

# Restraining animals and simple treatments

## Foreword

These manuals have been written with the simplest language possible for the convenience of the intended user -the animal health practitioners or ("para-vets") working in isolated rural communities. It is not designed to be a complete veterinary medicine reference material. But rather, aims to present the most important animal health problems commonly encountered and some of the most effective, but simple treatments.

The manuals are based upon experiences documented through a series of intensive field work activities over a one-year period with a group of livestock small-holders living and working in Cavite province of the Philippines. The manuals were first produced in a draft form in early 1994. The manuals were then pretested by a group of small-scale animal producers in June of that year.

The manuals are divided into four separate booklets

1. Restraining animals and simple treatments
2. Basic husbandry practices and veterinary care
3. Disease control and treatment
4. Herbal medicine for animals

Common antibiotics, hormone vitamins and dewormers mentioned are mostly in solution. For dosages on the mixtures prescribed see page 12 of *Restraining animals and simple treatments*.

We hope that these manuals will help rural animal health practitioners to identify and remedy common health problems which they may encounter in their work. Further, we hope that this humble contribution will truly help practicing "para-vets" to make greater contributions as partners in the veterinary profession.

We would like to gratefully acknowledge the funding support provided by the Canada Fund-Philippines of the CIDA through the Canadian Embassy. Their support financed the fieldwork upon which these manuals are based, as well as the actual production and printing of the manuals. Their continued assistance to the betterment of the rural communities of the Philippines is greatly appreciated.

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## Restraining animals

Occasionally, livestock must be restrained for examination and treatment.

Restrain animals with care to ensure safety and a minimum of stress.

### Cattle and water buffalo

#### Grasping the nostrils with thumb and fingers

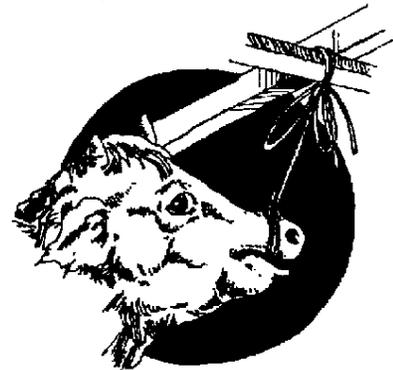
This is used for thoroughly domesticated cattle and water buffaloes.



#### Upper jaw held up by a rope

Procedure

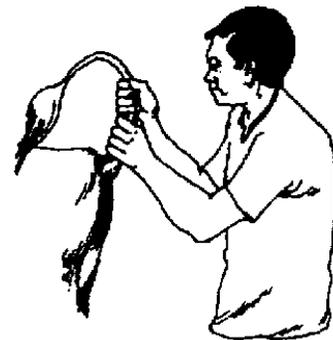
1. Double an eight-foot long light rope or sash cord in the middle.
2. Thread the two ends through the resulting loop to form another loop.
3. Slip it slowly over the animal's upper jaw towards the back of the mouth and pull it tight.
4. Tie the other ends of the rope to a post. Be sure that the head is slightly elevated.



#### Grasping the tail

Procedure

Hold firmly the base of the tail and raise it straight over the back of the animal. This is done to restrain the hindquarter section of cattle and water buffaloes.



#### "Figure 8" method

Wind a rope to create a "Figure 8" around the hocks (just above the main joint). This is used to restrain animals with mastitis (inflamed mammary gland).

Procedure

1. With the use of a light rope, place a "Figure 8" around the hocks.



Do not tie the rope. It could cause lameness to the animal.

2. A second person should keep tension on the rope to prevent the animal from walking.

### **Chute**

Bamboo poles can be used to make a chute. This will Evict the animal's movement and prevent it from kicking.

#### **Procedure**

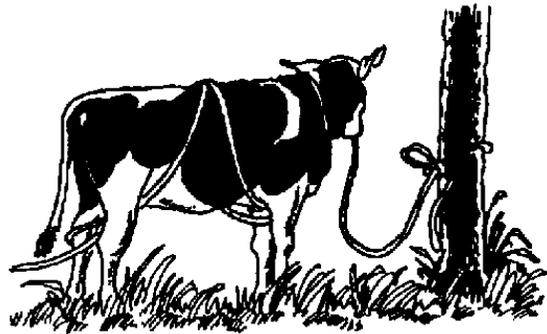
1. Put up four bamboo posts near a tree. They should be strong and wide enough to enclose either cattle or water buffaloes.
2. Guide the animal inside the structure and tie the nose lead closely to a tree or post.
3. Close the chute at the rear end by tying two short poles, one below the anal region and the other at the level of the shanks.

### **Double-loop method**

This method has the advantage of reducing the possibility of injury to either the penis or mammary organ of the animal.

#### **Procedure**

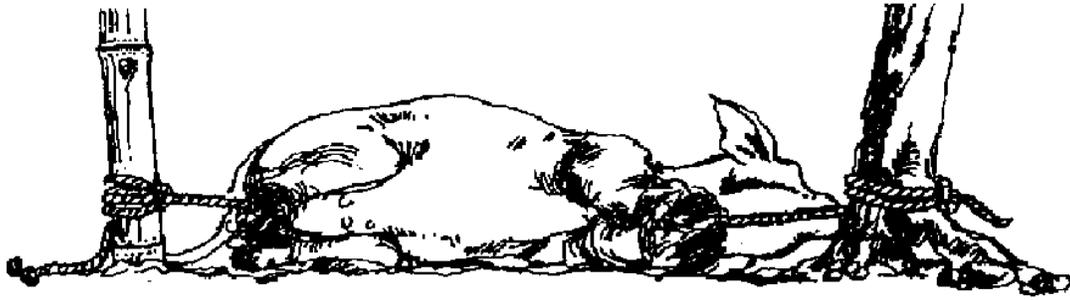
1. Tie the animal to a post or tree with the use of a rope.
2. Double a long rope. Put the middle of the long rope over the neck of the animal.
3. Pass one end below the elbow, pass over the back and down the groin at the other side.
4. Do the same with the other end of the long rope on the other side of the animal.
5. Pull the two ends of the rope.



### **Tying legs to a post or tree trunk**

#### **Procedure**

1. Tie both forelegs to a post or tree trunk.

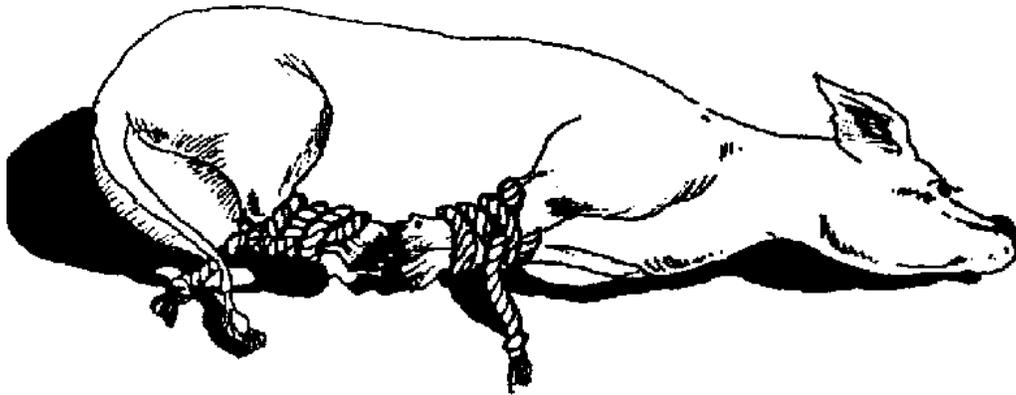


2. Then, tie the hindlegs to another post or tree trunk.

### **Tying all legs together**

#### Procedure

1. First, tie the forelegs together.
2. Then, tie the hindlegs together.
3. Lastly, tie the fore and hindlegs together.

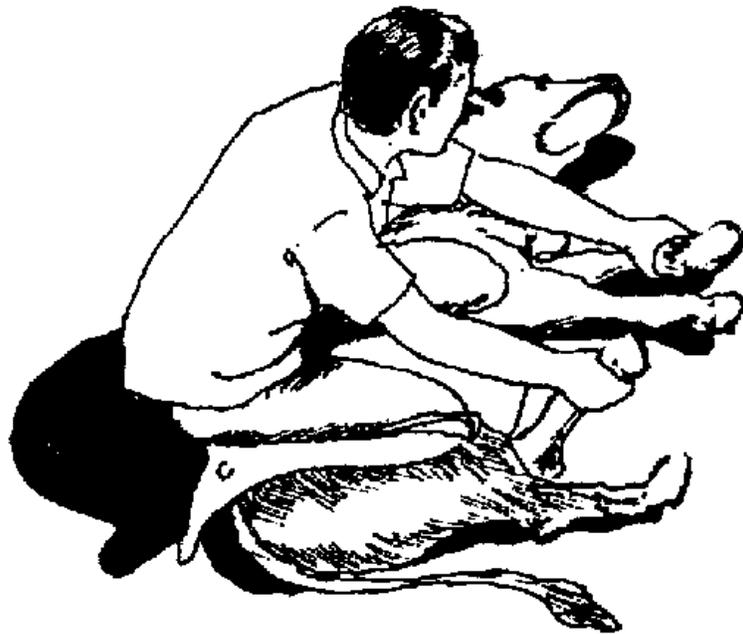


### **Restraining a calf**

#### Procedure

1. Position yourself at side of the calf.
2. Bend over the animal.
3. Reach over the animal and grasp the fore and hind legs farthest from you.

4. Set the animal down on its side.

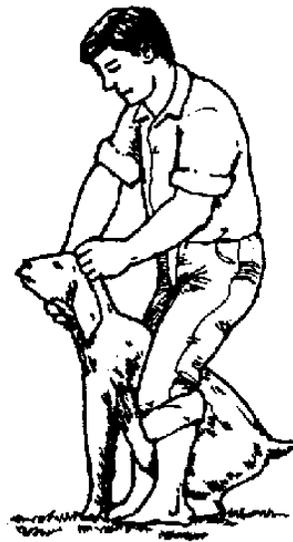


## Goat

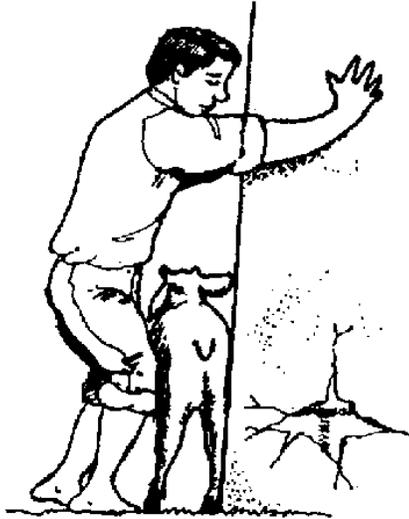
Since goats are smaller than cattle and water buffaloes, they are easier to restrain.



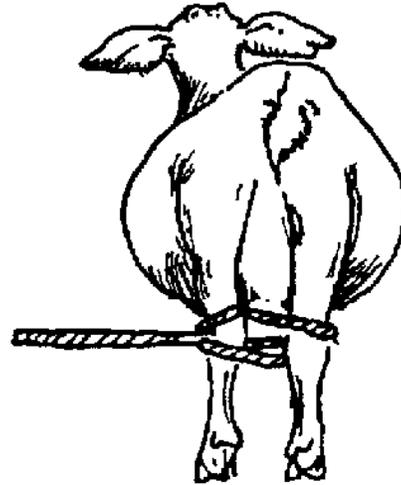
Cradling a kid.



Holding a goat between your knees.



Pinning goat to a solid wall with knees.



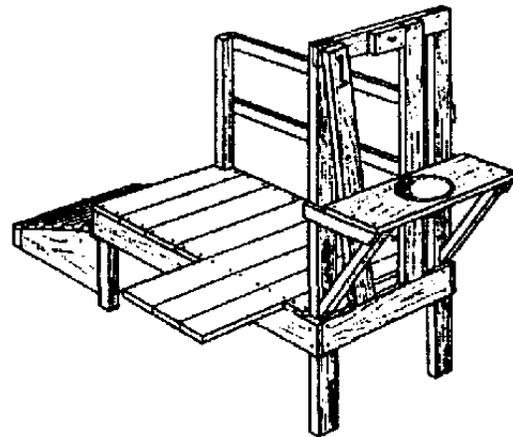
"Figure 8" around the hocks.

## Stanchion

A stanchion is a restraining device that loosely clamps a goat's neck limiting its forward and backward motion while permitting some lateral motion. Stanchions can be made of bamboo or wood. They can also be built to restrain large ruminants.

It can be used in:

- milking;
- dehorning;
- castration;
- hoof trimming; and,
- clipping of hair.



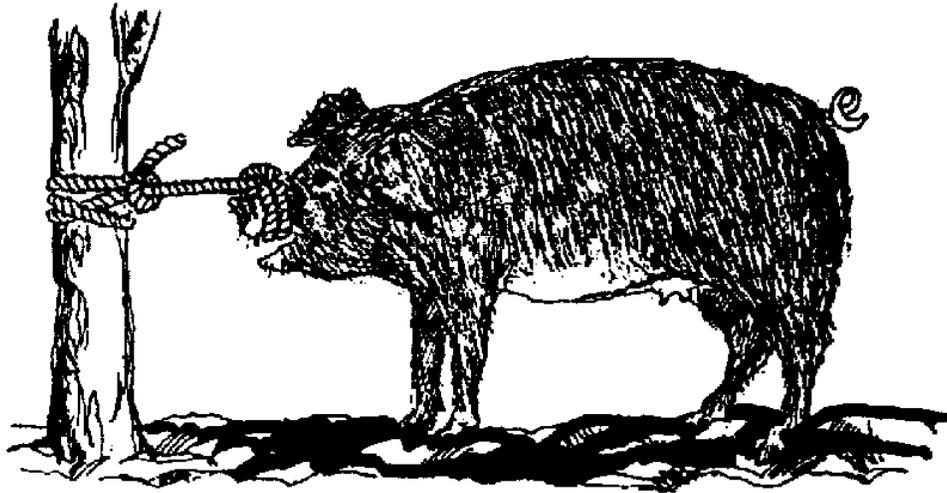
## Pigs

### Slipping a rope around the snout

Procedure

1. Double a rope and slip the loop around the pig's snout, behind the pair of long teeth.

2. Fasten it to a tree or to a sturdy post.



### Restraining smaller pigs

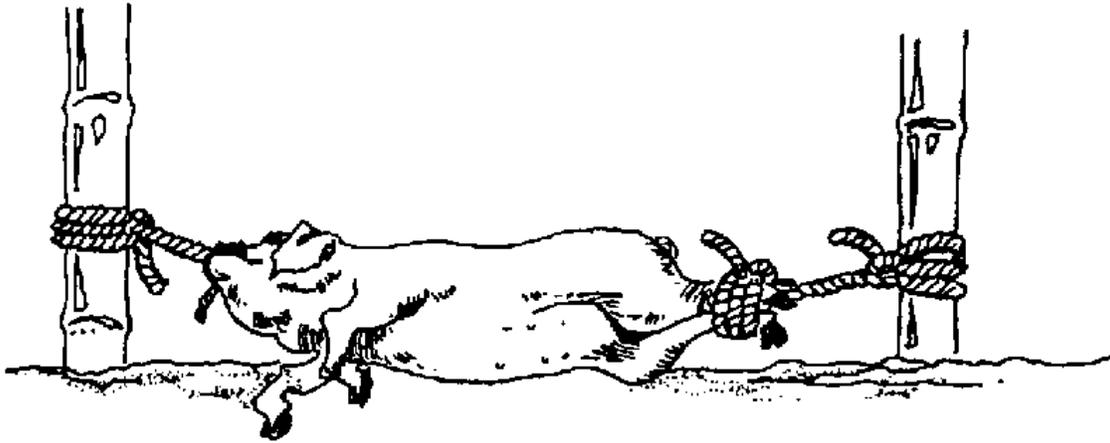
- Hold the animal's hindlegs firmly.
- Press the body between your knees.



## Restraining very large pigs

- Lay the animal on its side.

-Tie the snout and hind legs to posts.

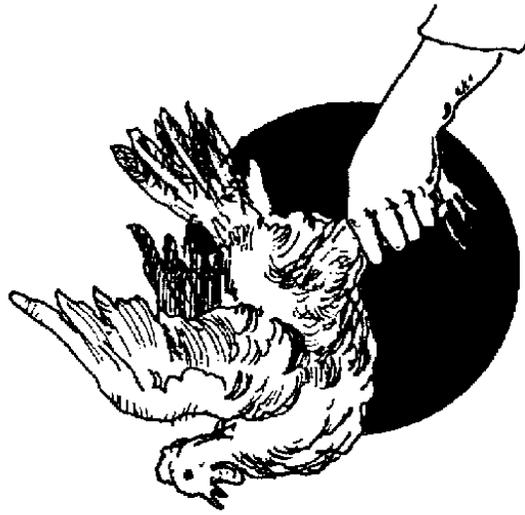


-Tie the animal's snout, then its hindlegs to a post.



## **Poultry**

To restrain poultry, hold the bird by the legs and turn it upside down.



## Physical examination

Physical examinations can help you learn what's wrong with your animal. Start with the simple things. Look for the following:

- unusual behavior;
- unusual appearance of skin and hair;
- unusual odor, discharges;
- difficulty in walking;
- swelling of joints;
- feces staining the rear;
- high temperature.

**Caution:** Do not give any medication before taking the temperature of the animal unless you are sure that the animal is sick.

## How to take the temperature of an animal

The temperature of the animal is taken at the rectum. Take the animal's temperature before administering any medication.

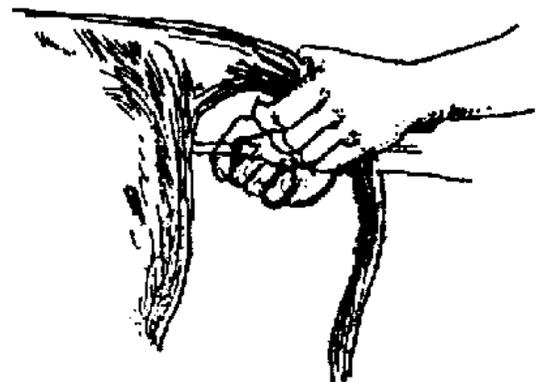
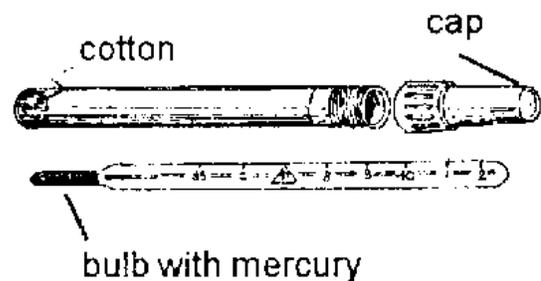
### Procedure

Basic parts of thermometer

1. Shake the thermometer to bring the mercury level below the normal temperature of the animal.
2. For cattle, buffaloes, goats and pigs, hold the tail and insert the thermometer, one to two inches into the rectum, with the mercury bulb first.

**Caution:** Never pull the tail while taking the temperature.

3. Leave the thermometer in position for three minutes. When the bulb with mercury is warmed, the mercury rises.



4. Read after three minutes.
5. After reading, shake the thermometer again so the mercury is shaken back into the bulb.
6. Clean and return the thermometer to its case.

If your reading is two or more degrees centigrade higher than the normal temperature, then your animal is sick. Start medicating the animal with the use of either herbal or western medicine. The temperature should decline within 24 hours. If it continues to rise, medication is not working; hence, there is a need to change the kind of medicine used.

A below-normal temperature indicates shock or a dying animal. A rise of several degrees during the day and return to normal at night may indicate chronic infections.

A disease is acute when it is severe but of short duration. There is a rise in temperature for several days.

#### **Normal body temperature of some animals**

<b>Animal</b>	<b>Normal Temperature</b>	<b>Range (°C)</b>
Cattle	38.5	37.5—39.5
Water buffaloes	39.0	38.5—39.9
Goats	39.3	38.5—40.0
Pigs	39.4	38.8—40.0
Chickens	41.8	40.5—43.0

## Paraveterinary kit

A simple paraveterinary kit should contain the following:

- Veterinary syringe
- Non-disposable needles
- Cotton
- 70<sup>3</sup>/<sub>4</sub> alcohol
- Iodine
- Commonly used antibiotic, like Penicillin
- Thermometer
- Distilled water
- Soap
- Pair of forceps
- Pair of scissors
- Notebook and Pen.



## How to care for a paraveterinary kit

- Keep all medicines out of reach of children.
- Label all medicines.
- Indicate directions for use.
- Note expiration dates.
- Always use sterilized instruments.

## Dosages

### How much medicine should you use?

The amount of medicine to use depends on several factors:

- **The type and stage of the disease.** Generally, more severe cases need more medicine.
- **The species and weight of the animal.** Larger, heavier animals usually need more medicine than small or young ones.
- **The type and composition of the medicine.** Medicines come in different formulations. Plus, the formulation might vary between brands of the same type of medicine and from country to country.

What is important is not the weight of the tablet or the amount of liquid, but the amount of the active ingredient. Some tablets contain 5 mg of the active ingredient, others contain 10 mg or more. You might have to mix some medicines yourself from powder or concentrated solution.

### Active ingredients

The *active ingredient* in a medicine is the substance that does the work of curing or preventing the disease.

In addition to the active ingredient, medicines might also contain water, a binder to make the medicine stick together in a tablet, and other ingredients.

Some medicines have more than one active ingredient (such as penicillin streptomycin, which contains two antibiotics: penicillin and streptomycin). Check to make sure that both can be used for a particular problem.

### Measuring active ingredients

The amount of active ingredient in a medicine is normally measured in milligrams.

For *liquid medicines*, the concentration of active ingredient is normally given in milligrams of the ingredient per milliliter of the medicine (mg/ml).

For *tablets and capsules*, the concentration is normally given in milligrams per tablet or capsule.

Antibiotics and vitamins are sometimes measured in special units, called *International Units* or *IU* instead of milligrams.

## Read the label

Because of these variations, it is not possible to give a firm general rule on how much medicine to use. However, here are some guidelines.

Read the label on the medicine carefully. (If you bought the medicine without a label, ask the store owner for instructions.) Follow the directions on how much medicine to use, how to apply it and how often to repeat the treatment. The section *Reading drug labels* on page 19 gives an example of a typical label.

The medicine label might tell you to apply a certain amount of medicine per kilogram of the animal's body weight. Use the tables on pages 20 to 23 to estimate the bodyweight.

If you are not sure how much medicine to use, or how to apply it, ask someone with more experience. Veterinarians, experienced livestock raisers and the owner of the store where you bought the medicine are good sources of information.

## Applying the wrong amount

It can be dangerous to apply either too little or too much of a medicine.

- Applying *too much* medicine can harm or even kill the animal.
- Applying *too little* medicine can have at least two consequences:
  - It might fail to cure the problem.
  - The disease organisms might become resistant to the medicine. This makes the disease more difficult to treat.

This is especially a problem if you stop treatment early, before the recommended time is over (for instance, if the animal seems to be recovering but still carries the disease bacteria). Some bacteria might survive and be more resistant to the medicine next time.

**Remember:** use only the recommended dosages, and follow the instructions fully.

## Follow the law

Laws in many countries prohibit non-veterinarians from treating animals with certain types of medicine, for example antibiotics. These laws aim to avoid harming animal and human health and to prevent misuse through ignorance.

## Calculating dosages

Some medicine labels tell you very clearly how much medicine to

apply for a certain type of animal.

*Example* (from the medicine label)

Dosage Piglets 1.0-2.0 ml (1st-4th day of life)

Calves 4.0-8.0 ml (1st week of life)

Such cases are easy: just follow the instructions on the label.

### **Calculating dosage based on body weight**

Other labels require you to do some simple arithmetic. You might have to calculate the amount of medicine required from the body weight.

*Example* (from the medicine label)

Dosage 1 ml/10 kg body weight If your animal weighs 90 kg, you should apply 9 ml of the medicine. (See the tables on pages 20 to 23 to estimate the body weight.)

### **Calculating dosage based on active ingredient**

Sometimes, the label tells you only the concentration of active ingredient and the amount of active ingredient to apply per kilogram of bodyweight. You must calculate the amount of medicine to use. This takes a little more arithmetic (a pocket calculator can come in handy). Here's how to do it:

First, measure or estimate the body weight of the animal.

*Example*

A sick cow has a girth of 120 cm.

The table on page 20 shows that this animal weighs about 150 kg.

Calculate the amount of active ingredient you need to use.

*Example*

The medicine label says the dosage is 20 mg/kg body weight/day.

- Animal weighs 150 kg
- Dosage = 20 mg/kg body weight
- $20 \text{ mg/kg} \times 150 \text{ kg} = 300 \text{ mg}$  of the active ingredient.

Check how much active ingredient the medicine contains.

*Example*

The medicine label says that each 5 ml (1 teaspoon) contains 125 mg of dihydrostreptomycin sulfate.

- Therefore, 1 ml of the medicine contains 25 mg of dihydrostreptomycin (the active ingredient).  
Calculate how much medicine contains this amount of active ingredient.

*Example*

- 1 ml contains 25 mg of dihydrostreptomycin.
- You need 300 mg of the active ingredient.
- Therefore you need  $300/25 = 12$  ml of the medicine.

## Common units of measurement

The use of any equipment will depend on:

- Availability
- Simplicity in use
- Familiarity of the user.
- Region-specific.

### Liquid

#### Cups

 = 16 tablespoons

 = 1 pint

 = 1 quart

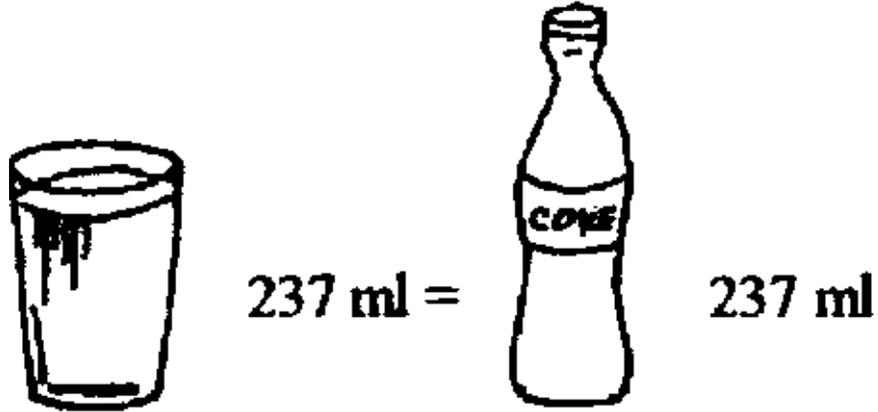
#### Spoons

 = 5 ml

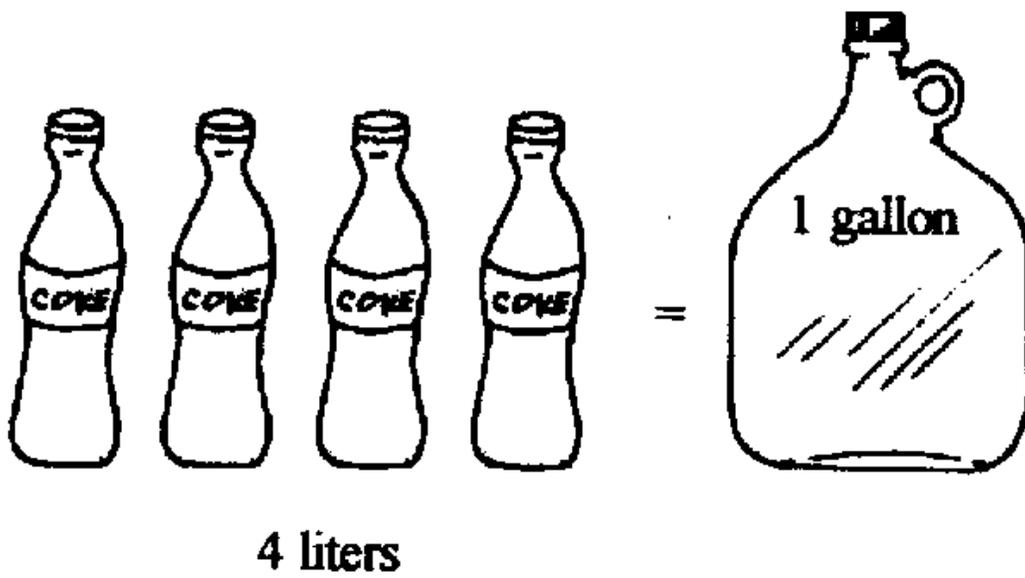
 =  = 15 ml

 =  = 30 ml

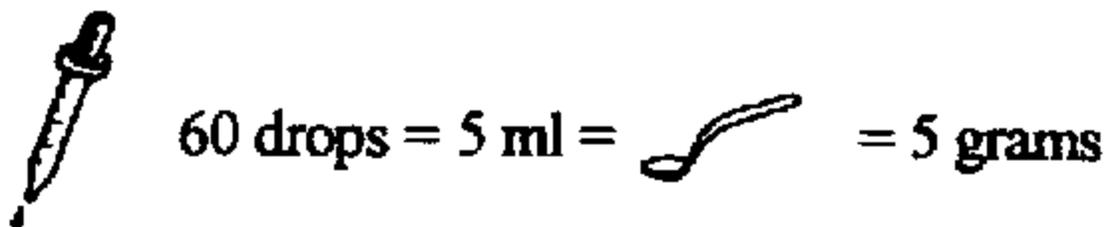
Drinking glass



Bottles



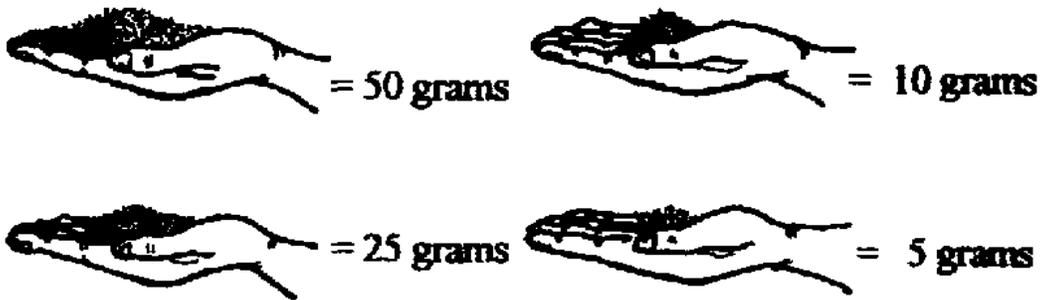
Dropper



# Powder



Weight depends on the size of the ingredients.



# Reading drug labels

## Sample prescription

### TSD Total Spectrum Dewormer Albendazole suspension (3,400 mg In 100 ml)

For most effective treatment of all types of worms in cattle carabao, goat, sheep (For Animal Use Only).

#### Indications:

*States the use of drug*

For the effective control of all stages of roundworms, lungworms, tapeworms and flukes in cattle, carabaos, goats and sheep. It also reduces hatching of worm and fluke eggs. The spectrum of efficacy covers the common destructive parasites.

#### Gastro-intestinal roundworm:

*Bunostomum spp., Capillaris spp., Cooperia spp., Haemonchus spp., Nematodirus spp., Oesophagostomum spp., Strongyloides spp., Trichuris spp, Trichuris spp.*

#### Lungworm:

*Dictyocaulus viviparus*

#### Tapeworm:

*Moniezia spp., baas and segments*

#### Liverflukes:

*Fasciola gigantica, Fasciola hepatica*

#### Formula:

*content*

Each 100 ml contains 3,400 mg of Albendazole.

*States how to use the*

#### Dosage and directions for use:

TDS is given orally as a drench in a single dose. The regular dose

is 15 ml (1 tbsp) per 45 kg bodyweight for cattle and cambsos.

**Precautions:**

1. Strictly ensure dosage of TSD administered with respect bodyweight.
2. Care must be taken when dosing young animals, those that are weak (thin and undernourished).
3. Observe 10 days withdrawal period prior to slaughter for human consumption.
4. Do not deworm lactating animals when milk is used for human consumption.
5. Drench pregnant sheep and goats only after the first month of pregnancy.

KEEP OUT OF REACH OF CHILDREN.  
SHAKE BOTTLE BEFOR USING.  
STORE AT ROOM TEMPERATURE.  
AND AVOID EXPOSURE TO SUNLIGHT

*Reminders*

## Estimating live weight

Estimating your animal's weight is important not only for monitoring growth but also in determining dosages of certain medicines. To estimate live weight you will need a tape measure and a weight chart.

### Large ruminants

Live weight of large ruminants can be estimated by measuring the chest girth with a tape measure or a calibrated string. Approximate weight can be calculated using the table below.



Girth	Weight
(cm)	(kg)
65	35
70	40
75	45
80	50
85	59
90	69
95	79
100	89
105	103
110	118
115	134
120	150

Girth	Weight
(cm)	(kg)
125	170
130	190
135	210
140	230
145	252
150	272
155	295
160	325
165	360
170	392
175	477
180	467

Girth	Weight
(cm)	(kg)
155	508
190	552
195	598
200	648
205	698
210	748
215	798
220	850
225	905
230	969

## 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.



Hearth girth		Body weight	
(in)	(cm)	(lb)	(kg)
10 <sup>3</sup> / <sub>4</sub>	27.3	5	2.3
11 <sup>3</sup> / <sub>4</sub>	28.6	5 <sup>3</sup> / <sub>4</sub>	2.5
11 <sup>3</sup> / <sub>4</sub>	29.9	6	2.7
12 <sup>1</sup> / <sub>4</sub>	31.1	6 <sup>1</sup> / <sub>2</sub>	3
12 <sup>3</sup> / <sub>4</sub>	32.4	7	3.2
13 <sup>1</sup> / <sub>4</sub>	33.7	8	3.6
13 <sup>3</sup> / <sub>4</sub>	34.9	9	4.1
14 <sup>3</sup> / <sub>4</sub>	36.2	10	4.5
14 <sup>3</sup> / <sub>4</sub>	37.5	11	5
15 <sup>1</sup> / <sub>4</sub>	38.7	12	5.4
15 <sup>3</sup> / <sub>4</sub>	40	13	5.9
16 <sup>1</sup> / <sub>4</sub>	41.3	15	6.8
16 <sup>3</sup> / <sub>4</sub>	42.7	17	7.7
17 <sup>3</sup> / <sub>4</sub>	43.8	19	8.6
17 <sup>3</sup> / <sub>4</sub>	45.1	21	9.5
18 <sup>1</sup> / <sub>4</sub>	46.4	23	10.4

Hearth girth		Body weight	
(In)	(cm)	(lb)	(kg)
18 <sup>3</sup> / <sub>4</sub>	47.6	25	11.3
19 <sup>1</sup> / <sub>4</sub>	48.9	27	12.2
19 <sup>3</sup> / <sub>4</sub>	50.2	29	13.2
20 <sup>1</sup> / <sub>4</sub>	51.4	31	14.1
20 <sup>3</sup> / <sub>4</sub>	52.7	33	15
21 <sup>1</sup> / <sub>4</sub>	53.9	35	15.9
21 <sup>3</sup> / <sub>4</sub>	55.3	37	16.8
22 <sup>3</sup> / <sub>4</sub>	56.5	39	17.7
22 <sup>3</sup> / <sub>4</sub>	57.8	42	19.1
23 <sup>3</sup> / <sub>4</sub>	59.1	45	20.4
23 <sup>3</sup> / <sub>4</sub>	60.3	48	21.8
24 <sup>3</sup> / <sub>4</sub>	61.6	51	23.1
24 <sup>3</sup> / <sub>4</sub>	62.9	54	24.5
25 <sup>3</sup> / <sub>4</sub>	64.1	57	25.8
25 <sup>3</sup> / <sub>4</sub>	65.4	60	27.2
26 <sup>3</sup> / <sub>4</sub>	66.7	63	28.6

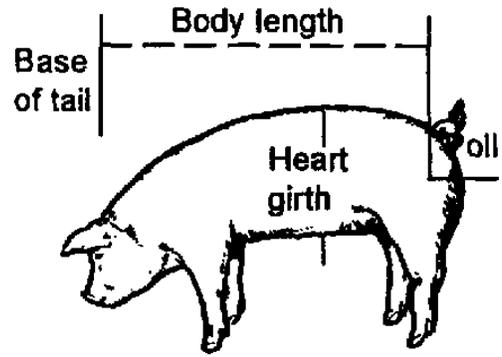
Heart girth		Body weight	
(In)	(cm)	(lb)	(kg)
26 <sup>3</sup> / <sub>4</sub>	67.9	66	29.9
27 <sup>3</sup> / <sub>4</sub>	69.2	69	31.3
27 <sup>3</sup> / <sub>4</sub>	70.5	72	32.7
28 <sup>3</sup> / <sub>4</sub>	71.7	75	34
28 <sup>3</sup> / <sub>4</sub>	73	78	35.4
29 <sup>3</sup> / <sub>4</sub>	74.3	81	36.7
29 <sup>3</sup> / <sub>4</sub>	75.6	84	38.1
30 <sup>3</sup> / <sub>4</sub>	76.8	87	39.5
30 <sup>3</sup> / <sub>4</sub>	78	90	40.8
31 <sup>3</sup> / <sub>4</sub>	79.4	93	42.2
31 <sup>1</sup> / <sub>4</sub>	80.7	97	44
32 <sup>3</sup> / <sub>4</sub>	81.9	101	45.8
32 <sup>3</sup> / <sub>4</sub>	83.2	105	47.6
33 <sup>3</sup> / <sub>4</sub>	84.5	110	49.9
33 <sup>3</sup> / <sub>4</sub>	85.7	115	52.2
34 <sup>3</sup> / <sub>4</sub>	87	120	54.4
34 <sup>3</sup> / <sub>4</sub>	88.3	125	56.7
35 <sup>3</sup> / <sub>4</sub>	89.5	130	59
35 <sup>3</sup> / <sub>4</sub>	90.8	135	61.2
36 <sup>3</sup> / <sub>4</sub>	92.1	140	63.5
36 <sup>3</sup> / <sub>4</sub>	93.4	145	65.8

Heart girth		Body weight	
(In)	(cm)	(lb)	(kg)
37 <sup>3</sup> / <sub>4</sub>	94.6	150	68.1
37 <sup>3</sup> / <sub>4</sub>	95.9	155	70.3
38 <sup>3</sup> / <sub>4</sub>	97.2	160	72.6
38 <sup>3</sup> / <sub>4</sub>	98.4	165	74.8
39 <sup>3</sup> / <sub>4</sub>	99.7	170	77.1
39 <sup>3</sup> / <sub>4</sub>	101	175	79.4
40 <sup>3</sup> / <sub>4</sub>	102.2	180	81.6
40 <sup>3</sup> / <sub>4</sub>	103.5	185	83.9
41 <sup>1</sup> / <sub>4</sub>	104.8	190	86.2
41 <sup>3</sup> / <sub>4</sub>	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 base of the tail) 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 is 110 cm, the swine weighs about 105 kg.

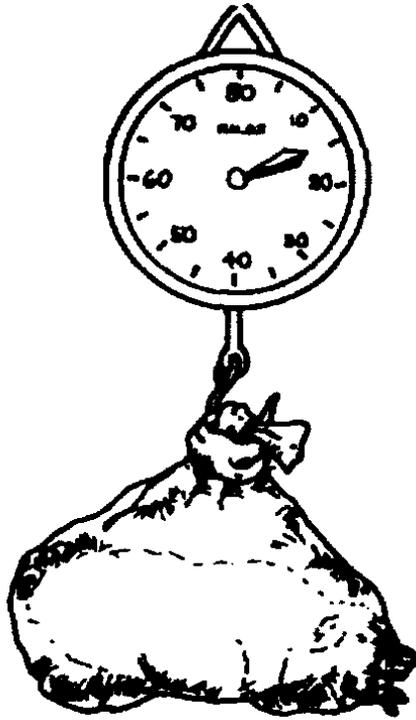


		Heart girth (cm)						
		80	90	100	110	120	130	140
		Body weight (kg)						
		80	36	40	48	60	75	94
Body length (cm)	90	42	47	55	67	82	101	123
	100	50	55	63	75	90	108	130
	110	59	64	72	84	90	117	139
	120	69	74	82	94	109	120	150
	130	80	85	94	105	120	139	161
	140	93	98	106	118	133	151	173
	150	107	111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

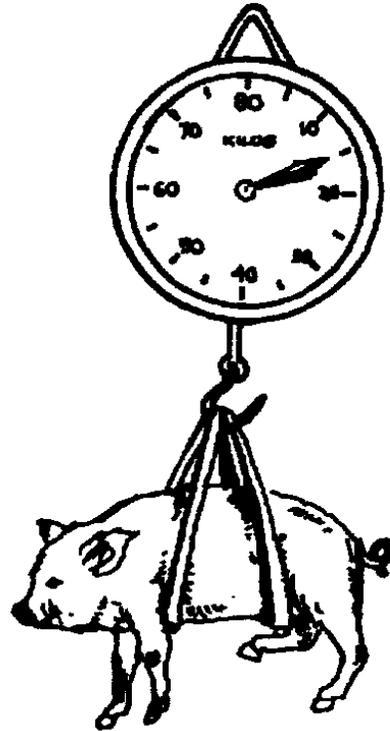
Source: Dayrit (1979)

## Weighing piglets

Usually, piglets are weighed for sale. There are several ways to weigh a piglet.



Place piglets in sack or box and hang from scale.

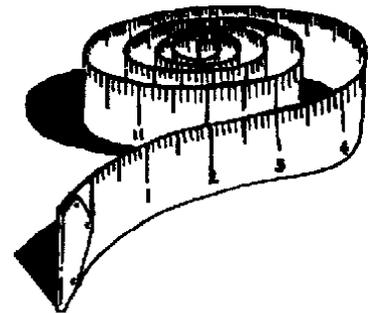


Hang a piglet on a scale, using a strap looped under its belly

## Weighing pigs over 50 kilos

There are two common ways of determining the weight of pigs over 50 kg. These are:

- Weigh the animal on a platform scale.
- Estimate its weight using an ordinary tape measure.



## Administering medicine

Medicine can be given either through the mouth (oral administration) or through injection (parenteral administration).



### Oral administration

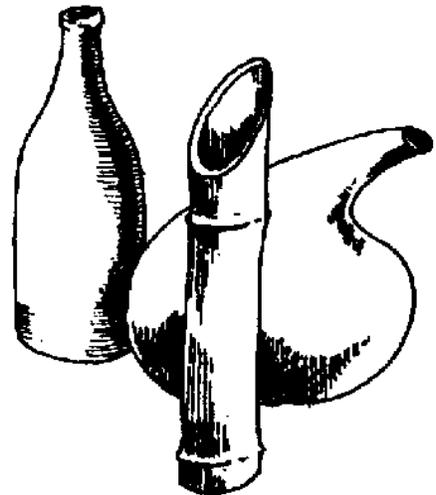
The most common forms of medicine given to livestock and poultry are pills, liquids and powders. Pills include tablets and capsules.

### Drenching

Drenching is the forced pouring of liquid preparations down the throat of an animal. This method can be used for ruminants, pigs and poultry. In all animals, hold the head elevated so that the medicine does not enter the lungs.

You can use:

- bamboo tube
- gourd
- plastic bottle



Procedure

### *Ruminants*

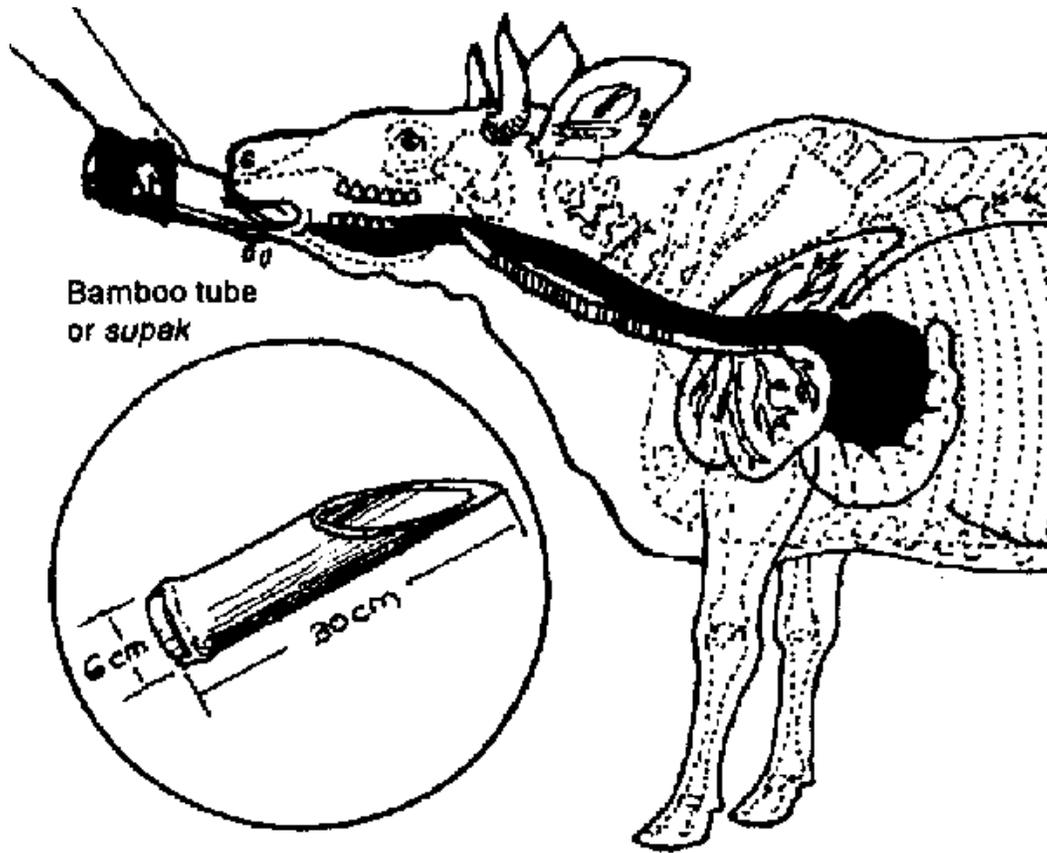
1. Tie the animal to a coconut tree or pole.
2. Elevate the nose until it forms a straight line with the neck.

**Caution:** Do not use a glass bottle. It can break and cause damage to the animal. Do not raise the head too high for it can interfere with swallowing. Do not pour the liquid abruptly into the animal's throat.

3. Allow about a minute for the animal to swallow and breathe before giving succeeding doses. Lower the head immediately when the animal starts to cough.

**Caution:** Do not pull the tongue out of the mouth. It needs to be free for swallowing.

4. Drench the medicine as seen in the illustration.

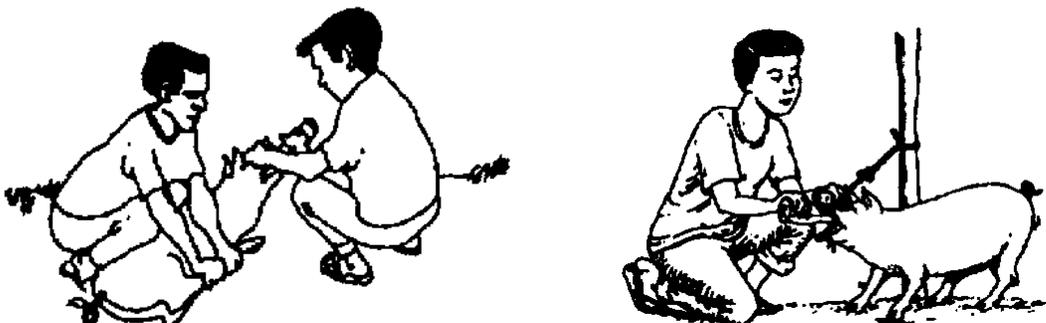


*Pigs*

- Set the animal on its side on the ground or have an assistant and hold it down, while you drench.

**Or**

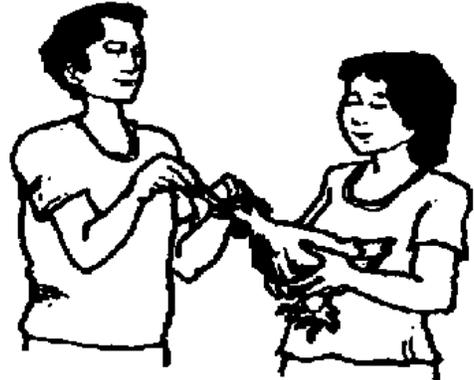
- Tie the upper snout with a piece of rope. Tie the rope to a post; hold it tightly. Drench.



## *Chickens*

Things needed:

- syringe without the needle, or
- dropper, or
- rice or sorghum straw, or
- plastic straw



An assistant may be needed to hold the chicken.

1. Hold the upper beak with the left thumb (if right banded).
2. Push the lower beak with the right index finger.
3. Administer the medicine.



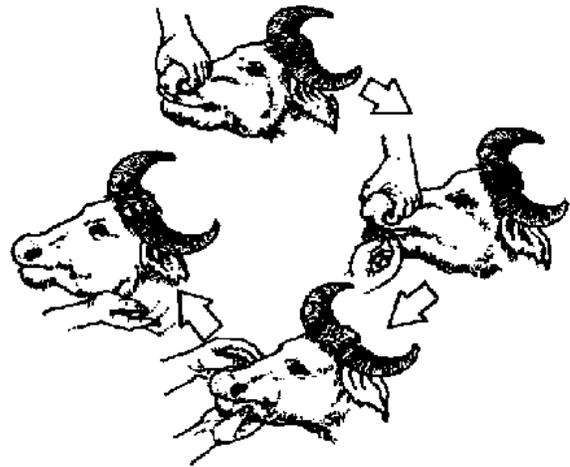
## **Solid medicines**

Application of solid medicine through the mouth.  
Examples of solid medicines are boluses, tablets and capsules.

Procedure

### *Ruminants*

1. Hold the animal by the nostrils.
2. Insert the solid medicine through the side of the mouth.
3. Immediately close the animal's mouth.
4. Slightly massage the throat to ensure that the animal swallows the medicine.



## *Pigs and poultry*

Solid medicines given to pigs and poultry are usually pulverized and mixed with feed or drinking water.

### **Medicated feed or drinking water**

Medicines with objectionable taste and odor are hard to administer. Mask the odor and the taste of the drug in water or feed by adding salt, sugar or molasses.

#### Procedure

1. Mix or sprinkle the remedy thoroughly with the feed or water.
2. Add salt sugar or molasses to the mixture.
3. Divide into portions and feed to animal.

### **Parenteral administration**

Some medicines do not work if they are fed to the animal. These medicines have to be injected, depending on the type of medicine, into the muscle (intramuscular), into the blood (intravenous), or under the skin (subcutaneous).

#### **Instruments/ things needed for injection:**

- syringe.
- needle/s.
- cotton.
- 70<sup>3</sup>/<sub>4</sub> alcohol.

#### **Syringe**

Syringes are used to inject liquid drugs. They are usually scaled in cubic centimeters (cc).

#### **Needle**

#### **Length and size of needles**

The length and size of needle

For large animals

to be used depend on:

1.0 x gauge 16

- the animal's size,

For medium-sized animals

- the animal's age

1.0 x gauge 18

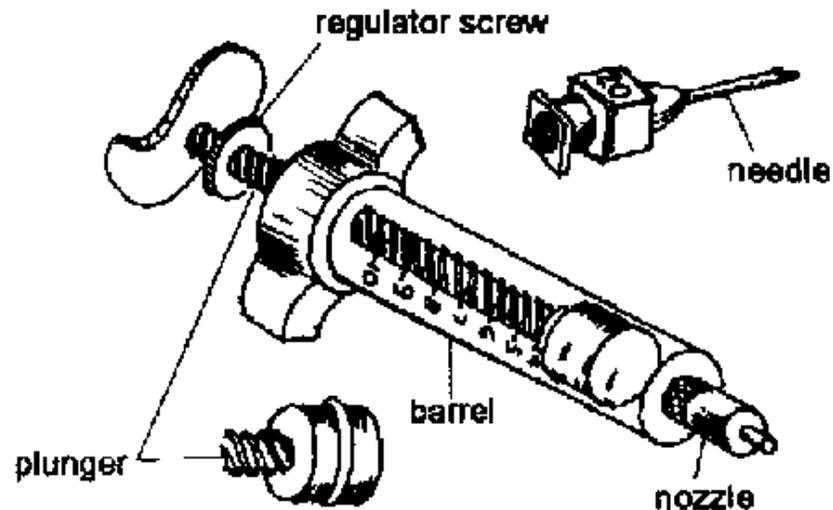
- the body part to be injected.

For small animals

0.5 x gauge 21

Needles can be disposable or non-disposable.

## Parts of a syringe



### Filling a syringe with undiluted drug

1. Shake the bottle containing the drug.

**Caution:** Always rub the stopper of bottles drugs with a clean cloth or cotton moistened with 70¾ alcohol before injecting the needle into it.

2. Force the needle through the stopper of the solvent.

3. Hold the bottle upside down and fill the syringe with solvent or distilled water.

4. Inject the distilled water into another bottle containing the powdered medicine.

5. Shake until the powdered medicine dissolves completely.

6. Fill the syringe with the dissolved medicine.

7. Push the plunger to remove all air from the syringe until liquid starts to come out

8. Inject into the appropriate site of the animal's body.

### Another faster way to fill a syringe with dissolved medicine

1. Fill the barrel of the syringe with air by pulling the plunger outward.

2. Push the needle through the stopper.

3. Hold the bottle upside down.
4. Press some air from the syringe into the bottle.
5. Pull the plunger down and suck in some fluid.
6. Continue to pump in this manner until syringe is full.

**Reminder:** Clean and sterilize the syringe and needle after every use. Keep in a clean place.

### **Cleaning and sterilizing a syringe and needle**

Unclean instruments like syringes, needles and forceps can be carriers of microorganisms from a sick animal to a healthy one. One way to avoid or prevent the spread of microorganisms is through proper cleaning and sterilization.

1. Take the syringe apart.
2. Wash every part in tap water and get rid of any trace of blood or dirt.
3. Boil in water for 20 minutes or soak in 1 part chlorine (chlorox) mixed with 7 parts of water.
4. Allow the solution to enter inside the syringe and needle.
5. Dry them in a clean and sterilized pan.
6. Put needle and syringe together; touch only the base of the needle and the bottom of the plunger.

### **Common ways of giving injection to animals**

#### **Intramuscular injection**

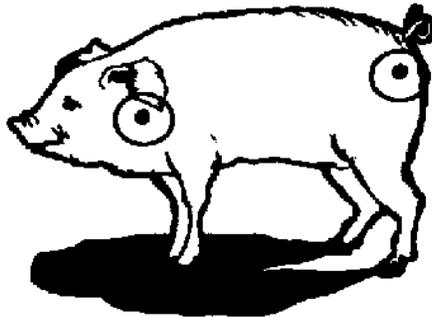
Most drugs are injected into the muscle because it is easily done. Any large muscle tissue like the hip or neck can be used for the injection. Use the recommended length and size of needles. Medicine injected can be oil- or water-based. Medicine injected is rapidly absorbed.

#### **Procedure**

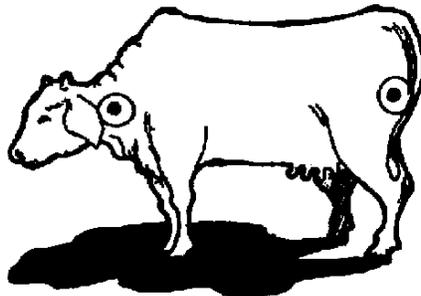
1. Be sure to do the following: —Restrain the animal properly. —Clean and disinfect the injection site.

2. Take the needle off the syringe.
  3. Slap the injection site with the back of the hand.
  4. Plunge the needle quickly into the muscle.
  5. Attach the syringe to the needle. If blood enters the syringe a blood vessel is hit. Do not inject unless you 've hit the right site. Repeat the process until no blood is seen.
  6. Inject the drug.
- While pulling the needle out massage the area. It will aid in the absorption of the medicine and reduce leakage through the puncture in the skin

### **Sites for intramuscular injection**



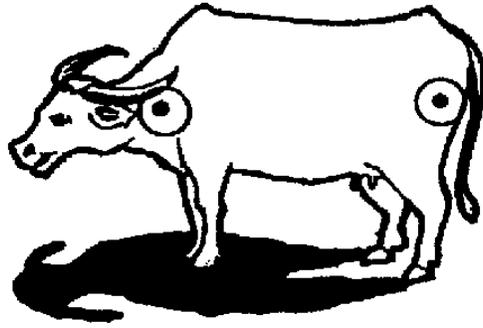
**Pig**



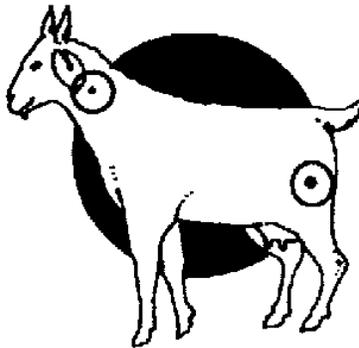
**Cow**



**Chicken**



**Water buffalo**



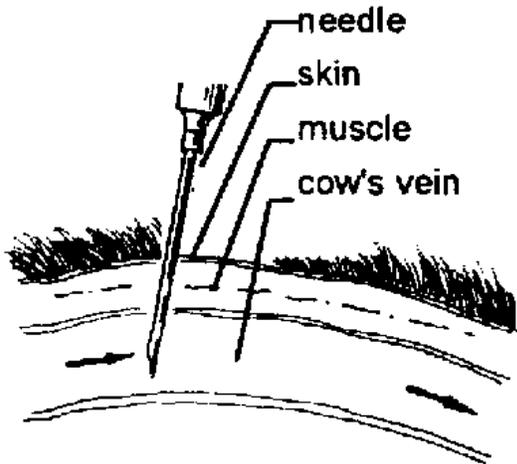
**Goat**

## **Intravenous injection**

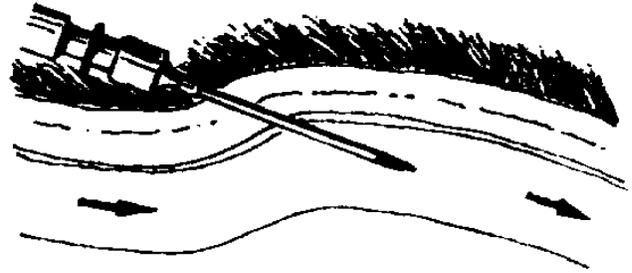
Intravenous injection is done when giving large amounts of drugs. The drug gets into the bloodstream quickly, but this requires extra caution. Only recommended solutions should be injected through the vein. Drugs should be given very slowly. The common sites are the ear and jugular veins.

### **Procedure**

- Apply pressure on the vein to make it swell so you can find it more easily.
- Push the needle into the vein. When the needle enters the vein, blood will enter the syringe through the needle.
- Take pressure off or release the vein.
- Slowly inject the rest of the content of the syringe.
- Once finished, remove the needle.
- Apply pressure on the site with cotton moistened with 70% alcohol.



**WRONG**



**CORRECT**

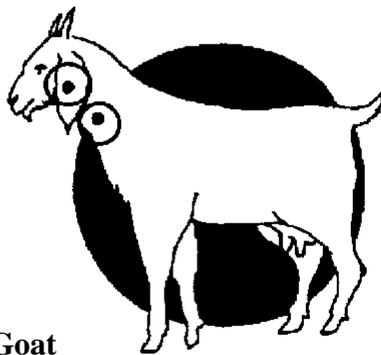
**Common sites for intravenous injection**



**Chicken**



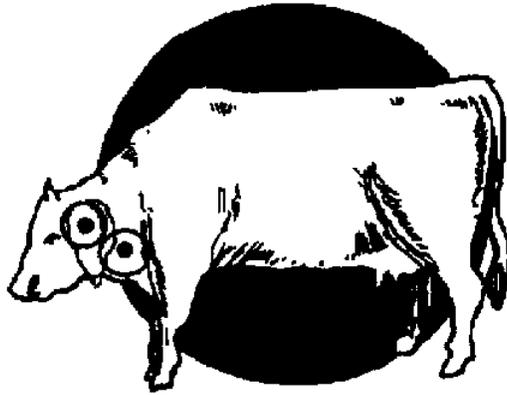
**Pig**



**Goat**



**Water buffalo**



Cow

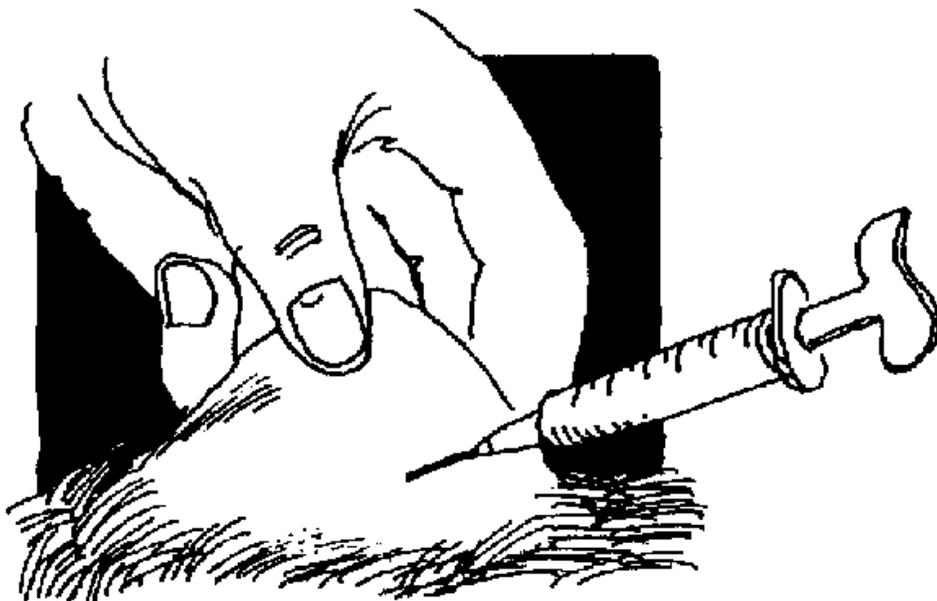
### **Subcutaneous injection (under the skin)**

This injection is given directly under the skin. It is painless and easy to administer. It is used only for certain recommended drugs. Common sites for subcutaneous injection are the neck and flank where there is loose skin. Absorption of drug is slow.

**Reminder:** If large doses are to be given, it is best to inject at several sites.

Procedure for subcutaneous injection

- Choose an area where there is loose skin.
- Raise the loose skin and insert the needle.



- Inject the drug. You should be able to feel the fluid under the skin.

- After injection is completed, massage the site as this aids in the absorption and reduces leakage of the drug.

**Reminder:** For mass vaccination, lifting a skin fold is not necessary provided the right size of the needle is used.

## **Emergency procedures**

An emergency case is any condition which endangers the life of your animal and which requires immediate attention.

### **Guidelines in handling emergency cases**

- Quickly evaluate the condition of the animal and closely monitor it. If possible, transfer the animal to a more comfortable place.
- Be calm in handling the situation.
- Protect the animal from other stresses.
- Continue with specific treatment as needed.
- If you diagnose the disease to be contagious, separate all healthy animals from the sick ones. Do not mix with other herd. Practice quarantine.
- In cases of infectious disease outbreaks, report immediately to the nearest office of the Bureau of Animal Industry.

Disease conditions which require immediate action are:

- Poisoning
- Fresh (bloody) wounds
- Bloat
- Fracture.

### **Poisoning**

Young calves and kids are curious and, therefore, particularly susceptible to poisoning. However, young and old, male and female animals can be poisoned.

#### **Common causes**

- Eating plants sprayed with pesticide.
- Eating toxic plants.

Examples of poisonous plants:

—young shoots of urai/Kulitis (*Amarantus spinosus*);

—bark and seeds of tubang bakod (*Jathrotas curcas*);

—leaves of sapinit (*Lantana camara*);

-fronds of pakong bundok or wild ferns.

- Licking or drinking water contaminated with pesticides.

- Eating old or moldy feeds.

- Eating excessive amounts of salt.

- Overexposure of animals to pesticides used in the treatment of external parasites.

## **Symptoms**

Ruminants

- Salivation

- Abdominal pain

- Bloat

- Diarrhea in arsenic poisoning

- Constipation in lead poisoning

Pigs

- Salivation

- Arched back

- Weakness

- Fever

- Staggering or swaying

- Bleeding from the mouth

- Swollen face

Chicken

Symptoms of poisoning in chicken are seldom seen.

## **Treatment**

Treatment for poisoning will depend on the.

### **External poisoning**

- Immediately bathe the animal. Repeatedly wet the animal until its condition improves.

### **Internal poisoning (except chicken)**

Make the animal vomit by giving any one of the following:

- For adults, tablespoonful of salt placed at the back of the tongue; 1 teaspoonful for young animals.

- Mix 3 tablespoonfuls of salt in 1 liter of water. Drench.

- Bum and pulverize 3 heads of garlic. Mix with 1 cup of water. Drench.

**Caution:** Avoid making the animal vomit if it is having convulsion or is stiff.

- After the animal has vomited, drench 5-10 egg whites.

- Drench the cattle and water buffaloes once with 1 liter of paraffin oil or vegetable oil, e.g., coconut oil.

## **Fresh (bloody) wounds**

Cuts to body tissue may be caused by:

- Injuries from sharp objects.

- Fights and bites.

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

**Remember:** If an animal has a wound, stop the bleeding first before cleaning and treating it.

## **Minor wounds**

Minor or small wounds may heal by themselves. If the wound needs attention:

1. Take a clean cloth or a piece of cotton and a pail of warm, soapy water.
2. Carefully clean the wound from inside-out. Pick out any pieces of dirt or soak the wound long enough to soften any dried blood or serum.
3. Rinse it well with clean water.
4. Pat it dry with clean cloth or cotton.
5. Spray fly repellent, if available.

## **How to control severe external bleeding**

1. Put pressure on the bleeding wound by tying a freshly laundered clean cloth.

2. If severe bleeding continues, tie a tight bandage or clean cloth above the point of bleeding. Loosen the tight bandage every 15-20 minutes. If bleeding does not stop, seek professional help.

### **Stitching a wound**

If the edges of the skin do not come together, the wound should be stitched. Old, dirty and infected wounds should not be dosed. Treat this wound with "AB-C" (refer to treatment of wounds).

#### **Things needed:**

- Ordinary sewing needle
- Thread
- Cotton
- 70¾ alcohol

#### **How to stitch a wound**

1. Boil sewing needle and a thin thread for 20 minutes.

**Tip:** If no timer is available, put some rice grains along with the needle and thread. It takes 20 minutes for rice grains to be cooked.

2. Wash your hands with soap and clean water.

3. Remove the dirt in the wound and wash it with soap and water.

4. Stitch the wound.

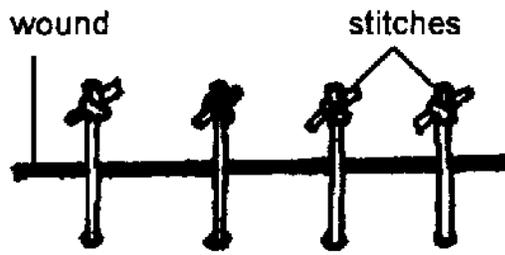
- Make the first stitch in the middle of the wound. This will be the basis for spacing of other sutures to be properly placed at regular intervals.

- Make additional stitches to close the wound. Leave stitches for 10-15 days for complete healing.

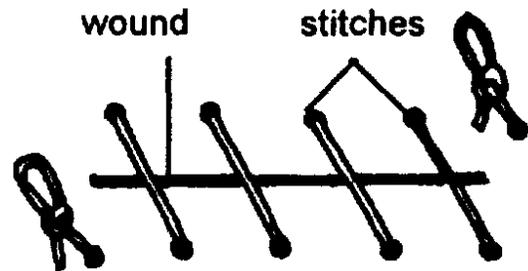
- Remove the thread by cutting it on one side of the knot. Pull the knot.

5. If available, spray fly repellent.

## Some common stitches



Simple interrupted suture



Continuous suture

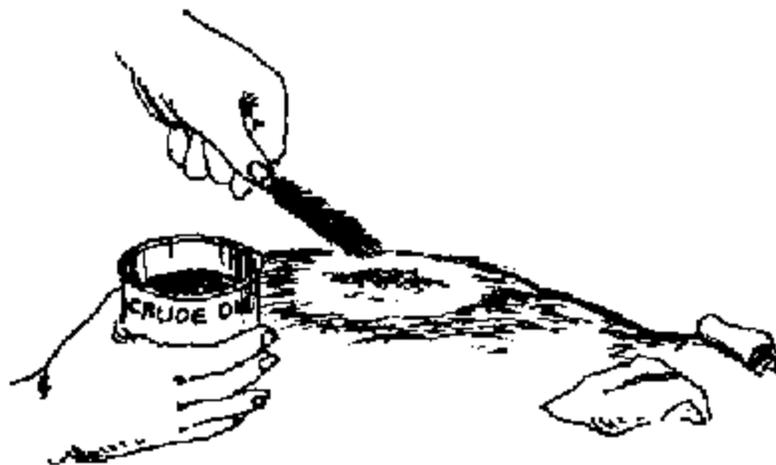


Interrupted sutures for deep wounds

## Indigenous ways of treating minor wounds

- Crude oil

Using a feather, apply crude oil to wounds infested with maggots.



- Patani (*Phaseolus lunatus*)

Pound a handful of leaves. Apply the juice on the maggotinfested wound, three times a day until the wound is healed.

- "A -B- C"

This is used to treat old wounds that do not heal. Collect equal amounts of fresh leaves of avocado (*Persea americana*), banaba (*Anona muricata*) and star apple (*Chrysophyllum cainito*). Boil the leaves in a part of water for 20 minutes. Cool. Use a clean cloth dipped in the water to wash the wound. Do this twice a day until the wound is healed.

Prevention

- Keep the animal areas free of sharp objects.

## **Bloat**

Bloat is the abnormal accumulation of gas in the stomach of animals, especially ruminants. It is common among adult animals.

### **Common causes of bloat**

- Eating too many leguminous younger grasses or grasses that have been overly fertilized with nitrogen.
- Sudden changes to certain types of feed rations.
- Eating ripe fruits and other feedstuffs that ferment easily.
- Eating plastic or foreign matter.
- Constipation.
- Tumors in the neck region.

### **Symptoms**

- Animal's abdomen is enlarged on the left side. It sounds like a drum when you tap it.
- Thick and foamy saliva
- Stops eating or chewing.
- Fast breathing.

- Restlessness.
- Hind legs kicking the abdomen.
- Bluish color of the gums.

### Treatment

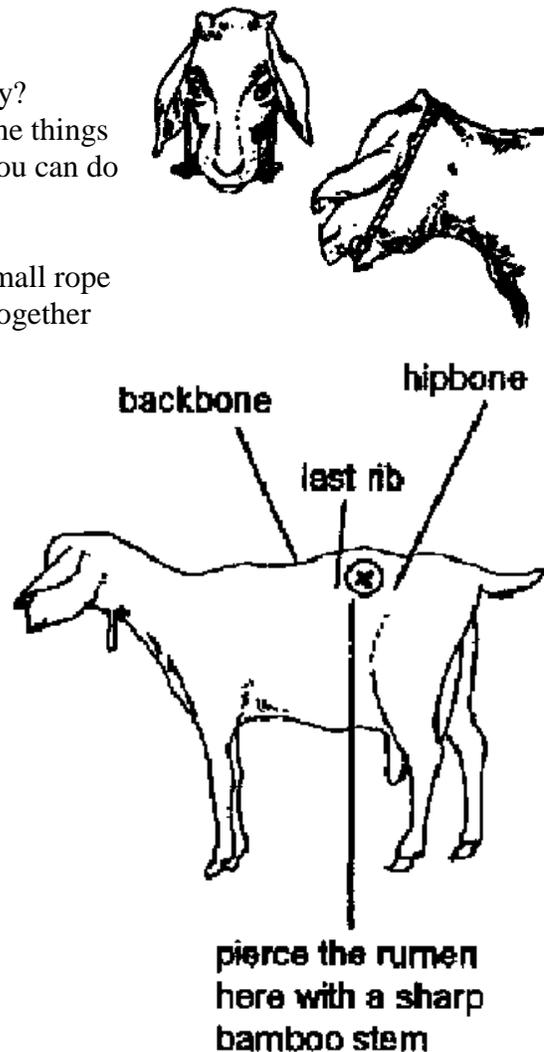
All bloat cases cannot be treated in the same way. Why? Because bloat occurs for several reasons. Here are some things one can do to help save the life of a bloated animal. You can do one or two of the following measures:

- Tie a large stick or rope crosswise in the mouth. A small rope is fastened to each end. The free ends are tied tightly together behind the ears. Draw them well back in the corners of the mouth.
- Keep the animal walking.
- Feed the animal with a pile of chopped banana leaves.
- Knead the left side of the stomach to force the gas out of the rumen.
- In extreme emergency cases, pierce the left side of the animal, between the last rib and the hip bone, four fingers below the backbone.

Bloat that starts suddenly is very dangerous. It can kill the animal within a few hours if not treated. Watch for these symptoms:

- The animal lies down on the ground
- The legs are stiff, spread out when standing.
- The animal refuses to move.
- Green discharge with chewed feed comes out of its nose and mouth.

If you see these symptoms, pierce the left side of the stomach as the last resort. Then, seek professional help.



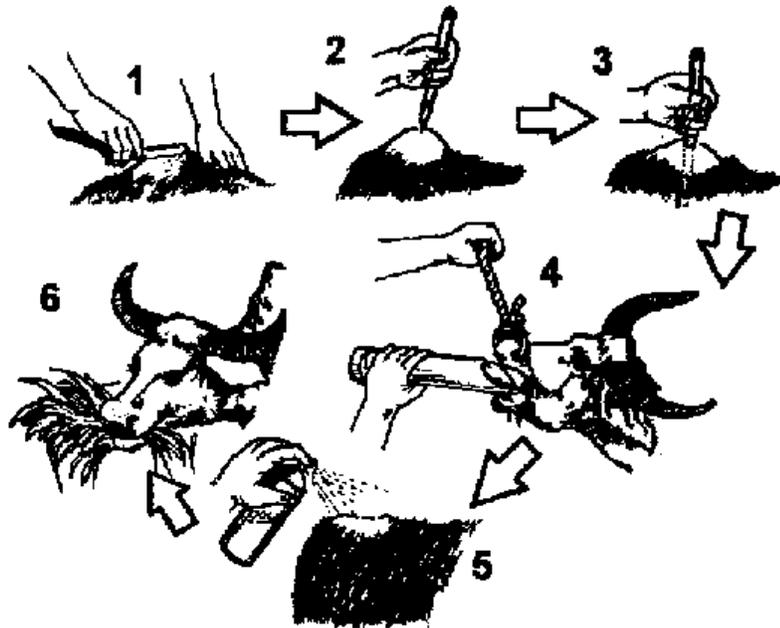
## Piercing the stomach

### Things needed

- Cotton
- 70¾ alcohol
- Bamboo stem hollow inside) or sharp knife.

### Procedure

1. Shave and disinfect the area.
2. Puncture the bloated animal at the highest point (toward the backbone) of the bloat with the use of a bamboo stem or knife.
3. Insert the bamboo stem or knife further to let the gas escape without contaminating the surrounding areas.
4. After the gas is released, drench the animal with any one of these mixtures:
  - Half pint of warm milk and half pint of kerosene Repeat treatment every half hour.
  - Powdered detergent dissolved in water. In severe cases, put a handful of powdered detergent at the back of the tongue.

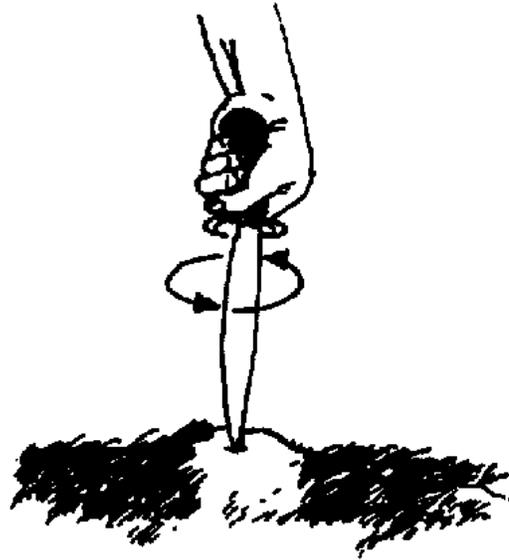


- Vegetable oil. One half pint for young animals and one pint for adult animals.

5. If available, spray a fly repellent on the wound.

6. Reduce the animal's grain and water ration for one week.

If a sharp knife was used in piercing the stomach, do not immediately remove the knife. Instead, turn the knife to enlarge the passage. Once the gas is released, remove the knife and spray a fly repellent on wound. In case the wound is quite big and the content of the stomach spread inside, suture the wound and inject the animal with penicillin.



## **Fracture**

A break or a crack in a bone is called a fracture. It is usually caused by accidents or falls. Unless it is immediately treated, the affected area may become useless. A severely fractured animal which is not used for breeding can be slaughtered immediately for food.

Fractures to some parts, like the nose and ribs, usually heal without treatment.

## **Symptoms**

- Swelling at the fracture site.
- The fracture site is painful to the touch.
- You can hear a crackling sound when you touch or move the fracture.
- The animal has difficulty using the affected part.
- Fractured leg often appears longer than the healthy leg.

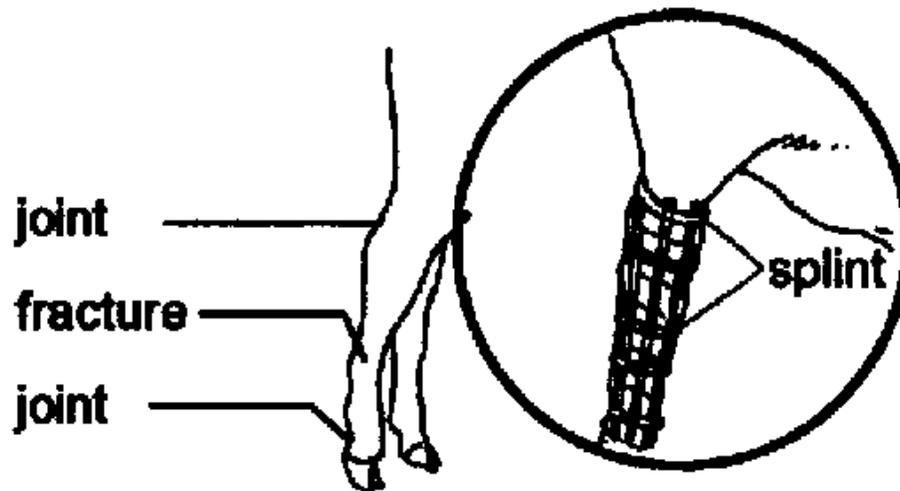
## **Treatment for minor fractures**

1. Position the animal carefully and comfortably.
2. Straighten the fractured leg and align the bones. For larger animals, a rope can be used to pull a broken bone into alignment
3. If possible, shave the affected area. Clean the affected part with clean water. Pat dry.

4. Wrap the entire leg with a clean cloth. Do not make it so tight that the blood circulation is cut off.

Newspapers can also be used to immobilize the animal.

- Pour vegetable oil on the newspaper. Wrap several layers of newspaper around the joint as a cast to keep it from moving. This helps reduce the swelling slightly. Leave on for 1 day.



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

- Tape thin, stiff bamboo sticks on all sides of the padded leg to keep it from bending at the fractured site. Extend the splint above and below the adjacent joints. Normally, four splints are needed around a leg.

- Tie a clean cloth around the leg. It must not be too tight. You should be able to insert your finger under it.

For a young animal, healing occurs in 10 days; while adult animals will take one to two months. Too much movement of the affected limb will delay healing.

### **After treating the fracture**

- Allow animal to rest.

- Give the animal nutritious feed.

- Add a handful of ground limestone or eggshells to every 10 kg of feed.

- If the splint falls off, replace it immediately with a fresh one.

## **When to call a veterinarian**

It is neither practical nor necessary to call a veterinarian for every little thing that goes wrong with your animals. It is sometimes difficult to decide when to ask a veterinarian for help. Call a veterinarian for unusual cases, such as the following:

- Animal has not eaten for more than 24 hours.
- Animal has a temperature of 41 degrees Centigrade or higher.
- Animal shows signs of fits.
- Animal is shaking.
- Animal falls down and is unable to get up again.
- Animal suffers from recurring diarrhea.
- Ongoing weight loss despite a good appetite.
- Animal shows signs of a contagious disease.
- One of your animals dies suddenly.

## Glossary

### A

**Agalactia.** Absence of milk or failure to secrete milk.

**Anemia.** Condition in which the blood is deficient either in quality or quantity.

**Antibiotic.** Germ-killing substance produced by bacteria or mold.

**Antibodies.** Body particles produced in response to infection or administration of vaccines or serum.

**Antiserum.** A serum containing antibodies against a particular disease.

**Antitoxin.** Antibody capable of combining with and neutralizing a specific toxin.

### B

**Bacteria.** One celled organisms belonging to the plant kingdom.

**Barrow.** Male pig castrated before it reaches sexual maturity.

**Bloat.** An abnormal accumulation of gas in the rumen of cattle, water buffaloes and goats.

**Boar.** An uncastrated male pig.

**Buck.** Sexually mature, uncastrated male goat.

**Bull.** Sexually mature, uncastrated male cattle or water buffalo.

### C

**Cast.** Stuck in a downward position.

**Chronic.** A disease with slow onset, long in duration and somewhat resistant to treatment.

**Cockerel.** A male domestic fowl less than one year old.

**Colostrum.** The first milk secreted by the mother after giving birth, characterized by high protein and antibodies.

**Constipation.** Abnormally delayed or infrequent passage of dry, hardened feces.

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

## **D**

**Decoction.** Process of boiling plant parts in water for 15-20 minutes or until the water is reduced to half its original volume.

**Diarrhea** Frequent bowel movements with more or less fluid feces.

**Disease.** Impairment of the normal state of living animal or plant.

**Drench** To give liquid medicine to animals.

## **E**

**Ewe.** Mature female goat or sheep.

## **F**

**Farrowing.** Birthing in pigs.

**Fetus.** An unborn developing animal.

**Fever.** A rise in body temperature above the normal.

**Foot rot.** An infection that attacks the feet of cattle, water buffaloes and goats.

## **G**

**Gilt.** A female pig that has not farrowed or has just farrowed for the first time.

## **H**

**Heifer.** A young cow that has not had a calf.

**Hemorrhage.** Heavy or uncontrolled bleeding.

**Hen.** A female of domestic fowl that is more than one-year old.

**Hock.** Tarsal joint in hind limb of animals.

**Hog cholera** Highly infectious, often fatal, viral disease of pigs.

**Hoof.** A horny covering protecting the foot of certain animals like cattle and goats.

**Hormone.** Chemical substance produced in an organ and transported to another organ to produce a specific effect.

## I

**Immunity.** Capacity to resist a particular disease or level of resistance to a particular infection.

**Impaction.** Lodging of something in a body passage or cavity.

**International unit (IU).** Quantity of antibiotics and vitamins that produces a particular effect agreed upon internationally.

## J

**Jugular veins** Large veins on each side of the neck.

**Lactation.** Secretion of milk by a female mammal.

**Lice.** Small, flat, gray, oval-shaped, blood-sucking insects that are parasitic on warm-blooded animals.

**Ligate.** Tie off.

## M

**Maggots.** Soft-bodied, legless larva of certain flies.

**Mastitis.** Inflammation of the mammary gland.

**Mites.** Small parasites that feed on blood and live in the roosts and litter of poultry.

**Mucus.** Watery secretion of the mucus gland.

**Mummified.** Decayed fetus.

## O

**Oxytocin.** A hormone used to aid new mothers having difficulty letting down their milk or to cause uterine contractions during a difficult birth

## P

**Paralysis.** Loss of normal power of motion.

**Parenteral.** Administering medicines by means other than the digestive system.

**Parasite.** Organism deriving nourishment from a living animal or plant

**Passive immunity.** Resistance gained by the injection of serum containing antibodies or by ingestion of colostrum

**Placenta** Membrane that contains the fetus in the uterus.

**Peritoneum.** Transparent serous membrane that lines the cavity of the abdomen

**Predisposing cause.** Anything which renders an animal liable to an attack of disease.

**Prescription.** A written direction for the preparation and use of medicine.

**Pullet.** A hen less than a year old.

## Q

**Quarantine.** To isolate an animal

## R

**Rale.** A soft crackling sound heard in the lungs. Not normally heard in healthy lungs

**Regurgitate.** To return the contents of the rumen to the mouth for further mastication.

**Rooster.** A cock; an adult male fowl.

**Ruminants.** Animals that chew cud, such as cattle, water buffaloes, sheep and goats.

## S

**Scours.** Severe diarrhea in farm animals.

**Scrotum..** External sac or pouch containing the testicles.

**Sedative.** Medicine that lessens pain or agitation.

**Serum.** Watery portion of blood left after clotting.

**Soluble.** Capable of changing form or changing into solution.

**Sow.** A female pig that has farrowed at least once.

**Stanchion.** A device that fits loosely around an animal's neck and limits forward and backward motion.

**Stillbirth** Viable fetus that is born dead.

**Suture.** To sew; material used for closing wounds.

**Susceptible.** Non-resistant.

**Symptom.** Sign or signal.

**Syringe.** An instrument used to inject fluid into or remove fluid from the body.

**Third eyelid.** White to pinkish membrane found at the inner corner of the eye.

**Ticks.** Blood-sucking, disease-carrying, soft-bodied, parasitic insects that attach to warm-blooded animals.

**Tunic.** White, tough membrane surrounding the testicle.

## U

**Udder.** Mammary gland.

**Uterus.** Muscular, fleshy pouch where fetus grows in the female.

## V

**Vaccine.** A suspension of live, killed or weakened virus or bacteria administered to healthy animals to build up immunity to disease.

**Vesicle.** Blister-like sac containing fluid.

**Virus.** Microorganism that reproduces itself and obtains its energy from the body cells it enters; there are no completely effective treatments for any viral infection.

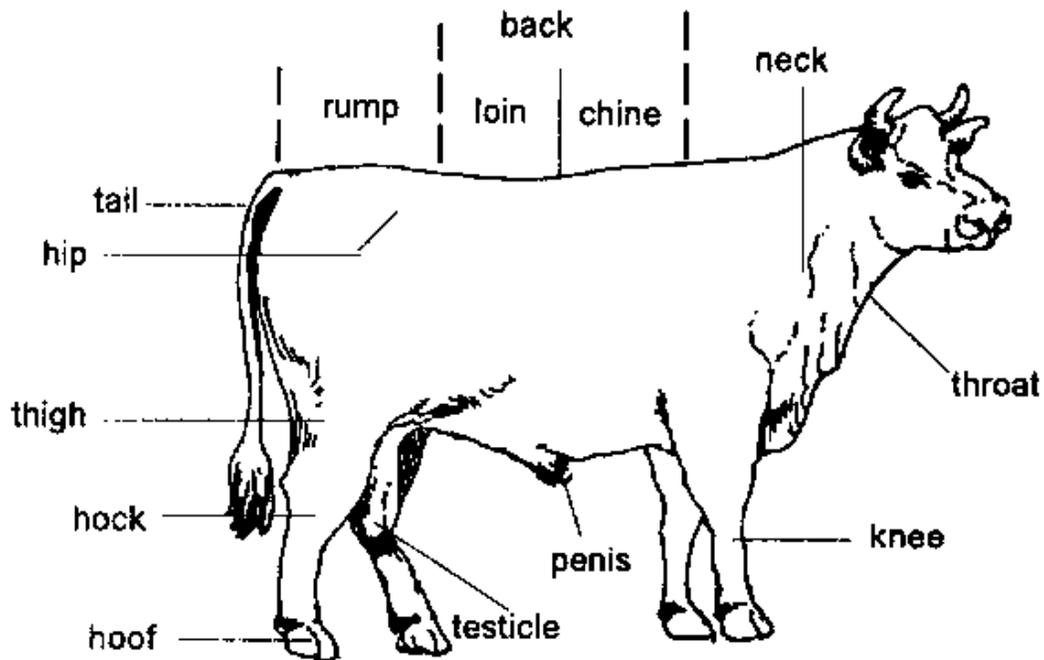
## Z

**Zoonosis.** Disease transmissible from animal to human.

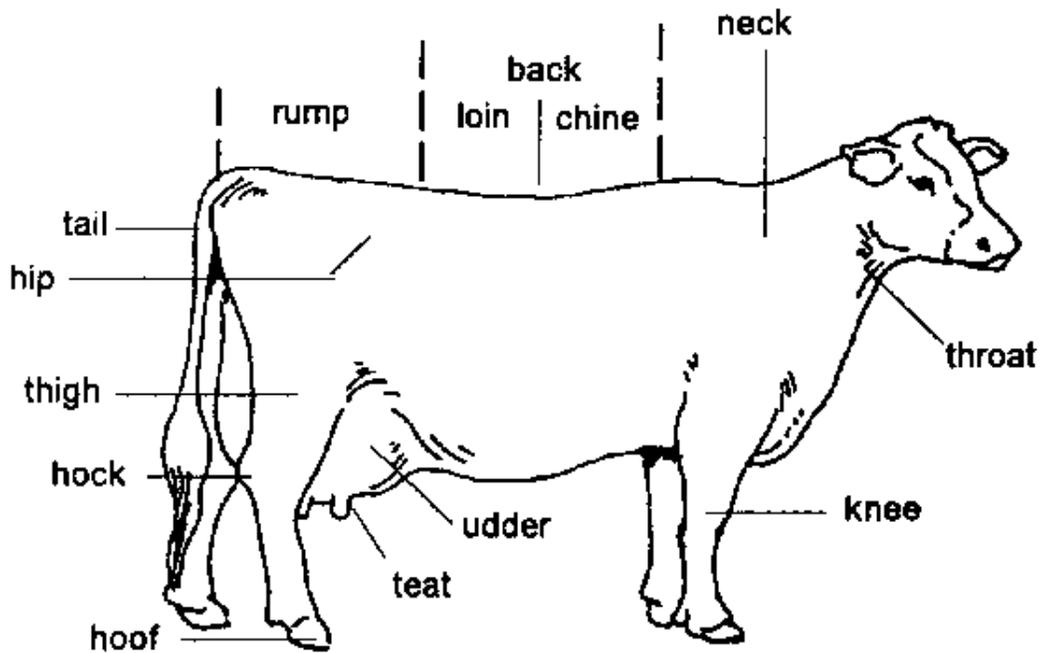
# Basic Husbandry Practices and Veterinary Care

## Body parts of farm animals

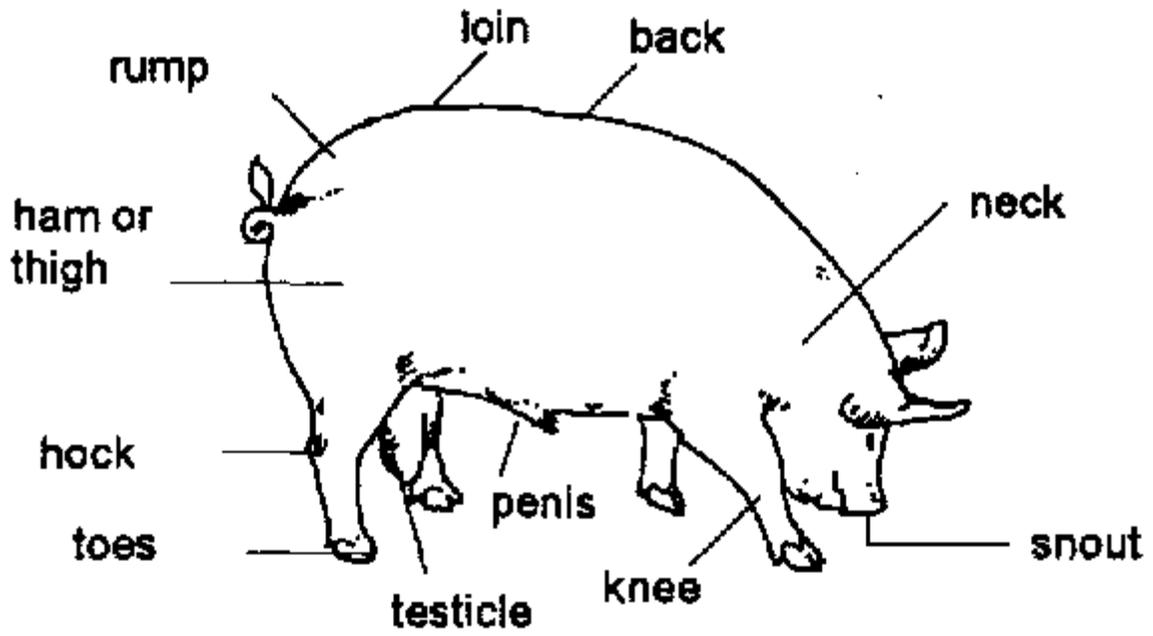
### Bull



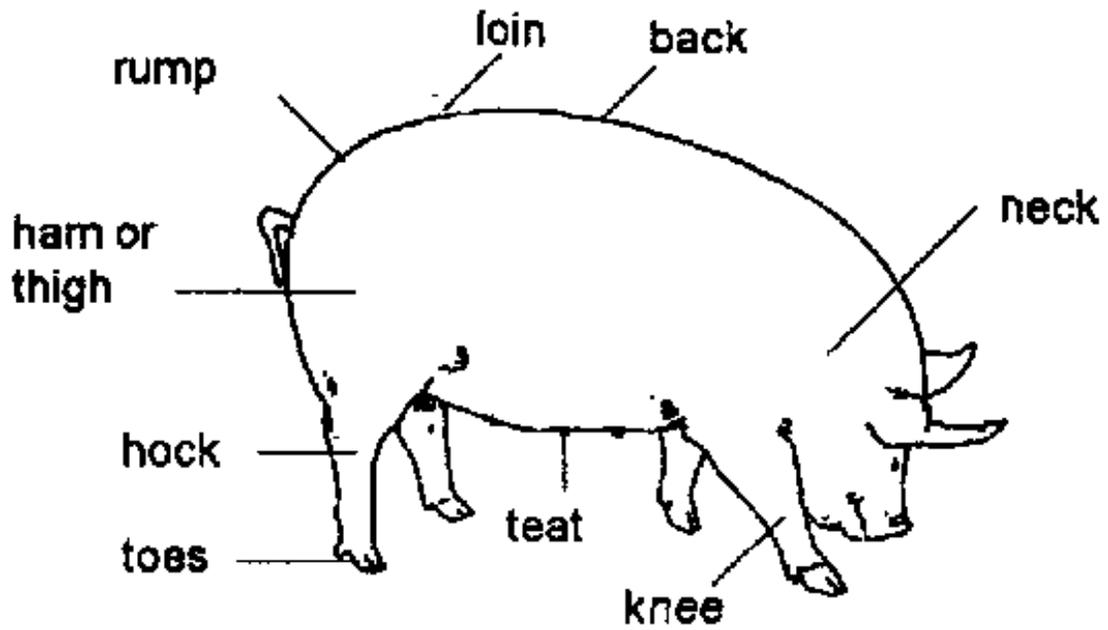
### Cow



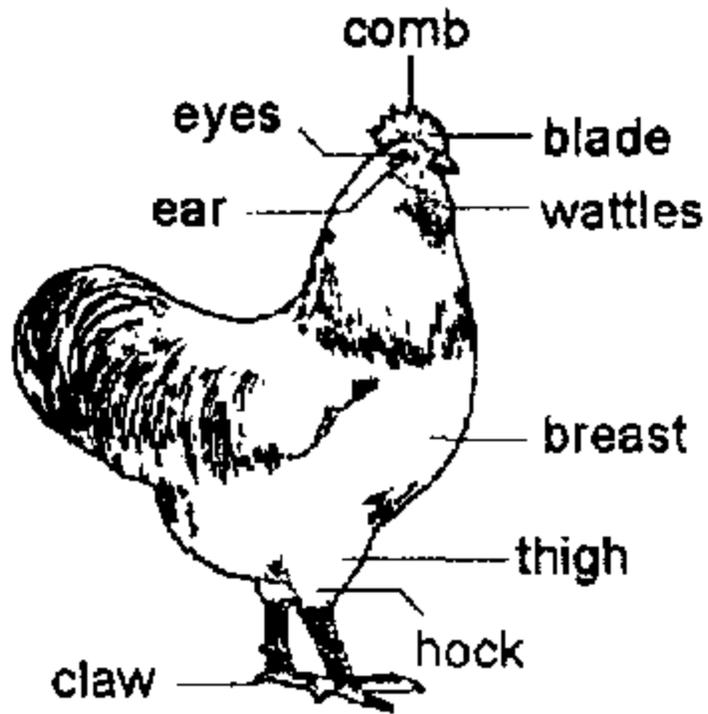
Boar



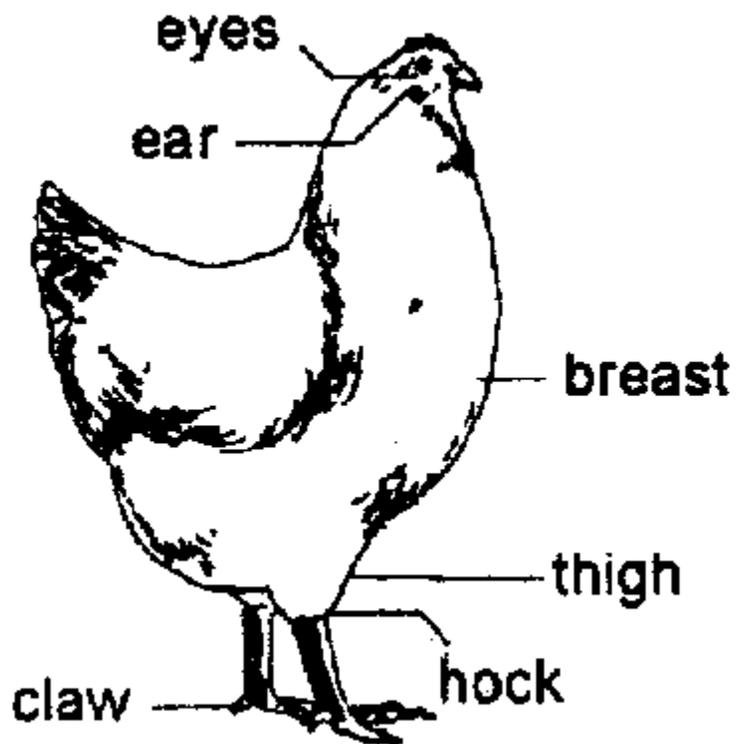
Sow



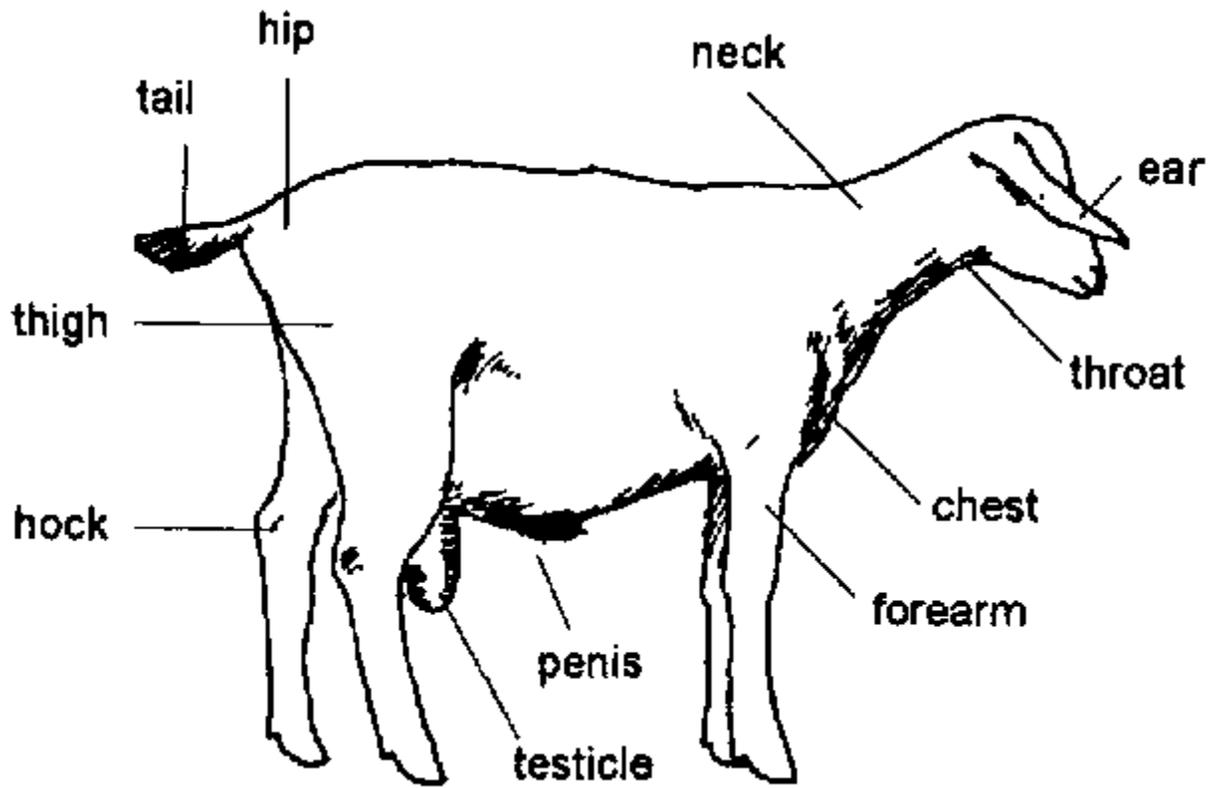
Rooster



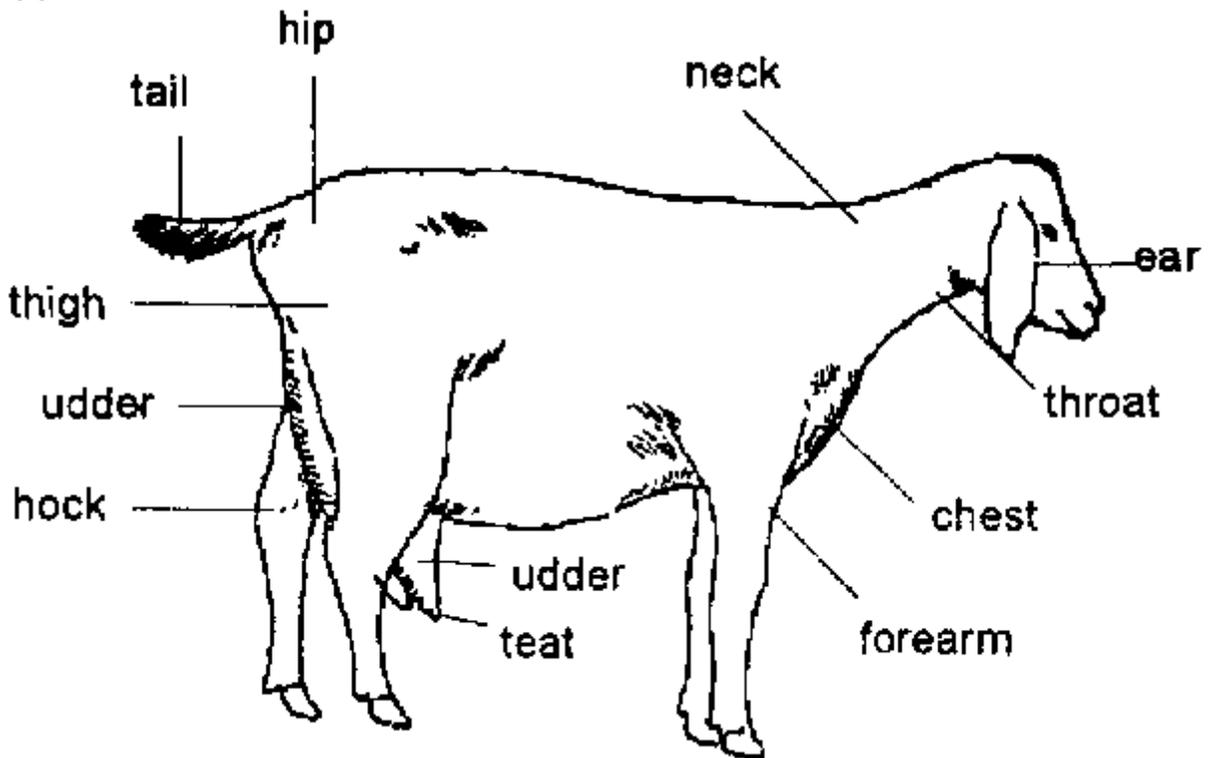
Hen



**Buck**



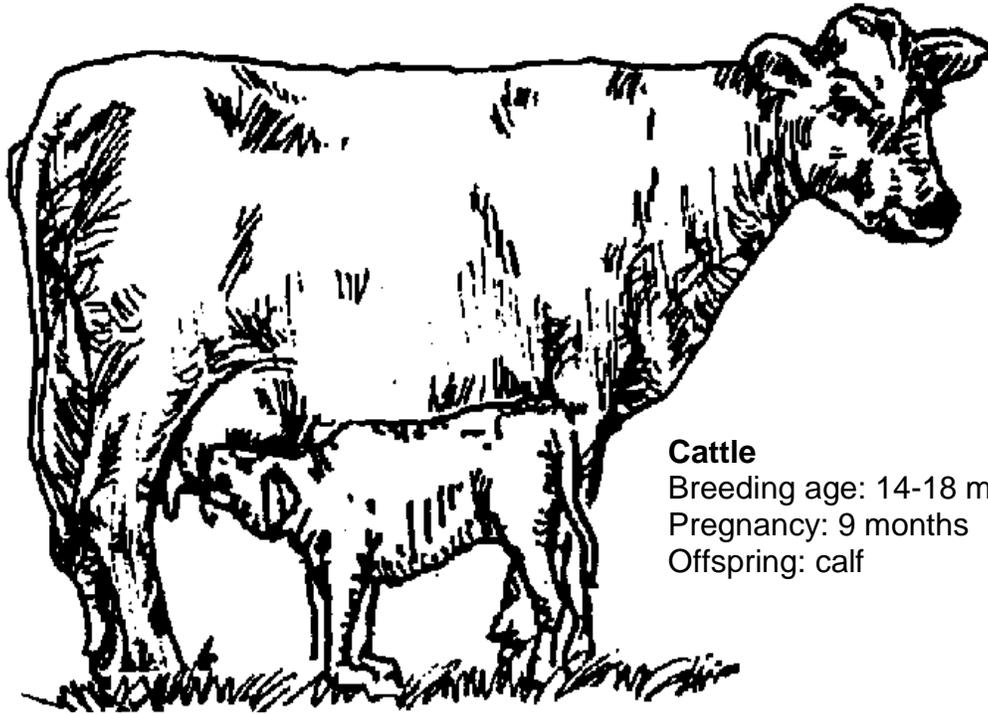
**Doe**



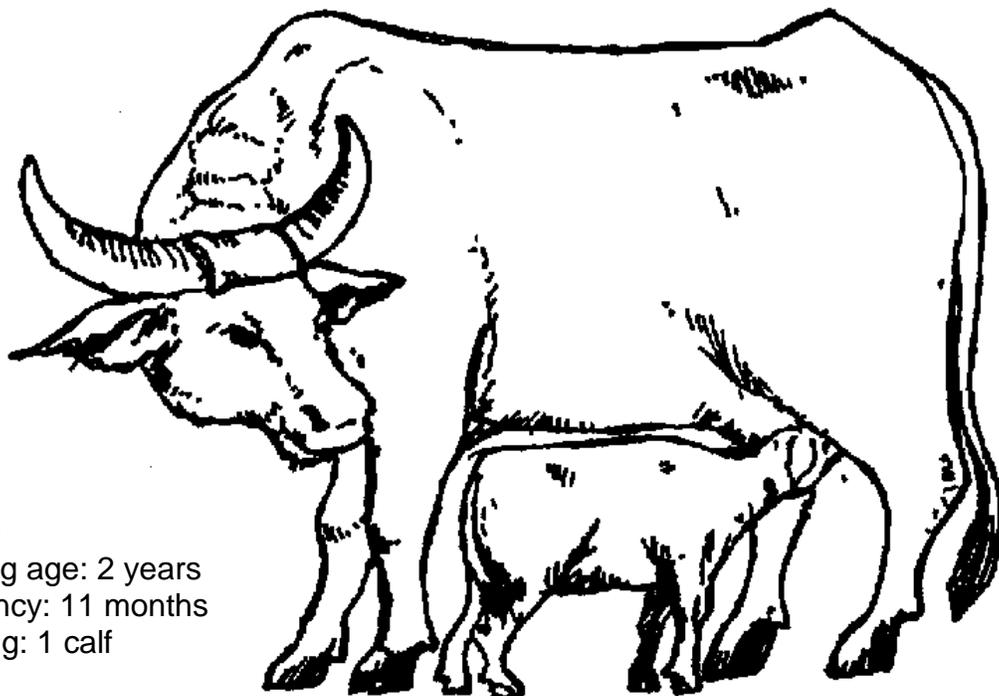
## Names of farm animals

	<b>Cattle</b>	<b>Buffalo</b>
<b>Newly born</b>	Calf	Caracalf
<b>Young male</b>	Bullcalf	Bullcalf
<b>Young female</b>	Heifer	Heifer
<b>Adult male</b>	Bull	Bull
<b>Adult female</b>	Cow	Caracow
<b>Castrated male</b>	Steer	Steer
	<b>Goat</b>	<b>Pig</b>
<b>Newly born</b>	Kid	Suckling
<b>Young male</b>	Buck	Shote
<b>Young female</b>	Doeling	Gilt
<b>Adult male</b>	Buck	Boar
<b>Adult female</b>	Doe	Sow
<b>Castrated male</b>	Wether	Barrow
	<b>Chicken</b>	
<b>Newly born</b>	Chick	
<b>Young male</b>	Cockerel	
<b>Young female</b>	Pullet	
<b>Adult male</b>	Rooster	
<b>Adult female</b>	Hen	

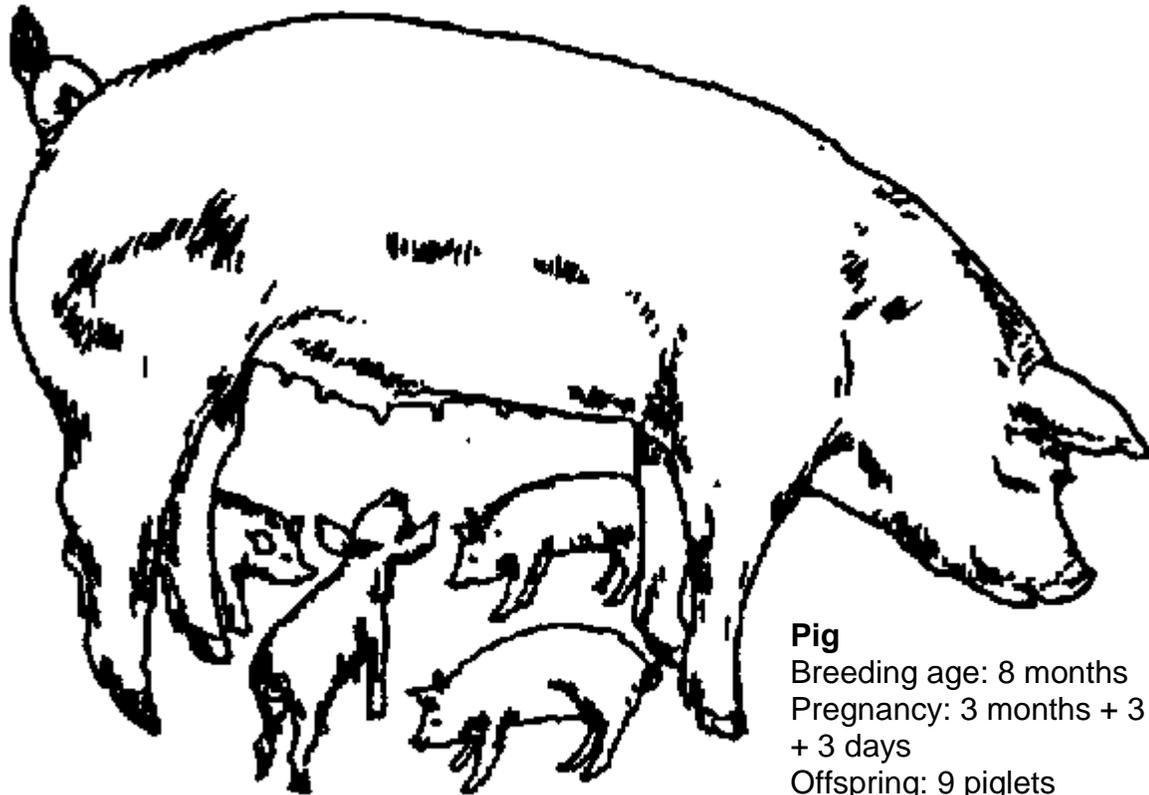
## Farm animals and their young



**Cattle**  
Breeding age: 14-18 months  
Pregnancy: 9 months  
Offspring: calf



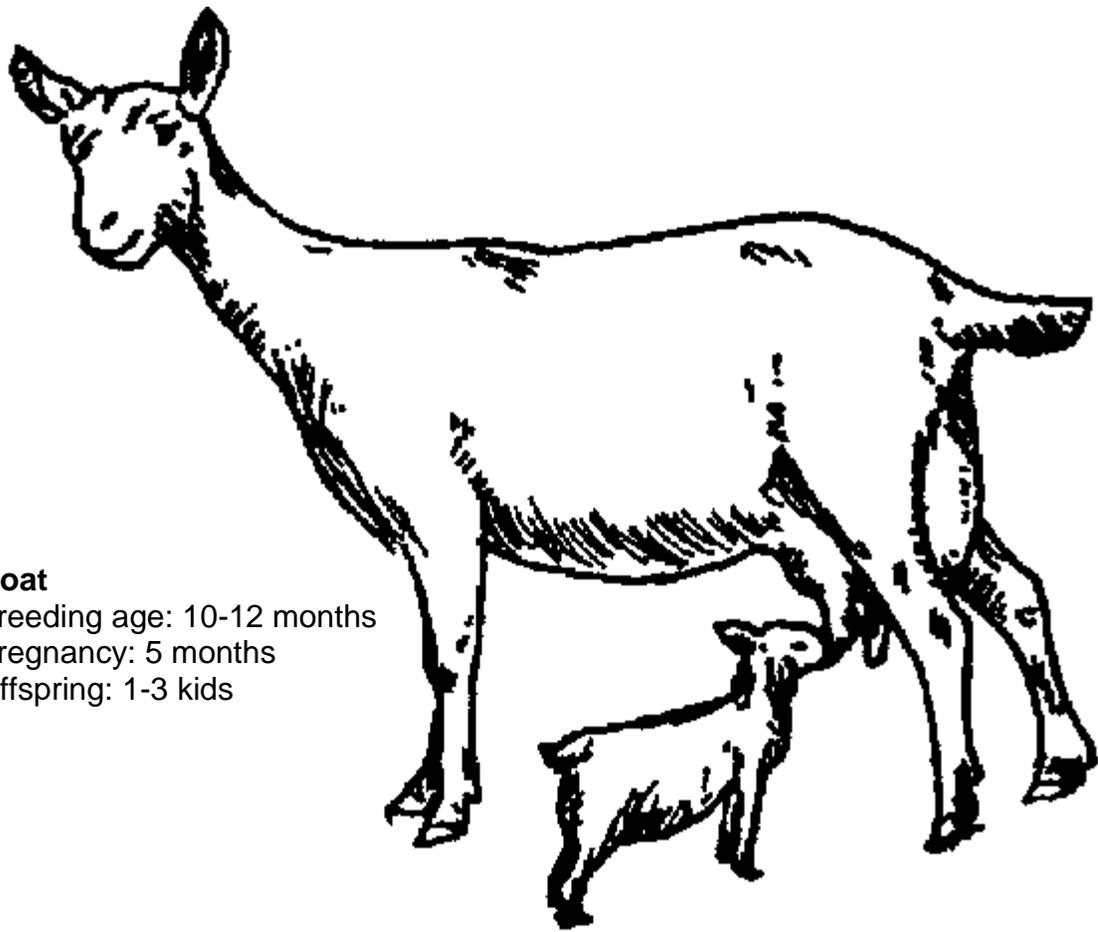
**Buffalo**  
Breeding age: 2 years  
Pregnancy: 11 months  
Offspring: 1 calf



**Pig**  
Breeding age: 8 months  
Pregnancy: 3 months + 3 weeks  
+ 3 days  
Offspring: 9 piglets



**Chicken**  
Breeding age: 44 months  
Incubation: 21 days  
ffspring: 10-15 chicks



**Goat**

Breeding age: 10-12 months

Pregnancy: 5 months

Offspring: 1-3 kids

## Livestock production

		<b>Cattle</b>	<b>Buffalo*</b>	<b>Goat</b>	<b>Pig</b>
FEMALES	<b>Sexual maturity**</b>	9 mos	1 year +	6-8 mos	5-6 mos
	<b>Breeding age**</b>	14-18 mos	2 years +	10-12 mos	8 mos
	<b>Heat cycle</b>	about 3 weeks	about 3 weeks	about 3 weeks	about 3 weeks
	<b>Duration of heat</b>	up to 1 day	up to 1 day	1-3 days	1-2 days
	<b>Duration of pregnancy</b>	9 months	11 months	5 months	3 months, 3 weeks, 3 days
	<b>No. of offspring</b>	1 calf	1 calf	1-3 kids	9 piglets
	<b>Milk production</b>	Varies: Local breeds up to 8 kg per day for about 10 months, exotic breeds can produce much more.	1-3 kg per day for about 8 months	0.5 liters per day for about 3 months	30 days
MALES & FEMALES	<b>Weaning age</b>	Depends on management system. Important is that newborn animals are given colostrum (the first milk of a mother) as soon as possible after birth.			
MALES	<b>Castration age</b>	150 days	150 days	30-60 days	14 days

\*Figures in this column refer to the Philippine carabao.

\*\*Figures in this table are approximate only. Actual figures may depend on the breed, the individual animal, feeding and other factors.

## Reproduction of poultry

	<b>Age of breeding laying eggs</b>	<b>Hatching period of eggs</b>
<b>Chicken</b>	Months	21 days
<b>Duck</b>	5-7 months	28 days
<b>Goose</b>	5-7 months	29-31 days
<b>Turkey</b>	5-7 months	28 days

# **Breeding**

## **Cow/Caracow**

A heifer should not be bred before she reaches 18 months in order for her to make the best cow. For first calving, she should not be bred to a bull of her own breed. This is to avoid difficult birthing.

## **Heat cycle**

Most cows come into heat every 18 to 24 days all year round. Most cows are in heat for one whole day. The best time to breed is either near the end of the heat cycle.

A heifer or cow is in heat if she shows the following signs:

- String of clear mucus on her tail or hindquarters.
- Trying to ride other animals.
- Wandering around.
- Bawling or crying.

## **Pregnancy examination**

At about five or six months after the cow has been last bred, make a fist and gently but firmly bump it into the cow's right side, in the flank. If the animal is pregnant, you will be able to feel a hard lump move. This is the calf. After six months, you can no longer feel the calf in this way because the calf is now located further down the abdominal cavity.

## **Drying up the cow/caracow**

If you are milking the cow, you should stop milking her at six to eight weeks before she is due to give birth.

## **Taking care of the pregnant cow/caracow**

Proper feeding is important for the pregnant cow. A good ration consists of legumes, silage and grain. A pregnant cow also needs salt, water and minerals. See section on Nutrition for details.

## **Doe**

### **Heat detection**

Does are in heat when they show the following signs:

- Bleating
- Running back and forth.
- Wagging their tails often.
- Riding other does or allowing themselves to be ridden.
- Drop in milk production.

The doe's heat lasts from one to three days.

## **Pregnancy**

Be sure to exercise the does daily. Approximately 5 months (150 days) after breeding, the does will kid.

## **Pigs**

### **Heat detection**

Common signs of heat:

- The sow's vulva is swollen and reddish.
- Watery vaginal discharge.
- Sow is restless.
- During the early phase of heat, sow mounts other pigs. At the peak of heat, sow allows herself to be mounted by other pigs.
- Sow stands still when she feels pressure on her back.

Heat lasts about 24 hours. When not pregnant, sow exhibits heat every 21 days.

### **How to induce heat**

Some sows do not come to heat at the expected time. Here are some methods used by farmers to induce heat:

- Gently stroke the sow's vulva with a freshly cut papaya stalk every morning for 3-5 days.
- Spray the sow's pen with boar's urine every morning for 3-5 days.
- Bring the sow to the boar or place the sow in a pen next to the boar.

## **Mating**

A sow should be mated twice, preferably late in the afternoon of the first day of heat and early in the morning of the second day.

Do not mate animals during the hot time of the day.

## **Assistance**

Young boars often do not know the proper way to mount a sow. Assist the boar to avoid injury to boar and sow.

## **Pregnancy detection**

If a sow does not show signs of heat three weeks after mating, then she is pregnant.

## **Care during pregnancy**

- Separate pregnant sows from other animals.
- Protect pregnant sows from high temperatures.
- Avoid transporting pregnant sows.
- Provide ample fresh water.
- Provide space for sow to walk in.
- Provide a farrowing pen for each pregnant sow.
- Gradually reduce concentrate ration one week before farrowing and or weaning. (See Nutrition.)
- If sow is constipated, feed her with sweet potato leaves.

## **Dates of breeding and birthing**

### **Cow**

<b>Date of breeding</b>		<b>Approximate date of birthing</b>		<b>Date of breeding</b>		<b>Approximate date of birthing</b>	
Jan	1	Oct	10	Jul	16	Apr	24

	8		17		23	May	1
	15		24		30		8
	22		31	Aug	6		15
	29	Nov	7		13		22
Feb	5		14		20		29
	12		21		27	Jun	5
	9		28	Sep	3		12
	26	Dec	5		10		19
Mar	5		12		17		26
	12		19		24	Jul	3
	19		26	Oct	1		10
	26	Jan	2		8		17
Apr	2		9		15		24
	9		16		22		31
	16		23		29	Aug	7
	23		30	Nov	5		14
	30	Feb	6		12		21
May	7		13		19		28
	14		20		26	Sep	4
	21		27	Dec	3		11
	28	Mar	6		10		18
Jun	4		13		17		25
	11		20		24	Oct	2

	18		27		31	9	
	25	April	3				
Jul	2		10				
	9		17				

Source: J.W. Bailey. 1977. **Veterinary Handbook for Cattlemen**. New York: Springer.

## Caracow

Date of breeding		Approximate date of birthing		Date of service		Approximate date of birthing	
Jan	1	Nov	16	Jul	16	May	31
	8		23		23	June	7
	15		30		30		14
	22	Dec	7	Aug	6		21
	29		14		13		28
Feb	5		21		20	Jul	5
	12		28		27		12
	19	Jan	4	Sep	3		19
	26		11		10		26
Mar	5		18		17	Aug	2
	12		25		24		9
	19	Feb	1	Oct	1		16
	26		8		8		23
Apr	2		15		15		30
	9		22		22	Sep	6

	16	Mar	1		29		13
	23		8	Nov	5		20
	30		15		12		27
May	7		22		19	Oct	4
14		29		26		11	
	21	Apr	5	Dec	3		18
28		12		10		25	
Jun	4		19		17	Nov	1
	11		26		24		8
	18	May	3		31		15
	25		10				
Jul	2		17				
	9		24				

Source Adapted from Valente Villegas. 1965. **Carabao Husbandry**. Manila, Philippines: D. P. Perez.

## Sow

Date of breeding		Approximate date of birthing		Date of service		Approximate date of birthing	
Jan	1	Apr	26	Jul	16	Nov	8
	8	May	3		23		15
	15		10		30		22
	22		17	Aug	6		29
	29		24		13	Dec	6
Feb	5		31		20		13
	12	Jun	7		27		20
	19		14	Sep	3		27
	26		21		10	Jan	3
Mar	5		28		17		10
	12	Jul	5		24		17
	19		12	Oct	1		24
	26		19		8		31
Apr	2		26		15	Feb	7
	9	Aug	2	22			14
	16		9		29		21
	23		16	Nov	5		28
	30		23		12	Mar	7
May	7		30		19		14
	14	Sep	6		26		21
	21		13	Dec	3		28

	28		20		10	Apr	4
Jun	4		27		17		11
	11	Oct	4		24		18
	18		11		31		25
	25		18				
Jul	2		25				
	9	Nov	1				

Source: Adapted from Dirk van Loon. 1983. **Small-scale Pig Raising**. Charlotte, Vermont: Garden Way.

## Goat

Date of breeding		Approximate date of birthing		Date of service		Approximate date of birthing	
Jan	1	May	31	Jul	16	Dec	13
	8	Jun	7		23		20
	15		14		30		27
	22		21	Aug	6	Jan	3
	29		28		13		10
Feb	5	Jul	5		20		17
	12		12		27		24
	13		19	Sep	3		31
	26		26		10	Feb	7
Mar	5	Aug	2		17		14
	12		9		24		21
	19		16	Oct	1		28

	26		23		8	Mar	7
Apr	2		30		15		14
	9	Sep	6		22		21
	16		13		29		28
	23		20	Nov	5	Apr	4
	30		27		12		11
May	7	Oct	4		19		18
	14		11		26		25
	21		18	Dec	3	May	2
	28		25		10		9
Jun	4	Nov	1		17		16
	11		8		24		23
	18		15		31		30
	25		22				
Jul	2		29				
	9	Dec	6				

## Care of calves and kids at birth

When a calf has been delivered, check whether it is breathing. If not, do one or a combination of the following:

Grasp the animal's hindlegs and raise them so fluids will be drained.

- Swing or shake the animal.
- Clean its mouth by removing the mucus with your fingers.
- Tickle the nasal cavity with a piece of rice straw.
- Slap or gently massage the rib
- If these fail, do artificial respiration by blowing air into the mouth of the young animal.

When breathing has started, dry the young animal with a rough cloth. Dab the navel with diluted tincture of iodine. Help a weak animal suck colostrum (the first milk) from the mother.



## Care of piglets

After birth, piglets are wet and covered with a thin mucus membrane. This membrane will dry and disappear very quickly. Most piglets will not need special attention from the hamster.

### Reviving newborn piglets

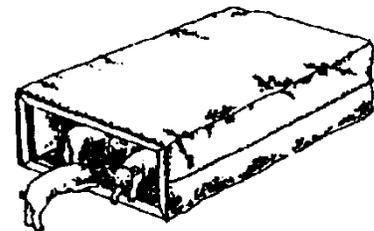
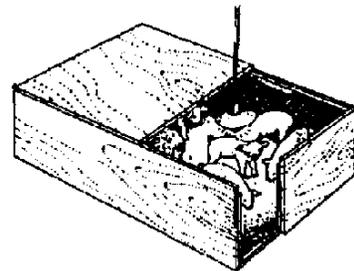
A newborn piglet may appear lifeless. Here are some methods for reviving piglets:

- Clear the piglet's nose and mouth of mucus.
- Gently shake the piglet with its head down to drain the mucus.
- Briskly rub a cloth up and down the piglet's back.
- Gently blow air into the piglet's nose; or hold the piglet on its back and gently pump the back legs forward and back until the piglet breathes.
- Dip the piglet into a bucket of water.

### Keeping piglets warm

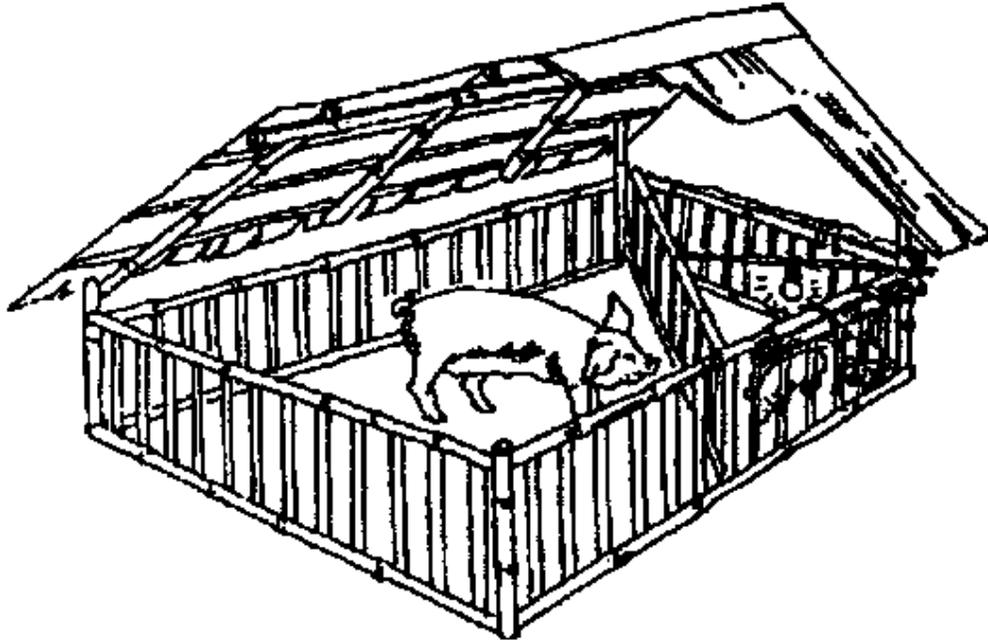
- Rub the piglet with vegetable oil.
- Put the piglets in a box.
- Provide a heating lamp (if electricity is available).
- Use chopped, dry rice straw or dried banana leaves for bedding. Slim rim hails straw or charcoal in a metal bucket to supply warmth.

**Caution:** Make sure the hot bucket does not burn the pigs or the pen.



### Avoiding crushing newborn animals

Until they learn to get out from under her when she lies down, newborn piglets can easily be crushed by their mother. The harrowing area should have barriers to prevent the sow from crushing the piglets. After the first two week, the barriers can be removed.



### **Getting piglets to suckle**

Sows develop their own styles of nursing. Some stand up; other lie on their side. After a day or two, each piglet will establish ownership of a teat. In a small litter, piglet may share the extra teat. Weaker piglets get the hind teats. A sow may be able to feed more piglets than she has teats. But generally, it is better to take extra piglets away and place them with another recently farrowed sow or to raise the extra piglets on cow's milk.

**Reminder:** Make sure the piglets get the first milk from their natural mother before moving them to a foster mother.

## **Feeding orphaned animals**

Provide a foster mother to orphaned animals. If a foster mother is not available, prepare supplemental feed.

### **Cattle and goats**

Supplemental feed for young orphaned calves and kids:

- 1 gallon of caracow's milk
- a pinch of Neomycin
- 1 egg white
- 1 tsp vegetable oil

When about 2 weeks old, add solid food in the form of small amounts of concentrate. Allow the young animal to gradually nibble soft forage.

### **Pigs**

A mixture of the following can be used as supplemental feed for young orphaned piglets:

- 1 quart of cow's milk
- 4 tbsp of syrup made from boiled mixture of water and sugar
- 1 egg
- a pinch of Neomycin

Here's how to feed orphaned piglets with the supplemental feed:

1. Hold the piglet by the head.
2. Insert your clean little finger into the piglet's mouth.
3. Gradually lower the piglet's head into a bowl of prepared supplemental feed. The piglet will start to suck. This procedure also applies to calves and kids.
4. Continue feeding piglets until they can be switched to a dry pre-starter ration.

For cattle, goats and pigs, the new mother will not usually allow the animals for adoption to suck her milk. If you see this, do the following:

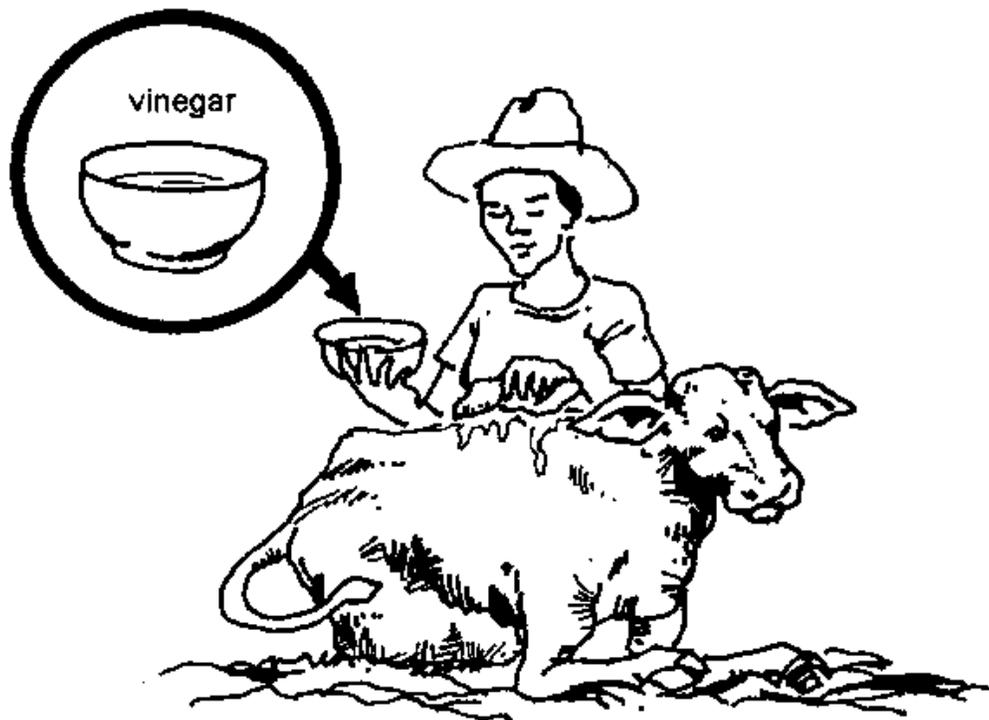
- Rub the whole body of the animals for adoption and the young of the foster mother with any of the following:

-urine of the foster mother

-milk. of the foster mower

-alcohol

-vinegar



Keep the foster young animals in a box together, with the young of the foster mother, so their smells will blend.

## Nutrition

Good nutrition is important for the health of animals. Proper nutrition helps an animal fight disease and parasites. Good nutrition also enables an animal to respond well to vaccination.

The amount and quality of nutrients required for good health and efficient production vary according to age, sex and level of production. They vary between ruminants (four-stomached animals) like cattle, water buffaloes and goats, and simple stomached animals like pigs and chickens. Ruminants have four digestive compartments:

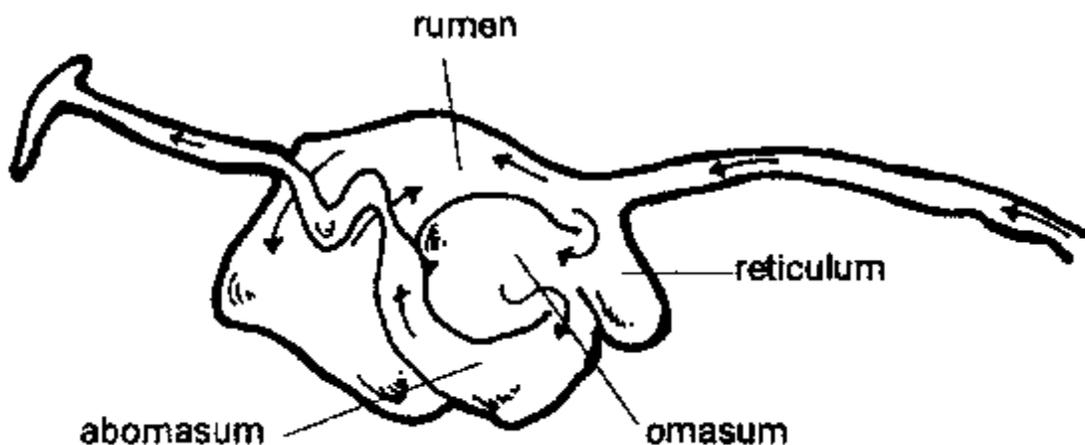
- rumen or paunch
- reticulum or honeycomb
- omasum or manyplies
- abomasum or true stomach.

All animals need protein, carbohydrates, fats, vitamins, minerals and water.

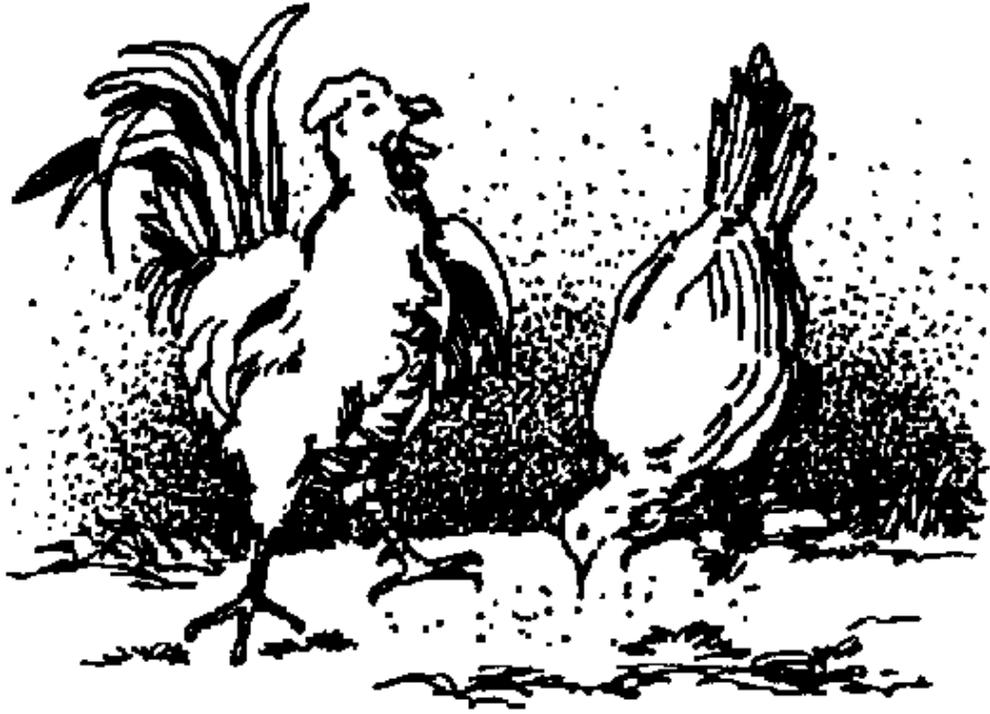
Nutrients in excess of an animal's minimum requirements are used for production and growth. A reduction of feed intake by five percent will decrease weight gain by 10 percent.

### Parts of a compound stomach

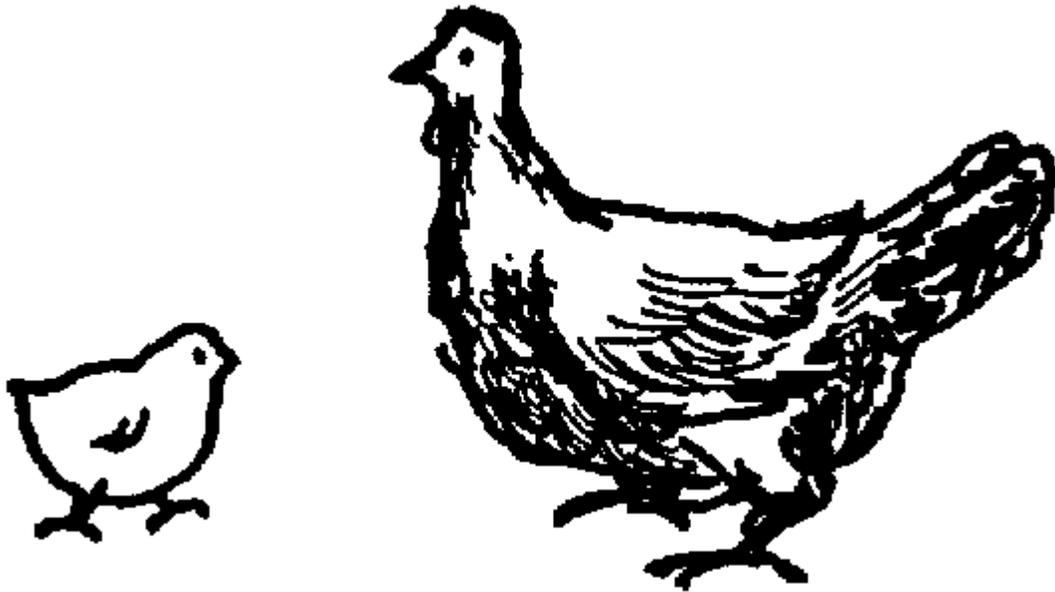
Ruminants (cattle, buffaloes, sheep and goats) have a stomach made of four parts.



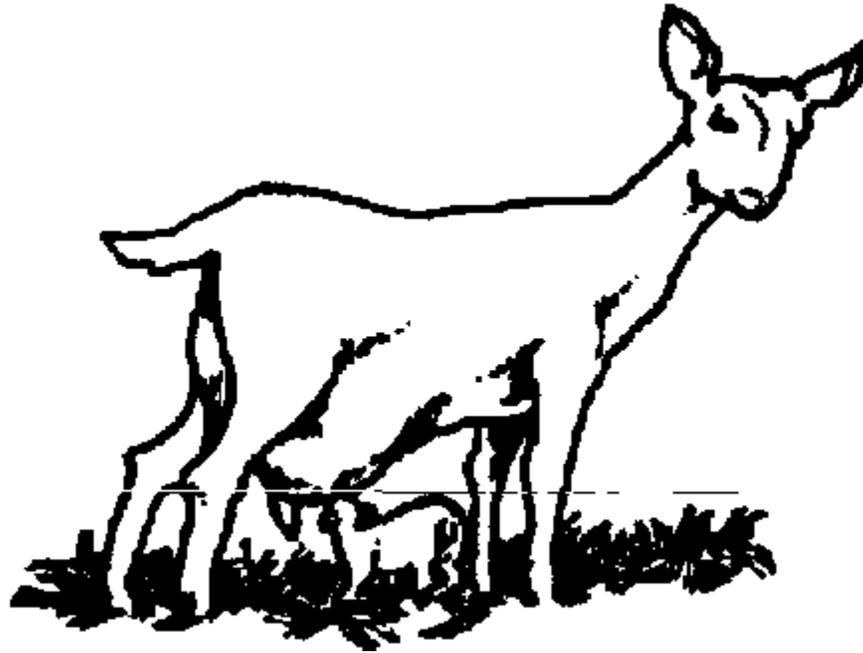
**Protein** is the most costly source of all nutrients. It is particularly important for reproduction, growth and milk production.



Reproduction



Growth



## Lactation

### Examples of protein sources

- *Leucaena* leaves
- Fish meal
- *Centrosema*
- Soybean
- Rice bran (D1)

### Crude protein content of feeds (in percentage)

---

	Ruminants
Milk replacement	20
Cal starter	18
Dairy concentrate	16
Beef concentrate	13

	Pig
<b>Pre-starter</b>	22
<b>Hog starter</b>	18
<b>Hog grower</b>	16
<b>Hog fattener</b>	14
<b>Hog breeder</b>	14
	Poultry (layer)
<b>Chicken starter</b>	20
<b>Chicken grower</b>	16
<b>Chicken Dyer</b>	18
	Poultry (meat)
<b>Broiler starter</b>	21
<b>Broiler finisher</b>	18
<b>Chick booster</b>	24

**Examples of energy sources**

- Corn/rice bran
- Molasses
- Rice straw
- Root crops

**Examples of fats**

- Copra
- Tallow

**Vitamin sources soluble in water (C and B complex)**

- Fish meal
- Grass
- Legumes

**Carbohydrates** are the most important source of energy for animals. The major function is to provide energy for:

- grown
- muscular activity
- reproduction and lactation
- maintenance of body temperature.

**Fats** provide an easily digested, concentrated source of energy for animals. They:

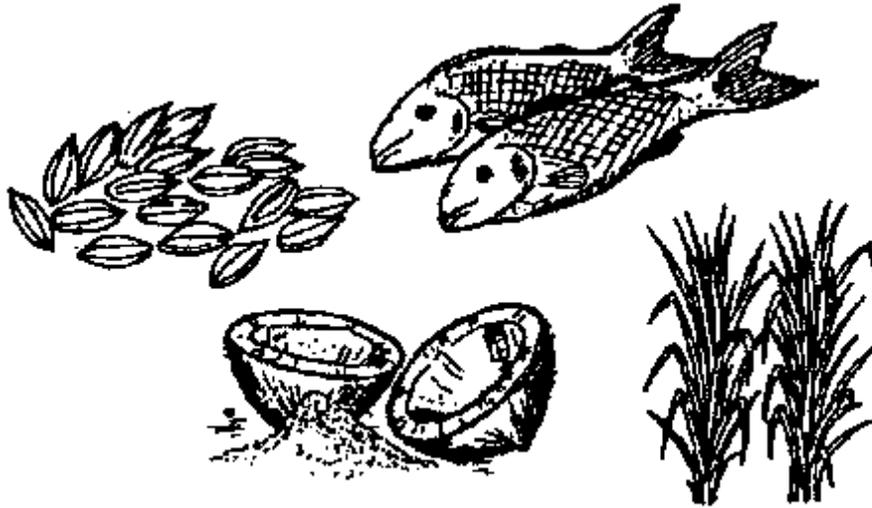
- supply essential fatty acids needed for coronal growth

**Vitamin sources soluble in fat (A, D, E, K)**

- Yellow corn
- Grass
- Legumes

- help in the absorption of vitamins soluble in fat.

**Vitamins** are required in very small amounts to facilitate the normal functioning of the body.



**Minerals** aid in the development of bones. Salt is an example of a common mineral. Feeds, such as grains, do not contain enough salt to sustain livestock. Therefore, salt must be supplied as a ration supplement.

**Examples of grasses**

**Napier grass**

- Perennial.
- Drought-resistant.
- Less palatable when fully grown.
- High-yielding.
- Easier to plant than guinea grass or pare grass.

**Guinea grass**

- Perennial.
- Shade-tolerant.
- Higher-yielding than Napier grass.

**Para grass**

- Grows well in water-logged areas.

**Examples of legumes**

**Centrosema**

- Perennial climbing vine.

**Leucaena**

- Excellent for animal growing but not for fattening.

## Feeding ruminants

Ruminants browse. They eat a variety of feedstuffs. They like to eat the tender new growth and barks of trees and shrubs.

They should have free access to salt and calcium supplements. Salt should be crushed or in granules, not blocks, because ruminants may not get enough salt off a block. Egg shell is a low-cost source of calcium. Shells should be dried, crushed or pulverized and mixed with the regular feed ration.

Fresh water should always be provided.

## Examples of feed rations for fattening of cattle and buffaloes

**This is fed to animals age 6 months and above.**

1. Mix 1 tablespoon of urea with 15 liters of water.
2. Set aside for 2 hours to release ammonia.
3. Add 4 tablespoons of molasses. Give as drinking water in the morning.

**Caution:** Do not use too much urea as it cause poisoning.

Rice straw is a cheap feedstuff for ruminants. It can be enriched by mixing it with other nutrients such as molasses. A simple method is described below:

### "Spaghetti"

1. Immerse dried rice straw in water for 4 hours.
2. Dissolve 4 gallons of molasses in 12 gallons of water. Add 3 kg of urea.
3. Add rice straw to the mixture.
4. Feed to animal.

**This feed mixture is given 60-90 days before slaughter.**

1. Gather about 20 kg of fresh ipil-ipil (*Leucaena sp.*) leaves. Remove the midribs and pound the leaves.
2. Extract the juice.
3. Add 1-2 kg of fine rice bran mixed with 15-19 liters of water.

4. Add a handful of salt and mix thoroughly.

Divide the mixture into two portions. Feed one portion in the morning and the other in the evening. Use a bamboo tube (locally known as *supak*), measuring about 6 cm in diameter and 30 cm long, to feed the mixture. (See *Administering medicine in Restraining animals and simple treatments.*)

**Note:** Feed the animal with the mixture 6 times a day for best results.

### **Other home-made rations for large ruminants**

- Pound 15-20 kg fresh leaves of ipil-ipil (*Leucaena sp.*). Extract the juice. Add 15 liters of clean water and 0.1 kg of salt.

- Finely chop 15-20 kg of gabi tubers (the kind that humans eat). Add 15 liters of water and 0.1 kg of salt.

Divide the above mixtures into two portions. Give one ration in the morning and another in the evening. Rations are given through the *supak*.

The above rations can also be given to small ruminants, like goats. Reduce the amount of ingredients needed to produce a ration.

## **Feeding rations for pigs**

### **Breeders**

Breeding animals (not pregnant or lactating) should be given brood sow or breeder's mash.

Feed the gilt/sow 1.5 to 1.7 kg per day until bred and becomes pregnant.

### **Pregnant**

Pregnant gilts/sows should be fed with gestation mash.

For the first 14 days, feed 1.6 to 1.8 kg per day.

From the 15th-80th day, feed 1.6 to 2.0 kg per day.

From the 81st-107th day, feed 2.5 kg per day.

From the 108th-14th day, feed 1.2 kg per day.

## **Nursing sows/gilts**

Nursing or lactating gilts/sows should be fed with lactation mash.

For the first 3 days, feed 0.6 to 0.7 kg per day.

From the 4th-6th day, feed 0.8 to 1 kg per day.

From the 7th-10th day, feed 1.2 to 1.8 kg per day.

From the 11th-24th day, feed 2.0 kg per day.

From the 25th-27th day, feed 1.8 to 1.2 kg per day.

From the 28th-30th day, feed 1.2 to .8 kg per day.

After Me 30th day, piglets should be weaned.

## **Fatteners**

Pre-starter feeds for the first month.

Starter mash for the 2nd-3rd month.

Grower mash for the 4th-5th month.

Finisher/fattener mash rattan for the 6<sup>th</sup> month.

After the 6th month, pigs will be ready for market.

**Note:** Pre-starter mash, starter mash and hog grower should be fed without limit.

## **Low-cost feeds for pigs**

Each of the following mixtures can be consumed by 3 heads of starter pigs (2-3 months old) for 2-3 days:

- Mix 5.4 kg of fine rice bran with 4.6 kg of cam bran.
- Mix 6.3 kg of midlings (*bindlid*) with 3.6 kg of corn gluten. he following mimes are for fatteners:
- Mix 7 kg of rice bran with 3 kg of sapal (coconut waste product).
- Mix 5 kg of sweet potato roots vim 5 kg of ipil-ipil (*Leuacaena sp.*) leaves.

- Mix 3 kg of cassava roots with 7 kg of fine rice bran.

- Mix the following:

-3 kg com bran

-2 kg molasses

-1.5 kg tugui root (*Dioscorea esculenta*)

-1.0 kg fish washings (e.g., fish guts, gills, scales)

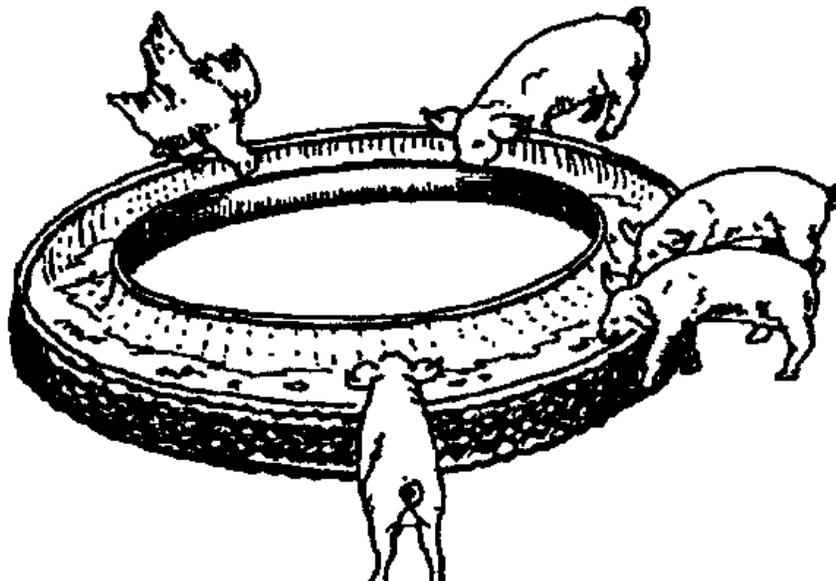
-2.5 kg ipil-ipil leaves

### **Feeding pigs**

The amount of feed given depends on age, stage of growth, of reproduction, health status and degree of activity. Unlimited feeding only applies in the pre-starter, hog starter and hog grower stages-the stages where protein and carbohydrates are needed the most.

At 2 ½ months of gestation, fetuses are at their peak growth stage. The sow's feed should be increased.

Milk production reaches its peak in the third and fourth weeks after birthing. The amount of feed given at this stage should be high. Milk production starts to decline in the middle of the 4th week. Piglets can be weaned to decrease milk letdown. Decrease the amount of feeds given.



## **Feeding rations for chickens**

### **Broiler ration (meat)**

Starter ration for the first 5 weeks.

Finisher ration for the 6th week.

### **Layer ration (egg)**

Starter ration for the first 7 weeks. Grower ration for the 7th-20th week. Layer ration for 20-week-old layers.

The laying age for chickens is 24 to 85 weeks.

## **Home-made rations for chickens**

Mix the following:

- 4 cans (1 kg) yellow corn or broken rice
- 1.5 cans fine rice bran
- 2 pints ground snails
- 1.5 cans copra oil
- 0.5 can mung bean, string beans or lima beans
- 0.5 can dry Leucaena leaves
- 1 tablespoon salt
- 1 handful lime or powdered oyster shell



## **Deworming**

Parasites are a problem in countries with tropical climates like the Philippines. Animals catch parasites from soil and grasses.

Regular deworming with chemical or herbal preparations can reduce the amount of parasites in your animals.

**Deworming** means removing worms from the digestive system, particularly from the stomach, intestine and liver. Deworming makes the animal more resistant to diseases. It helps the animal grow faster, perform better and produce better milk, meat and eggs.

## **Symptoms of worm infestation**

- Animal lacks vigor.
- It has a poor appetite.
- Its body weight decreases.
- It shows diarrhea with mucus, blood or worms.
- It eats soil or other organic matters.
- It has rough hair coat.
- It has anemia.

Parasites hurt animals by:

- Absorbing digested nutrients.
- Sucking blood.
- Causing mechanical obstruction.
- Destroying tissue.
- Secreting toxins.

## **Preventing worm infestation in animals**

- Proper nutrition.
- Avoid overstocking.

- Practice pasture rotation.
- Avoid keeping several types of livestock together (e.g., goats and cattle).
- Observe cleanliness.

## **Considerations in deworming animals**

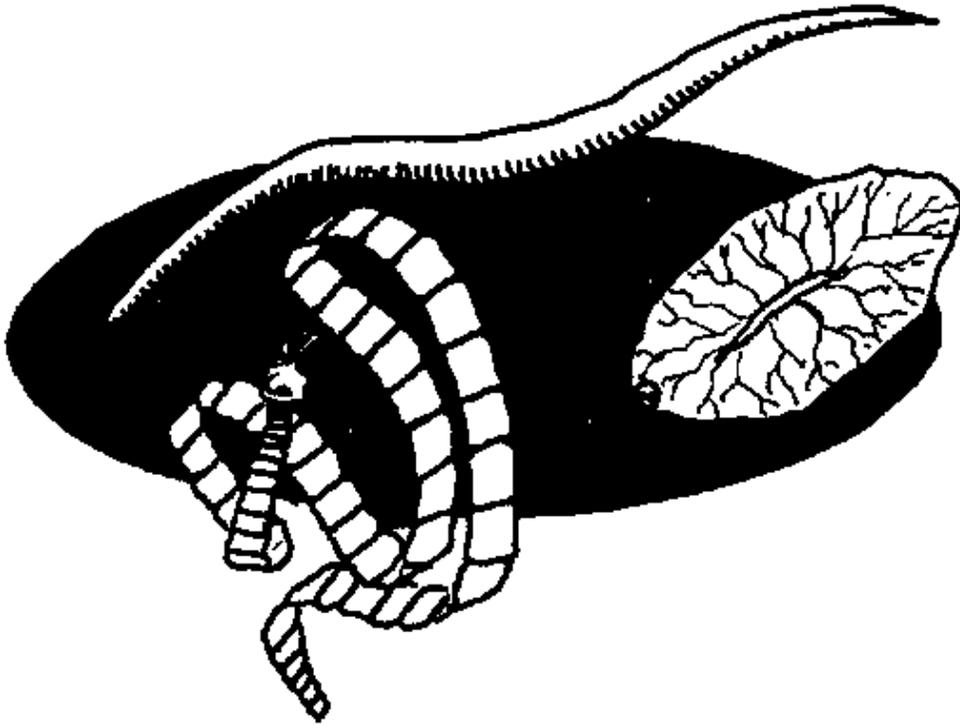
Do not deworm animals that are:

- Weak and sick. They need medication; delay deworming.
- Pregnant.
- Lactating.
- Laying.

## **Common internal parasites**

### **Roundworms/ascaris:**

Affect ruminants (cattle, water buffaloes, goats), pigs and poultry.



### **Tapeworms:**

Affect ruminants, pigs and chicken.

### **Leaf-shaped worms(liver flukes):**

Affect ruminants.

### **Guidelines for a deworming program**

- Identify the kind of worm present.
- Deworm the animals regularly.
- Deworm young animals 23 times a year, adult animals at least once a year.
- Improve grazing management.

### **Characteristics of a good dewormer**

- It will not easily cause poisoning
- It can kill various worms.

- It is easy to administer.
- It is economical.
- It stays in the tissues for a short period of time.

### Common dewormers used

Animal	Western drug*	Herbal
Cattle,	<i>Valbazen, TSD,</i>	Stems of makabuhay
water buffalo,	<i>Latigo 50, 500</i>	<i>(Tinosphora rumpii)</i>
goat	<i>Pidro</i>	Papaya seeds
Pigs	<i>Latigo 50, 500</i>	<i>Leucaena</i> seeds
		Pidro
Chickens	<i>Pidro</i>	Areca nut or bunga

\* The drugs listed in this column are brand names. The generic names for each drug are as follows:

*Valbazen* and TSD - Albendazole

*Latigo 50, 500* - Tetramizole

*Pidro* - Piperazine

### An indigenous way to deworm animals

**Beer/Soy sauce.** A bottle of beer or soy sauce is given to cattle and water buffalo for deworming. An egg can be mixed with the beer or soy sauce.



## Deworming program for livestock and poultry

Age	1st dose	2nd dose	Remarks
<b>Cattle, water buffaloes, goats</b>			
Young	1 or 2 months	3-4 months until 1 year	Against all worms
Adult			Once a year
Breeders			2 weeks before breeding
<b>Pigs</b>			
Piglets			Few days after weaning(before vaccination)
Breeders			Twice a year before breeding and before giving birth
<b>Chicken</b>			
Young	2 months	Repeat after 2 weeks	
Breeders			Before onset of breeding and laying period

# Vaccination

A vaccine produces immunity or protection against a given disease. Vaccination stimulates the production of antibodies.

It is important to vaccinate animals because:

- Vaccinated animals become more resistant to outbreaks of disease.
- Vaccinated animals suffer less and recover faster from the effects of disease.

## Forms of vaccine

- Powder with solvent—mix, then inject. (Example: hog cholera vaccine)
- Liquid (Example: hemorrhagic septicemia vaccine)

**Antiserum** can also protect animals against diseases. It comes from the blood serum of an animal which contains antibodies for a specific disease.

## Comparison between vaccine and antiserum

	<b>Vaccine</b>	<b>Serum</b>
Immunity	Develops in two weeks	Quick-acting
	Long-acting	Short-acting
	Active	Passive
Dose	Small quantity	Large quantity
Site of injection	One site divided and injected into different sites.	A single large dose
Antibodies	Produced by the body in response to the vaccine.	Supplied by the injection.

**Antibiotics** are chemical substances produced by bacteria to inhibit or kill other bacteria. Antibiotics are useful to treat bacterial diseases. They are sometimes given regularly to healthy animals to prevent them from getting sick and to improve their production. This practice,

however, should be discouraged because it may harm the health of people who consume the meat and milk of these animals.

**Vitamins** are found in foods. Animals need small regular amounts for growth, health and survival. Feeding or injecting vitamins can make animals more resistant against diseases.

### **Comparison between vaccination and injection of antibiotics and vitamins**

	<b>Vaccination</b>	<b>Vitamin injection</b>	<b>Antibiotic injection</b>
Condition of animal	Healthy	Healthy or sick	Sick
Handling and storage	Strictly observed	Less critical, (though expire or spoil)	Less critical (though expire or spoil)
Purpose	Produce immunity	Increase resistance	Inhibit or kill bacteria
Time of day	Early morning or late afternoon	Anytime as needed	Anytime as needed

### **Guidelines and precautions**

- Vaccines spoil easily. Special care and precautions are necessary for their proper use.
- Only a veterinarian or a person who has special training and experience in the use of vaccines should vaccinate.
- Avoid vaccinating an animal in very hot weather.
- Vaccinate before anticipated disease outbreak.
- Do not consider vaccination as a substitute for sanitation and other preventive management practices.
- Use sterile instruments.
- Use the recommended solvent.

- Avoid contamination with other chemicals.
- Bum or bury empty bottles and vials of vaccines.
- Do not use left-over vaccines.
- Do not vaccinate weak, sick, pregnant, unhealthy, stressed and very young animals.
- To avoid contamination, use separate needles for injecting the animal and for dissolving the vaccine.
- Follow the instructions on the packaging.

## **Steps in administering a vaccine**

1. Assess the health status and age of the animal.
2. Properly restrain the animal. (See booklet on Restraining animals and simple treatments.)
3. Dissolve and mix the vaccine (if needed) with its solvent.
4. Clean and disinfect the preferred site for injection.
5. Administer the recommended amount in the right location.
6. Properly identify vaccinated animals.
7. Closely observe vaccinated animals for allergic reactions.

## **Handling and storage**

Vaccines are made from disease-causing microorganisms. They must be handled carefully and stored properly. Improper handling and storage may cause them to lose their effect or, worse, make them dangerous agents. They should be refrigerated but not frozen. Store in a styro foam box with ice or in refrigerators.

## **Factors which limit animal's response to vaccine**

- Infections
- Poisoning
- Improper dosage
- Improper handling
- Heat stress
- Improper administration

## **Common brand names of vaccines for livestock and poultry**

### **Ruminants**

- Foot and mouth disease vaccine

Dosage: 2 cc per animal, regardless of size.

- Hemorrhagic septicemia vaccine Dosage: 2 cc per animal, regardless of size.

- Anti tetanus serum Dosage: minimum of 1500 international units

### **Pigs**

- Hog cholera vaccine comes in pairs-the powder and the solvent. Brand names: Suvac, Pigvax and Vadimune Dosage: 2 cc per animal, regardless of size

### **Chickens**

- Newcastle disease vaccine like NCD B1B1 should be used for young chickens only, NCD La Sota for adult chickens Dosage: a drop of NCD B1B1 in the eye/nostril per bird; 0.5 cc of NCD La Sota per bird

- Fowl pox vaccine

### **Vaccinating poultry**

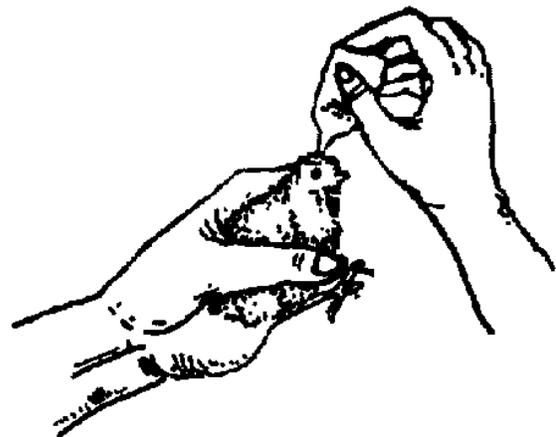
Poultry vaccines come in pairs-the powder and its accompanying solvent.

#### **Intraocular or through the eye**

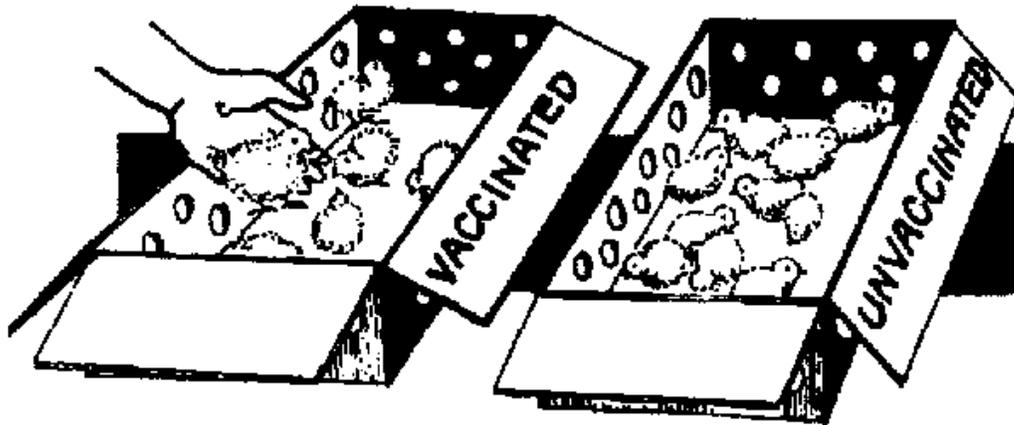
This is used when vaccinating day-old chicks against Newcastle disease. (See page 39.)

#### **Procedure**

1. Hold the chick firmly, not too loose or too tight.
2. Put one drop of vaccine into one of its eyes and let the chick blink before releasing it.



3. Separate the vaccinated from the unvaccinated chicks.



### **Intranasal or in the nose**

This method can also be used in administering Newcastle disease vaccine. Follow the same procedure as in intraocular, but apply the vaccine in one of the nostrils. Such vaccines are available in poultry supply stores.

### **Wing web or through the wing**

This is done to vaccinate chickens against fowl pox.

1. Get an assistant to hold the chicken and spread one of its wings. Vaccination site is the wing web or inner side of the wings.

2. After thoroughly mixing the vaccine (fowl pox vaccine), dip the applicator into the vaccine, then immediately pierce it through the wing web.

3. Examine for "takes" after 10 days. "Takers" are small swellings with scabs formed at the vaccination point ten days after the vaccination procedure. Lack of such a reaction indicates:

- Vaccine is less effective or has no effect at all.
- Presence of existing antibodies.
- Improper vaccination.

Takes are only applicable to fowl pox vaccination.

### **Water vaccination**

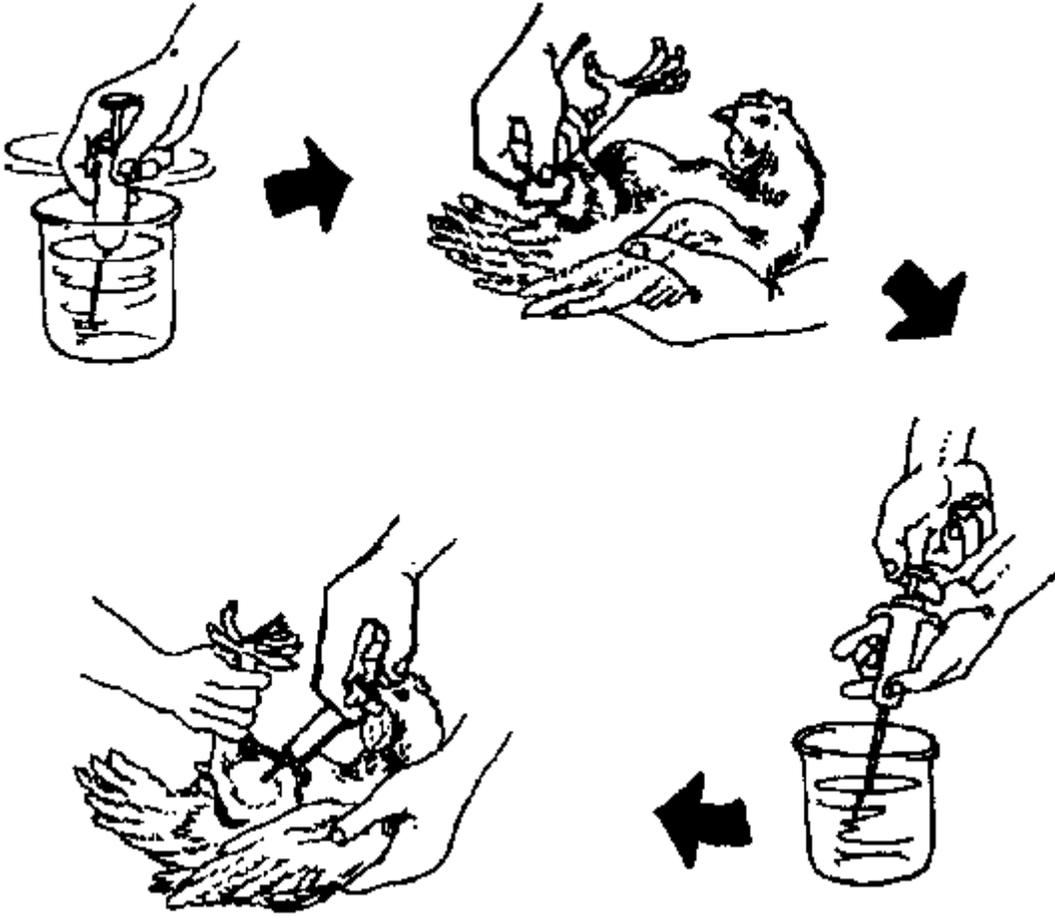


When mixing vaccines in drinking water:

- Do not use chlorinated water or water treated with antibiotics or disinfectants.
- Do not give the vaccine in metal containers or drinkers.
- Three hours before giving the vaccines, deprive the birds with water to induce thirst.
- Provide enough drinkers.

### **Intramuscular or through the muscles**

1. Mix the required amount of solvent with the vaccine before vaccination.
2. Disinfect the breast or thigh muscle of the chicken by rubbing it with cotton moistened with 70 percent alcohol.
3. Fill the syringe with the prescribed quantity of the vaccine-water solution.
4. Inject 0.5 cc of the solution into the muscle of the chicken.



## Suggested vaccination program for livestock and poultry

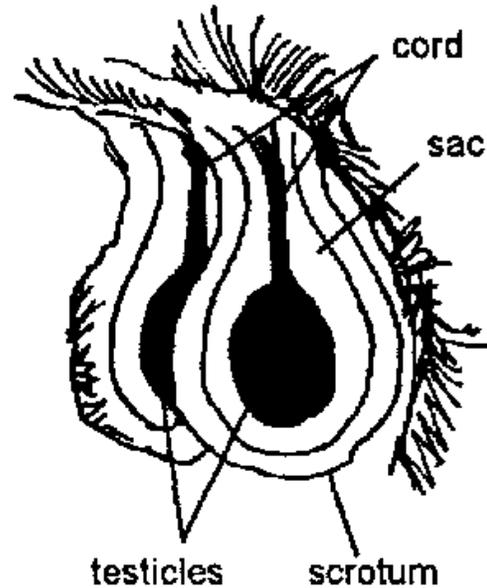
<b>Ruminants</b>				
<b>Vaccine</b>	<b>1st dose</b>	<b>2nd dose</b>	<b>Next dose</b>	<b>Route</b>
Foot-and-mouth disease	2-3 mos	6-8 mos	Annually	In the muscle
Hemorrhagic septicemia	2-3 mos	6-8 mos	Annually	Under the skin
Anti-tetanus	6 months			In the muscle
<b>Pigs</b>				
<b>Vaccine</b>	<b>1st dose</b>	<b>2nd dose</b>	<b>Next dose</b>	<b>Route</b>
Foot-and-mouth-disease	1-2 mos for breeders	3-4 mos	Semi-annually	In the muscle
Hog cholera	1-2 mos	6 mos(for replacements)	Semi-	In the muscle annually for breeders. After weaning for piglets.
<b>Chickens</b>				
<b>Vaccine</b>	<b>1st dose</b>	<b>2nd dose</b>	<b>Next dose</b>	<b>Route</b>
Newcastle disease	1-2 weeks	3-5 weeks	Before laying eggs drop	Eye/nose
Fowl pox	34 weeks		Before	Wing web laying eggs

## Castration

Castration is the process of removing the testicles of male animals.

### Reasons for castration

- Improves quality of meat.
- Prevents male animals from acquiring undesirable sexual traits.
- Makes the animal easier to handle.
- Prevents undesirable breeding.
- Aids in growth and fattening.



### Preferred age for castration

- Bull —2-3 months old
- Buck —2 months old
- Piglet —2 weeks old
- Boars can be castrated when no longer needed as breeders.

Young animals are easier to handle. Their wounds bleed less and heal faster.

**Caution:** Avoid castrating sick or stressed animals, e.g., animals with fever or recently vaccinated animals. If possible, perform this minor surgical operation during the dry season. Wounds heal faster during the dry season.

### Prepare the following before castration:

- Blade or sharp knife
- Forceps
- Thread (if needed)
- Cotton

- 70% alcohol
- Diluted iodine
- Pine tar
- Fly repellents (e.g., Negasunt, Gusanex)

## Castrating large animals

1. Properly restrain the animal. Refer to booklet on *Restraining animals and simple treatments*.
2. Wash your hands with clean water and soap.
3. Disinfect the surgical instruments and the scrotal area with 70% alcohol or diluted iodine.
4. Hold testicles in between the thumb and forefinger, pressing one toward the bottom of the scrotum.



5. Using a razor blade or sharp knife, make a small incision at the bottom of the scrotum. The incision should be just long enough for the testicle to be removed.



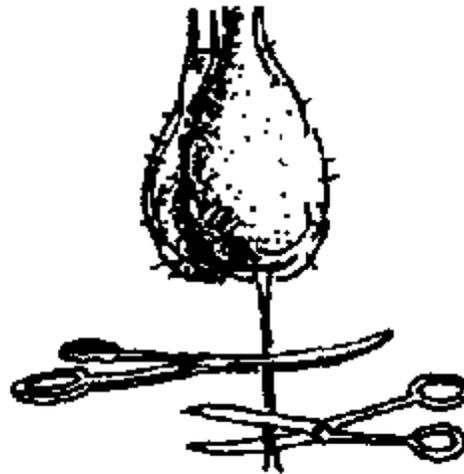
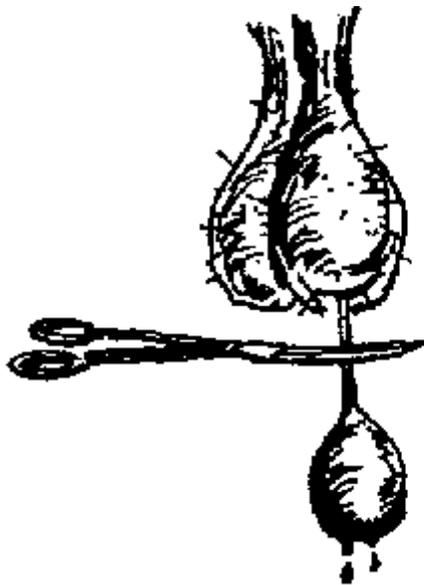
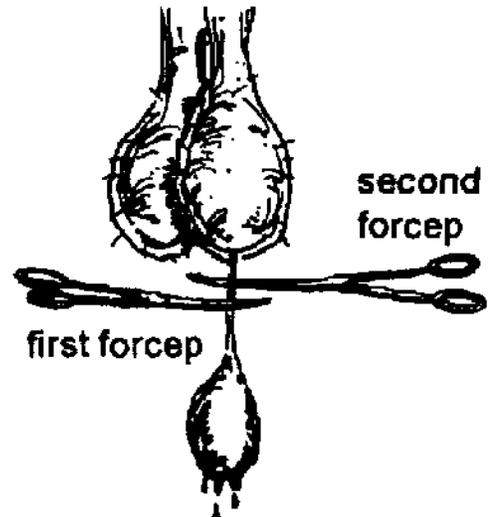
6. Pull the sac containing the testicle out of the scrotum.



7. Clamp the blood vessels with 2 pairs of forceps. Or, use an emasculator or long-nose pliers. If instruments are not available, make a knot with a thread around blood vessel.

8. After two minutes, remove the first forcep and make a knot with sterilized thread around the cord.

9. Cut the cord 1-1.5 cm below the second forceps. Wait for 1-2 minutes before removing the second forcep.



10. If available, apply a fly repellent, such as Pine tar, Negasunt or Gusanex.

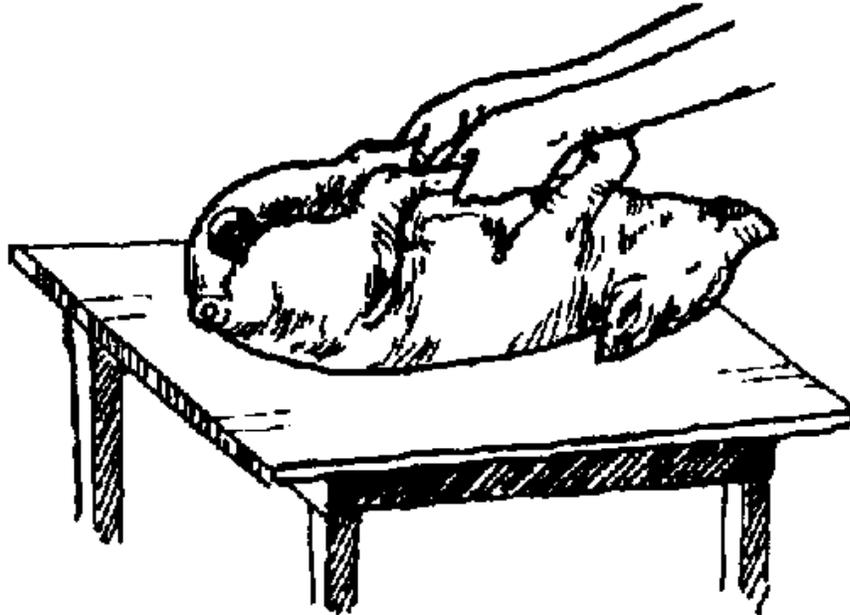
11. Follow the same procedure for the other testicle.

12. Inject 1,500 I.U. of antitetanus toxin serum into the hip muscle to prevent tetanus.

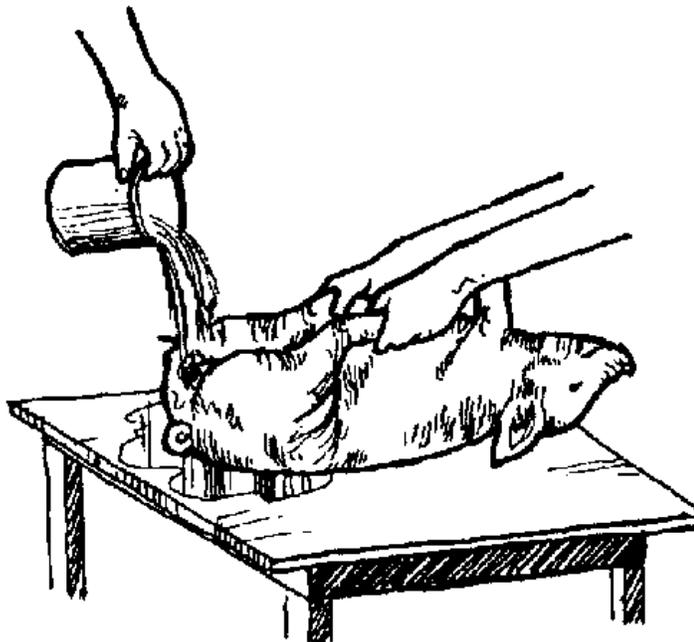
## Procedure for castrating piglets

This procedure applies only to piglets 2-3 weeks old.

1. Properly restrain the animal. A small piglet can also be held on a table top on its back



2. Wash your hands with clean water and soap.
3. Wash and disinfect the area around the testicle.



4. Push each testicle outward.

5. Make an incision at the bottom of each of the scrotums.

6. Pull the cord out.

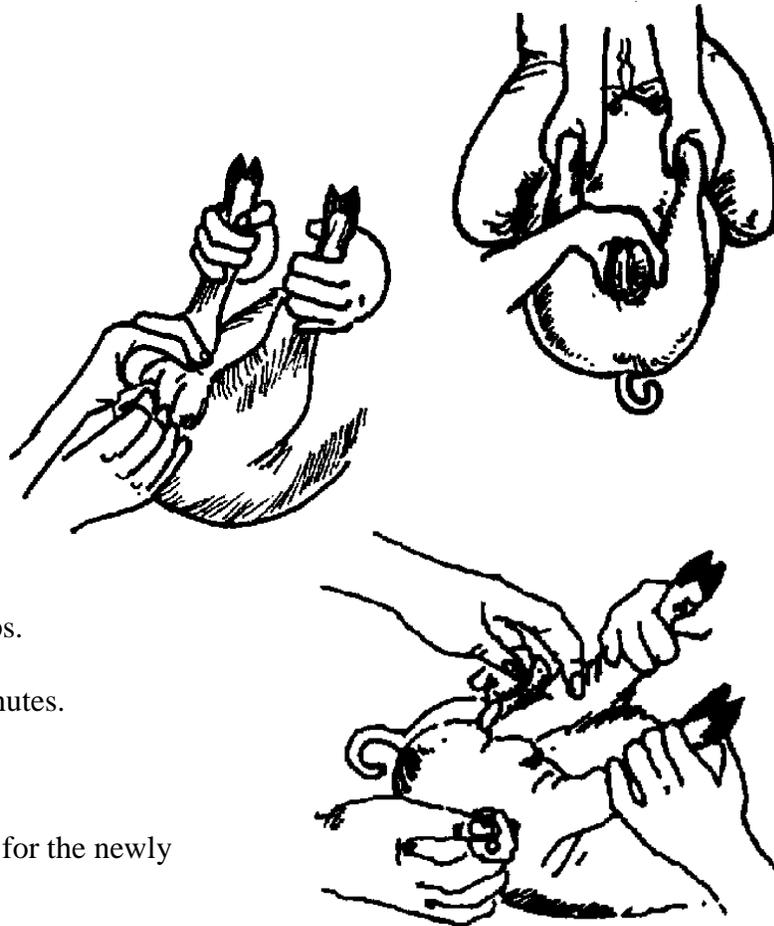
7. Clamp with one pair of forceps.

8. Cut the cord below the forceps.

9. Remove forceps after 1-2 minutes.

10. Apply fly repellent.

11. Provide a clean and dry pen for the newly castrated piglets.



Castration of piglet can be done without forceps. After pulling the cord outward, twist the cord several times. Cut the cord when it turns white.

### **Care for newly castrated animals**

- Always keep pens dry and clean.
- Provide clean water and nutritious feeds.

### **Indigenous practices in castrating animals**

#### ***Pukpok* system**

An old way of castrating bulls by farmers is the *pukpok* system or the crushing, method. They use either a big stone or a hard piece of wood to crush the testicles.

#### **Full moon**

Farmers prefer their animals castrated during a full moon. They believe that the wounds will heal faster.



### **Hot day**

Farmers throw testicles removed during castration on top of roofs made of galvanized iron. They believe that the testicles dry up faster and so will the castration wound.

### **Wood ash**

Ash is applied to castration wounds.

### **Hot cooked rice**

Some farmers apply hot cooked rice to castration wounds to stop bleeding and, at the same time, to reduce the risk of bacterial infection.



## Hoof trimming



Overgrown



Properly trimmed

A hoof is the horny part of the feet of cattle, water buffaloes, goats and pigs. Hooves should be trimmed regularly. The hooves of animals kept indoors grow fast and often in irregular shares.

### Instruments needed

#### Large animals

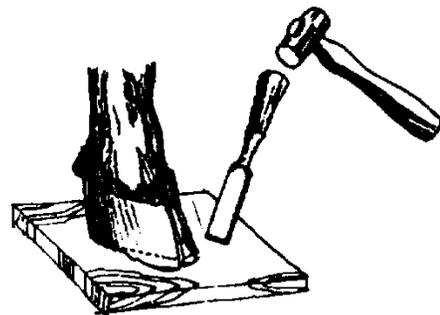
- Chisel
- Hammer
- Piece of flat wood.

#### Small animals

- Sharp knife.

### Trimming the hooves of a large animal

1. Restrain the animal. Cast down wild animals only.
2. Tie the legs together to avoid being kicked.
3. If chisel and hammer are used, the animal does not have to be cast down. Place a leg on a flat piece of wood (to reduce shock awing hammering)
4. Start trimming at sides, then around the entire hoof  
Front and sides are normally harder. It should be trimmed up to the level of the hoof.



### Trimming the hooves of small animals

1. Restrain the animal.
2. Trim sides with the use of a sharp knife around the entire hoof.

# Dehorning

Dehorned animals require less space in feeders. The danger of serious injuries from horns is also avoided.

## Methods of dehorning cattle, water buffaloes and goats

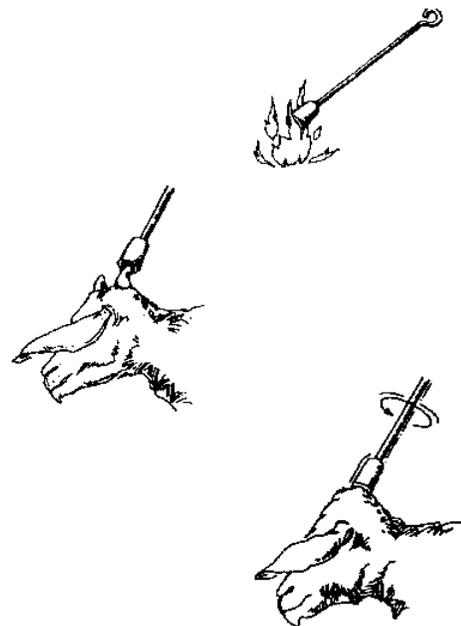
### Hot iron

This method is commonly used to dehorn older animals (4-5 months old). It is quick and bloodless.

1. Restrain the animal.
2. Select a capped-head dehorner that fits the horn to be removed.
3. Heat the capped-head in fire until it is cherry-red in color.
4. Fit it to the here of the horn
5. Turn the handle around to completely encircle the hoary. Remove the horn and bum also the tip of the horn bud with the same red-hot dehorner.
6. Apply a fly repellent, either Pine tar or Negasunt or Gusanex.

### Things needed

- Cappedhead dehorner
- Fly repellent like pine tar



### Things needed

- Caustic potash stick
- Vaseline or vegetable oil
- Scissors
- Vinegar
- Plastic/ rubber gloves. if available. If not, take extra care in applying potash.

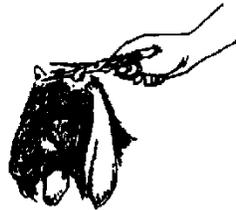
### Important

#### **DON'T use caustic potash stick if:**

- It is raining. It could burn the face or other parts of the animal.
- Several calves or kids run together.
- Young and mother are together.

### Chemical

A caustic potash stick is used to disbud animals, 4-10 days old.



1. Remove hair from and the base of the hoary.



2. Apply oil abaft one-half inches around the base of the horn.



3. Wearing rubber gloves, dip one end of the potash stick in water.

4. Rub stick around the base of the horn until it starts to bleed. Then, stop rubbing.

If burning occurs on the side of the head, wash the area with a solution of 1 part vinegar and 3 parts water.

5. Follow same procedure with the other horn bud.



6. Place disbudded animals in an individual pen.

## Clipping milk teeth of piglets

Newborn piglets have 4 pairs of sharp teeth, 2 pairs on the lower and upper jaws.

Clipping these teeth will reduce the incidence of injury to the udder of the row and to the other piglets.

1. Clip teeth close to the gums.

2. Smoothen the clipped edges using a nail cutter or clipper.

### Items needed

- Clipper or
- Nail cutter



## **Disinfection of pen and equipment**

Disinfect pen and equipment after use to kill germs. Disinfectants help prevent animals from dying and improve animal production.

### **When to disinfect**

- 2-3 times a week during a disease outbreak.
- If the number of animals getting sick rises.
- If the number of animals dying rises.

### **Commonly used disinfectants**

#### **Lye**

Soak 1 kg of wood ash in 1 can (kerosene) of water overnight. Use the water extract (lye) to disinfect the pen. Avoid getting in contact with lye for it could cause a burning sensation on the skin and the eyes.

#### **Creoline**

Mix 1 teaspoon of creoline with 1 liter of water using a stick. Use the solution to disinfect the pen.

#### **Lysol**

Mix 1 teaspoon of Lysol with 1 liter of water. Use the solution to disinfect the pen.

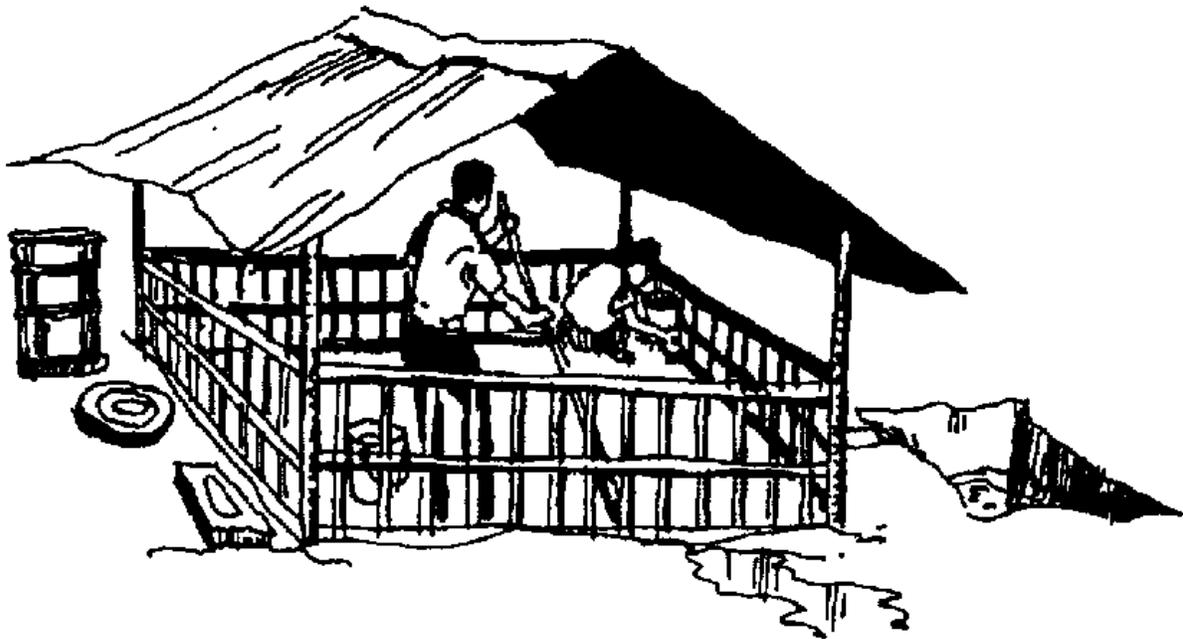
### **Tips about disinfectants**

- They are harmless to humans and animals when applied in the right amount.
- If possible, use gloves when handling.
- Do not expose disinfectants to sunlight.
- Close the bottles tightly.

### **How to disinfect?**

1 . Clean the pen or house. Clean the ceiling first, then the wall and lastly the floor. Thoroughly dry the area.

2. Remove drinkers and feeders (if possible).
3. Use a detergent to loosen dirt and organic matter sticking to all surfaces. Warm or hot water increases the cleaning performance of the solution.
4. After using the detergent, rinse the pen with clean water.
- 5 Disinfect with any of the above examples of disinfectants.



## Waste management and disposal

Dispose animal wastes properly to control diseases and to prevent air and water pollution. Apply livestock and poultry manure as fertilizer for crops and grasses.

Animal waste has several benefits:

- Nutrients are added to the soil.
- Soil cultivation is improved.
- The water-holding capacity of the soil is improved.
- Soil erosion through wind and water is lessened.

Among animal manure, poultry droppings have the highest commercial and nutritive value because of their high nitrogen content, needed by plants.

### Another use of chicken manure

Farmers in Bulalo, Cavite, Philippines, apply chicken manure around newly sown seeds and planted seedlings to ward off field mice. The manure of other animals can also fertilize the soil; but only chicken manure can prevent mice from destroying seeds and seedlings.

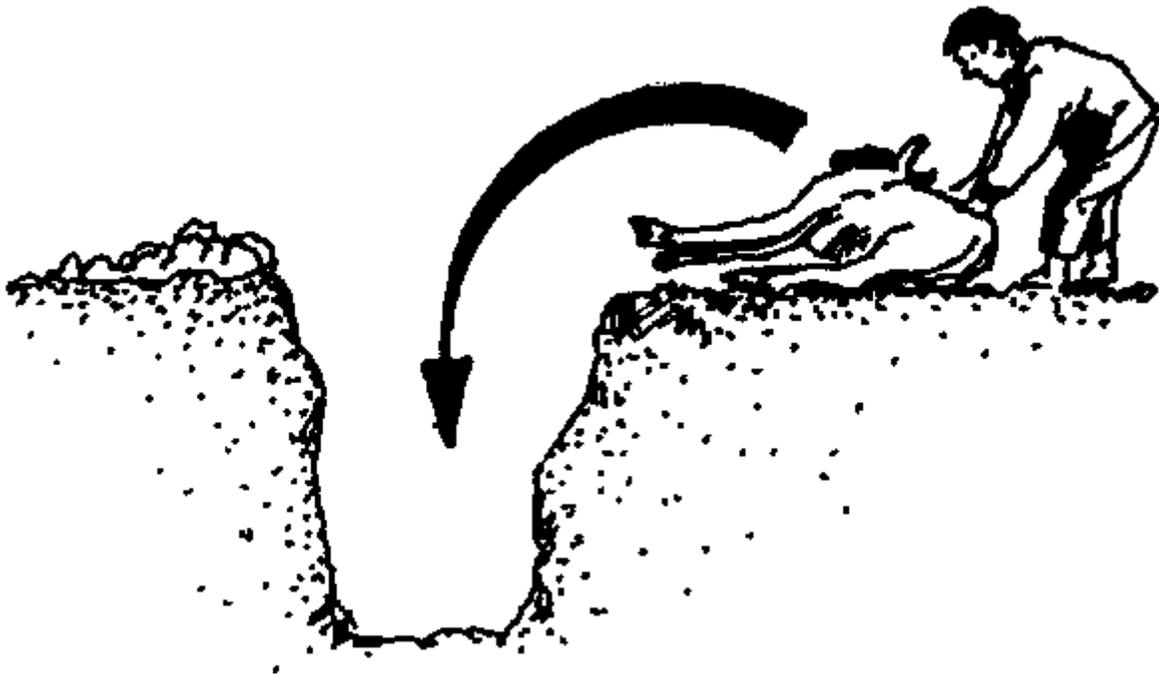


## Disposal of carcasses

Dispose of animal carcasses properly to prevent the spread of infections and diseases.

### Suggested precautions

- Cover dead animals immediately, so insects and other animals will not feed on them prior to proper disposal.
- Never deposit carcasses on or near streams.
- Dig a hole 6 feet deep, right beside the carcass. Roll the dead animal into the hole.
- Sprinkle large amounts of lime, wood ash or kerosene over the carcass then fill in the hole with soil.
- Protect the area from stray dogs which might carry away parts of the carcass and spread disease. Cover with stones or logs to prevent dogs from digging up the carcass.



## Pesticides

Pesticides are substances which kill or repel pests.

Most pesticides are harmful to people and animals when they enter the body through the mouth, skin or nose, Skin contact is most difficult to prevent.

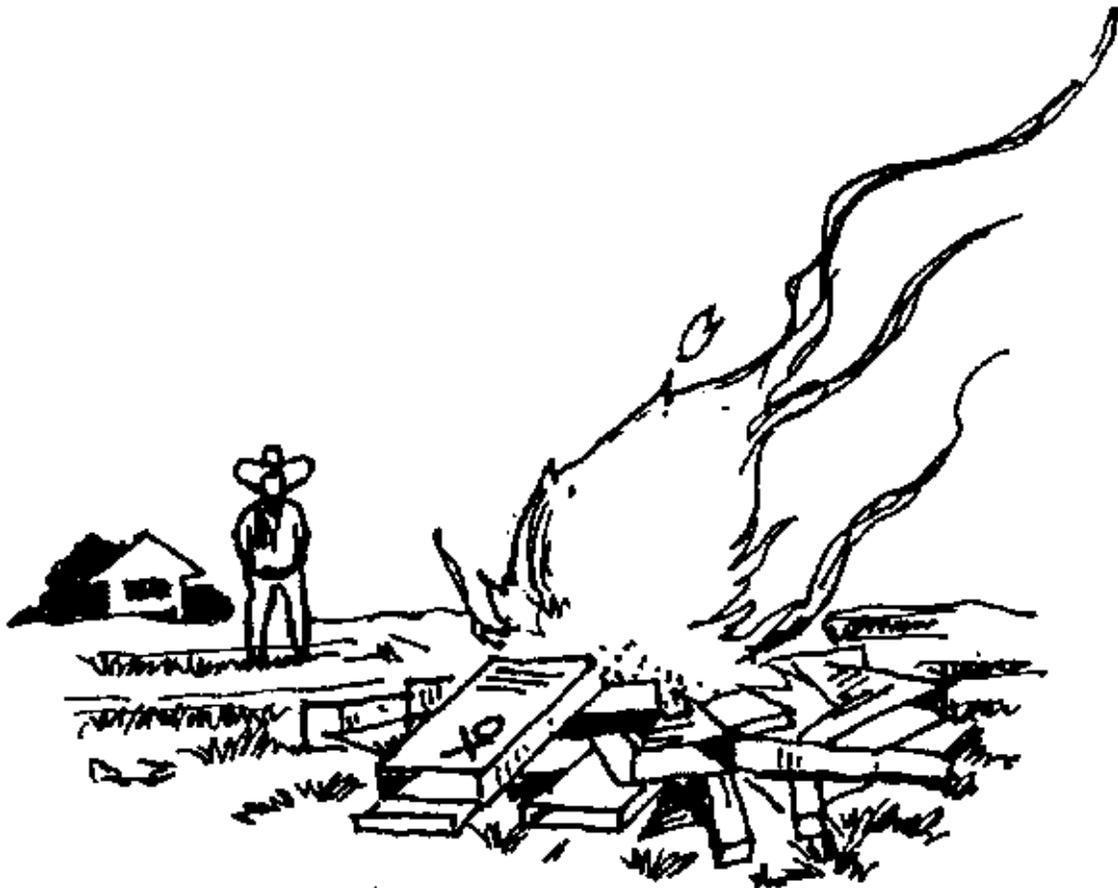
### Safe disposal of chemical pesticides and their containers

To avoid accidental poisoning of people and animals, carefully dispose of empty containers and unused pesticides. Bury these in a pit far from any water source to avoid contamination.

Burn empty pesticide bags and cardboard containers in the open. Keep away from the smoke. Cover the ashes with soil. Ensure that the buried ashes can not contaminate water sources.

#### Signs of pesticide poisoning in animals

- Swaying
- Incoordination
- Vomiting
- Sleepiness
- Frothy mouth



## Botanical pesticides

Botanical pesticides are formulations made from plants and other materials found in the environment. They are less toxic than commercial pesticides and can be prepared by farmers.

### Example

#### Ingredients

1 kg *Gliricidia* (madre de cacao) leaves

2 tablespoons vinegar

1 gallon water powdered detergent (enough to saturate the water)

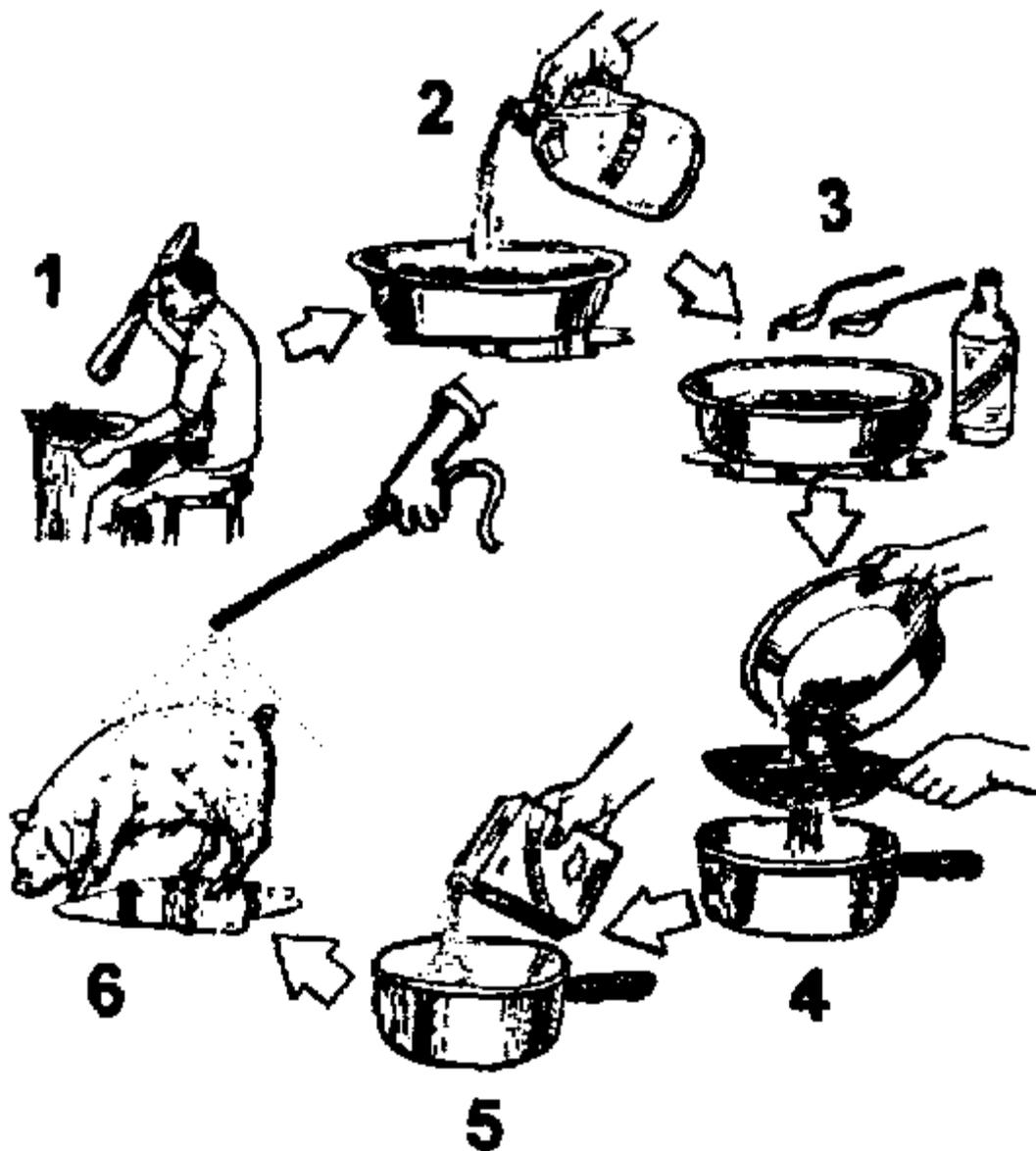
To saturate the water add powdered detergent until no more powder will dissolve.

#### Tools needed

- Strainer

- Sprayer

1. Pound 1 kg of *Gliricidia* leaves.
2. Soak overnight in 1 gallon of water.
3. Add 2 tablespoons of vinegar.
4. Strain.
5. Add powdered detergent to the solution.
6. Spray or bathe the animal with the solution.



**Botanical pesticides preparing**

**This natural pesticide can control external parasites like mites ticks and lice.**

# Disease Control and Treatment

## Disease causes and symptoms

Diseases are abnormal conditions of the body. You can tell an animal has a disease by looking for *symptoms*, or observable signs.

A disease may be acute or chronic.

- *Acute* diseases appear suddenly, last only a short time, but are severe.
- *Chronic* diseases last a long time, but are not usually severe.

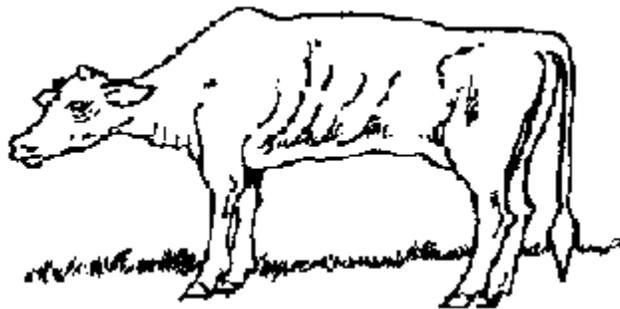
Animals can get sick if:

- they come in close contact with sick animals;
- they graze in an area where sick animals have grazed or died, or
- they do not receive proper care and food.

## Symptoms

A sick animal shows one or more of the following signs:

- Staying away from other animals.
- Loss or lack of appetite.



- Fever.
- Frequent thirst and shivers.
- Inactivity.
- Constipation or diarrhea.
- Drooping ears, tail or wings.
- Change in color.
- Abnormal discharges like pus, mucus.

## Classification of diseases

Diseases may affect different parts of the animal's body.

- Digestive—affects stomach and intestines
- Respiratory—affects breathing and lungs.
- Skin.
- Bone/muscle.

- Urinary—affects kidneys and bladder.
- Reproductive—affects uterus, vagina, ovaries (in females) or penis, testes (males).

### Disease causes

- **Contagious.** These are diseases transmitted directly from one animal to another. Examples: Foot-and-mouth disease (FMD), Hog Cholera.
- **Infectious.** Diseases caused by microscopic organisms such as bacteria, viruses, fungi and one-celled parasites (protozoa). Many infectious diseases are contagious (see below). Others such as tetanus, are not contagious.
- **Parasitic.** Diseases due to different kinds of parasites. Examples: Mange, lice infestation, worms.
- **Deficiency.** Diseases due to different kinds of nutritional deficiency. Example: Iron deficiency.
- **Metabolism.** Diseases due to some kind of an upset which affects important body processes. Example: Milk fever.
- **Poisoning.** Disorder due to eating something that destroys tissues or interferes with normal body functions. Example: Lead poisoning.
- **Injuries.** Damage done by cuts or accidents. Example: Fractures.
- **Miscellaneous.** Includes disorders diet do not properly belong under any of the other headings Example: Prolapse of uterus.

### Prevention and control of any disease can be assisted in a number of ways:

- Education of farmers.
- Good management and feeding.
- Sanitation (keeping animals and housing clean).
- Vaccination.
- Early treatment.
- Isolation of sick animals.

## Diseases of ruminants

### Foot-and-mouth disease

Foot-and-mouth disease (FMD) is an acute and highly contagious viral disease which affects all animals with hooves (such as cattle, water buffalo, goats and pigs). All ages are affected.

#### Symptoms

- Blister-like sores and ulcers on the feet, mouth, muzzle, udder and teats.
- High fever.
- Refusal to eat.
- Heavy salivation.
- Hooves sometimes fall off.
- Lameness.

#### Treatment

- **Herbal medicine.** Refer to booklet on *Herbal medicine for animals*. Herbal medical relieves only the symptoms of FMD.
- **Western medicine.** Treat the animal with any of the following:

— Alum (locally known as tawas) and gentian violet. Dissolve alum in 1 glass of gentian violet. Use cotton to apply the solution to blisters 2-3 times a day. This will quickly dry up blisters.

— Formalin and gentian violet. Mix 1 glass of formalin with 1 glass of gentian violet. Apply the solution to the blisters 2-3 times a day. This will also dry up blisters.

— Antibiotics. Inject antibiotics like penicillin-streptomycin into the muscles of the hip or neck to fight complications. Repeat the injection for 34 days.

— Vitamins. Inject Vitamin C (ascorbic acid) into the muscles of the hip or neck to speed up wound healing.

#### Prevention

- Regularly vaccinate animals against FMD.
- Isolate infected animals.
- Do not slaughter or sell infected animals. Destroy and bury them.
- Quarantine infected areas.
- Report FMD to the nearest office of the Bureau of Animal Industry.



## Hemorrhagic septicemia

Hemorrhagic septicemia is an acute infectious characterized by pneumonia. It occurs after a long, dry period and at the onset of rainy season.

### Symptoms

- Swelling of the neck.
- Difficulty in breathing. In the last stage of the disease, the animal's tongue sticks out because of breathing difficulty.
- High fever.
- Loss of appetite.
- Nasal discharge.

### Treatment

- **Herbal medicine.** Boil tamarind or camphor leaves. (See booklet on *Herbal medicine for animals*.)
- **Western medicine.** Inject the following drugs:

— Ecolmin. This will loosen mucus in the respiratory tract. Site of injection: Muscle of hip or neck. Repeat the injection for 2-3 days.

— Antibiotic. Inject antibiotics like penicillin-streptomycin or trimethoprim-sulfa into the muscles of the hip or neck. Repeat the injection for 3-4 days.

### Prevention

- Vaccinate animals against hemorrhagic septicemia. (Refer to vaccination.)
- Avoid stress to animals.
- Keep animals and shed clean and dry.
- Bury dead animals.

## Tetanus

Tetanus is an acute, highly infectious, non-contagious disease. It is manifested by contractions the muscles. It affects humans, swine and ruminants. The bacteria gain entrance through deep wounds that heal quickly on the outside.

### Symptoms

#### *Early stage*

- Stiffness of the jaw (lockjaw).
- Erect ears.
- Extended tail.

### *Acute stage*

- Protruded third eyelid (white to pinkish membrane found at the inner corner of the eye).
- Inability to swallow food and water.

### **Treatment**

Inject the following drugs into the muscles:

- Tetanus antitoxin. Dosage: 10,000-50,000 International Units (IU) for cattle and buffaloes; 3,000-15,000 IU for goats and pigs

The exact amount will depend on:

- Degree of tissue damage.
- Amount of wound contamination.
- Time passed since injury.

- Acepromazine. This will lessen pain or excitement of the affected animal.
- Penicillin-streptomycin. Dosage: 5-15 cc per animal. Inject into the muscle of hip or neck. Repeat injection after 24 hours.

### **Prevention**

- Regularly trim hooves. (See section on hoof trimming in *Restraining animals and simple treatments*.)
- Thoroughly clean all wounds as soon as they occur.
- Instruments for castration should be properly cleaned and disinfected. (See section on *Restraining animals and simple treatments*.)
- Inject tetanus antitoxin at a dose of 1,500 IU to protect the animal from tetanus for at least 10 days after the wound occurs.

### **Husbandry measures**

- Put the animal in a quiet, dark place.
- When infection is found, the wound should be reopened and thoroughly cleaned.

### **Foot rot**

Foot rot is a major cause of lameness in ruminants of all ages.

The bacteria multiply in wounds in the skin between hoof sections.

Prolonged standing in mud, water, manure or urine can lead to foot rot. The bacteria enter cracks in the skin, causing painful swelling on the affected foot. The flesh dies and rots, causing a foul smell.

### **Symptoms**

- Lameness.
- Hoof smells bad.
- Pus in the inflamed foot.



- Swelling.

**Warning:** If you see sores in the mouth of ruminants with foot rot, the problem may be FMD.

### **Treatment**

- Wash the foot with lukewarm water and soap. Remove dirt or manure in the affected area.
- Apply or spray fly repellent like Gusanex or Negasunt, 2-3 times a day until the infected area is cured.
- Inject an antibiotic preparation such as penicillinstreptomycin. Inject into the muscle of hip or neck. If symptoms remain after 2-3 days, repeat the injection.

### **Prevention**

- Provide salt in diet.
- Keep animals in a dry place.
- Regularly trim the hooves.
- Clear the pasture area of sharp objects such as glass, wire or sharp stones.

### **Tick infestation**

Ticks are external parasites, dark in color and two or three centimeters in size when full of blood. They get on the livestock by climbing up on bushes and weeds and waiting for an animal to brush against them. They attach themselves to the skin of animals and suck their blood. Ticks can transmit serious diseases like tick fever.

### **Direct damage**

- Hundreds or thousands of ticks infesting an animal can result in anemia, low milk production, weight loss and even death.
- Some species of ticks can cause tick paralysis.
- Ticks damage the animal's hide. A damaged hide reduces the market value of the animal.

### **Symptoms**

- The animal scratches.
- The animal's hide has red patches (tick-bite marks noticeable in white-colored cattle and buffaloes).
- The animals show discomfort.
- A large number of ticks may be found in less hairy areas.

Humans can be infected with ticks while handling infested animals.

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

### **Treatment**

- Herbal medicine. Leaves of *Gliricidia* or *Premna* (Refer to section on *Herbal medicine for animals*).
- Dissolve 1 tsp of either Asuntol or Neguvon in 1 gallon of water. Use the solution to bathe the animal. Thoroughly rinse after 10 minutes

**Warning:** Do not allow the animal to lick the solution; it is toxic.

## Prevention

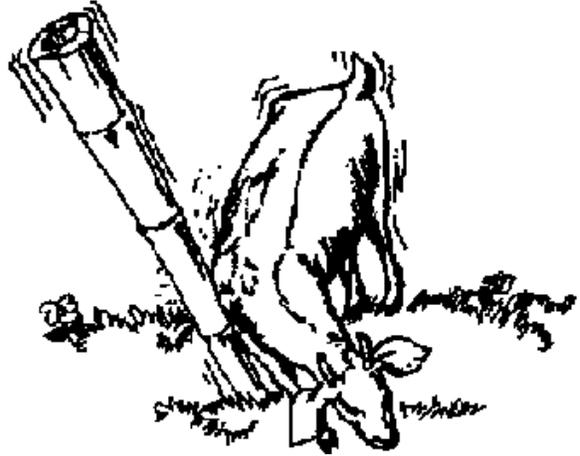
- Regularly bathe the animal.
- Give salt to the animal.
- If your farm is near the sea, bathe your animal in the sea at least once a month.

## Lice infestation

Lice infestation in ruminants is the result of bad sanitation.

### Symptoms

- Itchiness.
- Animals scratch or rub their bodies against trees, posts or their pens.
- Lice eggs concentrate at the tip of the tail, hair inside the ears, hair around the eyes and at the neck.



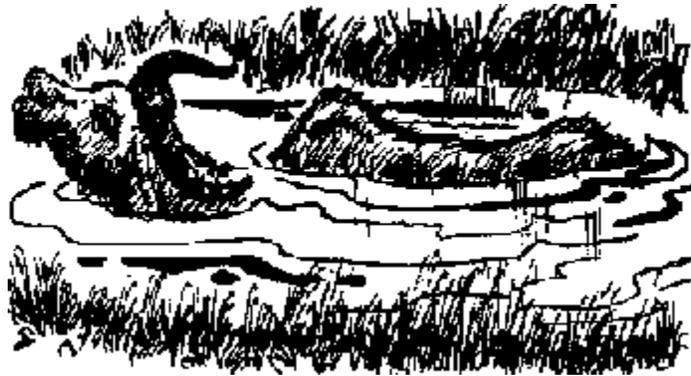
### Treatment

- **Herbal medicine.** Leaves of *Gliricidia* or *Premna* (See *Herbal medicine for animals.*)
- **Western medicine.** Dissolve 1 tsp of Asuntol or Neguvon in 1 gallon of water. Bathe the animal with the solution. After 10 minutes, rinse the animal thoroughly.

**Warning:** Asuntol and Neguvon are toxic. They can cause poisoning and death to animals and humans.

### Prevention

- Wash your animals regularly.
- If the place is near the sea, bathe the animals in the sea once a month for half an hour or so.
- Shave water buffaloes, especially during summer.
- Allow animals, particularly water buffaloes, to wallow in mud. Dried mud on the animal's skin stops parasites like ticks and lice from biting.

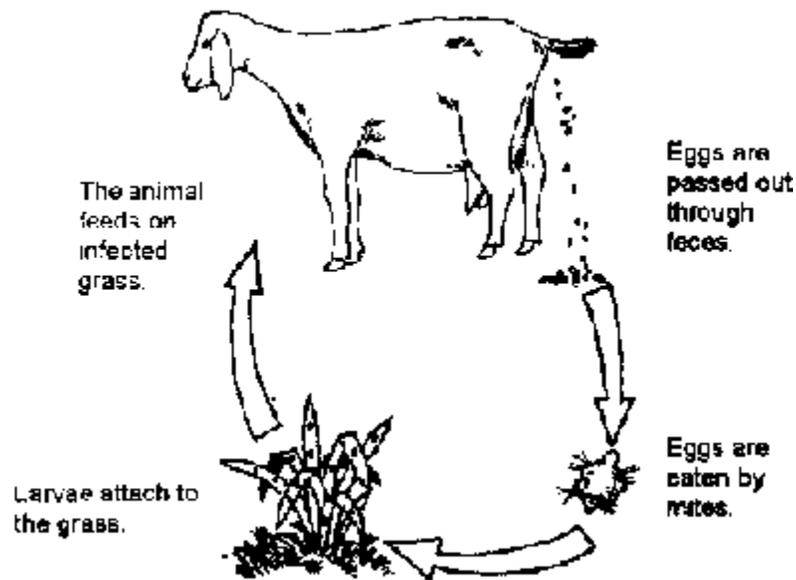


## Tapeworm infestation

Tapeworms are long, flat worms that live in the intestines of ruminants, robbing them of nutrients.



### Life cycle of tapeworms in cattle, water buffaloes and goats



### Tapeworms from cysts in the muscles of ruminants and pigs

Animals infected with these type of tapeworms do not show signs of infection. Humans can be infected with these tapeworms if they do not properly cook the meat of infected animals before eating. To avoid tapeworm infection in humans, eat only meat that is properly cooked and keep human feces away from areas where animals feed or drink.

### Symptoms

- Anemia.
- Repeated diarrhea.
- The animal tires easily.
- The animal is weak.

### Prevention

- Herbal dewormers—Nuts of *Areca catechu*. (See *Herbal medicine for animals*.)
- Western dewormers—Valbazen or Total Spectrum Dewormer (TSD).
- Keep pastures and animal yards well- drained.
- Keep water tanks and troughs leak-free.
- Avoid overstocking pasture.
- Isolate animals which are heavily parasitized.

- Isolate newly acquired animals.
- Rotate grazing areas.

## Roundworm infestation

These are the most common internal parasites of ruminants and other animals.

### Cause

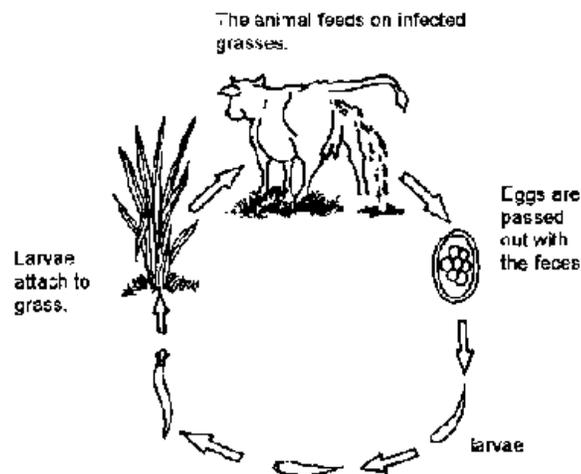
*Ascaris lumbricoides*, *Strongyles*

### Symptoms

- Loss of appetite.
- Animal is thin and weak.
- Anemia.
- Repeated diarrhea
- Enlarged abdomen.



### Life cycle of roundworm in cattle, water buffaloes and goats



### Treatment

- **Herbal dewormers:** nuts of *Areca catechu*, seeds of *Carica papaya*, leaves of *Chrysophyllum cainito*, vines of *Tinospora rumpii*. (See *Herbal medicine for animals*.)
- **Western drugs:** Valbazen, Piperazine or TSD

### Prevention

- Rotate pasture. Do not use the same pasture area over and over.
- Cover stagnant pools of water with soil.

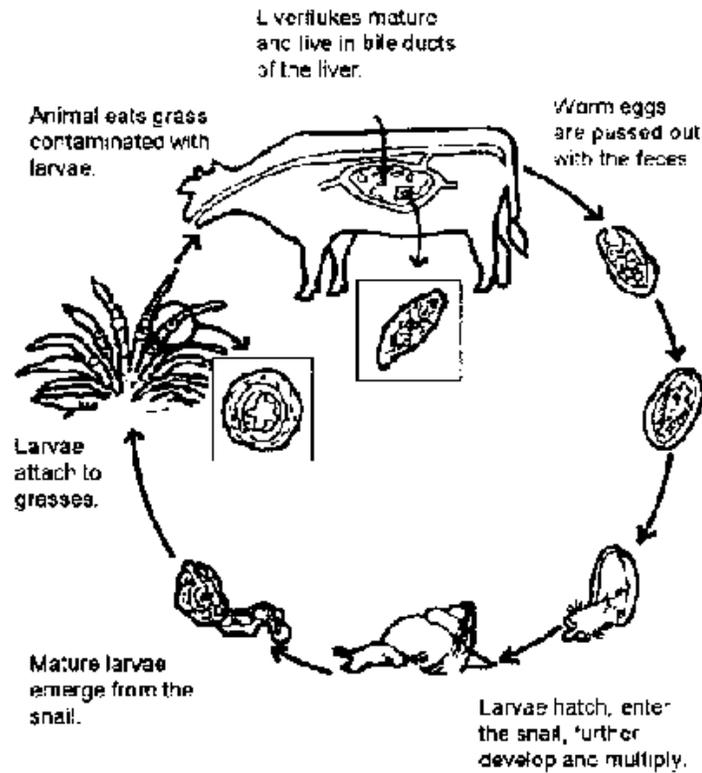
## Liver fluke infestation

### Cause



Liver fluke (leaf-shaped worm). Adult liver flukes live in tubular passages of the liver and gall bladder.

### Life cycle of liver fluke



### Symptoms

- Anemia.
- Gradual loss of weight.
- Repeated diarrhea.
- Swollen face ("bottle neck").
- The animal tires easily.

### Treatment

- **Herbal dewormer**—nuts of *Areca catechu*. (See *Herbal medicine for animals*.)
- **Western dewormer**—Valhazen or TSD. These are given Orally.

Because animals may have liver fluke without showing symptoms, deworm all animals in your herd twice a year or when needed.

## Prevention

- Raise ducks to eat the snails.
- Improve the pasture. Cover stagnant pools.
- Keep the animals away from areas with many snails.



## Udder infection (mastitis)

### Causes

Bacteria, wounds, insect bites and abscesses.

The following can lead to udder infection:

- Injury to the udders.
- Rough handling of the animal, especially during milking.
- Unclean pens and feeders.

### Symptoms

- Reddening of the udder.
- Swelling of the udder.
- Infected udder is warmer to the touch than a healthy udder.
- Fever.
- Absence or reduction of milk in infected udder.

### Treatment

- Carefully massage the mammary organ with lukewarm water 2-3 times a day for 2 days.
- Western medicine. Inject antibiotics in either the hip or neck of the infected animal (e.g., penicillin-streptomycin). Repeat injection for 2-3 days.

## **Prevention**

- Provide adequate bedding.
- Keep pens dry and clean.
- Milk cows regularly.
- Avoid udder injuries.
- Milk infected animals last. Wash hands after milking infected animal.

## **Lack of milk**

Milk flow from any ruminant can decrease from time to time, often due to disease. Some animals are normally hard milkers.

They produce less milk no matter what you do.

Cows, goats and sheep normally give their maximum milk yield during their second or third lactations. Buffaloes give their highest yield in the third or fourth lactations.

## **Causes**

- Disease.
- Loss of calf or kid after birth.
- Hard milkers.

## **Symptoms**

- Less milk production compared to previous lactations.
- Milk is drawn with difficulty.
- Sudden drop in milk production.

## **Treatment**

- Inject oxytocin in the muscle of hip or neck. Oxytocin is a hormone which stimulates milk flow and uterine contractions.
- Inject penicillin-streptomycin in the muscle of the animal's hip or neck.

## **Prevention**

- A week before the animal gives birth, provide it with a continuous supply of a solution of boiled leaves of *Moringa oleifera*. This will induce milk production.
- Avoid stressing the animal.

Uterus infection, udder infection and leak of milk can occur simultaneously. They affect cattle, pigs and goats.

## Birthing difficulties

Difficult births can occur in females of any age. However, birthing is often slow and difficult for first-time mothers.

### Causes

- Abnormal position of the offspring inside the uterus.
- Very large offspring.
- Weak or no uterine contractions.

### Symptoms

- Long hours of labor without progress: two hours for sheep and goats; four hours for cattle and buffaloes.
- A part of the offspring or afterbirth has come out.
- The water bag has broken, yet birth has not taken place is within 2 hours.
- The animal strains without result.

**Note:** The above causes and symptoms also apply a' pigs

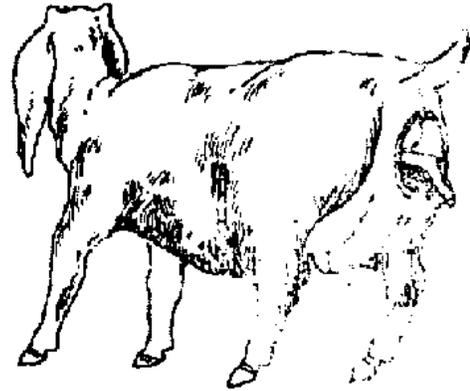
**Warning:** Before giving assistance to the animal, trim your fingernails very short. Thoroughly wash your hands and arms with soap and clean water. If possible, disinfect them with alcohol. Apply unused vegetable oil to hands and arms to ease entering the reproductive canal.

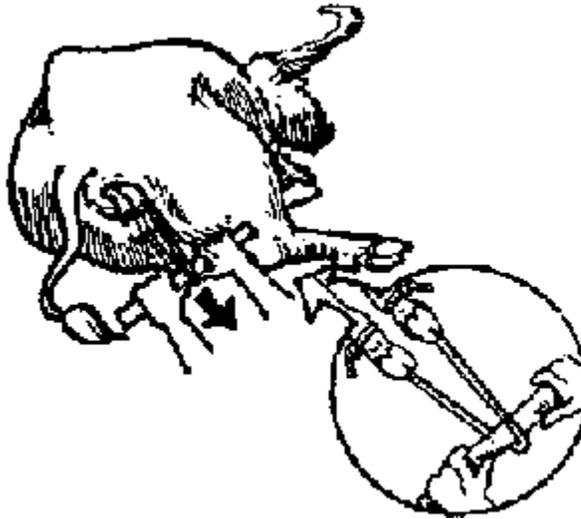
### Inadequate uterine contraction.

Infect oxytocin in the muscle of hip or neck Once the drug takes effect, e.g., the mother starts pushing, perform traction by doing the following:

1. Disinfect a 1-meter lone rope with boiling water
2. Carefully tie each end of the rope a little above the hoof joint of each of the forelegs or each of the hind legs (whichever end is closes to coming out) of the offspring.
3. Insert a clean stick about 30 cm in length through the loop.
4. Pull the stick only when the mother pushes.
5. Pull the baby animal only towards the udder.

**Note:** Make sure that both are hind legs and not one front leg and one hind leg. If both are hind legs, tie the rope in the same way as above and pull when the mother gushes.





- After delivery, inject the mother with penicillin-streptomycin.

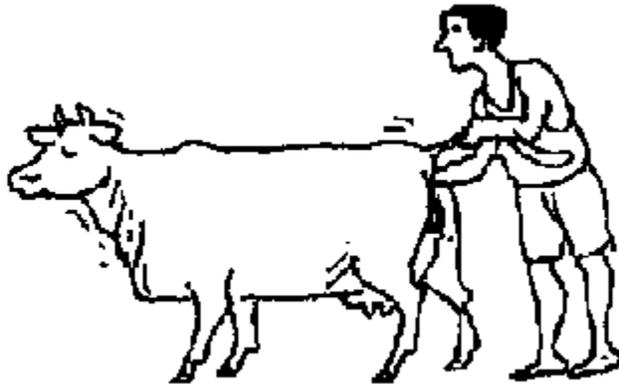
- Wash the vagina with a strained solution of boiled guava leaves. The solution can also be used to irrigate the uterus. Repeat the guava wash 2-3 times a day for 2 days.

### **Abnormal position of offspring**

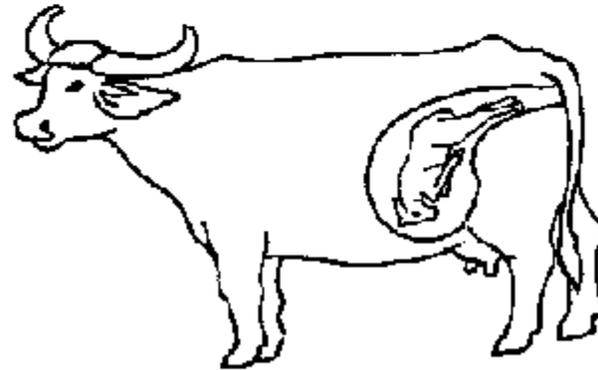
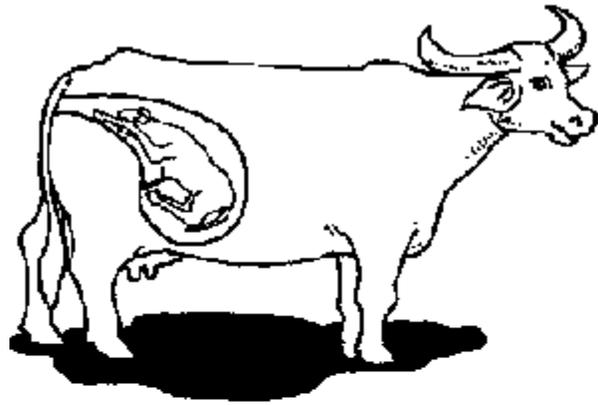
Trim your nails, wash your hands and arms and lubricate them with unused vegetable oil. Then do the following:

1. Cup one hand into a cone shape.

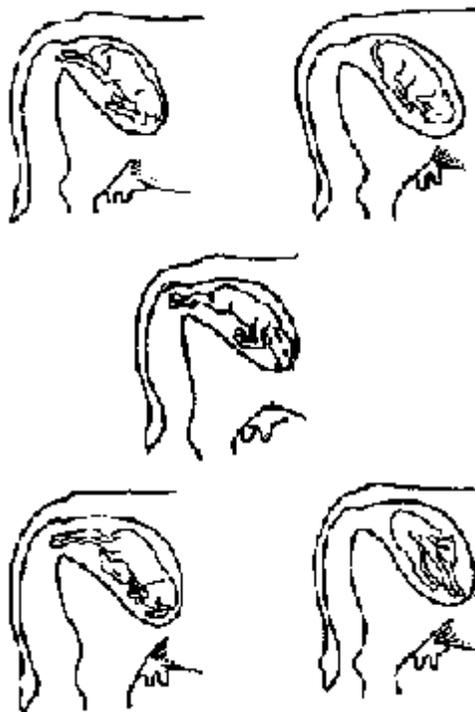
2. Insert this hand into the vagina following along the length of the placenta and reaching as far as you can, until the baby animal is reached. Identify the part of the baby animal you are holding. Gradually, position the baby animal in a normal position. Then, pull the legs at the same time the mother pushes. If the reproductive tract has dried up, apply vegetable oil to ease pulling the baby animal. Once the baby animal is out, inject the mother with penicillin-streptomycin. Wash the vagina with a strained solution of boiled guava leaves. The solution can also be used to irrigate the uterus. Repeat the guava wash 2-3 times a day for 2 days.



Normal positions of cattle and water buffalo offspring

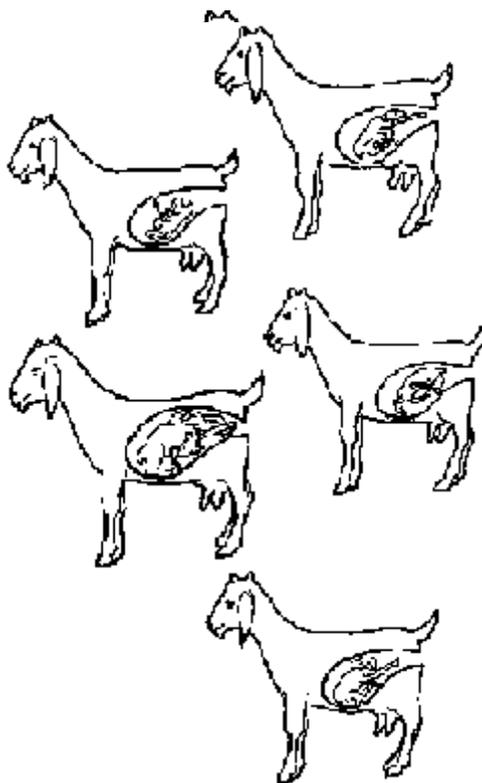


**Abnormal positions of cattle and water buffalo offspring**

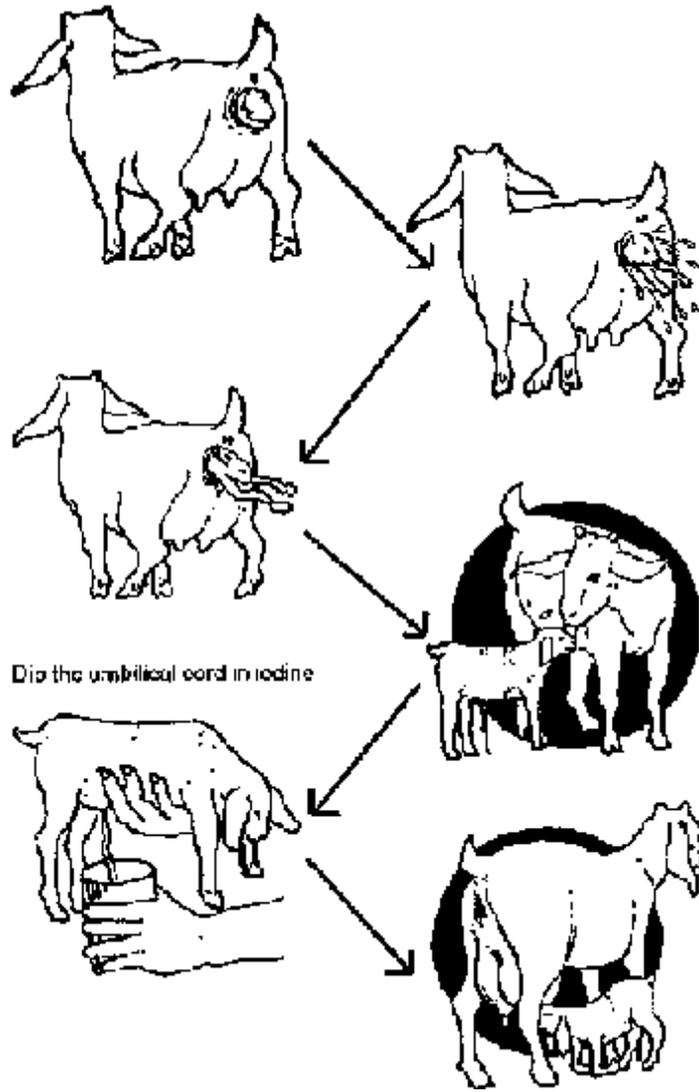


**Normal positions of goat offspring**

**Abnormal positions of goat offspring**



Normal birthing of a goat



## Very large offspring

Do the following simple techniques if faced with this problem:

1. Apply unused vegetable oil along the reproductive tract for ease in pulling.

2. Pull the legs of the baby animal as the mother pushes. The direction of pulling should be out and downward toward the mother's udder as the baby animal passes through the birth canal. After delivery, inject the mother with penicillin-streptomycin into the muscle of hip or neck.

3. After delivery, do the following to the mother

Wash the external reproductive tract with a strained solution of boiled guava leaves.

Irrigate the internal reproductive tract with the solution of boiled guava leaves.

Insert Nitrofurazone capsules into the uterus.

Inject oxytocin into the muscle of neck or hip.

Allow the mother to lick the new born. This also helps to induce milk flow in the mother.

If the mother refuses or is too weak to lick the newborn, dry the newborn with a clean, rough cloth. Remove any mucus from its nostrils. Rub the hooves with the cloth to remove the plasticlike coating.

If the newborn animal does not breath, do one or a combination of the following:

Massage the chest. Pump a foreleg. Blow in the mouth. Swing it back and forth by the hind legs. Insert a clean finger into the mouth to remove all mucus. Insert a piece of rice straw to tickle the newborn animal sneeze. This expels the mucus blocking the breathing passage.

**Tip:** A live baby animal will suck your finger or move.

### Drying the navel cord

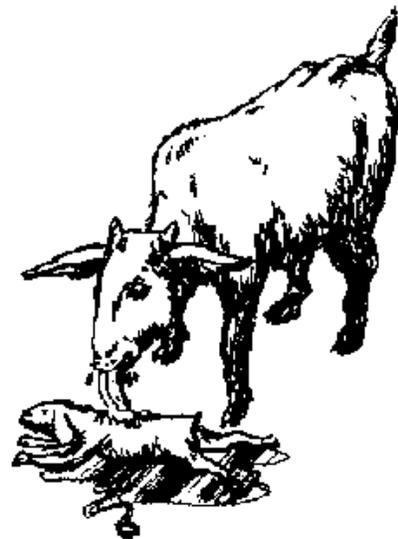
• Choose any of the following practices to dry the navel cord. These practices also prevent bacterial infection and infestation by maggots.

1. Pound 1 medium-sized head of garlic and apply it to the navel.

2. Apply vegetable oil to the navel and then cover it with wood ash.

3. Spray fly repellents like Gusanex or Negasunt into the navel.

**Warning:** Do not pull the navel cord unnecessarily. This could lead to hernia, a swelling in the navel region.



### **The mother's first milk**

Within 24 hours, the newborn ruminant should suck the colostrum. This is the first milk from the mother. It contains antibodies that will provide resistance to diseases later in the newborn's life. It is also rich in protein, Vitamin A and fats.

### **Prolapse of the uterus**

Sometimes, the entire uterus comes out of the vulva after birth. It will look like a red, inflated inner tube of car tire. If this happens, seek professional help. While waiting, do the following:

If the animal is lying down, gently clean and wrap the uterus with a large, clean cloth. Be sure not to injure the uterus.



## Diseases of pigs

### Hog cholera

Hog cholera is a highly contagious disease caused by a virus. It affects pigs of all ages. The disease appears suddenly and spreads rapidly through direct or indirect contact with sick animals. Hog cholera virus persists in meat preserved by salting, smoking or freezing. The disease is often spread through uncooked meat. It may persist for up to two years. Death occurs in five to seven days.

#### Symptoms

##### *Early phase*



- Inactivity.
- Loss or lack of appetite.

##### *Acute phase*



- Loss or lack of appetite.
- High fever.
- Constipation then diarrhea.



- Vomiting.



- Difficulty breathing
- Convulsions.



- Pigs pile up or huddle together
- Skin of ears, neck and abdomen turns purple.

*Chronic phase*

- Diarrhea.
- High fever.
- Weakness.
- Trembling piglets.

**Treatment**

- If the disease is still in its early stage, inject hog cholera serum. If the animal has been ill for more than three days, the serum is useless.

**Prevention**

- Dead animals should be burned and buried with lime.
- Cook kitchen scraps before feeding.
- Practice regular vaccination
- Disinfect pens of infected animals.
- Purchase animals from reputable sources.
- Isolate newly purchased animals for observation for about a month.

## Foot-and-mouth disease

Foot-and-mouth disease (FMD) is an acute, highly contagious, viral of animals with hooves, such as cattle, water buffalo, goats and pigs.

Symptoms, treatment and prevention methods for FMD in pigs are the same as those of FMD affecting cattle and water buffaloes. (See section on FMD in *Diseases of ruminants*.)

## Transmissible gastroenteritis

Transmissible gastroenteritis is a common viral disease of the small intestine that causes vomiting and profuse diarrhea in pigs of all ages. It spreads rapidly. Piglets less than one-week old rarely survive the disease.

### Symptoms

#### *Early stage*

- Vomiting.
- Profuse watery diarrhea.
- Dehydration.
- Excessive thirst
- Lactating sows vomit and have diarrhea. Their milk production is reduced.

#### *Acute stage*

- Nursing piglets' stools contain curds of undigested milk. Mortality rate is nearly 100 percent.
- Growers/finishers have yellowish diarrhea.
- Pregnant sows abort.
- 
- 

### Treatment

No recommended treatment.

### Prevention

- Delay reusing the pens of infected animals.
- Disinfect pens. (See *Basic husbandry practices and veterinary care*.)

## Swine dysentery

Swine dysentery is known by a number of names, including bloody diarrhea, hemorrhagic enteritis bloody scours and black scours. It affects pigs of all ages, sometimes causing death.

## Symptoms

### Early stage

- Partial loss or lack of appetite.
- Sometimes fever.
- Soft feces.

### Acute stage

- Mucoid diarrhea with flecks of blood.
- Watery, hemorrhagic diarrhea.
- Dehydration.
- Weakness.
- Emaciation.



## Treatment

- Some herbal medicines can be used to relieve the symptoms of diarrhea and dehydration. (See *Herbal medicine for animals*.)
- Western medicine.

inject Tylosin into the hip or neck. Repeat injection for 3 4days.

## Prevention

- Delay reusing the pens of infected animals.
- Disinfect pens.

## Baby-pig diarrhea

Infection occurs in the first few days of a pig's life. Improperly fed sows and poor farrowing conditions contribute to the spread of infection. Mortality rate may reach 100 percent.

## Cause

*Escherichia coli* bacteria. These are normally present in the pig's digestive tract. Lowered resistance of piglets permits the bacteria to multiply and spread abnormally.

## Symptoms

- Watery, yellowish white diarrhea.
- Dehydration: Nose is very dry and skin is slack. To test for this, gently pinch the skin of the animal and pull it. Then let go. If the piglet is *not* dehydrated, the skin will snap back into place.
- Weakness.
- Rapid weight loss.

## Treatment

- **Herbal medicine**—Fresh leaves of guava or star apple. This will treat the symptoms only. (See *Herbal medicine for animals*.)
- **Western medicine.**

— For sows. Inject antibiotic (penicillinstreptomycin) into the muscle of hip or neck. Repeat injection for 2-3 days, if necessary.

— For piglets. Give 1/2 teaspoon of Kaopectate oral suspension twice a day for 34 days.

## Prevention

- Keep pens, feed and watering troughs clean.
- Separate affected animals from healthy animals.
- Do not change abruptly an animal's ration.

## Lice Infestation

Hog lice are the largest of all lice which attack domestic animals. They are usually found in less hairy areas of the body such as the neck and ears. Hog lice feed by puncturing the skin and sucking blood.

Lice infestation is mainly due to poor hygiene.

## Symptoms

- Itching.
- Scratching.
- Loss of hair due to rubbing and scratching.
- Lice can be seen on the skin.
- Lice eggs can be seen attached to the hair.

## Treatment

- **Herbal medicine**—Leaves of sugar apple or gliricidia. (See *Herbal medicine for animals*.)
- **Western medicine**—Neguvon or Asuntol powder. (For treatment, see mite infestation on page 37.)

## Prevention

- Separate infected animals from healthy animals.
- Keep pens, animals and surroundings dean

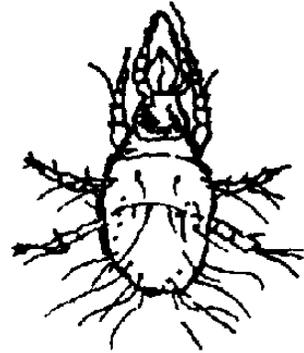


## Mite infestation

Mites burrow deep under the skin. They can be spread by contact with infected animals, infected caretakers or from contaminated objects or pens. Mite infestation is also called scabies or mange.

### Symptoms

- Scratching.
- Wrinkled and rough skin.
- Inflammation of the skin.
- Falling hair.
- Moist, open wound (which can ooze pus or serum).



Mites usually thrive on the hairless portions of a pig's body, like the back of the pig's ears.

Fungal infection may also have the same symptoms but the wounds (lesions) are different. Lesions caused by fungus are rounded and the surrounding areas are reddish.

**Warning:** Scabies is transmissible to humans and other animals.

### Treatment

- Herbal medicine. Use any of the following:

- dried seeds of sugar apple.
- fresh leaves of woodworm.
- fresh leaves of ringworm bush.
- fresh leaves of *gliricidia*.
- fresh leaves of chrysanthemum.

(See *Herbal medicine for animals*. For more information on preparations and dosages, see also *Ethnoveterinary medicine in Asia: An information kit on traditional animal health care practices*.)

- Apply used crude oil on the affected area 2-3 times a day until the skin is fully treated. Caution: Never expose an animal which has been treated with used crude oil to direct sunlight.
- Western medicines such as Neguvon or Asuntol. Dissolve 1 teaspoon of Neguvon or Asuntol powder in 1 gallon of water. Bathe the infected pig with the solution. Repeat the procedure twice a week until the animal has fully recovered. Spray some amount into the pen to kill the eggs and young mites. Do this once a week for about a month.

### Prevention

- Separate infected animals from healthy ones.
- Keep pen and surroundings clean.

## Intestinal parasites

The most common internal parasite of pigs is ascaris, a large white roundworm found in the small intestine. Other worms inhabit the stomach, large intestine and lungs. Worms affect pigs of all ages.

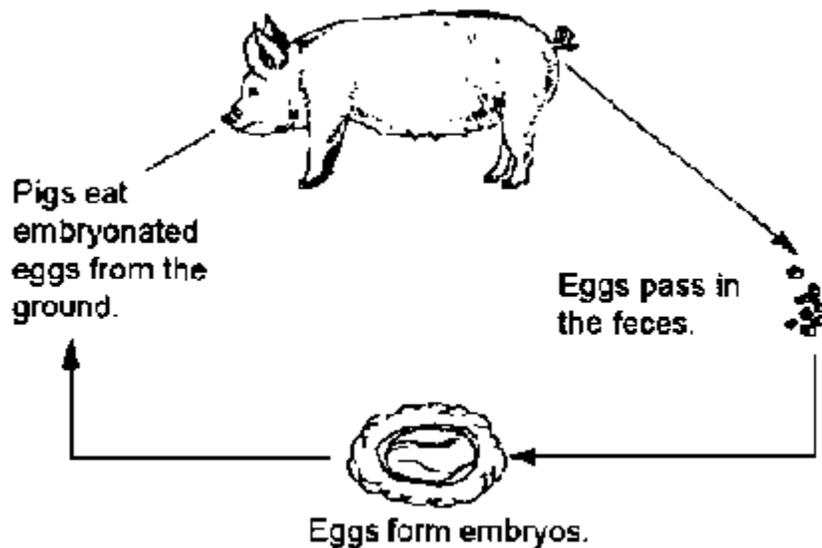
**Warning:** Eating vegetables treated with ascaris-infested pig manure will transfer the worms to humans.

### Symptoms

- Lack or loss of appetite.
- Diarrhea.
- Anemia.
- Weight loss.
- Slow growth.
- Coughing.
- Dull, thick hair
- Live worms expelled in the feces.



### Life cycle of roundworms in pigs



Eggs hatch in the intestinal tract into larvae, which burrow into capillaries and circulate to the lungs. They grow there, then migrate up the windpipe, are swallowed and only then mature to adult worms in the intestinal tract.

### Treatment

- **Herbal medicine**—betel nuts or leaves of sugar apple. (See *Herbal medicine for animals.*)
- **Western medicine.**

—For breeders (boars, sow, gilts). Deworm with Latigo 500. Give 2 tablets per animal.

—For young pigs. Deworm with Latigo 50. Give 1-2 tablets per animal.

### Prevention

- Keep animals and surroundings clean.

- Deworm, then repeat deworming after 21 days to break the life cycle of the roundworm. Then, deworm every three months.

## Udder Infection

Bacteria infection causes an inflammation of the mammary organ and results in changes in milk production. These bacteria enter the wounds in the udder

### Symptoms

- Swelling of the udder.
- Absence or reduction of milk in the affected udder.
- Fever.
- Sow refuses to suckle her piglets. As a result, piglets squeal due to hunger.
- Reddening of the udder.

### Treatment

- **Herbal medicine.** Make a poultice from any of the remedies below and apply to the infected udder once a day until the redness disappears or the wounds heal. Use either a strip of banana stalk or strips of clean cloth to hold the poultice.

—Pound and extract the juice from 5-10 fresh leaves of betel pepper. Mix it with 5-10 chopped, fresh guava leaves and 5-10 chopped, fresh tobacco leaves.

—Pound 5-10 fresh leaves of guava.

- **Western medicine.** Inject penicillin-streptomycin into the muscle of hip or neck. Repeat the injection for 34 days.
- Gently massage the affected udder with lukewarm water. Do not allow the young to suck milk from the infected sow. Remove the milk from the infected udder and discard. Separate sow from piglets and reduce access to teats (allow a few piglets to suckle at a time). If possible, foster piglets to lactating mothers.

### Prevention

- Provide adequate bedding.
- Keep pig pens clean, dry and free of sharp objects.
- Clip milk teeth of baby pigs.

## Uterine infection

An infected uterus accumulates pus. This usually occurs after birthing, breeding or examining the uterus with a dirty hand.

### Symptoms

- Weak appetite.
- Fever.
- Milky to yellowish discharge from the birth canal.

## Treatment

- **Herbal medicine.** Irrigate or wash the birth canal with the strained solution made from boiled fresh guava leaves. Use a matured papaya stalk to funnel the solution inside. Pour in the solution until the pus comes out. Wash also the external reproductive organ with the strained solution of boiled guava leaves. Repeat the external wash twice a day for three days.
- **Western medicine.**
  - Inject antibiotic like penicillin-streptomycin into the muscle of hip or neck. Repeat the injection for 34 days.
  - Inject hormone (oxytocin) to speed up the expulsion of pus and dead tissues from the uterus. Repeat the injection after 20 minutes if no effect is seen, i.e., the pus and dead tissues coming out of the vagina.

## Prevention

Proper hygiene and sanitation, especially during birthing and examination of uterus.

## Lack of milk

The condition is usually seen during or after a disease, like infection of the udder or uterus.

## Symptoms

- Increased milk production.
- Milk can be drawn only with difficulty.
- Piglets squeal due to hunger.

## Treatment

- Inject the saw with oxytocin to speed up the release of milk. Repeat after 20 minutes if no effect on the milk flow is seen.

## Prevention

- A week before the sow is to give birth, provide it with a continuous supply of extract from boiled, fresh horseradish tree leaves.
- Avoid stressing your animal.
- Always provide ample fresh water.

## Lack of heat

Sometimes a female does not show signs of heat.

## Causes

- Low body weight due to poor feeding.
- The animal is lactating heavily.

- Overweight.
- Mineral deficiency.
- Intestinal worms.
- Chronic disease.
- The animal has just given birth.
- Lack of contact with a male.
- Heavy infestation with parasites.

### **Treatment**

- Improve feeding, of mineral-rich feeds. (See section on nutrition in *Basic husbandry practices and veterinary care*.)
- Regularly deworm your animals. (See section on deworming in *Basic husbandry practices and veterinary care*.)
- Allow the female to stay with a male animal.

If the gilt or sow does not come into heat despite improved management, inject 1-2 ampules of Gonadin. The animal will come into heat within 2-3 days.

### **Birthing difficulties**

Common causes and symptoms of birthing difficulties in sows are similar to those in ruminants. (See *Diseases of ruminants*.)

### **Treatment**

If the sow labors for more than half an hour without any signs of progress, check the neck of the birth canal. If a piglet is stuck do the following:

1. Cut your fingernails short.
2. Wash your hands and arms with soap and water.
3. Wash the sow's hindquarters with soap and water
4. Lubricate your hands and arms with soap or oil.
5. Cup one hand to form a cone shape.
6. Gently separate the lips of vulva with the other hand.
7. Push your cone-shaped hand gently into the birth canal.
8. If the piglet is coming out forelegs first, grasp the legs, head, or jaw.
9. Pull the offspring as the same time as the sow contracts.
10. Gently shake and massage the piglet while keeping its head down to drain fluids from its mouth and nose.

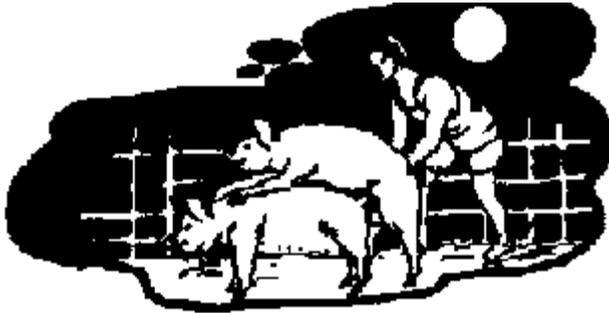
11. Tie the cord, 1 inch from the abdomen, if necessary.

12. Disinfect the cord with diluted iodine. Other piglets will normally come out without assistance. The afterbirth will come out within four hours. If another piglet gets stuck in the opening, repeat steps 510.

13. Inject the sow with antibiotic, such as penicillin and streptomycin. Repeat the injection once each day for 2-3 days. Also, inject one dose of 24 cc of oxytocin. This will stop bleeding and will remove dead tissues inside.

14. Wash the external reproductive tract with a strained solution of boiled guava leaves.

### Indigenous practices



**Full moon.** Farmers prefer breeding animals during full moon to produce healthy offspring.

**Native breed.** They prefer raising native breeds because they are sturdy and are highly resistant to diseases.

**Pure boar's urine** is sprayed into pens of gilts and sows which fail to go into heat. This is done twice a day, preferably early in the morning or late in the afternoon. Animals are expected to show signs of heat

after five to seven days.

**Papaya stalk or stick.** Farmers in Cavite, Philippines, induce estrus in animals by gently spoking the female's external organ with a papaya stalk or a stick.

### Rectal prolapse

A rectal prolapse appears as a protrusion of the end of the rectum through the anus. Young animals are most commonly affected, but mature animals with severe diarrhea can prolapse. The following factors can contribute to rectal prolapse:

- Internal parasites.
- Diarrhea.
- Weakness of the rectal wall.

Intestinal irritation causes prolonged straining or pressure on the rectum, forcing it through the anus.

### Symptoms

- Reddish protrusion through the anus.
- The animal becomes restless.

### Treatment

- **Herbal medicine.** Wash the prolapsed anus with a strained solution of boiled guava leaves. Repeat the procedure 2-3 times a day for three days.
- **Western medicine.** After washing it with the above solution, spray a fly repellent like Gusanex or Negasunt twice a day until the pig recovers.
- **Husbandry measures:**

- Lessen the feed intake of the affected animal.
- Provide fresh, leafy vegetables like leaves of sweet potato.
- Provide fresh water.
- Separate affected animal from the other animals.

### **Prevention**

- Regularly deworm animals.
- Feed a proper ration.

## Diseases of chickens

### Newcastle Disease or Avian Pest

Newcastle disease is an acute viral infection of poultry and other birds. It is the number-one poultry killer in the Philippines. It appears suddenly and spreads rapidly. It affects all ages.

#### Symptoms

- Watery, green & althea.
- Nasal discharge.
- Swelling of the head.
- Head and neck twisted to one side.
- Drooping wings.
- Sleepiness.
- Paralysis of wings, legs and neck.
- Eggs are abnormal in shape and color.

Mortality is 100 percent in chicks.

#### Treatment

There is no recommended treatment available.

#### Prevention

- Vaccinate birds with NCD vaccine when they are one day old.
- Isolate infected birds from healthy birds.
- Kill infected birds. Burn or bury dead birds.

### Fowl pox

Fowl pox is a relatively slow-spreading viral infection of poultry, characterized by nodules on the skin. It affects all ages of poultry. The disease is spread by insect bites and by direct contact with infected birds.

#### Symptoms

- Nodules which later form into scabs.
- Blisters around the mouth, nose and eyelids.
- Watery or half closed eyes.

#### Treatment

- No effective treatment.

#### Prevention

- Burn dried peelings of lanzones (*Lansium domesticum*). The smoke helps get rid of mosquitoes.



- Fill stagnant water holes with soil to control mosquitoes.
- Vaccinate birds regularly against fowl pox. (Refer to section on vaccination in *Basic husbandry practices and veterinary care*.)

## **Infectious coryza**

Infectious coryza is an acute bacterial, respiratory disease of poultry.

### **Symptoms**

- Nasal discharge.
- Rales.
- Swollen face.

Chickens become susceptible to coryza at 4 weeks of age. Susceptibility increases with age. The disease lasts two weeks. It is spread by contact with infected birds.

### **Treatment**

- Dissolve 1 teaspoon of Gallimycin powder in 1 gallon of water. Give as drinking water.



## **Mite infestation**

Mites feed at night and hide during the day in cracks and crevices of the chicken house, where they deposit eggs. Mite populations grow rapidly during the warmer months. They can attack chickens of all ages, but layers are particularly affected.

Mites can also bite people, causing irritation and itchiness.

### **Symptoms**

- Small, red bumps on the skin.
- Mites seen on the bumps.
- Birds are uncomfortable and ruffle their feathers.
- Birds constantly peck themselves.

### **Treatment**

- Put a handful of lemon grass in the nest before the hen starts to lay. Leave it there while the hen lays and broods.
- Hang fresh leaves of either alagau (*Premna odorata*) or fiveleaved chaste tree (*Vitex negundo*) around the chicken house.

### **Prevention**

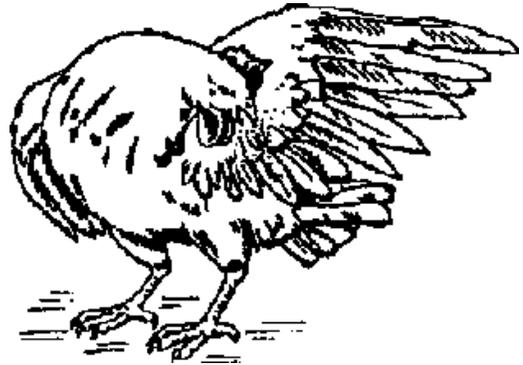
- Blow cigarette smoke underneath the bird's wings every morning.
- Clean your poultry house regularly before hens start to lay.
- Burn all trash.

## Lice infestation

Lice puncture the base of feathers and eat the skin.

### Symptoms

- Small, white lice eggs on feathers.
- Lice moving on feathers and skin.
- Reduced egg population.
- Slower weight gain.
- Birds constantly peck themselves.



### Treatment

- Hang fresh dry leaves of alagau (*Premna odorata*) or fiveleaved chaste tree (*Vitex negundo*) around the chicken house.
- Pound fresh or dried sugar apple (*Annona squamosa*) seeds and rub on the bird's skin.



## Prevention

- Change bedding regularly.
- Smoke the poultry house regularly.
- Keep the chicken house and surroundings clean and free from



## Intestinal worms

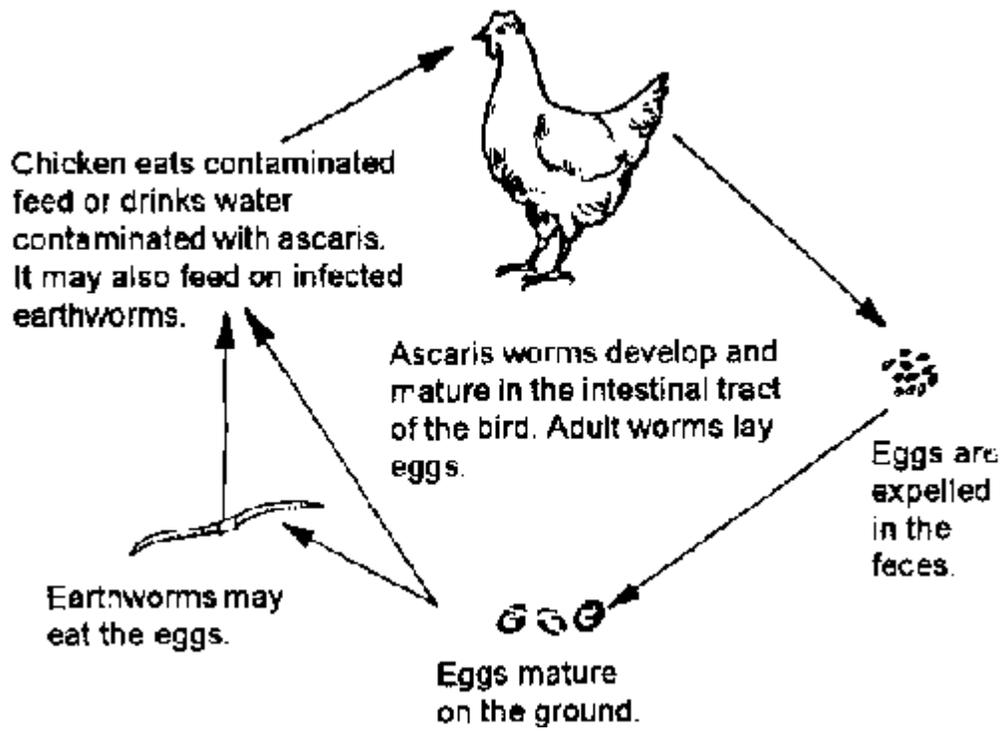
### Symptoms

- Poor appetite and slow weight gain.
- Pale comb and wattle.
- Dull eyes.
- Irregular diarrhea.
- Dull, ruffled feathers.

### Treatment

- Herbal medicine**—nut of betelnut (see section on *Herbal medicine for animals*).
- Western medicine**—Deworm chickens with Pipelazine. (See section on deworming in *Basic husbandry practices and veterinary care*.)

Life cycle of roundworms in chickens



## **Diseases transmissible to people**

### **Anthrax**

Anthrax is an acute infectious that causes severe hemorrhaging. It causes rapid death of infected animals. Cattle and water buffaloes are more susceptible to anthrax than any other animals. Chickens are not usually affected. Outbreaks may occur after a heavy rain.

Some diseases, like anthrax, brucellosis and trichinosis infection, can be transmitted from animals to humans. Take precautions when handling infected animals.

### **Anthrax in animals**

#### **Symptoms**

Clinical symptoms vary due to virulence of the organism and species of animal affected. It may occur in peracute, acute and subacute or chronic forms.

#### **Peracute form**

- Animal usually found dead, with dark-colored blood coming from its nose, mouth and anus.
- Incoordination.
- Labored breathing.
- Convulsions.

#### **Acute and subacute form**

This form is most common in cattle, water buffaloes goats. Other symptoms include:

- High fever.
- Muscular tremors.
- Diarrhea that may have blood in it.
- Swelling in the neck chest and abdomen.
- Convulsions and death in 10-36 hours.

#### **Chronic form**

This is most common in pigs, although they can also be affected by the acute form. Other symptoms include:

- Swelling in the throat, which interferes with swallowing and breathing.
- High fever.
- Blood-stained, frothy material in the mouth.
- Vomiting.

Pigs may recover but remain carriers of the disease

#### **Treatment**

- Inject Penicillin into the muscle of the animal (3-15 cc for ruminant or 3-10 cc for swine, depending on the size of the animal). Repeat the injection for 2-3 days, if do is seen aDer 2-3 days.

### **Prevention**

- Keep animals away from infected areas.
- Burn contaminated bedding and manure.
- Isolate and treat sick animals.
- Bum animals which die from anthrax.

### **Anthrax in humans**

Humans can be infected by spores. Spores can enter through breaks in the skin, or can be inhaled or ingested.

### **Symptoms**

Anthrax occurs as an infection of the skin, producing painful, localized, pus-filled lesions. A small, red, slightly raised spot appears where the spores have entered. The lesion enlarges rapidly to form an itchy blister, then becomes an ulcer.

### **Treatment**

Anthrax is very dangerous in humans but usually responds favorably to antibiotics if identified soon enough. If you suspect anthrax, consult a doctor immediately.

### **Brucellosis**

Brucellosis is a contagious, bacterial disease primarily affecting cattle, water buffaloes, goats and pigs. It is known as undulant fever in humans.

### **Brucellosis in animals**

#### **Symptoms in females**

- Abortion.
- Infertility.
- Increased incidence of retained placenta.
- Sticky, rust-colored, odorless discharge from the uterus.

#### **Symptoms in males**

- Inflammation of testicle (orchitis).
- Infection of other sex glands, like prostate glands.
- Infertility.

### **Treatment**

- There is no effective for brucellosis.

## Prevention

- Observe proper hygiene and sanitation.
- Buy animals from reputable sources.

## Brucellosis in humans

Humans can be infected through:

- Drinking raw milk from an infected animal. Eating raw butter or cheese made from the milk of an infected animal.
- Eating partially cooked flesh of an infected animal.
- Contact with the body of an infected animal.
- Contact with infected materials such as uterine discharges, afterbirth and aborted fetuses.

## Symptoms

### *Early stage*

- Headache.

- Loss of appetite.

- Weakness.

- Increasing fever.

- Constipation.

- Coughing.

- Night sweats.

### *Acute to chronic*

- Weakness.

- Anemia.

- Swollen and painful joints.

- Patient feels better in the

- morning then in the

- evening.

- Fever.

## Treatment

The disease responds to several antibacterial drugs.

## Prevention

- Use only milk and milk products which have been pasteurized (thoroughly boiled).
- Eat meat which is thoroughly cooked.
- Make a fire on the place where an animal abortion has occurred.

## Erysipelas

Erysipelas is an infectious disease which attacks pigs of all ages, but is most common in young and growing animals. The disease may affect other animals and people.

### Erysipelas in animals

#### Symptoms

##### *Acute form*

- High fever.
- Vomiting.
- Arched back.
- Irregular red patches, roughly diamond shaped on lighter parts of the skin.

##### *Chronic form*

- Stiffness of gait.
- Enlarged bones.
- Animal walks on its toes.

#### Treatment

- Inject Penicillin into the muscle of hip or neck. Repeat the injection for 34 days.

#### Prevention

- Disinfect the stalls and feeding troughs of infected animals.
- Separate infected animals from sick animals.

### Erysipelas in humans

- High fever.
- Skin shows a glazed appearance (usually the face)
- Affected area itches and bums.
- Swollen area feels firm and hot to the touch.
- Joint and back pains.
- Abortion in pregnant women.

#### Treatment

- Penicillin is the most successful remedy.

#### Prevention

- Person nursing the patient must wear rubber gloves.
- Ice bags and other things used by the patient should be disinfected.

## **Leptospirosis**

Leptospirosis is an infectious disease which attacks cattle, hogs and humans. All ages are susceptible but the young suffer a higher rate of mortality. The disease spreads rapidly where animals are densely stocked. It can spread in flowing water at breeding time and through the urine.

### **Leptospirosis in animals**

#### **Symptoms**

- Pregnant animals abort.
- Fever.
- Thick yellowish milk.
- Marked drop in milk flow.
- Jaundice.
- Urine is coffee-colored.
- Abortion during the latter stage of gestation.

#### **Treatment**

- Treatment severe cases of leptospirosis is often unsuccessful because the course of the disease is extremely short.

#### **Prevention**

- Bum or bury beddings used by infected animals.
- Bury aborted fetuses deep.
- Keep infixed animals away from streams and ponds.
- Isolate animals that show signs of leptospirosis.

### **Leptospirosis in humans**

Humans can become infected through cuts or by consuming food or drink contaminated with rat urine.

#### **Symptoms**

- Chills.
- Nausea and vomiting.
- Headache.
- Muscle and abdominal pains.
- Fever.
- Thirst.
- Dilated blood vessels of eyeballs.
- Jaundice.

#### **Treatment**

- Treatment of severe cases is often unsuccessful.

#### **Prevention**

Exterminate rats. Avoid swimming or caning into contact with water that might be contaminated with the disease organism.

## **Trichinosis**

The disease is caused by small roundworms that become embedded in the muscles of animals. It is spread by eating infected meat that has not been sufficiently cooked or treated. The disease is common among garbage-fed pigs.

### **Trichinosis in animals**

#### **Symptoms**

Animals with trichinosis parasites usually do not display symptoms. Symptoms, when they do appear, can be confused easily with other diseases.

#### **Prevention**

- Avoid feeding uncooked swill to pigs.
- Exterminate rats. Rats are often infected with the parasites. Never throw dead rats or mice into pig pens.

### **Trichinosis in humans**

#### **Symptoms**

In humans, symptoms appear within 9-10 days after infected meat has been eaten. A person suffering from trichinosis suffers intense pain in the muscles of arms and legs. There is difficulty in breathing because the tongue is also affected. Severity of the disease is dependent upon the number of worms in the body. Worms concentrate in the diaphragm.

#### *Mild case*

- Symptoms hardly hardly
- Pains in muscles of arms and legs.
- Inflamed eyeballs.
- Difficulty in chewing, swallowing and breathing.
- Profuse sweating,
- Fever.

#### **Treatment**

There is no effective treatment for the disease in humans and animals.

#### **Prevention**

Eat only pork that has been cooked thoroughly.

# **Herbal Medicine for Animals**

## **Growing and using herbal medicine**

### **Cultivation and planting**

It is best to plant medicinal plants during the rainy season.

### **Collection**

#### **What to collect**

- Collect only the recommended plant part.

#### **When to collect**

- Collect ingredients in the morning or on a sunny day.

#### **How to collect**

- If the part to be used is seed, the fruit must be fully ripe before harvest.
- If the whole fruit is to be used, it should be collected before reaching maturity.
- If the underground part is to be used, collect the plant part before it starts flowering.
- The bark should be collected from the trunk and branches when the plants are in bloom or in vigorous growth.
- Collecting should be done by handpicking.
- Avoid collecting plant parts that are discolored, have insect bites and have other signs of injury.

### **Preparation**

Use containers like earthenware pot. The most common way of preparing herbal medicine is to boil the plant material in water for 15-20 minutes after the water has started to boil. The fluid is called a "decoction" and should be used within 12-24 hours.

### **Usage**

- Use only the prescribed dose. Dosages given are in ranges (e.g., 2-3 liters). The lower number applies to young animals while the larger number to adult animals.
- Use only one plant at a time.

### **Drying and storage**

Properly dried leaves crumble easily.

Herbs can either be air- or sun dried. Small amounts can be dried in large transparent containers. Large amounts can be hung in bundles or baskets outdoors. Protect herbs from molds, insects or rodents by puffing them in glass containers. Write the plant name and date of collection on the containers.



## *Allium sativum*

### Garlic

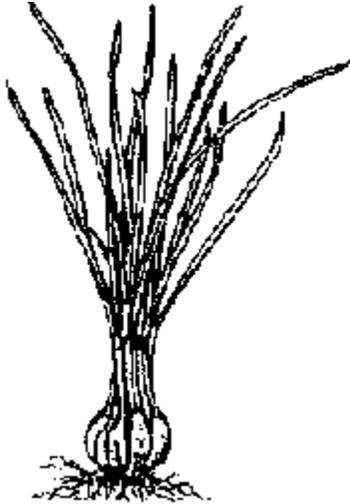


FIG. 1. *Allium sativum* –Garlic



FIG. 2. *Allium sativum* –Propagation

<b>Plant part</b>	<b>Indication</b>	<b>Preparation</b>	<b>Dosage</b>
Cloves	Poisoning	Burn 3 heads of garlic, pulverize and mix with 1 glass of water.	Give as drench. For adults 1 glass of the mixture. For the young: 1 cup of the mixture. Repeat the procedure if no vomiting occurs.

## *Areca catechu*

### Betel nut



FIG. 1. *Areca catechu* -Betel nut



FIG. 2. *Areca catechu* -Propagation

<b>Plant part</b>	<b>Indication</b>	<b>Preparation</b>	<b>Dosage</b>
Fresh nut	Intestinal worms	Pound and mix with enough amount of water to facilitate drenching.	Give the whole mixture as drench. Repeat the procedure after 2 weeks. <b>Chickens:</b> one nut as big as a peanut. <b>Cattle and water buffaloes:</b> 8-10 nuts <b>Goats and pigs:</b> 3 nuts

## *Blumea balsamifera*

### Camphor



FIG. 1. *Blumea balsamifera* –Camphor



FIG. 2. *Blumea balsamifera* –Propagation

<b>Plant part</b>	<b>Indication</b>	<b>Preparation</b>	<b>Dosage</b>
Fresh leaves	Cold Cough Fever	Boil leaves for 15-20 minutes in 1 liter of water	Give decoction as drench, 1/2- liter, 2x a day for 1-3 days.

## *Carica papaya papaya*

### Papaya



FIG.1. *Carica papaya* –Papaya



FIG.2. *Carica papaya* –Propagation

<b>Plant part</b>	<b>Indication</b>	<b>Preparation</b>	<b>Dosage</b>
Dried seeds	Fluke infestation	Pound air-dried ripe seeds and add a little water.	Drench the mixture, once a day for 6 days. 1/2 kg for small ruminants and 1 kg seeds for mature ruminants.

# *Cocos nucifera*

## Coconut (Young)



FIG.1.Coconut (Young)



FIG.2.Coconut-Propagation

<b>Plant part</b>	<b>Indication</b>	<b>Preparation</b>	<b>Dosage</b>
Water	Dehydration	Mix water from 3-5 young coconuts with a cup of brown sugar and a little salt	Give solution as drench 3x a day until animal recovers.  <b>Adult cattle and buffaloes:</b> 2-3 liters  <b>Calves, sheep, goats:</b> 1-1.5 liters
Charcoal (from shell)	Diarrhea	Pound and mix with feed. Grind coconut shell charcoal to a powder and mix with water.	Divide the mixture into several rations and feed the animal one ration at a time until it recovers. Drench animal 3 times a day
Powder(from the external part of the shell)	External wound or cuts	<b>Adult cattle and buffaloes:</b> 1 cup of powdered coconut shell mixed in 500 ml of water.  <b>Calves, goats and sheep:</b> Half of the above amount.	Apply on clean wound 2-3x a day for 3 days.

## ***Chrysophyllum cainito***

### **Star apple**

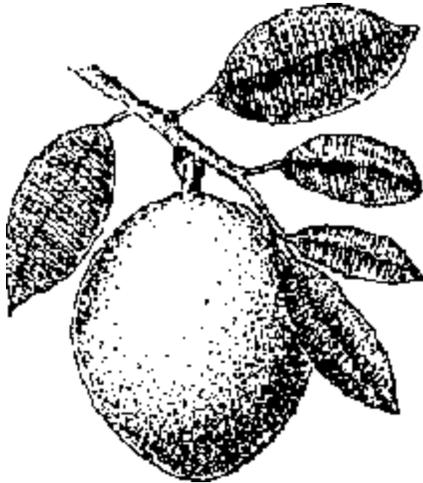


FIG.1. *Chrysophyllum cainito*-Star apple



FIG.2. *Chrysophyllum cainito*-Propagation

<b>Plant part</b>	<b>Indication</b>	<b>Preparation</b>
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Fresh leaves	Diarrhea	Boil half a kilo of leaves in 3 glasses of water.
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#### **Dosage**

##### **Adult cattle and buffaloes:**

Drench 1-2 cups of the decoction 3x a day for 1-3 days.

##### **Calves, sheep and goats:**

Half the amount given above.

# ***Gliricidia septium***

## **Madre de cacao**



FIG.1. *Gliricidia septium* -Madre de cacao



FIG.2. *Gliricidia septium* –Propagation

<b>Plant part</b>	<b>Indication</b>	<b>Preparation</b>	<b>Dosage</b>
Fresh leaves	External parasites	Pound the leaves (the number of leaves will depend on the severity of the infestation).	<b>Swine and ruminants:</b> Apply the juice of leaves on the affected area. Repeat the procedure 2-3x a day until the parasites are eliminated.
Fresh leaves	Warts	As above.	Apply the juice and massage the affected part 2-3x a day until the warts disappear.

## ***Momordica charantia***

### **Bitter gourd**



FIG. 1. *Momordica charantia*-Bitter gourd



FIG. 2. *Momordica charantia*-Propagation

<b>Plant part</b>	<b>Indication</b>	<b>Preparation</b>	<b>Dosage</b>
Fresh leaves	Intestinal worms	Pound 1/2 kg of leaves. Extract the juice of the leaves and divide into small doses.	<b>Pigs:</b> Give 1 dose of the juice as drench 1-3x a day. Repeat the procedure after 2 weeks.
Fresh leaves	Anemia	Pound a handful of leaves.	<b>Piglet:</b> Give 5 drops (1 cc) of juice per piglet 2x a day for 3-4 days. The juice extracted will be enough for 7-8 piglets.

***Moringa oleifera***

**Horseradish tree**



FIG. 1. *Moringa oleifera* –Horseradish



FIG. 2. *Moringa oleifera* –Propagation

<b>Plant part</b>	<b>Indication</b>	<b>Preparation</b>	<b>Dosage</b>
Fresh leaves	Anemia	Pound 1/2- 1 kg of leaves and extract the juice.	<b>Piglet:</b> Give 5 drops (1 cc) of juice per piglet as drench 2-3x a day for 3-4 days.

# *Musa sapientum*

## Banana



FIG. 1. *Musa sapientum* –Banana



FIG. 2. *Musa sapientum* –Propagation

Plant part	Indication	Preparation	Dosage
Fresh leaves	Bloat	Chop 2 leaves for calves, sheep and goats or 3-5 leaves for adult cattle and buffaloes.	Feed to animal 2x a day until it recovers. (This is only applicable during the early stage of the abnormality.)
Fresh leaves	Bleeding wound	Steam 1 leaf over boiling water.	<b>Ruminants and pigs:</b> Apply the leaf on the wound. Do this 2-3x a day until the wound heals.

## *Premna odorata*

### Alagau



FIG. 1. *Premna odorata*- Alagau

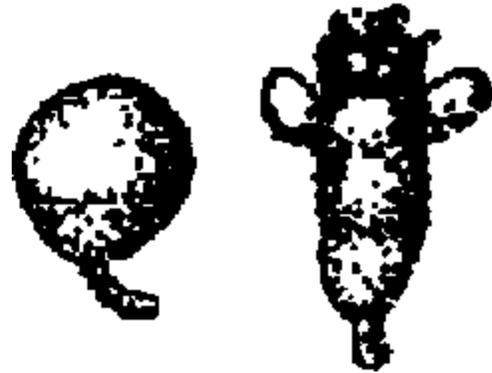


FIG. 2. *Premna odorata*-Propagation

Plant part	Indication	Preparation	Dosage
Fresh leaves	Wound with maggots	Pound 3-5 leaves and extract the juice.	Apply the juice on the wound 2-3x a day for 3-4 days.
Fresh leaves	Fever, colds cough	Boil 8-15 leaves in 2-3 glasses of water	Give 1/2-1 cup as drench 2-3x a day for 3 days.
Fresh leaves	Mite infestation	<b>Poultry:</b> Hang leaves in roosts/house until the leaves are fully dried.	

## *Psidium guajava*

### Guava

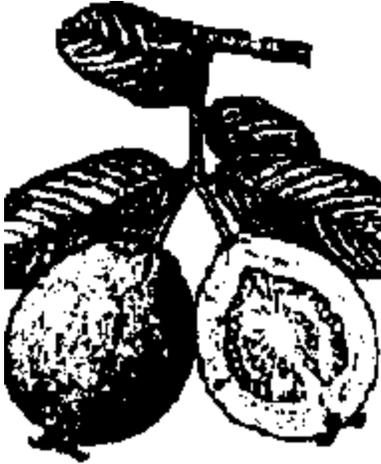


FIG. 1. *Psidium guajava* –Guava



FIG. 2. *Psidium guajava* –Propagation

<b>Plant part</b>	<b>Indication</b>	<b>Preparation</b>	<b>Dosage</b>
Fresh leaves	Diarrhea	Boil 1/2 kilo of leaves in 3 glasses of water.	<b>Adult cattle and buffaloes:</b> Give decoction as drench 2x a day for 3-4 days. <b>Calves, sheep and goats:</b> Half of the amount given above.
Fresh leaves	Severe wounds	Pound 5-10 leaves.	<b>Ruminants, pigs and poultry:</b> Apply juice on clean wound 2-3x a day for 3-4 days.

## *Tamarindus indica*

### Tamarind



FIG. 1. *Tamarindus indica* –Tamarind



FIG. 2. *Tamarindus indica* –Propagation

<b>Plant part</b>	<b>Indication</b>	<b>Preparation</b>	<b>Dosage</b>
Fresh leaves	Fever Colds Cough	Boil 1 kg of leaves in 1 gallon of water. Divide the decoction into small doses.	<b>Adult ruminants:</b> Drench the animal with 1 dose of the decoction 2-3x a day until the animal recovers.  <b>Young ruminants:</b> 1/3-1/2 the dosage given above.

## *Tinosphora rumpii*



FIG. 1. *Tinosphora rumpii*

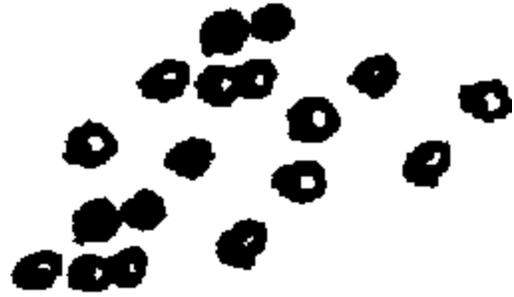


FIG. 2. *Tinosphora rumpii*- Propagation

<b>Plant part</b>	<b>Indication</b>	<b>Preparation</b>	<b>Dosage</b>
Fresh stems	Intestinal parasites	Soak 1/2 kilo of pounded stems in 1 liter of water.	<b>Adult cattle and buffaloes:</b> Give whole solution as drench Repeat after 2 weeks.  <b>Calves, sheep and goats:</b> Half of the dosage given above.

## *Vitex negundo*

### Five-leaved chaste tree



FIG. 1 *Vitex negundo*- Five-leaved chaste tree



FIG. 2 *Vitex negundo*- Propagation

<b>Plant part</b>	<b>Indication</b>	<b>Preparation</b>	<b>Dosage</b>
Fresh leaves	Fever Colds Cough	Boil 1/2 kg of leaves for 15-20 minutes in 2 liters of water.	<b>Adult ruminants:</b> Give the decoction as drench 2-3x a day for 3-4 days.  <b>Young ruminants:</b> 1/3-1/2 of the dosage given above.
Fresh leaves	Mite infestation	<b>Poultry:</b> Hang the leaves in the roost of chickens.	