be able to pull heavy carts or plows. In most cases, it will be most practical to sell or slaughter the animal.

Warts

Warts are small, solid growths on the surface of skin. Warts on the tongue can interfere with eating. Warts around the nostrils block the breathing passage. Warts on the teats make milking painful for the animal. Warts on the penis hinder the passage of urine.

Warts

Treatment

Treatment

Remove the wart using any of the following:

- **Tie a thread or 3-4 strands of horse hair tightly around the wart. This will cut off the blood supply to the wart. It will shrink, dry up and eventually fall off. (1, 2, 3, 4, 5)**

- **Apply 1 or several drops of latex of Euphorbia neriifolia or the latex from a papaya trunk, fruit or leaves on the wart. The amount of latex depends on the size of the wart. Apply twice a day until the wart falls off. (1, 2, 3, 4)**

- **Crush 2-3 fresh leaves and petals of a single flower of Calendula officinalis (calendula). Extract the juice and apply at least 3 drops on the wart twice a day until the wart falls off. The amount of juice depends on the size of the wart. (1, 2, 3, 4)**

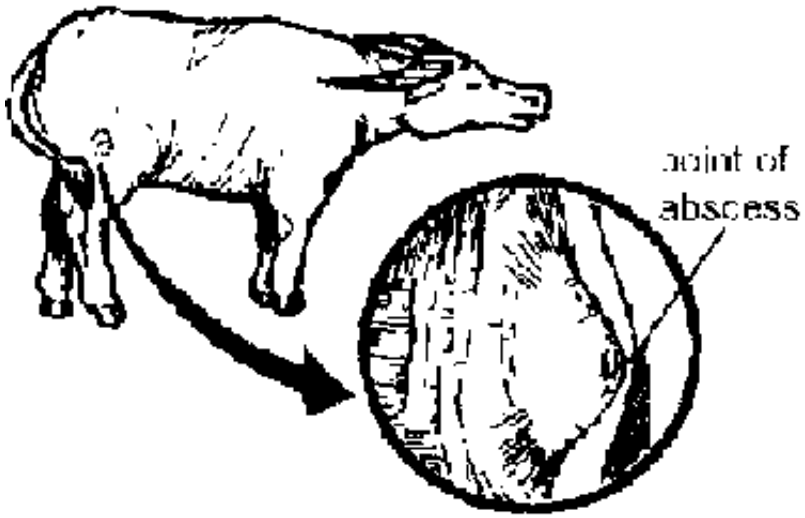
- **Tie an entire Piper belle (betel) leaf over the wart like a bandage. Use a string to keep the leaf in place. Change the bandage twice a day until the wart falls off. Also used to treat abscesses (see below). (1, 2, 3, 4)**

- **Mix 2-3 crystals of copper sulfate with a drop of water. Apply on the wart using a matchstick. Caution: Copper sulfate is strong enough to burn your fingers. (1, 2, 3, 4)**

- **Squeeze 1-2 cloves of garlic directly onto the wart. Do this once a day till the wart falls off. (1, 2, 3, 4)**

Abscesses

Symptoms



Symptoms

An abscess is a rounded, hot, painful swelling full of pus. A single or many abscesses may be found on the body.

Cause

Abscesses may have various causes, including infected wounds, irritants on the skin and internal disease. They may also be caused by using dirty instruments, syringes or needles. If the animal has fever as well as abscesses, it may have an infectious disease (see Infectious diseases in species-specific manuals). Infected matter from an abscess which falls on open wounds may cause more abscesses, severe pain and swelling.

Prevention

- **Keep the animal clean and well-fed.**
- **Clean and sterilize syringes, knives and other instruments before using them on animals.**
- **Clean wounds properly (see Wounds in species-specific manuals).**

Treatment

Use any of the treatments below twice a day until the abscess has dried up. If the animal has fever, see also Fever in species-specific manuals. If the abscess does not subside, or if there are other symptoms, check the section on Infectious diseases and other sections. Consider getting help from a professional.

- **Grind a handful of fresh neem leaves to make a paste. Apply it on the affected area as a poultice.**

- **Grind a handful of Odina wadder (sesharam) leaves and mix with half this amount of vegetable oil. Apply it on the abscess.**

- **Tie a Piper betle (betel) leaf over the abscess to drain it (see Warts on page 40).**

- **Make a paste from 5 teaspoons of turmeric rhizome powder and 5 teaspoons of water. Apply on the abscess.**

- **Rub a block of Pterocarpus santalinus (red sanderswood) against a rough stone to make a powder. Make a paste from 5 teaspoons of this powder with 5 teaspoons of water and apply on the affected area.**

- **Mix equal amounts of salt and water and pour on the abscess.**

- **Mix equal amounts of slaked lime (calcium hydroxide) and water. Mix this with an equal amount of lemon juice and apply on the abscess.**

- **Crush 10-20 fresh Mentha piperita or M. cordifolia opiz (mint) leaves and apply on top of the abscess as a poultice.**

- **Boil 1 part of young, chopped leaves of Spondias pinnate with 2 parts of clean water. Boil for 1015 minutes. Use the decoction to wash the abscess.**