



## CATTLE: DISEASES

### Animal health

Disease causing germs and parasites are present almost everywhere. Animal health is a balance between disease pressure and the immune system and self healing forces. Organic animal husbandry puts the emphasis on strengthening the animals' immune system by offering good living conditions.

Farmers can reduce the quantity of germs by keeping the stables clean. They are also responsible for most other factors influencing animal health. Animals must be fed properly and be allowed to express their natural behaviour. They need enough space to move freely, and social stress caused by overcrowding must be avoided.

**Prevention before curing:** All measures which keep animals healthy are given first priority in organic farming.

- Breeds which are adapted to the local climate and to available feeds are naturally more resistant.
- Provide dry and clean bedding and housing, shelter, light and air. Sufficient space for natural movement and frequent exercise (e.g. grazing) are important.
- The quality and quantity of fodder is crucial for the health of all animals. A natural diet appropriate to the needs of the animals should be achieved, while commercial products which make animals grow faster and produce more are to be used with restriction.

Most diseases can be avoided if you follow these basic principles.

Vaccinate according to recommendations. If veterinary treatment is necessary, medicine based on herbal, mineral and traditional remedies should be used first.

Only if they fail or are not sufficient, synthetic medicines like antibiotics are applied. To ensure that animal products are free from residues of antibiotics etc., withholding periods must be adhered to before products from medicated animals are consumed or sold.

## Cattle diseases

### Mastitis (Udder inflammation)

Mastitis is one of the most significant health problems of dairy cows worldwide, together with lameness and fertility problems. It is an acute or chronic infection of the udder, caused by various bacteria when they enter from outside through the teat opening into milk canal and udder. If this happens, there is an increased blood flow to the udder, and immune cells in the udder increase rapidly to fight the infection.

**Symptoms:** Depending on the severity of the infection, the affected quarter of the udder may turn red, swell and feel hard and hot. Touching the udder may be painful to the cow, and she may start to kick when you touch the infected quarter. When using the strip cup for the first squirts, you will find flakes and clots in the milk. Also few small clots in otherwise normal looking milk are an indication.



Signs of mastitis



Severe mastitis

### Risk factors

Mastitis is closely linked with high milk yields and often occurs in early lactation, but it can also become chronic. Important factors are poor hygiene (dirty udder, unclean milking, soiled stable and bedding), incomplete milking, poor nutrition, ketosis, milk fever, and lameness.

### Treatment of mastitis

- In severe, persistent or recurrent cases, you need to consult a veterinarian.
- Always milk infected cows and quarters last.
- Milk the infected quarter every 2 to 3 hours for some days, until the symptoms disappear.
- Use udder creams or cold water massage of the infected quarter (at least ten minutes per treatment) to reduce the swelling and pains.
- Milk of infected cows must be thrown away or can be fed to calves in less severe cases.

### Prevent mastitis!

- Cows with suckling calves almost never develop mastitis.
- Always keep good milking hygiene: hand washing, washing and drying of udder and teats before milking.
- Always use a strip cup for mastitis detection.
- Disinfect the teats after milking.
- Do not allow the cows access to bedding until 30 minutes after milking, as the teat canal remains open for up to 45 minutes after milking and is then easily entered by bacteria.
- Always keep the housing and the bedding clean and dry.
- Maintain good foot health.
- Make sure that each cow has a minimum space of 8 sq.m.
- Don't let the cows suffer from energy deficit in early lactation.
- Breed heifer calves from healthy cows.
- If you buy an additional cow, ask for a proof of mastitis free status before purchase. Allow her to join the other animals only when her udder health status is clear.

## Foot diseases and lameness

Lameness is a common problem caused by various bacteria infecting the hooves of all classes of cattle, but also of goats, sheep, donkeys and horses. The swelling and painful inflammation leads to lameness in one or more feet and can become chronic if not treated. Productivity, fertility and welfare of the animals are severely affected by foot diseases. Clean housing and good foot care are central for the foot health of all animals.

### Prevention and control of foot diseases

- Clean dry housing is the first condition to maintain foot health. The animal unit must be well drained. Manure and slurry must be removed two times every day in zero grazing units to reduce the amount of mud, filth and bacteria.
- Regular hoof trimming is necessary to prevent foot damage due to overgrown hooves. Do this during the dry period when disease pressure is low and infected hooves can heal more easily. Learn hoof trimming from an experienced cattle holder or attend a specific training course.
- Straw yards are best for foot health, if kept dry and clean.
- Cubicles must be spacious. Provide thick, dry bedding.
- Floors must not be too smooth to prevent slipping, nor too rough to prevent bruising of the sole.
- Overcrowding has a negative impact on foot health.
- Feed enough roughage to promote good rumen function.
- Ensure healthy feet in first lactation heifers. If they are lame in the first lactation, the risk of repeated lameness is three times higher. Keep them comfortably on straw and separately from older cows during the first months of lactation to prevent bullying.
- Do not breed from cows with severe lameness or badly deformed legs or feet.
- Animals with dark hooves and from lighter breeds often have healthier feet.
- Feet of bought-in animals should be thoroughly checked for lesions and given a footbath in zinc or copper sulfate.



### Treatment of foot infections

- Wash the infected foot and especially the skin between the claws with hot water - as hot as you can put your hand in.
- Cut away or trim any decayed part of the hoof to remove the infection underneath it.
- Apply a disinfectant or juice from Euphorbia trees (e.g. E. kibwezi) to cauterize secondary infections and abscesses. This also stops the wound from bleeding.
- Isolate animals with severe infection to stop spread of the disease to other animals.
- Always treat animals at the first signs of lameness and without delay! This avoids worse complications and spreading the disease to the rest of the herd.

## Milk Fever (Hypocalcaemia)

Milk fever is also one of the most frequent disorders in high yielding dairy cattle. It is the most common cause of sudden death in dairy cows and can also cause calving problems and death of the calf. It usually occurs just before, during or immediately after calving. It is caused by low blood calcium resulting from the high calcium demands during pregnancy and the sudden high milk production after calving. When the cow's blood calcium becomes too low to support normal nerve and muscle function she collapses. Milk fever can kill an otherwise healthy cow in less than 24 hours if it is not successfully treated.

**Symptoms:** During a short period the cow acts excitedly, her muscles tremble, and she is reluctant to move or to eat. The hind legs become stiff and she staggers. These signs often go unnoticed. Then the cow lies down and cannot get up anymore. Her head is often folded along her flank. She is dull and cold to touch, her body temperature is often lower than normal and her eyes are dry and staring. Breathing becomes heavier and the heartbeat gets faster. Finally, the cow lies on her side with her legs stretched out and her head turned back. She may lose consciousness. Bloat often develops and regurgitation of the rumen content is likely. If left untreated, at this stage most animals die.

### Treatment of milk fever

Treatment for all cases of milk fever is always urgent. The longer a cow is 'down', the greater the chance she will never get up again!

- The first thing to do is to ensure that the cow is sitting up in order to reduce the danger of choking and to relieve bloat. Make her head rest on a bale of hay or any suitable object.
- If discovered early enough, a handful of agricultural lime flour in a bottle of water fed to the cow may be sufficient for the cow to recover.  
**Note:** Never use burnt lime, hydrated lime or slaked lime as they are extremely toxic to livestock!



- For late discovered cases, when the cow is no longer able to drink, only a veterinarian can save the animal by injecting a specific calcium solution directly into the bloodstream.
- After treatment and recovery, cows should be only partially milked out for the next 48 hours to reduce the calcium drain and prevent relapses.

## Prevention of milk fever

- Cows should be kept on a low calcium diet during the fourth, third and second week before calving. Also restrict leguminous fodder, as it is high in calcium. This stimulates the body to mobilize its own calcium stores. When the demand for calcium increases at calving, calcium is then drawn more rapidly from the body rather than just from the feed.
- A handful of agricultural lime flour mixed into the concentrate or into a bottle of water and given the day before calving, during calving and daily during the following weeks can prevent milk fever in cows with a known risk.
- If the cow is left with her calf for the first days after calving and is not milked by people during this time, many cases of milk fever can be avoided. The milk from the first few days is not suitable for mixing with other milk for sale anyway.

## Ketosis (Acetonaemia)

Ketosis is a further common disease associated with dairy breeds. During the first six weeks of lactation, all dairy cows are at risk of ketosis. The suddenly high milk production in early lactation requires more nutrients than the cow can eat, which results in intense body fat mobilization. Cows which are fat at calving have an increased risk of ketosis. Ketosis occurring later in lactation is often associated with underfed cattle.

**Symptoms:** The early sign is a decrease in milk production and appetite, and the cow becomes depressed. A sweet acetone smell may be noticed in the breath, milk and urine. The faeces is firm, and the cow loses weight. She may display strange behaviour like lip smacking, licking, chewing, or bellowing, and she may be excitable and staggery.

### Treatment of Ketosis

- Treatment should be undertaken by a veterinarian. Usually glucose is injected.
- The energy deficiency in the diet has to be corrected to prevent relapses.

### Prevention and control of Ketosis

- Body condition should already be managed in late lactation. In the dry period it is generally too late to correct too high or too low body reserves.
- Maintaining and promoting feed intake from the third week before calving is essential. Cows tend to reduce feed consumption before calving, which should be prevented by offering high quality forage and concentrates in increasing amounts.
- After calving, continue feeding in the same way to promote rapid and sustained increases in feed intake. Energy and especially protein levels have to be high.

## Diarrhea and scours in calves

Diarrhea accounts for most losses of calves, followed by respiratory problems. Most often, diarrhea or scours are connected with bucket feeding: inadequate feeding amounts and poor feeding techniques (e.g. dirty milk, dirty buckets, overfeeding etc.). On wet pastures, coccidiosis causing bloody diarrhea can be taken up. Diarrhea can be prevented by making sure that the calf gets enough colostrum after birth, and by providing clean and dry bedding, clean water, and adequate feeding and housing.

**Symptoms:** The infection can be caused by various types of bacteria and germs and makes the gut stop digesting. The amount of passed manure and fluids is increased; they can be whitish or bloody. The calf loses appetite, has a soiled tail, a dry coat, increased body temperature and is dull and listless. A scouring calf can lose 20 times as much water as normal. This loss of water and salts may lead to dehydration, shock and death within a short period.

### Treatment of scours

The most important thing to do is to replace the lost body water and salts. The earlier this is done, the better the response!

- Mix 2 litres of warm and clean water or thin black tea with 1 tablespoon of common salt and 6 tablespoons of sugar.
- In less severe cases, feed 1 t 2 l of this solution in alternation with a milk meal every two to three hours.
- In severe cases, withdraw milk immediately for at least one day! Feed at least 1 litre of this solution every two hours.
- Increase the share of milk gradually over several days.
- Antibiotics can be used on veterinary advice. If no veterinarian is available you may try the nearest chemist for a drug for scouring calves. Use any medication only as directed.
- If a calf is severely affected and will not drink, only a veterinary practitioner treating it with intravenous fluids can save it. Force feeding can result in pneumonia, because very sick calves can not swallow properly.
- Make sure affected calves are kept warm and dry and protected from wet and cold weather.



### Prevention of scours

- Colostrum is more potent than any drug a veterinarian can sell. The most important prevention is to ensure that the calf gets adequate amounts of colostrum within the first hours after birth. A calf can absorb the immunizing antibodies from the colostrum only during this time.
- Provide very clean, comfortable housing and good shelter to protect calves from bacteria and from wet and cool weather.
- Maintain a suitable feeding system. Bucket feeding is always a high risk. Overfeeding and sudden changes of diet can cause further stress.

## Bloat

When animals feed on young pastures after the dry season, or when high amounts of leguminous feeds are introduced into the diet suddenly, digestion can get upset and the rumen may fill with gas or foam which can neither escape nor be belched away. Bloat can be fatal within less than one hour. Cattle of any type and age may be affected.

**Symptoms:** The animal stops eating, staggers, and is reluctant to move. It appears distressed and vocalises, and its left abdomen is swollen. It is breathing rapidly and with difficulty; sometimes through the mouth with protruding tongue. Diarrhoea may be observed. If the animal goes down, death is rapid as the swollen rumen compresses the lungs and obstructs breathing, oxygen uptake and blood flow.

### Treatment of bloat

- In less severe cases, feed any edible vegetable oil, butter, or ghee (100 to 500 g, depending on the size of the animal). Make it move around to improve on digestion. Do not feed it for several hours.
- In more severe cases where the animal cannot swallow, tie a rope across its mouth to make it chew the rope and to stimulate belching.
- Bloated animals starting to show signs of distress need immediate veterinary attention. Contact a veterinarian without delay!
- A stomach tube can be used to relieve the gas build-up. Vegetable oil can then be delivered directly into the rumen through the tube. Moving the animal around after this treatment is important.
- When a stomach tube has not worked in a severely bloated and distressed animal, only a rumen puncture may create rapid relief. This must be done by a veterinarian due to the high infection risk.
- If a veterinarian is not available and the animal is already unable to get up, you may do it on your own (see box beneath). The risks involved are high, but if you do not try it, the animal will die for sure.



### A last measure in case of emergency

Where no time is left to wait for a veterinarian to arrive, use a clean, sharp knife.

An incision must be made at a hand's width behind the last rib and a hand away under the edge of the backbone of the left flank, where the swelling is greatest.

Stab hard because the skin is very tough.

Put a tube or a cannula through the incision for the gas and the foam to escape. In lack of this, twist the knife to keep the wound open until gas and foam have ceased to escape. The incision may have to be made longer (10 to 15 cm).

Pour some vegetable oil through the hole into the rumen to stop froth formation.

Veterinary attention is now urgent to clean, disinfect and stitch the wound and give antibiotic treatment to the animal, or it will die from a serious infection.

### Bloat can easily be prevented!

- Feed all animals with dry grass before you put them on new lush pasture.
- Limit time of grazing after the dry season. When you put your animals on young pasture for the first time, limit access to half an hour or one hour at most. Increase this time every day for another hour.
- Do not graze the animals on wet pasture in the morning. Wait until the pasture has been dried up by the sun.
- Do not water the animals just before you put them on new pasture. Observe all of them well and react quickly at the first signs of bloat.
- Be careful with legume fodder and restrict its share in the diet to not more than 30%.
- Avoid abrupt changes in the diet of all animals. Always introduce new feeds only in small quantities, especially legumes and grain meal.

## Calf Pneumonia

Like calf diarrhoea, pneumonia can have many causes. Exposure to cold and wet weather, poor feeding and housing, transports, and stress from overcrowding weakens resistance and may contribute to an infection. Symptoms are watery discharge from nose and eyes, rapid breathing, coughing, loss of appetite and high temperature. Pneumonia requires veterinary treatment with antibiotics. Surviving calves recover slowly and usually show reduced growth and production later in life.

### Prevention is important

Prevention aims at avoiding stress and disease pressure during the first three to four months. During this period, the immune system of a calf is still developing. Resistance to all diseases will be increased after this.

- Ensure that the calf suckles early and frequently during the first days and receives all the colostrum.
- Always provide clean and dry bedding.
- Make sure that calves are sheltered from cold weather and do not suffer from draught.
- Provide 2 square meters for each calf in calf pens.
- Avoid transport and introduction to a new environment before 6 weeks of age.
- Time castration and disbudding away from weaning.
- Introduce changes in the diet gradually.

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