

# Exotic Disease Threats: What Every Food Veterinarian Should Know

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## Introduction

The term “exotic disease” or “foreign animal diseases” (or FADs) is used to group more than fifty animal diseases that are not currently in the US. Thirteen of them have been eradicated from our country after intensive, expensive and long duration campaigns. Many of these diseases are important zoonotic diseases

This presentation will review thirteen exotic diseases that affect cattle, grouped into three categories:

1. Highly contagious diseases.
2. Non-highly contagious diseases.
3. Vector-borne and parasitic diseases

The following information will be summarized for each disease: definition, etiology, global epidemiology, clinical signs and lesions. The diseases to be covered include those of greatest importance to bovine practitioners, and include:

### 1. Highly Contagious Diseases

#### *Foot-and-Mouth Disease*

Foot-and-mouth disease (FMD) is an extremely contagious, viral disease of domestic cloven-hoofed and many wild animals, characterized by fever, vesicular lesions and, subsequent erosions of the epithelium of the mouth, tongue, nares, muzzle, feet and teats.

#### *Vesicular Stomatitis*

Vesicular stomatitis (VS) is a viral disease of horses, cattle, and swine, characterized by fever, vesicular lesions and, subsequent erosions of the epithelium of the mouth, nares, muzzle/snout, feet and teats.

#### *Rinderpest*

Rinderpest (RP) is an acute or subacute, contagious viral disease of ruminants and swine, manifested by high fever, lachrymal discharge, profuse diarrhea, erosions of the epithelium of the mouth and of the digestive tract, and high mortality.

#### *Contagious Bovine Pleuropneumonia*

Contagious Bovine Pleuropneumonia (CBPP) is a subacute to chronic disease, primarily of cattle, affecting the lungs and occasionally the joints, caused by *Mycoplasma mycoides var. mycoides* – small colony type.

#### *Lumpy Skin Disease*

Lumpy Skin Disease (LSD) is an acute viral disease of cattle, characterized by fever and eruption of a large number of intradermal nodules of variable size which undergo central necrosis. Severe cases of LSD are accompanied by superficial lymphangitis, lymphadenitis and lower leg edema.

### 2. Non-Highly Contagious Diseases

#### *Malignant Catarrhal Fever*

Malignant catarrhal fever (MCF) is a sporadic, usually fatal, generalized viral disease that affects cattle and various exotic ruminants. MCF is characterized by high fever, profuse nasal discharge, corneal opacity, generalized lymphadenopathy, leukopenia and erosive lesions on the oral and nasal cavities.

#### *Bovine Spongiform Encephalopathy*

Bovine Spongiform Encephalopathy (BSE) is a non-febrile, slowly degenerative, transmissible, fatal disease affecting the central nervous system of cattle.

### 3. Vector-Borne and Parasitic Diseases

#### *Rift Valley Fever*

Rift Valley fever (RVF) is an acute arthropod-borne viral zoonotic disease with high mortality in young animals, principally affecting sheep, cattle and goats, manifested by severe hepatitis and abortions.

#### *Heartwater*

Heartwater (HTW) is an acute vector-borne infectious disease of ruminants affecting cattle, sheep, goats and antelope. It is caused by the rickettsial organism

*Cowdria ruminantium*, which is transmitted by ticks of the genus *Amblyomma*. HTW is characterized by fever, nervous signs, hydropericardium, hydrothorax, ascites, edema of the lungs and high mortality.

#### *New World Screwworm*

Screwworm (SCW) is a myiasis due to the invasion of wounds by maggots of *Cochliomyia hominivorax* flies. Screwworms are obligatory parasites – they require host tissue as food to complete their life cycle. SCW affects cattle and any other warm-blooded animal, including humans, causing significant public health concerns. Infestation of poultry and fowl is rare.

#### *African Animal Trypanosomosis*

African animal trypanosomosis (AAT) is a disease complex caused by tsetse-fly-transmitted *Trypanosoma congolense*, *T. vivax*, or *T. brucei brucei*, or simultaneous infection with one or more of these trypanosomes. AAT is most important in cattle but can cause serious losses in pigs, camels, goats and sheep. Infection of cattle by one or more of the three African animal trypanosomes results in subacute, acute, or chronic disease characterized by intermittent fever, anemia, occasional diarrhea, and rapid loss of condition and often terminates in death.

#### *East Coast Fever*

East Coast fever (ECF), also known as Bovine Theileriosis, is a tick-transmitted protozoal disease of cattle characterized by high fever and lymphadenopa-

thy. The disease causes high mortalities in breeds non indigenous to the endemic areas, and is confined to eastern, central and parts of southern Africa.

#### *Bovine Babesiosis*

Bovine babesiosis is a febrile, tick-borne disease of cattle, caused by one or more protozoan parasites of the genus *Babesia* and generally characterized by extensive erythrocytic lysis leading to anemia, icterus, hemoglobinuria and death.

### References

Due to the extensive information available on these FADs, the participants are referred to the “Gray Book” on Foreign Animal Diseases published by the US Animal Health Association, which is completely available online. The only caution about this book is on the indicated world distribution of each disease, which is outdated by now. Other excellent sources of information on these important diseases are found at web sites of the OIE - The World Organization for Animal health, and of the FAO – The Food and Agriculture Organization of the United Nations.

[www.vet.uga.edu/vpp/gray\\_book/index.htm](http://www.vet.uga.edu/vpp/gray_book/index.htm)

[www.oie.int](http://www.oie.int)

<http://www.fao.org/ag/AGA/AGAH/EMPRES/index.asp>