



# Common animal diseases and their management

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### Anthrax

Anthrax, a highly infectious and fatal disease of cattle, is caused by a relatively large spore-forming rectangular shaped bacterium called *Bacillus anthracis*. Anthrax causes acute mortality in ruminants. The bacteria produce extremely potent toxins which are responsible for the ill effects, causing a high mortality rate. Signs of the

Illness usually appear 3 to 7 days after the spores are swallowed or inhaled. Once signs begin in animals, they usually die within two days.

Hoofed animals, such as deer, cattle, goats, and sheep, are the main animals affected by this disease. They usually get the disease by swallowing anthrax spores while grazing on pasture contaminated (made impure) with anthrax spores. Inhaling (breathing in) the spores, which are odorless, colorless, and tasteless, may also cause infection in animals and people.

### **Symptoms:**

- Sudden death (often within 2 or 3 hours of being apparently normal) is by far the most common sign;
- Very occasionally some animals may show trembling, a high temperature
- Difficulty breathing, collapse and convulsions before death. This usually occurs over a period of 24 hours;
- After death blood, may not clot, resulting in a small amount of bloody discharge from the nose, mouth and other openings

### **Treatment and control**

- Due to the acute nature of the disease resulting in sudden death, treatment is usually not possible in animals even though Anthrax bacilli are clones. Treatment is of use in cases showing sub-acute form of the disease.
- In most cases, early treatment can cure anthrax. The cutaneous (skin) form of anthrax can be treated with common antibiotics.

### **Preventive measures:**

- Regular annual vaccination of animals in endemic areas will prevent the disease from occurring.
- Vaccination may be carried out at least a month prior to expected disease occurrence in endemic areas.
- Never open a carcass of an animal suspected to have died from anthrax.

Contact a veterinarian immediately if the following symptoms are seen and seek advice on control measures to be adopted.

- Fever (106-108°F), loss of appetite, depression and dullness
- Suspended rumination3. Rapid pulse and heart rates
- Difficult breathing (dyspnoea)
- Lameness in affected leg
- Crepitus swelling over hip, back & shoulder
- Swelling is hot & painful in early stages whereas cold and painless inter.
- Recumbency (prostration) followed by death within 12-48 hrs.

## **Black quarter (black-leg)**

It is an acute infectious and highly fatal, bacterial disease of cattle. Buffaloes, sheep and goats are also affected. Young cattle between 6-24 months of age, in good body condition are mostly affected. It is soil-borne infection which generally occurs during rainy season. In India, the disease is sporadic (1-2 animal) in nature.

**Causal organism:** it is a bacterial disease caused by *Clostridium chauvoei*

### **Symptoms:**

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- Suspended rumination
- Rapid pulse and heart rates
- Difficult breathing (dyspnoea)
- Lameness in affected leg
- Crepitation swelling over hip, back & shoulder
- Swelling is hot & painful in early stages whereas cold and painless inter.
- Recumbency (prostration) followed by death within 12-48 hrs.

### **Treatment:**

- Early treatment can be possible to complete cure of the animal.
- Consult with veterinarian immediately.

### **Ethnovet practice :**

The following measure is to be taken up in the month of May / June every year.

Exudates of thirugukalli (*Euphorbia tirucalli*), kodikalli (*Sarcostemma brevistigma*), aththi (*Ficus racemosa*), banyan tree (*Ficus bengalensis*), madara (*Calotropis gigantea*) are taken at the rate of 1 to 15 drops each in a stainless-steel vessel and mixed with 50 ml of sesame oil and ragi flour are added and made into a paste. This paste is applied as dot (coin size) in each animal in the groin region. (the above material may be used for about 50 animals).

## **Foot and mouth disease**

The foot-and-mouth disease is a highly communicable disease affecting cloven-footed animals. It is characterized by fever, formation of vesicles and blisters in the mouth, udder, teats and on the skin between the toes and above the hoofs. Animals recovered from the disease present a characteristically rough coat and deformation of the hoof.

In India, the disease is widespread and assumes a position of importance in livestock industry. The disease spreads by direct contact or indirectly through infected water, manure, hay and pastures. It is also conveyed by cattle attendants. It is known to spread through recovered animals, field rats, porcupines and birds.

## Symptoms

- fever with 104-105° F
- profuse salivation - ropes of stringy saliva hangs from mouth
- vesicles appear in mouth and in the inter digital space
- lameness observed
- cross bred cattle are highly susceptible to it

## Treatment

- the external application of antiseptics contributes to the healing of the ulcers and wards off attacks by flies.
- a common and inexpensive dressing for the lesions in the feet is a mixture of coal-tar and copper sulphate in the proportion of 5:1.

## Precautions

- heavy milch animals and exotic breeds of cattle bred for milk should be protected regularly.
- it is advisable to carry out two vaccinations at an interval of six months followed by an annual vaccination programme.
- isolation and segregation of sick animals. It should be informed immediately to the veterinary doctor
- disinfection of animal sheds with bleaching powder or phenol
- attendants and equipment's for sick animals should be ideally separate
- the equipment's should be thoroughly sanitized
- proper disposal of left over feed by the animal
- proper disposal of carcasses
- control of flies

## Ethnovet prevention practice:

When there is a outbreak in the nearby villages /surroundings take tulasi (*Ocimum sp*) leaves 100 gm, a pinch of common salt and turmeric rhizome 2 pieces and grind them. This has to be squeezed to obtain extract and administered orally. The residues left over can be used for smearing over the mouth region, foot region. This is repeated.

## Rabies (Mad dog disease)

Rabies is a disease of dogs, foxes, wolves, hyaenas and in some places, it is a disease

of bats which feed on blood.

The disease is passed to other animals or to people if they are bitten by an animal with rabies. The germs which cause rabies live in the saliva of the sick (rabid) animal. This is a killer disease but not every dog which bites is infected with rabies.

When the rabid animal bites another animal or human, the germs which live in its saliva pass into the body through the wound caused by the bite. The germs travel along the nerves to the brain. The time between the bite and the first appearance of signs that the bitten animal or human has been infected can take from 2 to 10 weeks or more. The time taken depends on the distance of the bite from the brain. If the bite is on the face or head, the bitten animal or human will quickly show signs, but if the bite is on the leg it will take much longer for signs to develop.

### **General signs of rabies**

You should first look for the marks of the bite and discover where and when the animal was bitten. All rabid animals show similar signs in the beginning.

- they change their normal behaviour and behave very strangely.
- They stop eating or drinking.
- Male animal will try to mate (mount) other animals.
- there is no change in the body temperature.
- These signs will continue for 3 to 5 days. Then, before it dies, the animal will develop one or the other of two types of the disease:
  - the furious (mad) type of the disease makes the animal aggressive and it will bite anything.
  - The quiet (dumb) type when the animal is quiet and does not move.

### **Rabies in the dog**

Dogs show either of the two types of rabies.

- a dog with the dumb or quiet type of the disease cannot move. It looks as if it has a bone stuck in the mouth and saliva drips from the mouth.
- rabies in the dog lasts about 10 days before the animal dies. If the animal does not die after this length of time then it may not be suffering from rabies.

### **Rabies in sheep, goats and cattle**

Rabies is characterised by the animals becoming restless and excited. They may bite themselves and saliva drips from the mouth. The most important sign in cattle is that the animal bellows (calls) very frequently and with strange sound. The animals will become paralysed and die.

## **Rabies in the horse and camel**

The horse will show the furious (mad) type of the disease. It will kick and bite and show signs similar to colic. The animal will die after paralysis of the back legs.

In the camel the signs of rabies are similar to those shown by an animal in the rut.

### **What to do with a biting dog**

Remember that not every dog which bites has rabies. If the dog belongs to somebody ask the owner about its normal behaviour. If the dog is showing signs of rabies you must inform your veterinary officer immediately. The dog must be shot and if it has bitten anybody, they must be taken to a hospital immediately for vaccination.

### **Control of rabies**

Dogs in your community can be vaccinated against rabies. You should ask your veterinary service about vaccination against rabies. If there is an outbreak of rabies, the livestock in your community can be vaccinated too.

### **Treatment (ethnovet practices) :**

Leaves of chirchra (*Achyranthes aspera*) 100gm and onion 50 gm are ground well and smeared over the bitten place. The extract of these ingredients is administered orally twice in a day.

## **Blue tongue**

Bluetongue, a disease which is transmitted by midges, infects domestic and wild ruminants and also camelids, however sheep are particularly badly affected. Cattle, although infected more frequently than sheep, do not always show signs of disease. Virus spreads between animals occurs via the midges of Culicoides species.

The likelihood of mechanical transmission between herds and flocks, or indeed within a herd or flock, by unhygienic practices (the use of contaminated surgical equipment or hypodermic needles) may be a possibility.

### **Clinical signs include:**

**Sheep :** eye and nasal discharges, drooling, high body temperature, swelling in mouth, head and neck, lameness and wasting of muscles in hind legs, haemorrhages into or under skin, inflammation of the coronary band, respiratory problems, fever,

lethargy.

**In cattle :** nasal discharge, swelling of head and neck, conjunctivitis, swelling inside and ulceration of the mouth, swollen teats, tiredness, saliva drooling, fever.

Note: a blue tongue is rarely a clinical sign of infection

#### **Control :**

Inspect stock closely, particularly focusing on the lining of the mouth and nose and the coronary band (where the hoof stops and the skin starts). If an animal is suspected as having bluetongue, it must be reported as quickly as possible. Telephone your local animal health office immediately.

#### **Preventive measures and treatment (ethovet):**

Since the animal is not taking any feed the starvation may lead to death. So the animal has to be administered orally the following food. Banana fruits (one) smeared with sesame oil (50 ml) for 2 to 3 times. By this animal will recover little. However, this will not control the disease fully. Next the leaf pulp of "sothukathalai"(Aloe vera) has to be administered daily. Administering of Aloe vera has to be continued for more days till the animal fully recovers from this disease. By this treatment the infected animal will recover from the disease. The disease will not spread to other animals if all animals are administered with Aloe vera as a preventive treatment. Administering aloe vera also increases the body weight of animals as it is against all intestinal parasite.

## **Pox**

**Epidemiology :** sheep-pox is a highly contagious disease. It causes a mortality of 20 to 50 per cent in animals below the age of 6 months, and causes damage to the wool and skin in adults. Of the pock diseases, sheep-pox ranks only second to human small-pox in virulence. The disease is transmissible to in-contact goats but not to other species of animals. It, however, spreads slowly.

**Symptoms :** The disease is characterized by high fever, and symptoms of pneumonia and acute enteritis. Skin lesions appear particularly in parts free from wool, notably around the eyes, inner side of the thigh, udder and under surface of the tail. The internal organs such as trachea, lungs, kidneys and intestines are also affected. The disease results in emaciation and, as already mentioned, frequent deaths of affected animals.

#### **Treatment, prevention and control :**

## **Treatment, prevention and control.**

The diseased animal should be treated with palliatives. In the young ones nursing is more important than medication. The infected litter should be burnt and the bedding changed every day. Affected animals should be kept on soft diet. The ulcers on the skin should be washed with potassium permanganate lotion and dusted with boric acid; strict hygienic measures should be adopted.

### **Preventive measures and treatment (ethnovet):**

External application of paste prepared by grinding neem leaves, tulsi leaves each 100 gm and turmeric powder- 50gm sprinkled with sufficient water. Continue for 3 to 5 days. Administer orally the same mixture by diluting with water.

## **Brucellosis of sheep**

**Transmission :** The mode of entry is by ingestion or via conjunctiva. The aborted foetus, vaginal discharge and milk from infected goats contain a large number of organisms.

**Symptoms** in infected goats and sheep state of abortion may occur followed by a quiescent period during which a few abortions occur. The aborted animals do not breed. After 2 years or more another abortion storm is likely to occur.

### **Diagnosis, treatment and control:**

It is not possible to diagnose brucellosis on the basis of symptoms alone. The suspicion is aroused when humans in contact suffer from undulant fever and there is poor breeding record in goat herd and evidence of mastitis. The diagnosis can be done by the isolation of organisms and by serological tests.

### **There is no adequate treatment:**

This is based on hygiene, vaccination, testing and disposal. Good management practice is essential. Separate quarters should be provided for kidding. Immunization can be done with attenuated as well as killed vaccines. The test and disposal procedure is highly desirable.

## **Tetanus**

This is an infectious, non-febrile disease of animals and man, and is characterized by spasmodic tetany and hyperesthesia. This disease is prevalent all over the world.

**Transmission :** Infection takes place by contamination of wounds. Deep punctured wounds provide favourable conditions for the spores to germinate, multiply and produce toxin which is subsequently absorbed in the animal body. The micro-organism is present in soil and in animal faeces, and is carried into the wound by a penetrating object. The organism is present in the intestine of normal animals, and under some undetermined conditions multiplies rapidly and produces toxin in sufficient quantities to be absorbed and cause the disease.

**Symptoms :** The incubation period is generally 1-2 weeks but it may be as short as 3 days. Tetanus affects many species of domesticated animals but occurs particularly in horses and lambs; less frequently in adult sheep, goats, cattle, pigs, dog and cats; and rarely in poultry. The initial symptoms are mild stiffness and an unwillingness to move all the animals. More severe symptoms develop after 12-24 hours which are stiffness of limbs, neck, head, tail and twitching of muscles. The spasms develop in response to noise. In terminal stages ears are erect, nostrils dilated, nictitating membrane protruded. Mastication becomes very difficult because mouth cannot be opened, hence the name lockjaw.

**Treatment :** The treatment is carried out by first injecting antitoxin then treating the wound. Penicillin parenterally is beneficial. Muscular relaxation is achieved by injection of relaxants. The animal should be kept in a dark room and fed with the help of stomach tube.

**Control :** Proper hygiene and cleanliness at castration and other surgical procedures should be observed. Sheep should be given 2 injections based 3 weeks apart to develop a solid immunity.

## **Listeriosis**

**Transmission :** The organisms are excreted in the faeces, urine, aborted foetuses, uterine discharge and milk of infected animals. The organisms are sufficiently resistant to remain viable in animal and human faeces, sewage, soil, silage and dust for several weeks and months. The blood sucking arthropods may spread infection since organisms have been isolated from cattle ticks and tabanid flies. Under natural conditions certain predisposing factors are related to clinical infection.

**Symptoms :** In farm animals the disease occurs towards the end of winter or early spring. The first signs of meningo-encephalitis are stiffness of neck, incoordinated movement of limbs and tendency to move in circles or to lean against a fence or wall. There may be paralysis of muscles of jaw and pharynx. Incoordination becomes progressively more severe until the animal can no longer stand. The cattle which are

progressively more severe until the animal can no longer stand. The cattle which are not severely affected may survive. Abortions in cattle usually occur after 4-8 months of pregnancy and at a comparatively later stage in sheep. In pigs and horses, clinical signs are not common but may develop as encephalitis and septicaemia. In poultry, the disease usually causes sudden death, occasionally there are signs of torticollis, weakness and inco-ordination of the legs.

**Treatment :** Tetracyclines are very effective in meningo-encephalities of cattle less so in sheep. The recovery rate depends on the speed with which the treatment is commenced.

**Control :** When outbreaks occur all affected animals should be slaughtered and buried along with litter and bedding. The vaccines, living or killed, have little effect on the pathogenesis of infection under natural conditions, tetracycline's are very effective for treatment of listeriosis.

### **Campylobacter abortion (vibriosis)**

**Transmission :** transmission occurs by coitus. The affected bulls carry the organisms in preputial cavity indefinitely. Mature cows and heifers also carry the infection for long periods. Infected semen from an infected bull is the important means of the disease. The organism survives low temperature used in semen storage.

**Symptoms :** infertility may cause become apparent only when the percentage of pregnancies in a dairy herd is low. The infertility rate in heifers is more than in cows. Abortions usually occur between fifth and sixth month of pregnancy. Infected bulls show no symptoms and their semen is normal. Healthy bulls become infected during coitus with diseased cow. Among sheep the disease is characterized by abortion occurring towards the end of gestation. Usually abortion is preceded by vaginal discharge for several days. The aborted foetus is edematous with petechial hemorrhages on serous surfaces and necrotic foci in the liver.

**Control :** abortion rate can be reduced by antibiotic therapy, and particularly by using chlortetracycline and concurrently with the development of specific immunity. The use of killed vaccines may reduce the incidence of disease in a herd but does not eradicate the infection. The bulls can be treated by injecting antibiotic cream in the prepuce. There is no direct treatment of females.

### **Johne's disease**

Johne's disease is a specific chronic contagious enteritis of cattle, sheep, goat,

buffaloes and occasionally of pigs. The disease is characterized by progressive emaciation and in cattle and buffaloes by chronic diarrhea and thickening of the intestine.

**Transmission** under natural conditions the disease spread by ingestion of feed and water contaminated by the faeces of infected animals. The infection occurs mostly in the early month of life. The incubation period extends from 12 months to several years. The animal aged 3 to 6 years mostly suffer from the disease. Affected animals may not show clinical symptoms continue to discharge organisms in faeces. The organisms persist in pastures for about 1 year. The organisms are susceptible to sunlight, drying and high ph of soil; continuous contact of urine with faeces reduces the life of bacteria. In cattle clinical signs appear mainly during 2-6 years of age. The infected animals which are apparently healthy, often show clinical signs after parturition.

**Treatment** the organisms is more resistant to chemotherapeutic agents invitro than mycotuberculosis. Because of this the practical utility of treatment in clinical cases is poor.

**Control** the affected animal should be segregated and their faeces properly disposed off. Alive vaccine has been developed. It reduces the incidence of clinical disease. It consists of a non-pathogenic strain of jhone's bacillus with an adjuvant. The calves soon after birth are inoculated with vaccine subcontaneously. The vaccinated animals become reactors of jhonin. Vaccination is generally done in heavily infected herds.

## **Bovine ephemeral fever**

Bovine ephemeral fever is an insect-transmitted, noncontagious, viral disease of cattle and water buffalo that is seen in Africa, the middle east, Australia, and Asia.

### **Etiology and epidemiology**

Bovine ephemeral fever virus (befv) is classified as a member of the genus Ephemerovirus in the family Rhabdoviridae (single-stranded, negative sense rna)

The prevalence, geographic range, and severity of the disease vary from year to year, and epidemics occur periodically. During epidemics, onset is rapid; many animals are affected within days or 2-3 wk. Bovine ephemeral fever is most prevalent in the wet season in the tropics and in summer to early autumn in the subtropics or temperate regions (when conditions favor multiplication of biting insects); it disappears abruptly

In winter, virus spread appears to be limited by latitude rather than topography or availability of susceptible hosts. Morbidity may be as high as 80%; overall mortality is usually 1%–2%, although it can be higher in lactating cows, bulls in good condition, and fat steers (10%–30%).

### Clinical findings

Signs, which occur suddenly and vary in severity, can include biphasic to polyphasic fever (40°–42°C [104°–107.6° F]), shivering, inappetence, lacrimation, serous nasal discharge, drooling, increased heart rate, tachypnea or dyspnea, atony of forestomachs, depression, stiffness and lameness, and a sudden decrease in milk yield.

Affected cattle may become recumbent and paralyzed for 8 hr to >1 wk. After recovery, milk production often fails to return to normal levels until the next lactation. Abortion, with total loss of the season's lactation, occurs in about 5% of cows pregnant for 8–9 months. The virus does not appear to cross the placenta or affect the fertility of the cow. Bulls, heavy cattle, and high-lactating dairy cows are the most severely affected, but spontaneous recovery usually occurs within a few days. More insidious losses may result from decreased muscle mass and lowered fertility in bulls.

### Lesions

The most common lesions include polyserositis affecting pleural, pericardial, and peritoneal surfaces; serofibrinous polysynovitis, polyarthritis, polytendinitis, and cellulitis; and focal necrosis of skeletal muscles. Generalized edema of lymph nodes and lungs, as well as atelectasis, also may be present.

### Treatment and control

Complete rest is the most effective treatment, and recovering animals should not be stressed or worked because relapse is likely. Anti-inflammatory drugs given early and in repeated doses for 2–3 days are effective. Oral dosing should be avoided unless the swallowing reflex is functional. Signs of hypocalcemia are treated as for milk fever. Antibiotic treatment to control secondary infection and rehydration with isotonic fluids may be warranted.

### Rinderpest

Rinderpest is the most destructive of the virus diseases of cloven-footed animals,

such as cattle, buffaloes, sheep, goats, pigs and wild ruminants. The virus is found notable in the saliva, discharge from eyes and nostrils, and in the urine and faeces. It is present in the circulating blood during the febrile stage and is later concentrated in different organs, especially in the spleen, lymph nodes and liver. Outside the animal body, the virus is rapidly destroyed by direct sunlight and disinfectants. Cold preserves the virus. The virus is usually spread by contaminated feed and water. Rise in temperature up to 104 – 107 degree F. Lacrimation and redness of eye. Foul odour from mouth. Discrete necrotic foci develop in the buccal mucosa, inside lip, and on the tongue. Bloody mucoid diarrhea is noticed

#### **Treatment:**

Symptomatic treatment can help early cure of the animals. Consult with veterinary doctor

### **Mastitis**

Mastitis, or inflammation of the mammary gland, is the most common and the most expensive disease of dairy cattle throughout most of the world. Although stress and physical injuries may cause inflammation of the gland, infection by invading bacteria or other microorganisms (fungi, yeasts and possibly viruses) is the primary cause of mastitis. Infections begin when microorganisms penetrate the teat canal and multiply in the mammary gland.

#### **Treatment**

- success depends on the nature of the aetiological agent involved, the severity of the disease and the extent of fibrosis.
- complete recovery with freedom from bacterial infection can be obtained in cases of recent infection and in those where fibrosis has taken place only to a small extent.
- such drugs as acriflavine, gramicidin and tyrothricin have now ceased to be in use, and have given place to the more effective drugs, such as sulphonamides, penicillin and streptomycin.

### **Footrot**

Foot rot is a common cause of lameness in cattle and occurs most frequently when cattle on pasture are forced to walk through mud to obtain water and feed. However, it may occur among cattle in paddocks as well, under apparently excellent conditions. Foot rot is caused when a cut or scratch in the skin allows infection to penetrate between the claws or around the top of the hoof. Individual cases should be kept in a dry place and treated promptly with medication as directed by a veterinarian. If the

disease becomes a herd problem a foot bath containing a 5% solution of copper sulphate placed where cattle are forced to walk though it once or twice a day will help to reduce the number of new infections. In addition, drain mud holes and cement areas around the water troughs where cattle are likely to pick up the infection. Keep pens and areas where cattle gather as clean as possible. Proper nutrition regarding protein, minerals and vitamins will maximize hoof health.

## **Bovine rhinotracheitis**

Infectious bovine rhinotracheitis (ibr) is a highly contagious, infectious respiratory disease that is caused by bovine herpesvirus-1 (bhv-1). It can affect young and older cattle. In addition to causing respiratory disease, this virus can cause conjunctivitis, abortions, encephalitis, and generalised systemic infections. Ibr is characterized by acute inflammation of the upper respiratory tract.

### **Treatment**

There is no direct treatment for viral diseases. Infected animals should be isolated from the rest of the herd and treated with anti-inflammatory drugs and antibiotics for secondary infections if necessary. Carrier cattle should be identified and removed from the herd.

### **Prevention**

Control of the disease is based on the use of vaccines.

## **Piglet diarrhea or scour**

Of all the diseases in the sucking piglet, diarrhea is the most common and probably the most important. In some outbreaks, it is responsible for high morbidity and mortality. The main bacterial causes are E. Coli and Clostridia and the main parasite is Coccidia.

### **Clinical signs**

Scour in the piglet can occur at any age during sucking but there are often two peak periods, before 5 days and between 7 and 14 days.

### **Acute disease**

The only sign may be a perfectly good pig found dead. Post-mortem examinations show severe acute enteritis, so sudden that there may be no evidence of scour

externally. Clinically affected piglets huddle together shivering or lie in a corner. The skin around the rectum and tail will be wet. Look around the pen for evidence of a watery to salad cream consistency scour. In many cases, there is a distinctive smell. As the diarrhea progresses the piglet becomes dehydrated, with sunken eyes and a thick leathery skin. The scour often sticks to the skin of other piglets giving them an orange to white color.

Prior to death piglets may be found on their sides paddling and frothing at the mouth.

### **Sub-acute disease:**

The symptoms are similar but the effects on the piglet are less dramatic, more prolonged and mortality tends to be lower. This type of scour is often seen between 7 to 14 days of age manifest by a watery to thin salad cream consistency diarrhea, often white to yellow in color.

### **Treatment**

- in severe outbreaks of E. Coli disease the sows feed can be top dressed with the appropriate antibiotic daily, from entry into the farrowing house and for up to 14 days post-farrowing. This can be effective in reducing bacterial output in the sows faeces.
- observe litters for the presence of diarrhea both night and morning.
- study the history of the disease on your farm. Is it sporadic, in one piglet in a litter, or total litters?
- in the light of the history either treat the individual pig or on the first signs of disease treat the whole litter.
- if a litter is badly scoured dose night and morning for a minimum of two days.
- assess the response to treatment. If there is no change within 12 hours, then change to another medicine as advised by your veterinarian.
- always treat piglets less than 7 days of age by mouth.
- for older pigs where the disease is less acute injections are equally effective and easier to administer.
- provide electrolytes in drinkers. These prevent dehydration and maintain body electrolyte balances.
- cover the pen, the creep area and where the pigs defecate with straw, shredded paper, shavings or sawdust.
- provide an additional lamp to provide an extra source of heat.
- use binding agents such as chalk, kaolin or activated attapulgite to absorb toxins from the gut.

### **Management control and prevention**

- adopt procedures to prevent the spread of the scour - disinfect boots between pens, use a disposable plastic apron when dosing piglets to prevent heavy contamination of clothing,

- wash hands after handling a scoured litter, disinfect brushes and shovels between pen.
- ensure that farrowing houses are only used on an all-in all-out basis with a pressure wash and disinfection between each batch.
- farrowing pens must be dry before the house is repopulated. Remember that moisture, warmth, waste food and faeces are ideal for bacterial multiplication.
- pen floors should be well maintained. Poor pen hygiene associated with bad drainage predisposes to scour.
- look carefully at the part of the pen floor where there are piglet faeces. Is this poorly drained? Do large wet patches develop? If so cover them with extra bedding daily and remove. This is a most important aspect of control.
- check nipple drinkers and feeding troughs for leakages.
- ensure that faeces are removed daily from behind the sow from the day she enters the farrowing crates until at least 7 days post-farrowing if the floors are slatted. Also remove faeces daily throughout lactation if they are solid concrete.
- maintain creep environments that are always warm and comfortable. Fluctuating temperatures are a major trigger factor to scour particularly from 7 to 14 days of age.
- consider vaccinating against E. Coli (make sure first that this is the cause of the problem however). E. Coli vaccines only protect the piglet for the first 5 to 7 days of age.
- assess the environment of all the farrowing house. Poor environments allow heavy bacterial multiplication and a much higher bacterial challenge is likely to break down the colostral immunity.
- check the sow's health. Animals affected with enteric or respiratory disease, lameness or mastitis predispose the litter to scour.
- where farrowing house floors are very poor, pitted and difficult to clean, brush them over with lime wash containing a phenolic disinfectant.
- Colostrum management : it is vital that the piglet receives the maximum amount of colostrum within the first 12 hours of birth. High levels of antibody are only absorbed during this period. Factors such as poor teat access, poor crate design, and particularly the development of agalactia in the sow, associated with udder oedema, reduce intake.

## **PPR (goat plague)**

PPR (Peste des petits ruminants) is a most important viral disease of goat capable of heavy mortality and commonly called as goat plague.

### **Etiology**

The causative virus was first thought to be an aberrant strain of rinderpest virus that had lost its ability to infect cattle. Later molecular studies showed that it was distinct from, but closely related to, rinderpest virus.

### **Clinical signs:**

The clinical sign of PPR in goats is often fulminating and fatal although apparent infection occurs in endemic areas. Incubation period may range from 2-6 days in field

conditions. In acute form, there is sudden onset of fever with rectal temperature of at least 40°- 41°C. The affected goats show dullness, sneezing, serous discharge from the eyes and nostrils. During this stage farmers often think that the animal has developed cold exposure and may attempt to provide protection for cold. In the process goats, may be congregated and accentuate the process of transmission. After 2-3 days, discrete lesions develop in the mouth and extend over the entire oral mucosa, forming diphtheric plaques.

During this stage profound halitosis (foul smell) is easily appreciable and the animal is unable to eat due to sore mouth and swollen lips. Latter ocular discharge becomes mucopurulent and the exudate dries up, matting the eyelids and partially occluding the nostrils. Diarrhea develops 3-4 days after the fever and is profuse and faeces may be mucoid or bloody depending upon the damage. Dyspnea and coughing occur later due to secondary pneumonia. Death occurs within one week of the onset of the illness.

#### **Treatment and control:**

No specific treatment is recommended for ppr being viral disease. However, mortality rates can be reduced by the use of drugs that control the bacterial and parasitic complications. Specifically, oxytetracycline and chlortetracycline are recommended to prevent secondary pulmonary infections. Lesions around the eyes, nostrils and mouth should be cleaned twice daily with sterile cotton swab. Our experience indicates that fluid therapy and anti-microbial such as enrofloxacin or ceftiofur on recommended doses along with mouth wash with 5% boro-glycerine can be of benefit in reducing the mortality during outbreak of ppr in goats. Health workers should inspect first the unaffected goats followed by treatment of affected goats. Immediate isolation of affected goats from clinically healthy goats is most importance measure in controlling the spread of infection. Nutritious soft, moist, palatable diet should be given to the affected goats. Provide parenteral energy infusion in anorectic goats along with appetizers.

Immediately measures should be taken for notification of disease to nearest government veterinary hospital. Carcasses of affected goats should be burned or buried. Proper disposal of contact fomites, decontamination is must. Vaccination is the most effective way to control ppr.

## **Bovine babesiosis (tick fever)**

### **Cause**

Bovine babesiosis (bb) is a tick-borne disease of cattle. Transmission of b bovis takes place when engorging adult female ticks pick up the infection. They pass it on to their progeny via their eggs. Larvae (or seed ticks) then pass it on in turn when feeding on another animal. B bigemina is also passed from one generation of ticks to the next. Engorging adult ticks pick up the infection and nymphal and adult stages (not larval stages) of the next generation pass it on to other cattle. Morbidity and mortality vary greatly and are influenced by prevailing treatments employed in an area, previous exposure to a species/strain of parasite, and vaccination status. In endemic areas, cattle become infected at a young age and develop a long-term immunity. However, outbreaks can occur in these endemic areas if exposure to ticks by young animals is interrupted or immuno-naïve cattle are introduced. The introduction of babesia infected ticks into previously tick-free areas may also lead to outbreaks of disease.

### **Symptoms:**

- high fever
- neurologic signs such as incoordination, teeth grinding and mania. Some cattle may be found on the ground with the involuntary movements of the legs. When the nervous symptoms of cerebral babesiosis develop, the outcome is almost always fatal.
- dark colored urine
- anorexia
- animals likely to separate from herd, be weak, depressed and reluctant to move
- n.b. Bigemina parasitaemia often exceeds 10 per cent and may be as high as 30 per cent.

Clinical symptoms for babesia divergens are similar to b. Bigemina infections. The survivors may be weak and in reduced condition, although they usually recover fully. Subacute infections, with less apparent clinical signs, are also seen.

### **Treatment**

Mild cases may recover without treatment. Sick animals can be treated with an antiparasitic drug. Treatment is most likely to be successful if the disease is diagnosed early; it may fail if the animal has been weakened by anemia. Imidocarb has been reported to protect animals from disease but immunity can develop. There are also concerns with regard to residues in milk and meat. In some cases blood transfusions and other supportive therapy should be considered.

### **Prevention**

Effective control of tick fevers has been achieved by a combination of measures directed at both the disease and the tick vector. Tick control by acaricide dipping is widely used in endemic areas. Dipping may be done as frequently as every 4-6 weeks

in heavily infested areas. The occurrence of resistance of ticks, chemical residues in cattle and environmental concerns over the continued use of insecticides has led to use of integrated strategies for tick control. Babesiosis vaccines are readily available and are highly effective. Anti-tick vaccines are also available in some countries and can be used as part of an integrated program for the control of ticks. Babesiosis can be eradicated by eliminating the host tick(s). In the us, this was accomplished by treating all cattle every two to three weeks with acaricides. In countries where eradication is not feasible, tick control can reduce the incidence of disease.

#### **Treatment for control of tick (ethnovet):**

Mix common salt and few camphor in castor oil or neem oil and apply over the affected area. Whole plant extract of ghaner (*Lantana camara*) should be diluted with the urine of cattle and apply externally. Boil 250 gm of tobacco in 2 litres of water and add 5 litres of water and sprayed over the body of 10-20 animals.

### **Theileriosis**

Theileriases are a group of tickborne diseases caused by *theileria* spp. Both *theileria* and *babesia* are members of the suborder piroplasmorina. Although *babesia* are primarily parasites of rbc's, *theileria* use, successively, wbc's and rbc's for completion of their life cycle in mammalian hosts. The infective sporozoite stage of the parasite is transmitted in the saliva of infected ticks as they feed. Sporozoites invade leukocytes and, within a few days, develop to schizonts. In the most pathogenic species of *theileria* (eg, *t parva* and *t annulata*), parasite multiplication occurs predominantly within the host wbc's, whereas less pathogenic species multiply mainly in rbc's. Development of the schizont stage of pathogenic *theileria* causes the host wbc to divide; at each cell division, the parasite also divides. Mortality in such stock is relatively low, but introduced cattle are particularly vulnerable. Unlike in *babesiosis*, in *theileriasis* there is no evidence of increased resistance in calves <6 mo old.

### **East coast fever**

East coast fever, an acute disease of cattle, is usually characterized by high fever, swelling of the lymph nodes, dyspnea, and high mortality. Caused by *theileria parva*, and transmitted by the tick vector *rhipicephalus appendiculatus*, it is a serious problem in east and southern africa.

#### **Etiology and transmission**

The african buffalo (*syncerus caffer*) is an important wildlife reservoir of *T parva*, but infection is asymptomatic in buffalo. *T parva* transmitted by ticks from either cattle or buffalo cause severe disease in cattle, but buffalo-derived parasites differentiate poorly to merozoites in cattle and generally are not transmitted by ticks. Hence, buffalo *T parva* are maintained as a separate population. Buffalo *T parva* were previously considered a separate subspecies (*T parva lawrencei*), but dna typing indicate that the cattle and buffalo parasites are a single species. *T parva* is usually highly pathogenic, causing high levels of mortality, although some less pathogenic isolates have been identified.

### **Pathogenesis, clinical findings, and diagnosis**

*T parva* sporozoites are injected into cattle by infected vector ticks. An occult phase of 5-10 days follows before infected lymphocytes can be detected in giemsa-stained smears of cells aspirated from the local draining lymph node. Subsequently, the number of parasitized cells increases rapidly throughout the lymphoid system, and from about day 14 onward, cells undergoing merogony are observed. This is associated with widespread lymphocytolysis, marked lymphoid depletion, and leukopenia. Piroplasms in rbc's infected by the resultant merozoites assume various forms, but typically they are small and rod-shaped or oval.

Clinical signs vary according to the level of challenge, and they range from in apparent or mild to severe and fatal. Typically, fever occurs 7-10 days after parasites are introduced by feeding ticks, continues throughout the course of infection, and may be  $>106^{\circ}\text{F}$  ( $41^{\circ}\text{C}$ ). Lymph node swelling becomes pronounced and generalized. Lymphoblasts in giemsa-stained smears of needle aspirates from lymph nodes contain multinuclear schizonts. Anorexia develops, and the animal rapidly loses condition; lacrimation and nasal discharge may occur. Terminally, dyspnea is common. Just before death, a sharp decrease in body temperature is usual, and pulmonary exudate pours from the nostrils. Death usually occurs 18-24 days after infection. The most striking postmortem lesions are lymph node enlargement and massive pulmonary edema and hyperemia. Hemorrhages are common on the serosal and mucosal surfaces of many organs, sometimes together with obvious areas of necrosis in the lymph nodes and thymus. Anemia is not a major diagnostic sign (as it is in babesiosis) because there is minimal division of the parasites in rbc's, and thus no massive destruction of them.

Animals that recover are immune to subsequent challenge with the same strains but may be susceptible to some heterologous strains. Most recovered or immunized animals remain carriers of the infection.

## **Treatment and control**

Treatment with parvaquone and its derivative buparvaquone is highly effective when administered in the early stages of clinical disease but is less effective in the advanced stages, in which there is extensive destruction of lymphoid and hematopoietic tissues. Immunization of cattle against *t parva* using an infection-and-treatment procedure is practical and continues to gain acceptance in some regions. The components for this procedure are a cryopreserved sporozoite stabilate of the appropriate strain(s) of *Theileria* derived from infected ticks and a single dose of long-acting oxytetracycline given simultaneously; although oxytetracycline has little therapeutic effect when administered after development of disease, it inhibits development of the parasite when given at the outset of infection. Cattle should be immunized 3–4 wk before being allowed on infected pasture. Parasitized bovine cells containing the schizont stage of *t parva* and *t annulata* can be cultivated in vitro as continuously growing cell lines. In the case of *t annulata*, cattle can be infected with a few thousand cultured cells. Attenuated strains produced by serial passage of such cultures form the basis of live vaccines used in several countries, including Israel, Iran, India, and the former USSR.

Incidence of east coast fever can be reduced by rigid tick control, but this is not feasible in many areas because of cost and the high frequency of acaricidal treatment required.

## **Ringworm**

This is the most common infectious skin disease affecting beef cattle. It is caused by a fungus, and is transmissible to man. Typically, the disease appears as crusty grey patches usually in the region of the head and neck and particularly around the eyes.

As a first step in controlling the disease, it is recommended that, whenever possible, affected animals should be segregated and their pens or stalls cleaned and disinfected. Clean cattle which have been in contact with the disease should be watched closely for the appearance of lesions and treated promptly. Proper nutrition, particularly high levels of vitamin A, copper and zinc while not a cure, will help to raise the resistance of the animal and in so doing offer some measure of control. Contact your vet and/or feed store for products to treat this disease. Using a wormer like Ivomec will kill lice and help prevent cattle from scratching causing skin damage and a place for the fungus to enter.

## **Milk fever**

Milk fever, also known as Parturient hypocalcaemia and parturient paresis, is a disease which has assumed considerable importance with the development of heavy milking cows. Decrease in the levels of ionized calcium in tissue fluids is basically the cause of the disease. In all adult cows, there is a fall in serum-calcium level with the onset of lactation at calving. The disease usually occurs in 5 to 10-year-old cows, and is chiefly caused by a sudden decrease in blood-calcium level, generally within 48 hours after calving.

## Symptoms

- in classical cases, hypocalcaemia is the cause of clinical symptoms. Hypophosphataemia and variations in the concentration of serum-magnesium may play some subsidiary role.
- the clinical symptoms develop usually in one to three days after calving. They are characterized by loss of appetite, constipation and restlessness, but there is no rise in temperature.

## Calf scour

Calves may develop scours due to bacterial or virus infections. Scours is known as "calf scours" or neonatal calf diarrhea. The primary causes of scours include: Rota virus, Corona virus, *Cryptosporidium parvum*, *Salmonella* and *Escherichia coli*.

- **Determine if treatment is required.** Calves that are moving around in the pasture, with their tails up, probably do not need treatment. Check to see if the diarrhea is yellow or white. If this is the case, treatment is probably not needed.
- **Determine if the calf is looking listless.** Calves that are lethargic or not participating much in the playful activities with other calves are a red flag to pay attention to. Calves that are also losing condition are also cause for alarm.
- **Check to see if the calf is dehydrated.** You can check for dehydration by pulling on the calf's neck skin. If the skin "tents" this is a sign of dehydration.
- **Determine the calf's body temperature.** A normal body temperature ranges from 100.5 °f (38.1 °c) to 102.5 °f (39.2 °c). Anything outside of this range is a sign for treatment.
- **Separate the sick calf or calves from the healthy herd.** You'll want to do this to avoid spreading the disease further.
- **Administer fluids using your veterinarian-approved electrolyte solution.** You may need to inject the fluids via iv or orally.
- Follow appropriate nursing care protocol using your vet's guidelines. This may include providing shelter, feed and a warm place to sleep.
- A drawback from providing shelter is maintaining infectious control. You will have to work extra to get rid of soiled bedding and disinfect everything that a calf will touch, from the floor to the fence panels and even the feed bucket.
- **Enthnovet practice:** *Ingredients needed:* vasambu (*Acorus calamus*) leaves 2 numbers, dried ginger (*Zingiber officinale*) 50 gm, guava (*Psidium guajava*) tender leaves 200

gm. The above materials are ground and made into a bolus and administered orally one or two times.

**Source : [Pashu sakhi Handbook](#)**

**Source:** [https://data.vikaspedia.in/short/lc?k=Itg9\\_vp9YmNte8UXfwXEzw](https://data.vikaspedia.in/short/lc?k=Itg9_vp9YmNte8UXfwXEzw)