



ANIMAL DISEASES CARRIED BY TICKS AND THEIR TREATMENT IN KENYA

Animal health is a major constraint to livestock production in many countries including Kenya. Modern veterinary inputs and services are often not readily available. They are either too difficult to obtain or expensive for poor, marginal farmers and pastoralists. Under these conditions, traditional animal health care practices, also called “ethnoveterinary medicine”, provide a readily available, low cost alternative. This brief looks at ways to combat animal diseases carried by ticks and covers; Anaplasmosis, Babesiosis (Redwater), East Coast Fever, Heartwater and Trypanosomosis (nagana, surra).

Ticks

Ticks are important external parasites of all livestock species, including chickens. They suck blood, causing anaemia, weight loss and even death. They also carry various serious diseases. Physical damage to the hide reduces its market value. People can become infested when handling animals.

Signs

- Large numbers of ticks on the animal's skin, especially around the ears, base of the tail and neck, and between the legs and the body.
- Anaemia (pale colour on the gums and under the tongue).
- Weakness, weight loss.
- Animal scratches and shows discomfort.
- Red patches and sometimes wounds where the ticks attach.
- Watery eyes when ticks attach on the eyes.
- Sagging ears when there are many ticks.
- Paralysis.

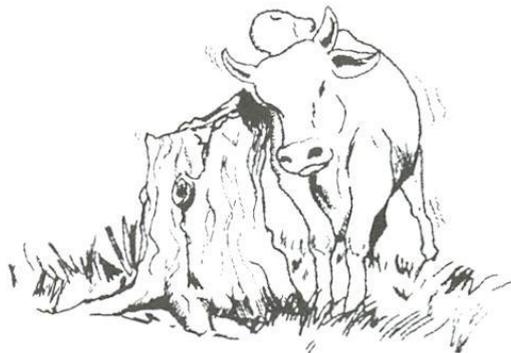
Effects

Ticks attach themselves to the skin and suck blood. Their bites are itchy. Various species of ticks carry the following important diseases:

- East coast fever.
- Babesiosis (redwater).
- Anaplasmosis.
- Heartwater.

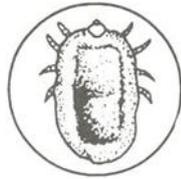
Also known as

Nguukuma (Embu), shilmi (Gabra), nguha (Gikuyu), mbili (Kamba), kerbesiet (Kipsigis), tsingwa (Lumarachi), okuodo (Luo), ilmasherr (Maasai), endohio, inamaara, tsinamaara (Maragoli), iguumba (Meru), chillim, turdach (Rendille), manjeri, Imansher, Itunturi (Samburu), shilin, yakhal (Somali Ethiopia and Kenya), kupe (Swahili), ngimadang (Turkana)

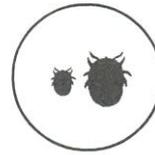




Bont (*Amblyomma*) tick (multi coloured): carries heartwater



Boophilus tick (blue) carries anaplasmosis and babesiosis



Actual size of ticks. Ticks get bigger as they suck blood for the animal

Prevention

- Keep animals with ticks away from healthy animals. (1)
- Avoid collecting fodder from roadsides where many animals graze and pass. (1)
- Graze in hot places where there are fewer ticks. (2)
- Move animals away from areas with high numbers of ticks. (2)
- Allow birds to eat ticks, for instance by keeping chickens in and around the animal housing. (2)
- Raise neem (*Azadirachta indica*) or other pest-repellent plants near animal housing. (2)
- Remove weeds and bushes from animal housing. (2)
- Burn tick-infested manure in the *boma*. (2)

Treatment

The treatments below may be expected to work also for lice (see *Lice* for further treatments).

- Rub old engine oil on infested areas of the animal's body. (Samburu, 2)
- Carefully pull ticks off the animal and burn them. Apply oil or warm ash to treat wounds that may occur. (Turkana, 1)
- Mix 100 g (5 tablespoons) of salt in 1 litre of water and rub the liquid on the animal's body. (Goats; Gabbra, 3)
- Allow camels to wallow in shallow, muddy pools. (Camels; Samburu, Turkana, 2)
- Make a paste of green tobacco leaves, add some water, and apply on the areas with ticks. You can also grind dry tobacco leaves and mix them with water to make a paste. (2)
- Boil 1 kg fresh or dry tobacco leaves in 10 litres of water for 30 minutes. Allow the liquid to cool and rub it on the animal. This makes the ticks fall off, but does not kill them. (Camels, cattle, donkeys, goats, sheep; Gikuyu, 2)
- Boil 0.25 kg of tobacco leaves in 4 litres of water. Add 1 litre of soapy water. Use this liquid to wash the animal. (2)
- Crush 1 handful of *Aloe broomii* leaves, mix with 1 litre of water, and brush on infested parts of the animal's body. (3)
- Mix 1 litre of camel urine with a handful of gum resin of *hagar* (*Commiphora erythraea*) or *damaji* (*Commiphora incisa*). Heat and stir to make a paste. Apply on parts where the ticks attach. They die, and other ticks are repelled for 1 week. (Camels, cattle, donkeys, goats, sheep; Somali, 3)

- Pound 5 aloe leaves and mix the pulp with 300 ml of paraffin oil and 2 handfuls of kitchen ash to make a paste. Apply on infested parts of the animal body. (Camels, cattle, donkeys, goats, sheep; Luo, 3)
- Dry 5 kg of *eteteleit* (*Acalypha fruticosa*) leaves and crush them to powder.
- Soak 1 handful of the powder in 250 ml of water for 1 hour. Pour off the water and smear the sediment onto the ear. (Turkana)
- If the tick problems persist, dip or spray the animal with an acaricide. (1)

Anaplasmosis

Anaplasmosis is an important disease in many species. While deaths are not common, animals may die because they refuse to eat. The disease is mild in calves but severe in adult cattle. It also affects goats and sheep.

Signs

- Refusal to eat.
- Constipation, very hard dung.
- Panting.
- Sudden drop in milk production.
- Fever.
- Swollen abdomen.
- Loss of balance.
- Raised hair.
- Animal is depressed and docile; it seeks shade.
- Anaemia, jaundice: mucous membranes (especially the eyes) look yellow.
- Little, yellowish urine.
- Yellow eyes.
- If the animal is slaughtered, the meat is yellowish.

Cause

A protozoan disease carried by *Boophilus* ticks, other ticks, and biting flies.

Prevention

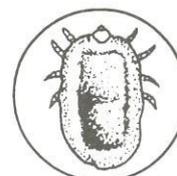
- See general comments on prevention

Treatment

- Crush 0.5 kg of leaves of murerema (*Basella alba*, a climbing herb). Mix with 0.5 litre of water. Drench 0.5 to 1 litre per day for 3 days for adult cattle (250 ml for goats and calves). Do not heat the mixture, as this destroys the effectiveness of the medicine. (Cattle, goats, sheep; Embu, Gikuyu, Kipsigis, Luo, 3)
- Crush a stem of banana using a pestle and mortar. Collect the sap and drench 1 litre a day for 3 days for adult cattle (500 ml for goats and calves). (Cattle, goats, sheep; Embu, 3)
- Collect 2 kg of *Idepe* (*A. oeforta*, *A. nubica*) bark and soak it in 20 litres of water for 2 days. On the third day, stir and then slowly

Also known as

Ndigania (Embu), *biraa* (Gabbra), *ndigana* (Gikuyu), *nthiana* (Kamba), *cheptikonit* (Kipsigis), *endigama*, *lipis* (Maasai), *nthigana* (Meru), *mporoto*, *ndiss* (Samburu), *lonyang'* (Turkana)



Boophilus tick: Carries anaplasmosis

drench the animal with 2 litres of liquid (this dose is for adult cattle). Repeat once a day for 5 days. For goats and sheep, drench 1 litre of liquid. Give twice a day for 3 days or until the animal has recovered and its eyes and urine are normal. (Cattle, goats, sheep; Samburu, 3)

- Crush a handful each of *rachar* (*Croton dichogamus*) bark and leaves, *ober* (*Albizia coriaria*) bark, and *ngowo* (*Ficus sycomorus*) bark. Boil in 4 litres of water for 45 minutes and mix with a handful of *luny* (a type of salt lick). Drench 700 ml of the liquid for adult cattle (250 ml for goats and sheep) twice a day for 1 week or until the animal recovers. (Cattle, goats, sheep; Luo, 3)
- Boil the bark *ofmuldnduri* (*Croton megalocarpus*) in 0.5 litre of water. Allow to cool, then sieve and give the liquid to the animal to drink. (Cattle, goats, sheep; Samburu, 3)
- Mix 500 g of epsom salt (magnesium sulphate, *igati*) with 750 ml of water. Drench to relieve constipation. (2)
- Crush 500 g of soda ash to powder and mix in 20 litres of water. Stir well. Allow the animal to drink this water for 4 days. Do not allow the animal to drink any other water. (Cattle, goats, sheep; Turkana, 3)
- Pound 1 kg of *sotowes* bark to a pulp. Put into 3 litres of water and boil it down to 2 litres. Leave overnight. Drench adult cattle with 2 litres of the broth (0.5 litre for goats and sheep) 3 times a day for 1 week. In the evening, burn wood of *sotowes* upwind of the animal and allow the animal to inhale the smoke. (Cattle, goats, sheep; Gabbra, 3)
- Take 250 g of *chemogong* (*Ajuga remota*) leaves, 250 g of *senetwet* (*Senna septemtrionalis*) leaves, and 250 g of *labotwet* (*Solanum dennekense*) roots. Boil in 700 ml of water for 30 minutes. Allow the liquid to cool. Drench 0.5 litre per day for 3 days. (Cattle; Kipsigis, 3)

Babesiosis (redwater)

A disease of livestock that causes very high fever and often kills infected animals. It is also known as "biliary fever" in donkeys and "redwater" in cattle.

Signs

- Red urine (giving the name "redwater").
- Very high fever.
- Pale or yellow mucous membranes.
- Nervousness.
- Depression.

Cause

A protozoan disease carried by *Boophilus* ticks. Adults are more often infected than are calves.

Prevention

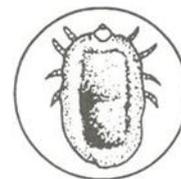
- Isolate infected animals.
- See the general comments on prevention

Treatment

- Pound two handfuls each of *murembe* (*Erythrina abyssinica*) roots and *olanga langwe* roots. Boil in 5 litres of water for 45 minutes. Allow to cool, and drench 0.5 litre twice a day until the animal recovers. Give half this amount to goats and sheep. (Cattle, goats, sheep; Luo, 3)
- Soak 1 kg of bark of *ljakwai* (*Acacia excocephaleia*) in 3 litres of water for 12 hours. Drench sick cattle with 1 Tree Top bottle (700 ml) of the liquid once. Repeat as required the next day. (Cattle; Samburu)
- Grind dry bark of *muiiri* (*Prunus africana*) to powder and mix with 1 litre of water. Drench. Repeat once a day for 2 days. (Cattle; Gikuyu, Meru)

Also known as

Beek che biriren (Kipsigis), *aremo* (Luo), *enado nkulak* (Maasai), *maumago yamatune* (Meru), *ngula* (Samburu), *eyiala* (Turkana).



Boophilus tick (blue) carries anaplasmosis

East coast Fever

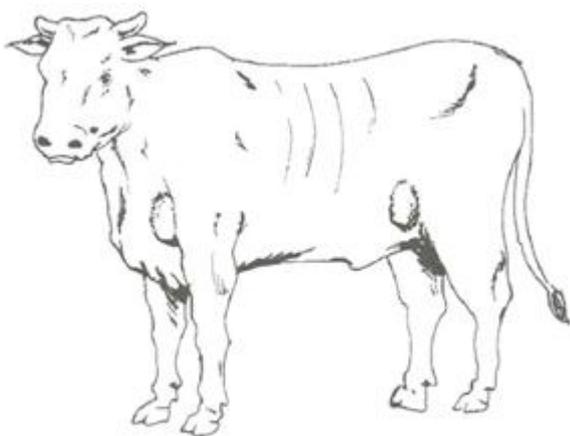
East coast fever is a disease of cattle which is transmitted by the brown ear tick. The tick is normally found in high, wet and cool areas. It attaches itself around the animal's ears. East coast fever is a killer disease, which is more severe in young animals.

Signs

- Loss of appetite.
- Decreased milk production.
- High temperature.
- Hair stands up.
- Swollen Lymph nodes, especially those in front of the shoulder blades.
- Rapid breathing.
- Blood spots or mucus in the faeces.
- Sometimes very small red spots at the base of the tongue, on the gums, eyelids and vulva.
- Clouded eyes; eyes filled with tears.

Also known as

Ngai (Embu, Gikuyu, Kamba), *shilmi dimtu* (Gabbra), *sosoito* (Kipsigis), *yapwolo* (Luidakho), *olitikana* (Maasai), *evivitu* (Maragoli), *ita* (Meru), *lipis* (Sam buru), *lokit* (Turkana)



Causes

East coast fever is caused by a protozoa. This tiny organism multiplies in the lymph nodes, making them swell. Animals that recover show some degree of resistance. Local animals are more resistant than exotic breeds.

If you suspect an animal has east coast fever, you must inform the authorities immediately.

Prevention

See the general comments on prevention.

Treatment

- Boil 2 kg of leaves and bark of *kyatha* (*Synadenium compactum*) shrub in 1 Tree Top bottle (700 ml) of water. Sieve and drench. (Kamba)

- Cut 0.5 kg of fleshy sisal (*Agave americana*) leaf and boil in 1 litre of water until the water evaporates to half the original amount. Cut 0.5 kg of bark from *Croton megalocarpus* and boil in 1 litre of water until the water evaporates to half the original amount. Mix the two liquids and drench 0.5 litre in the morning and 0.5 litre in the evening. The Embu people believe this treatment combats fever and is antibacterial. (Embu, 3)
- Cut leaves of baobab (*Adansonia digitata*) into small pieces. Add a little salt lick. Crush several baobab fruits together in a mortar and mix with the chopped leaves. Allow the animal to eat as much of the mixture as it wants. (Embu, 2)
- Crush 0.5 kg of leaves and roots of *olulusia* (*Vernonia amygdalina* or *V auriculifera*) and *osembo* (*Sesbania* sp.) and mix with the same amount of water.
- Add a teaspoonful of salt and boil the solution for 30 minutes. Drench. (Luo, 3)
- Boil 250 g of leaves of each of *soket iWarburgia ugandensis*) and *manereri* (*Gerrardanthus lobatus*) in 1 litre of water for 30 minutes. Drench 700 ml of the liquid once a day for 3 days. (Kipsigis, 3)
- Soak about 1 glassful of dry *kundet* (*Vigna unguiculata*) beans in 0.5 litre of water and boil for 20 minutes. Sieve and drench adult animals with 1 Fanta bottle (300 ml) of the liquid. (Cattle; Kipsigis, 3)

Heartwater

A serious disease of cattle, goats and sheep. It occurs especially during the rains.

Signs

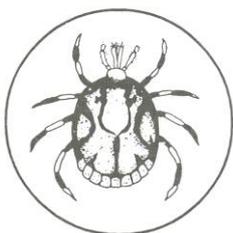
- Lack of appetite.
- Constant chewing movements.
- Occasional diarrhoea.
- Animal walks with a stiff, uneven gait.
- Exaggerated blinking.
- Fever.
- Animal presses its head against objects.
- Animal falls down, kicks and throws its limbs.
- If the animal is slaughtered, there is a lot of water around the heart.

Cause

A micro-organism transmitted by ticks.

Prevention

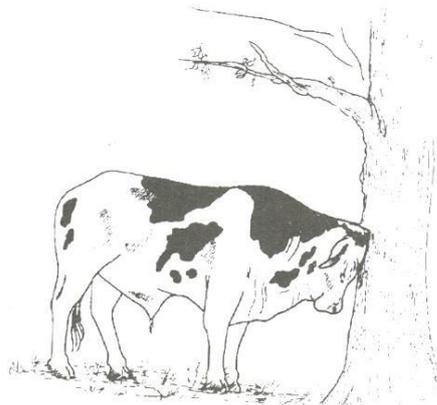
See the general comments on prevention.



Bont (Amblyomma) tick: Carries heartwater

Also known as

Qanno ree (Gabbra), *chepkiyait* (Kipsigis), *hawirawira* (Luo), *olmilo* (Maasai), *amili* (Turkana)



!WARNING: NOTIFIABLE DISEASE

If you suspect an animal has heartwater, you must inform the authorities

Treatment

- Boil 0.25 kg of roots and 0.25 kg of bark of *soget* (*Warburgia ugandensis*) in 1 litre of water. Sieve and drench 300 ml per day for adult cattle (75 ml for sheep) for 3 days. (Cattle, sheep; Kipsigis, 3)
- Take 1 handful of *ombulu* (*Abrus precatorius*) roots and leaves (1 part of roots and 3 parts of leaves), and 1 handful of *ochuoga* (*Carissa edulis*), in the same proportion of roots and leaves. Boil in 4 litres of water for 1 hour. When cooled, pour 0.25 litre of the liquid into the animal's nostrils. Drench with 0.5 litre. Repeat twice a day until the animal recovers. (Cattle, goats, sheep; Luo, 3)

Trypanosomosis (nagana, surra)

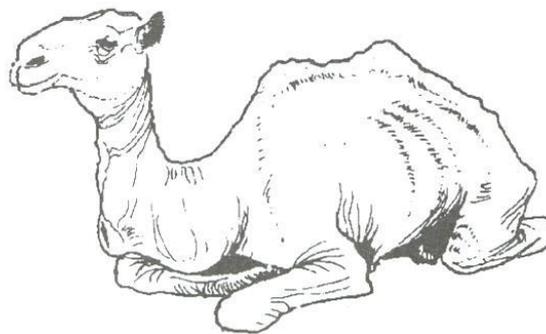
Trypanosomosis is transmitted by tsetse flies (see *Tsetse flies*) and biting flies (see *Bitingflies*). It causes low production and death in camels, cattle, dogs, donkeys, goats and sheep. The disease can take either a short or a long time, depending on the type of animal infected and the type of trypanosome protozoan that causes the disease (see *Causes* below). Some breeds of livestock are relatively resistant to the disease.

Also known as

Ghandi (Gabbra), *kamosu*, *kisiko* (Kamba), *kayangat* (Kipsigis), *dorobo* (Maasai), *mutombo* (Meru), *Itikana* (Samburu), *dukan* (Somali Ethiopia and Kenya), *dorobo*, *malale* (Swahili), *lotorobwo* (Turkana)

Signs

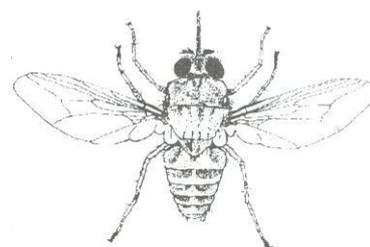
- Dull, lustreless hair.
- The animal does not eat.
- Progressive deterioration of body condition.
- Reduced milk production.
- The animal has a foul smell that herders recognise.
- Blood oozing from the ears, mouth and nostrils (in some forms of the disease).
- Paleness on gums, under the tongue and inside the eyes.
- Enlarged superficial glands.
- Abortion in pregnant females.
- Death if untreated.

**!WARNING: NOTIFIABLE DISEASE**

If you suspect an animal has trypanosomosis, you must inform the authorities immediately.

Cause

Trypanosome protozoans (tiny, one-celled organisms). Different types of these protozoans cause different forms of trypanosomosis



and affect different types of animals.

The protozoans are carried by tsetse flies and other biting flies. These flies are found along rivers, in bushes and forests.

Prevention

- Avoid fly-infested areas,
- Water animals when fly activity is low,
- Repel flies with smoke from smouldering cow dung,

See *Biting flies* and *Tsetse flies* for other prevention methods, *Ethnoveterinary Medicine in Kenya: A Field Manual of Traditional Animal Health Care Practices*.

Treatment

- Crush 1 kg of roots of *chepotet* (*Clerodendrum* sp.) and boil in 5 litres of water, Wait to cool, sieve and drench with 2 litres, (Camels; Pokot, 3)
- Crush 1 kg of roots and bark of *ofpiliil* (*Acacia reficiens*) and soak in 5 litres of water overnight. Sieve and drench about 3 litres of the liquid. (Camels; Pokot, 3)
- Burn branches of *asiokonyon* (*Salvadora persica*) to ash. Mix about 0.5 kg of the ash with 1 litre of water. Drench the whole mixture (this amount is enough for an adult animal). (Camels; Pokot, 3)
- Boil bark of *oremit* (*Salvadora persica*) in 1 litre of water. Drench the liquid. (Camels, cattle, donkeys, goats, sheep; Maasai)
- Crush 500 g of roots from *loarakimak* (*Adenia volkensii*) and dissolve in 2 litres of water for 12 hours. Drench 2 litres of the liquid for an adult (0.5 litre for a young animal). (Camels, cattle; Turkana, 3)
- Grind 200 g of fresh bark from *Ibukoi* (*Terminalia brownii*) tree and boil in 2 litres of water. Let the mixture cool and then drench the liquid. Add 2 more litres of water to the bark, boil and drench again the following day. (All animals; Samburu).

References and further reading

- *Ethnoveterinary Medicine in Kenya: A Field Manual of Traditional Animal Health Care Practices* by Practical Action East Africa & IIRR, Practical Action East Africa 1996 ISBN 9966 9606 2 7
- *Confidently Used Ethnoveterinary Knowledge Among Pastoralists of Samburu, Kenya Book 1 Methodology and Results* by Jacob B. Wanyama, Practical Action East Africa ISBN 9966 9606 7 8
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- *Community – Based Animal Health Care in East Africa: Experiences and Case Studies With Particular Reference to Kenya* Practical Action East Africa, ISBN 9966 931 04X
- *The Role of Community-based Animal Health Care in Rural Development* Practical Action East Africa, ISBN 9966 931 15 5

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