

Mainly affects farmed rainbow trout

All salmonids and many other species are susceptible

Outbreaks occur between 7°C and 14°C

No Treatment

Notifiable disease in the UK

Large scale mortalities up to 80% of stock. Clinical signs: Petechial haemorrhaging, exophthalmia, anaemia, spiraling swimming behaviour

Legal Obligation and Who to Notify

The Diseases of Fish (Definition of "infected") Order 1973, which came into force on 1 January 1974, makes it a legal obligation to report suspicion that inland waters have become infected with VHS Disease to the Fish Health Inspectorate (FHI) at the Centre for Environment, Fisheries and Aquaculture Science (Cefas).



The result of a VHS outbreak

Viral Haemorrhagic Septicaemia (VHS)

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Introduction

Viral haemorrhagic septicaemia (VHS) is considered the most serious disease of rainbow trout in aquaculture. It can cause up to 80% mortality in affected stocks. The UK was historically free from this disease. However, in spring 2006, a VHS outbreak caused high levels of mortality in a Yorkshire trout farm. This outbreak resulted in serious economic losses for many farms in the Yorkshire area.

Etiological agent: Viral haemorrhagic septicaemia virus (VHSV) of the family Rhabdoviridae.

Geographical Distribution

VHS was first reported from a rainbow trout farm in Denmark and has since caused significant losses in rainbow trout farms in many countries in continental Europe. It has also been reported in Japan and Russia. A highly virulent new strain of VHS has been reported in a range of freshwater fish species in the USA.

The VHS virus has also been isolated from the marine environment in the Baltic and North seas, the Atlantic Ocean and off the Pacific coast of North America.



Exophthalmia in VHS infected rainbow trout

Epizootiology & Clinical Signs



Petechial haemorrhaging on the gills of rainbow trout

Outbreaks of VHS in rainbow trout typically occur between temperatures of 7°C and 14°C.

The disease progresses in three stages.

The acute stage sees a rapid onset of high mortalities often with severe clinical signs such as darkening of body colour, exophthalmia (bulging eye), bleeding around eyes and fin bases, pale gills and petechial (pin point) haemorrhaging on the surfaces of the gills, viscera and in the muscle.

During the second sub acute, or chronic stage, the body continues to darken, exophthalmia may become more pronounced but haemorrhaging around the eyes and fin bases is often reduced. Fish are severely anaemic and paleness is particularly evident in the abdomen. Fish may develop a spiralling swimming motion, corkscrewing around the body axis.

The final, nervous stage sees reduced mortality and clinical signs are usually absent. The corkscrew swimming motion becomes more pronounced.

The disease is transmitted horizontally through contact with infected fish or water. Large numbers of virus are shed in the faeces, urine and sexual fluids. There is no vertical transmission of the virus.

Susceptible Species

VHS is principally a disease of farmed rainbow trout, but most salmonid fish are considered susceptible, as are whitefish (*Coregonus* spp), grayling and pike. The disease has also been reported in farmed turbot, wild Pacific herring and numerous other marine fish species.



Clinical signs of VHS

Treatment and Control

There is no treatment for VHS. As a notifiable disease there is a legal obligation to report any suspected outbreaks of VHS to the Fish Health Inspectorate.

If the disease were found on a farm in the UK, movement restrictions would be applied to all farms on the same river catchment and all contact sites. Attempts would be made to eradicate the disease and all contact sites would be investigated to look for evidence of the source and spread of the virus.

The approved status of any infected area would be lost until a testing programme had been undertaken to confirm the eradication of the disease.