

BOVINE EPHEMERAL FEVER

[Common names: "three-day sickness", "bovine epizootic fever", and "stiff sickness"]

Ephemeral Fever is an **insect-transmitted**, non-contagious, infectious viral disease of cattle and water buffalo characterized by transitory fever, muscular shivering, stiffness, lameness, and enlargement of the peripheral lymph nodes. The disease is caused by an unclassified, **insect borne rhabdovirus**. Commonly k.a. **Three-day sickness** because classically the effects stay for three days. However losses are associated with decreased Milk production.

It is caused by **Bovine Ephemeral Fever Virus** (BEFV) is classified as a member of the genus **Ephemerovirus** in the family **Rhabdoviridae** (-ssRNA).

SPREAD:

The virus is probably transmitted by **biting insects**. Culicoides species (sand flies) are suspected to be the vectors, but evidence is lacking.

PATHOGENESIS:

After an incubation period of **2-10 days**, a viraemia develops with localization and inflammation in mesodermal (mesenchymal) tissues, particularly joints, lymph nodes, and muscles. The virus is thought to grow mainly in the reticulo-endothelial cells in the lungs, spleen, and lymph nodes, and not in vascular endothelium or lymphoid cells.

The virus does not appear to cross the placenta or affect the fertility of the cow. More insidious losses may result from decreased muscle mass and lowered fertility in bulls.

SIGNS:

Calves are least affected, and those less than 6 months of age show no clinical sign. **Fat cows and bulls are worst affected.**

In most cases the disease is acute, with fever (40°–42°C [104°–107.6°F]) for almost three days, and is characterized by transitory (of brief duration) fever, inappetence (anorexia), hyperpnoea (increased breathing) or dyspnoea (difficult breathing) of short duration, **mucous or purulent nasal discharge**, shivering, and **shifting lameness, atony of forestomachs**, sudden decrease in milk yield.

In some cases, rumination may cease and ruminal stasis, diarrhoea, or constipation may occur. Occasional posterior paralysis seen. Many animals become ill, but mortality is very low.

LESIONS:

Bovine ephemeral fever is an Inflammatory disease. Gross lesions include general vascular engorgement, oedematous lymph nodes, congestion of abomasal mucosa, hydropericardium, hydrothorax, rhinitis, tracheitis, and pulmonary oedema.

The most common lesions include **Polyserositis**, **Tendovaginitis** (inflammation of a tendon and its sheath), **fasciculitis** (inflammation of a bundle of muscle fibres), **polyarthritis**, **polytendinitis** and **cellulitis** (inflammation of connective tissue) and **focal necrosis of skeletal muscles**.

Microscopically, lesions are limited to venules and capillaries, particularly in muscles, tendon sheaths, synovial membranes, fascia, and skin. Endothelial cells may be hyperplastic, and the vessels surrounded by oedema and leukocytic infiltration.

DIAGNOSIS:

Diagnosis is based almost entirely on clinical signs in an epidemic. Serofibrinous inflammation in the tendon sheaths, fascia, and joints, together with pulmonary lesions, may substantiate a presumptive diagnosis. Laboratory confirmation is by serology or virus isolation.