





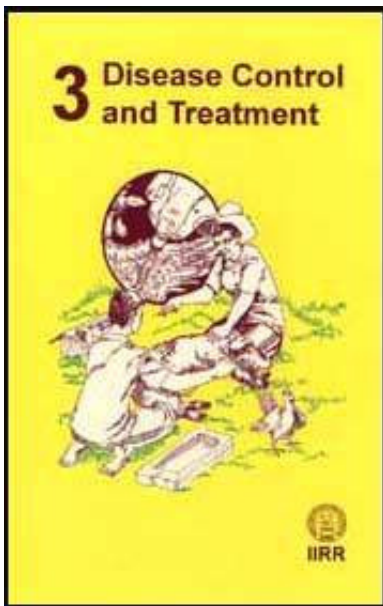








➔  **Animal Disease Control and Treatment (IIRR, 1996, 60 p.)**

-  **Foreword**
-  **Disease causes and symptoms**
-  **Diseases of ruminants**
-  **Diseases of pigs**
-  **Diseases of chickens**
-  **Diseases transmissible to people**



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## Foreword

**These manuals have been written with the simplest language possible for the convenience of the intended user—the animal health practitioners or ("pare-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 "pare-**

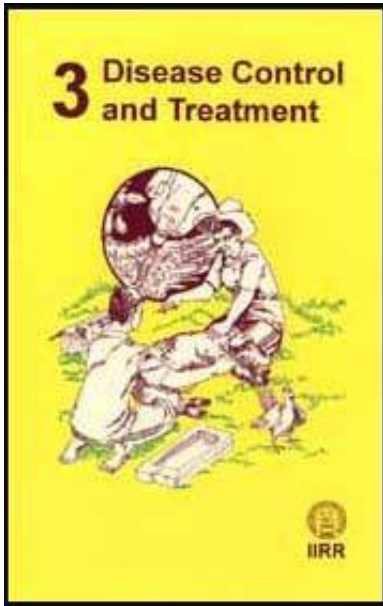
**vets" to make greater contributions as partners in the veterinary profession.**

**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.**

**Nita Cueva-Abena wrote the first draft of these manuals. Ms. Abena is a practicing rural veterinarian. She has worked with a feedmill operated by a cooperative and has worked as a veterinarian within rural development and extension programs. She is presently involved with two veterinary clinics which cater to both food and companion animals. She is also a consultant to swine production farms.**

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 **Foreword**

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### **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.**



**FIG. 1. Disease causes and symptoms**

### **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.

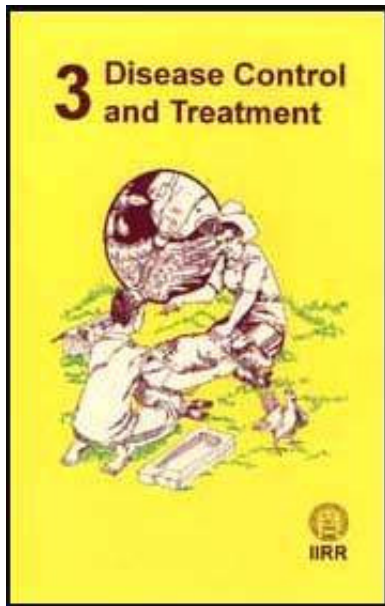
**Poisoning.** Disorder due to eating something that destroys tissues or interferes with normal body functions. **Example:** Lead poisoning.

**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.**



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## **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.**



**FIG.1. Foot-and-mouth disease**

### 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 penicillinstreptomycin 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.**



**FIG.1. Foot rot**

**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.**

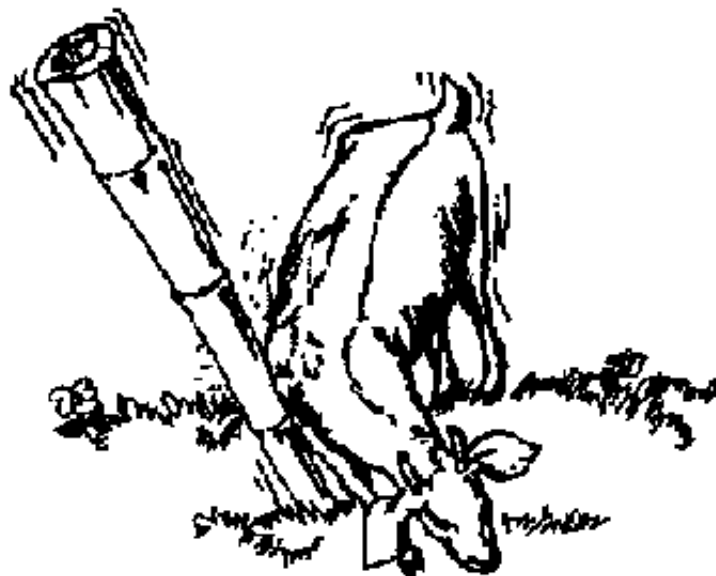
## **Prevention**

**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**



**FIG.1.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.**

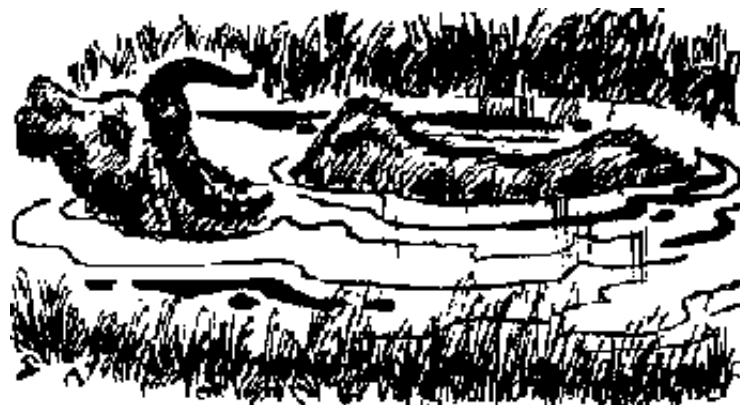
## **Prevention**

**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.**



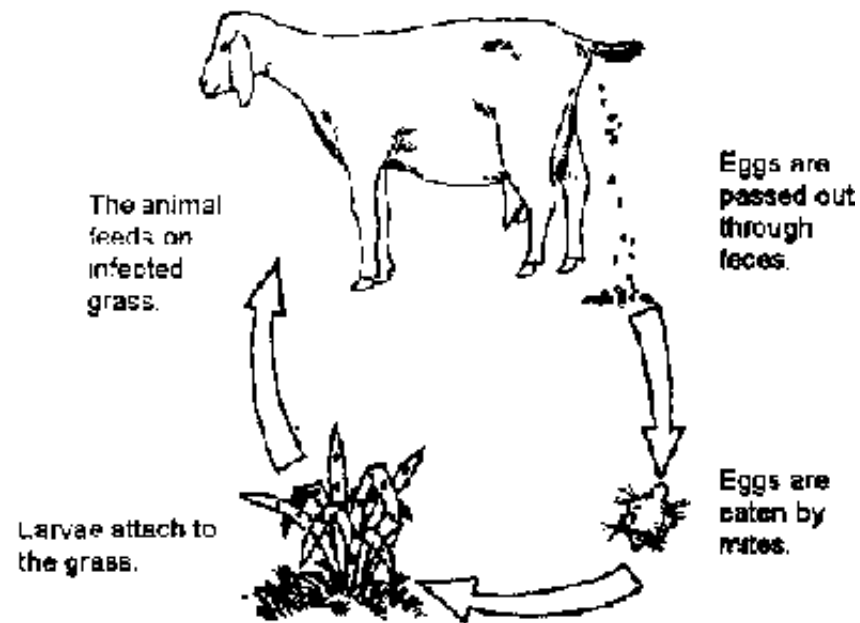
**Fig.1.Lice infestation**

## **Tapeworm infestation**

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



**FIG. 1. Tapeworm infestation**



**FIG. 2. 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.**



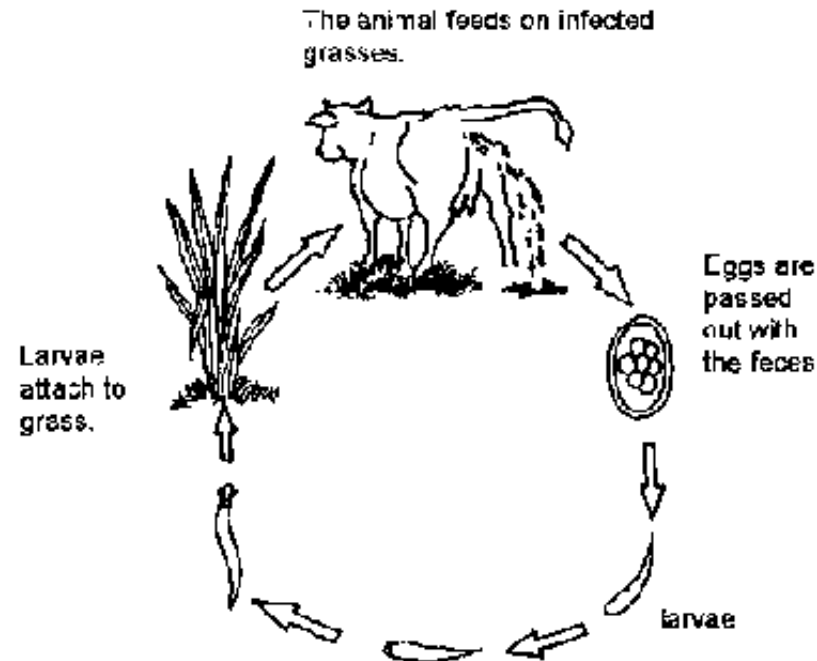
**FIG. 1. Roundworm infestation**

## Cause

**Ascaris lumbricoides, Strongyles**

## Symptoms

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



**FIG. 1. 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**

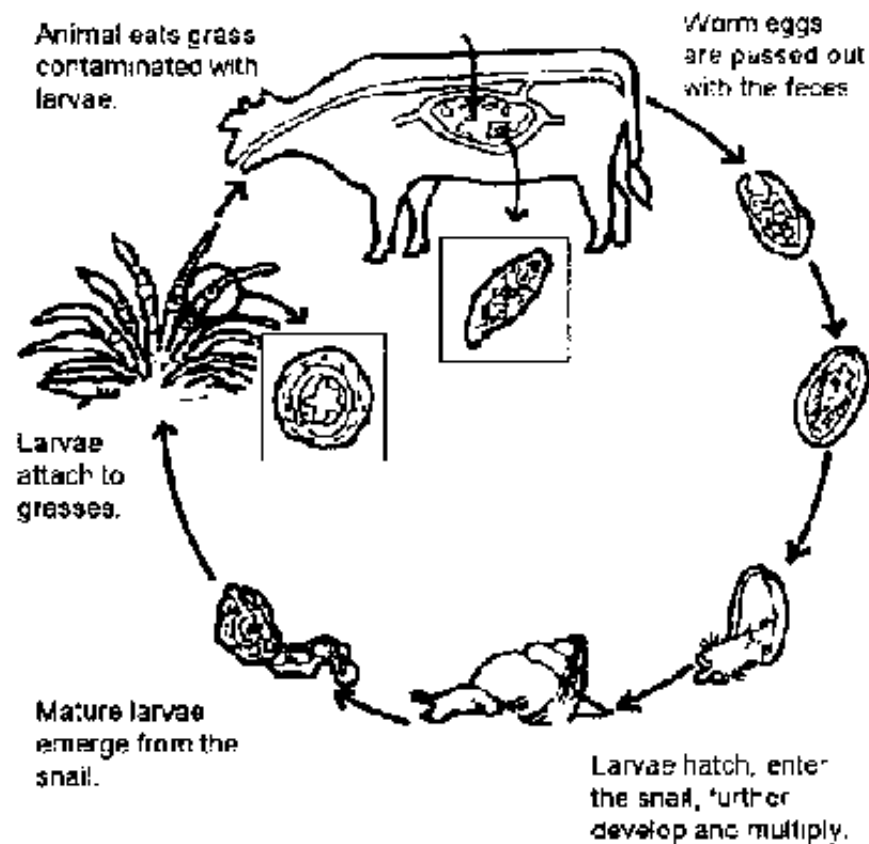


**FIG. 1. Liver fluke infestation**

### **Cause**

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

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 Liverflukes mature  
 and live in bile ducts  
 of the liver.



**FIG. 2. 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.**



**FIG. 1. Keep the ducks 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**

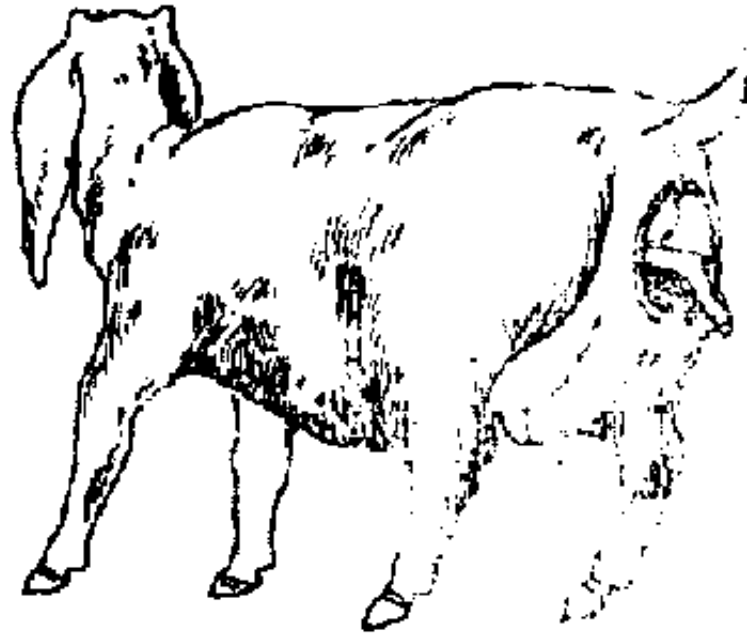
- **Inject oxytocin in the muscle of hip or neck. Oxytocin is a hormone which stimulates milk flow and uterine contractions.**
- **Inject penicillin-streptomycin in the muscle of the animal's hip or neck.**

## **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 leek of milk can occur simultaneously. They affect cattle, pigs and goats.**

## **Birthing difficulties**



**FIG.1. 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**

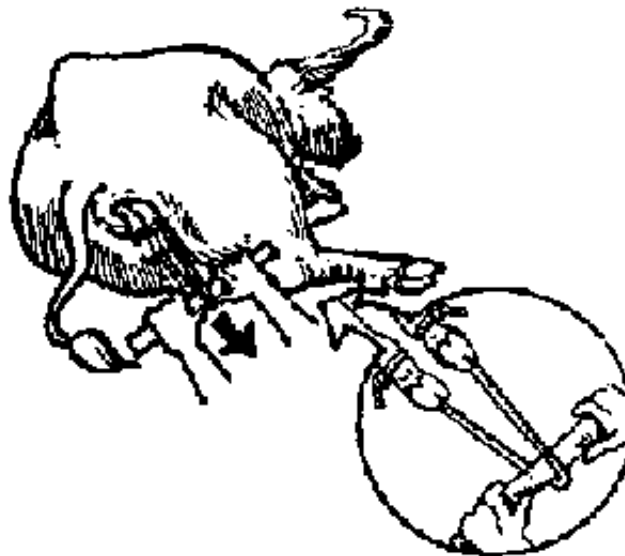
- **Long hours of labor without progress: two hours for sheep and goats; four hours for cattle and buffaloes.**

- **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.**



**FIG.1. 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 penicillinstreptomycin.**
- 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.**

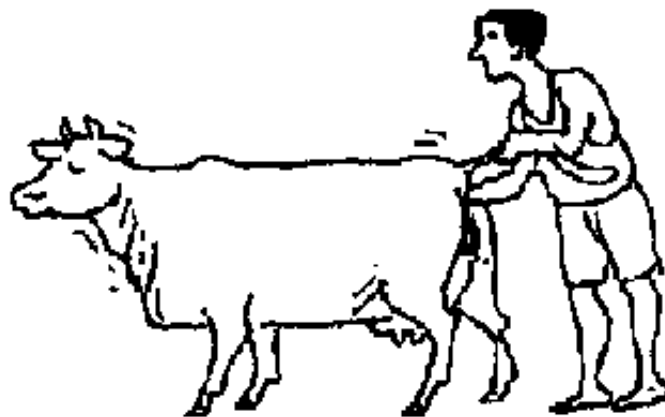
**Abnormal position of offspring**

**Trim your nails, wash your hands and arms and lubricate them with unused**

**vegetable oil. Then do the following:**

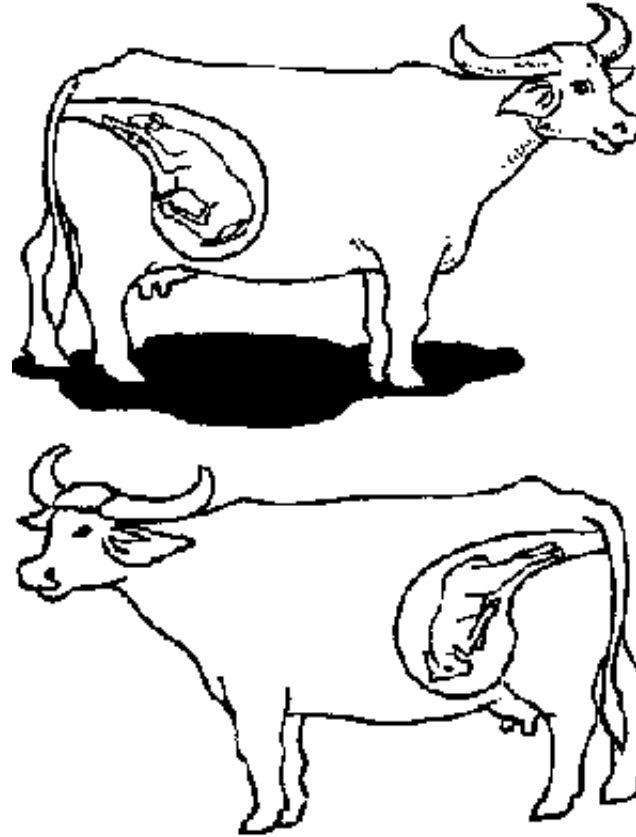
**1. Cup one hand into a cone shape.**

**2. Insert this hand into the vagina following along the length of the placenta and reaching as & 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.**

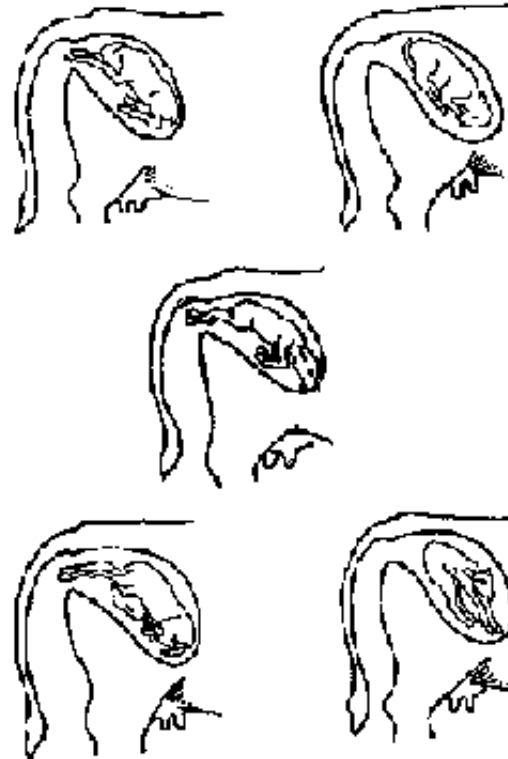


**FIG. 1. Abnormal position of offspring**

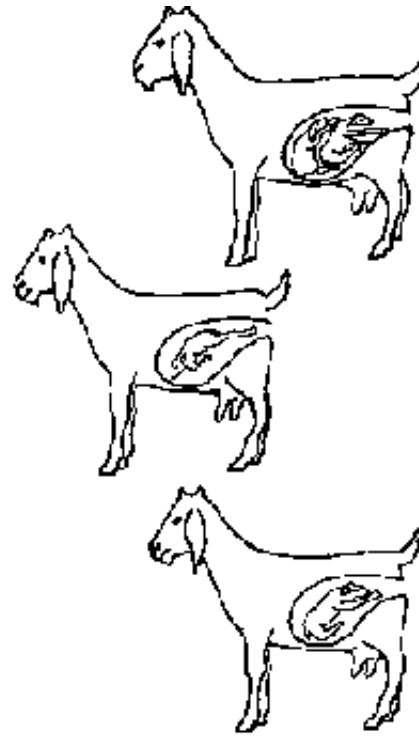




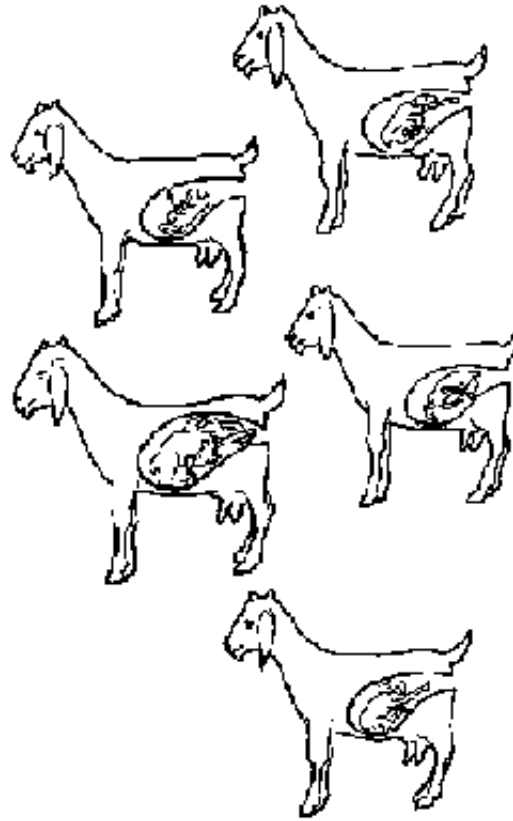
**FIG. 1. Normal positions of cattle and water buffalo offspring**



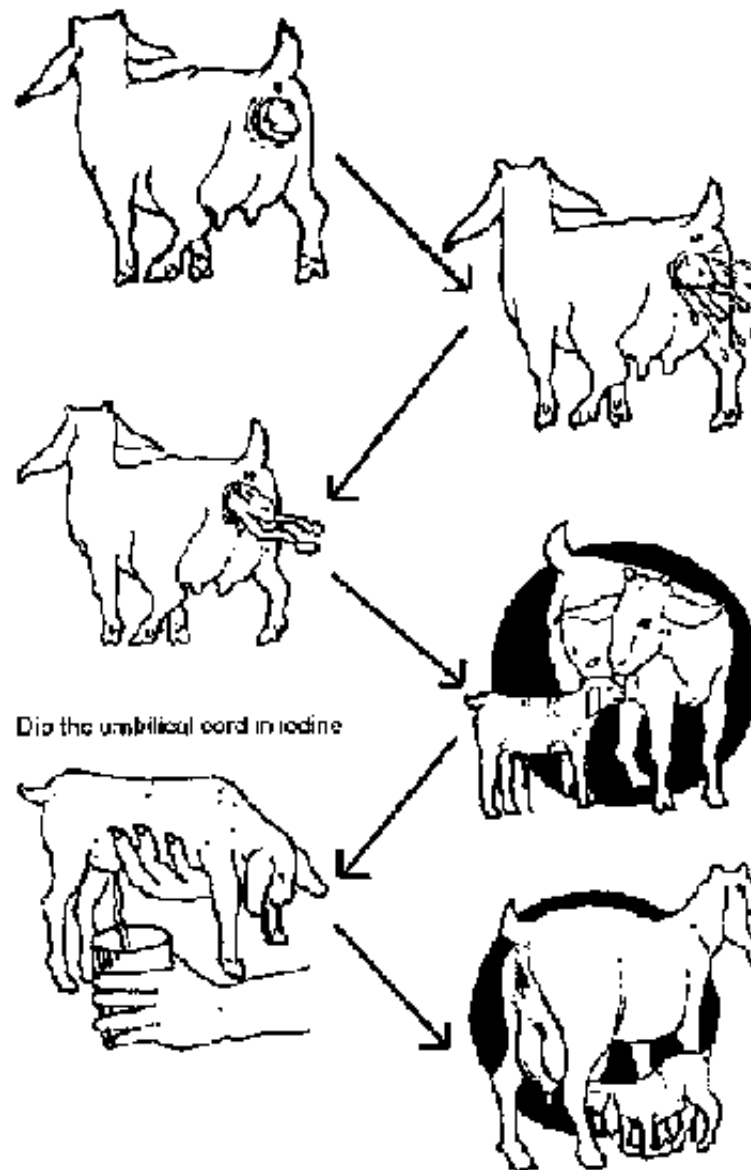
**FIG. 1. Abnormal positions of cattle and water buffalo offspring**



**FIG. 1. Normal positions of goat offspring**



**FIG. 1. Abnormal positions of goat offspring**



**FIG. 1. Normal birthing of a goat**

**Very large offspring**

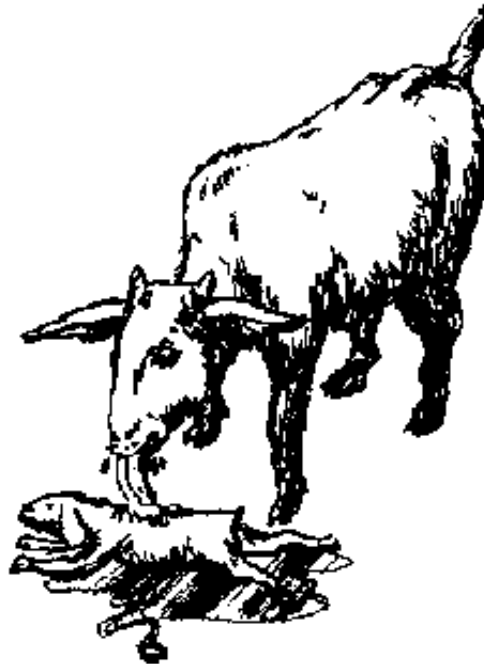


**FIG. 1. Very large offspring**

**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:**



**FIG. 2. Very large offspring**

**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.**



**FIG. 3. Very large offspring**

**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.**

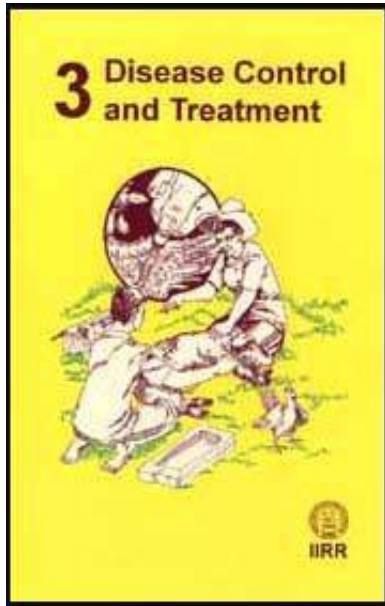
## **Prolapse of the uterus**









**FIG. 1. 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.**



## **Animal Disease Control and Treatment (IIRR, 1996, 60 p.)**

-  **Foreword**
-  **Disease causes and symptoms**
-  **Diseases of ruminants**
-  **Diseases of pigs**
-  **Diseases of chickens**
-  **Diseases transmissible to people**

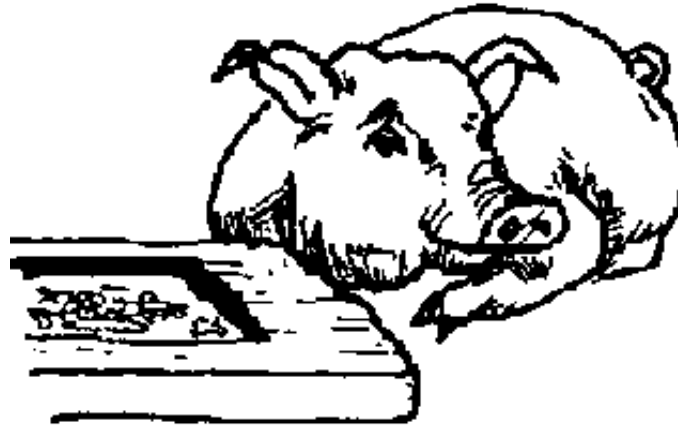
## **Diseases of pigs**

### **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



**FIG. 1. Hog cholera**

- **Inactivity.**
- **Loss or lack of appetite.**

## Acute phase



**FIG. 2. Hog cholera**

- **Loss or lack of appetite.**
- **High fever.**

- **Constipation then diarrhea.**



**FIG. 1. Vomiting.**



**FIG. 2. 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

Acute stage

-Nursing piglets' stools contain curds of undigested milk. Mortality rate is nearly 100 percent.

-Growers/finishers have yellowish diarrhea.

-Pregnant sows abort.

**-EXCESSIVE MILK**

- Lactating sows vomit and have diarrhea. Their milk production is reduced.

**Treatment**

**No recommended treatment.**

**Prevention**

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

**Swine dysentery**

**FIG. 1. 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.

Weakness.

Rapid weight loss.

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.

### **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**



**FIG. 1. 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**

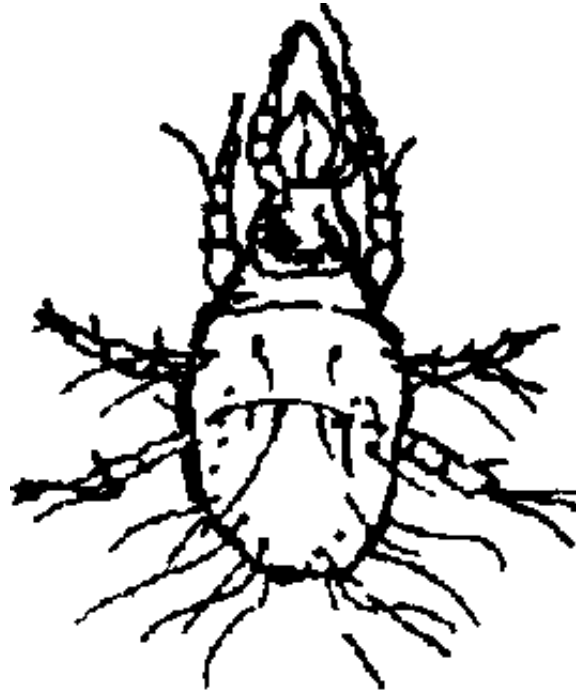
**Herbal medicine—Leaves of sugar apple or gliricidia. (See Herbal medicine for animals.)**

**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**



**FIG. 1. 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 I 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.**

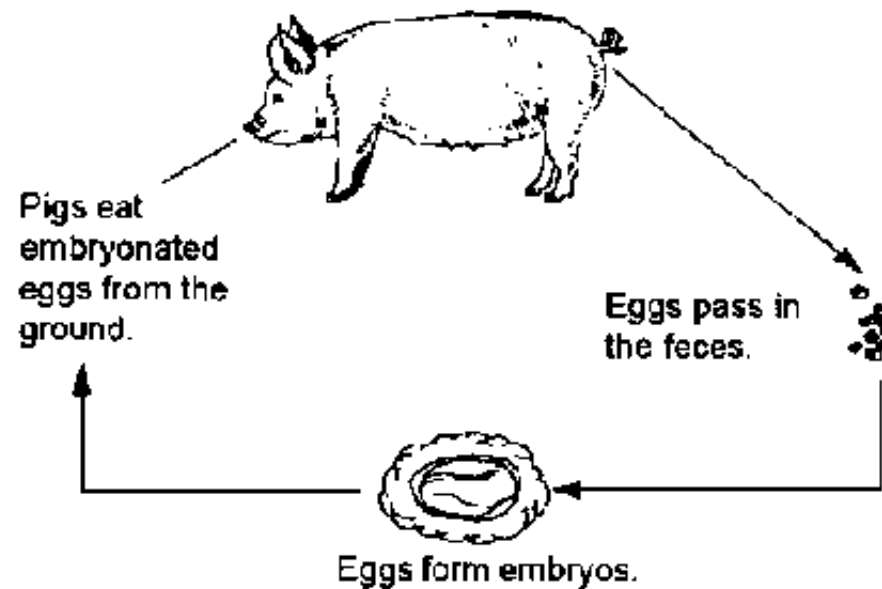
**Warning: Eating vegetables treated with ascaris-infested pig manure will transfer the worms to humans.**



**FIG. 1. Intestinal parasites**

## Symptoms

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



**FIG. 1. 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.

Reddening of the udder. Sow refuses to suckle her piglets. As a result piglets squeal due to

Reddening of the udder.

Sow refuses to suckle her piglets. As a result, piglets squeal due to hunger.

## **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 sow 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.

Lack of contact with a male.

Mineral deficiency.

Intestinal worms.

Heavy infestation with parasites.

Chronic disease.

The animal has just given birth.

### **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.**

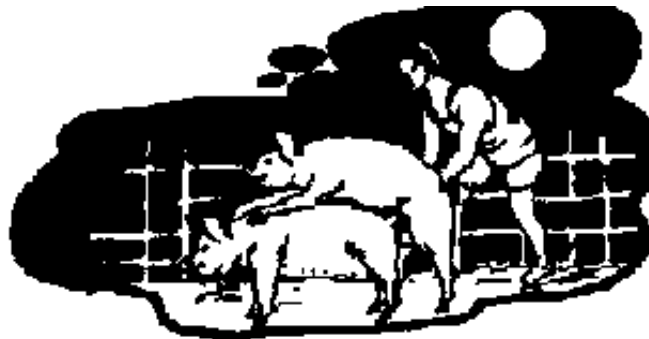
**11. Tie the cord, 1 inch from the abdomen, if necessary.**

**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**



**FIG. 1. 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.**



 **Animal Disease Control and Treatment (IIRR, 1996, 60 p.)**



**Foreword**



**Disease causes and symptoms**



**Diseases of ruminants**



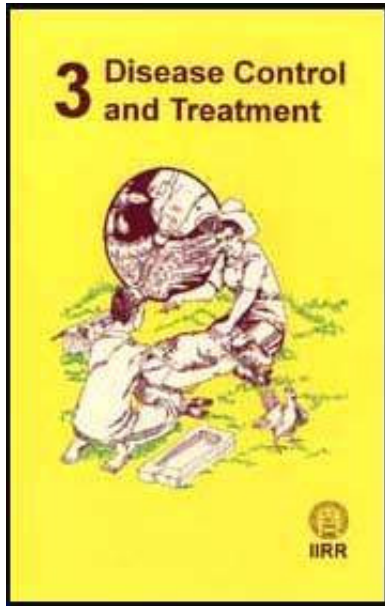
**Diseases of pigs**



**Diseases of chickens**



**Diseases transmissible to people**



## **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 age.**

### **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.**



**FIG. 1. Fowl pox**

## **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.**



**FIG. 1. Infectious coryza**

## **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**

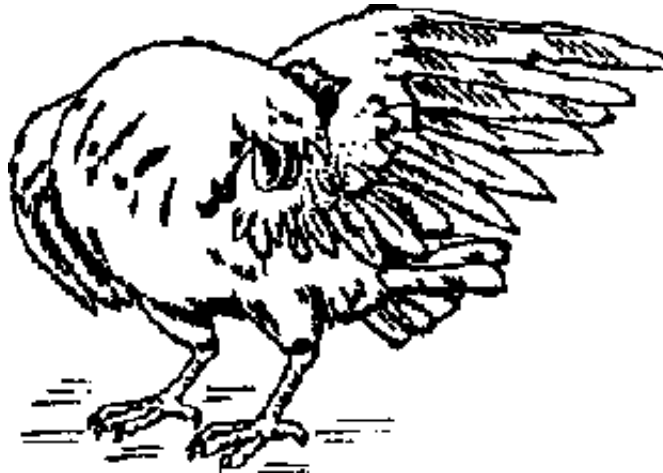
- **Put a handful of lemon grass in the nest before the hen starts to lay. Leave it there while the hen lays and broods.**
- **Hang fresh leaves of either alagau (*Premna odorata*) or fiveleaved chaste tree (*Vitex negundo*) around the chicken house.**

## **Prevention**

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

## **Lice infestation**

**Lice puncture the base of feathers and eat the skin.**



**FIG. 1. Lice infestation**

## **Symptoms**

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

## **Treatment**



**FIG. 1. The 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 sguamosa*) seeds and rub on the bird's skin.**

## **Prevention**





**FIG.2.The prevention**

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

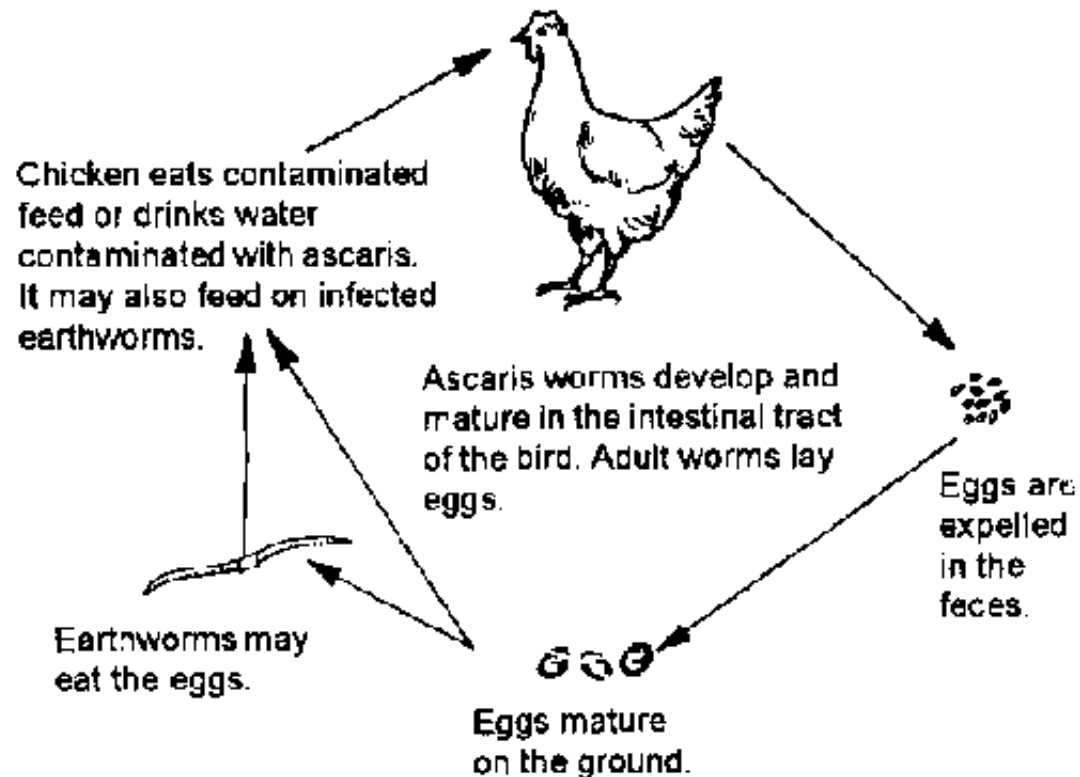
## **Intestinal worms**

### **Symptoms**

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

### **Treatment**

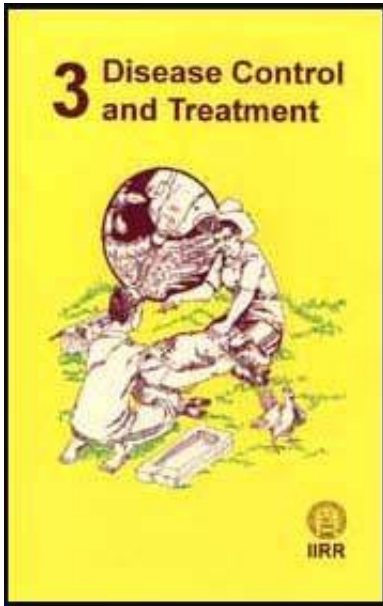
- **Herbal medicine—nut of betelnut (see section on Herbal medicine for animals).**
- **Western medicine—Deworm chickens with Pipelazine. (See section on deworming in Basic husbandry practices and veterinary care.)**



**FIG. 1. Life cycle of roundworms in chickens**

 **Animal Disease Control and Treatment (IIRR, 1996, 60 p.)**

-  **Foreword**
-  **Disease causes and symptoms**
-  **Diseases of ruminants**



-  **Diseases of pigs**
-  **Diseases of chickens**
-   **Diseases transmissible to people**

## **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	Acute to chronic
Headache.	Weakness.

Loss of appetite. Anemia.

Weakness. Swollen and painful joints.  
Increasing fever. Patient feels better in the  
Constipation. morning then in the  
Coughing. evening.  
Night sweats. 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

Chronic form



High fever.  
Vomiting.  
Arched back.

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

Irregular red patches, roughly diamond shaped on lighter parts of the skin.

## **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**

- **Burn or bury beddings used by infected animals.**
- **Bury aborted fetuses deep.**
- **Keep infected 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.**

