

## KOI HERPES VIRUS DISEASE IN EUROPE IN 2018 AND THE FIRST QUARTER OF 2019

### Abstract

Koi herpesvirus disease (KHVD) is a herpesvirus infection capable of inducing a contagious and acute viraemia in common carp (*Cyprinus carpio*) and varieties such as koi carp and ghost carp.

The aetiological agent is koi herpesvirus (KHV) in the family *Alloherpesviridae* although prior to taxonomic classification, it was also known as carp interstitial nephritis and gill necrosis virus (CNGV).

**More details on the prevalence of the disease in Europe in 2017, the characteristics of the causative agent, the susceptible fish species and the clinical signs can be found in the review prepared by the Risk Assessment Center on Food Chain in 2017, published at: [http://corhv.government.bg/?cat=27&news\\_id=195](http://corhv.government.bg/?cat=27&news_id=195) .**

KHVD is highly contagious, outbreaks start at temperatures above 16° C and can cause up to 70-100% carp mortality.

The disease in carp fish was first recorded in May 1998 in Israel in the decorative Japanese subspecies (*Cyprinus carpio koi*) called “koi” (or more specifically nishikigoi, literally “brocaded carp”) and in North America was first registered in 1999 in the United States. Herpesvirus infection leads to large losses in fish farms. It is spread all over the world except Australia. The fish die within 24-48 hours of infection.

The virus infection is on the European Union (EU) list for exotic diseases and is monitored by the European Reference Laboratory for Fish Diseases. There is no evidence that this disease is dangerous to human health.

### Disease spreading across Europe in 2018 and the first quarter of 2019

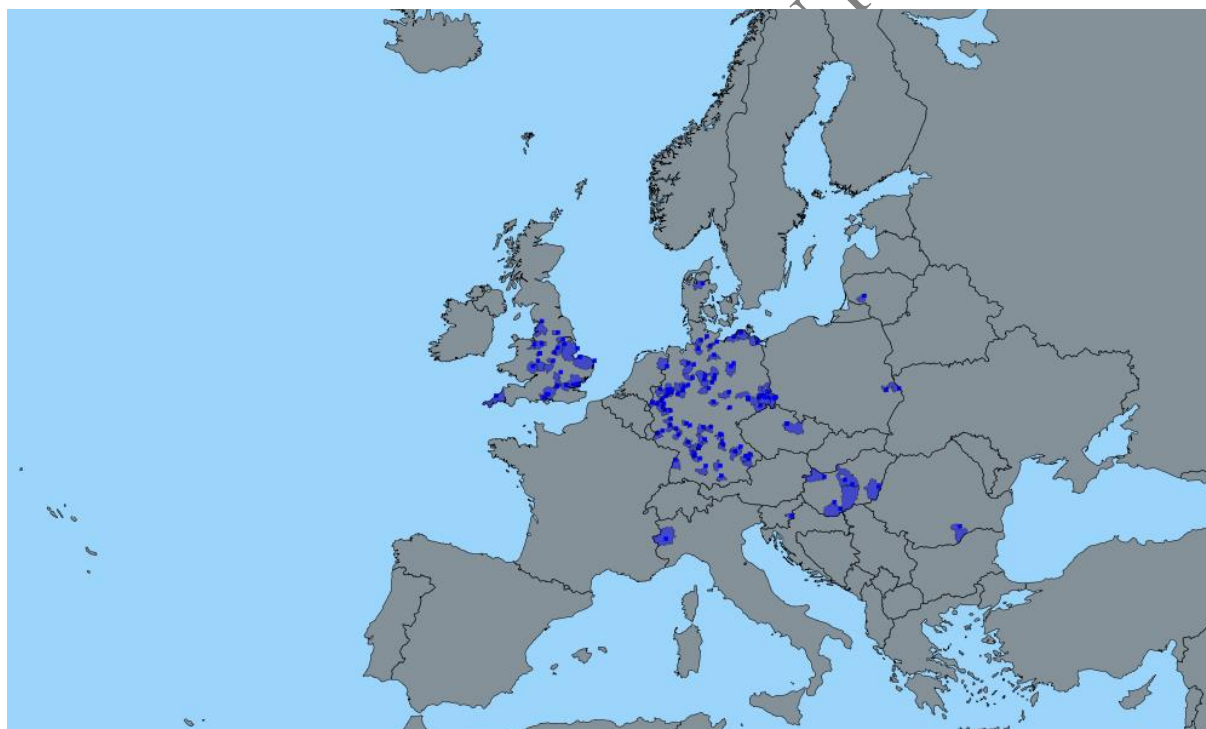
**For the period 01.01.2018 to 31.12.2018: No outbreaks of the disease in Bulgaria.**

From 01/01/2018 to 31/12/2018

Last refreshed 07/01/2019 at 10:14:28

Disease	Country	Date of last outbreak	N° of outbreaks
K.H.V.	CZECH REPUBLIC	01/10/2018	2
	DENMARK	21/09/2018	1
	GERMANY	14/12/2018	93
	HUNGARY	26/06/2018	6
	ITALY	24/10/2018	1
	LITHUANIA	24/07/2018	1
	NETHERLANDS	20/07/2018	1
	POLAND	16/07/2018	2
	ROMANIA	08/06/2018	1
	SLOVENIA	12/06/2018	1
	UNITED KINGDOM	05/10/2018	27
		<b>Total :</b>	<b>136</b>

### Map of outbreaks of KHVD in EU countries for the period 1.01.2018 to 31.12.2018



### Outbreaks of KHVD in EU countries - for the first quarter of 2019:

From 01/01/2019 to 31/03/2019

Last refreshed 01/04/2019 at 11:40:37

Disease	Country	Date of last outbreak	N° of outbreaks
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K.H.V.	GERMANY	01/02/2019	2
	UNITED KINGDOM	14/01/2019	2
		<b>Total :</b>	<b>4</b>

### Map of outbreaks of KHVD in EU countries for the period 1.01.2019 to 04.04.2019



### Serbia as a neighboring Bulgarian country - No KHVD outbreaks reported in 2018 to 04.04.2019

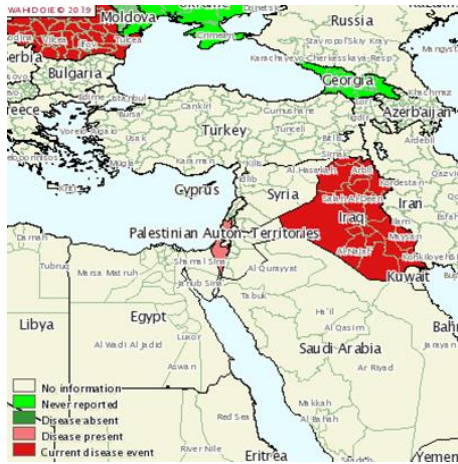
No outbreaks of which herpes virus in carp in Serbia have been reported in the WAHIS Animal Disease Reporting System of the OIE. The competent veterinary authorities in Serbia are implementing a surveillance program for early detection of the entry of the virus into their territory - the Animal Disease Surveillance Program for 2019. Serbia plans to carry out prophylactic examinations of all carp farms once a year in the period from 1 June to 1 September at water temperatures above 20 °C (but not earlier than two weeks after rising above 20 °C) – clinical examination of all fish categories and sampling for virological examination to detect the presence of KHV.

### KHVD outside Europe:

*Distribution map of KHVD by WAHIS data for the period 6-12.2018 - Israel, Iraq - pink - presence of the disease, red - current outbreaks*

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*KHVD distribution map by WAHIS system data for 01-04.2019 - Iraq - red - current outbreaks*



The Bulgarian Food Safety Agency (BFSA) is the competent authority in Bulgaria in the field of prophylaxis, surveillance, control and eradication of animal diseases as well as the border control of live animals and products of animal origin.

BFSA carries out official veterinary control of the aquaculture production business and the approved processing plants under the Law on Veterinary Medicine, the requirements of Art. (3) of Regulation (EC) No 882/2004; Article 10, paragraph 1 and paragraph 2 of Ordinance No 17 of 16 June 2008 on the health requirements for organic aquatic animals, their products and the prevention and control of aquatic animal diseases, Directive 2006/88/EC and Decision No 1554/2015 laying down rules for the implementation of Directive 2006/88/EC as regards the requirements for supervision and diagnostic methods.

In Bulgaria, the BFSA develops and implements a **National Program for the Prevention, Control, Control and Eradication of Animal Diseases, including zoonoses 2019-2021**, to which Appendix 23 is a **Program for the Examination of Exotic and Non-Exotic Fish Diseases and bivalve molluscs in Bulgaria in 2019 – 2021**.

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Regular inspections and clinical investigations are foreseen in the Program - registered fish farms are visited and inspected by an official veterinarian at least twice a year to monitor health status.

In carp farm inspections and sampling shall be carried out not earlier than two weeks after reaching a water temperature of 15° C. Clinical examination of the fish is carried out in all production units (pools, bathtubs in the pool, cages for fattening or farming, etc.) by checking for the presence of dead fish or fish with deviations from the normal state (poorly mobile, do not respond to external irritations, exophthalmus, blackening of the body, haemorrhages, etc.).

Samples for laboratory testing are also taken in cases of increased mortality over the technological norms or registered mortality in the within the natural habitats of the water catchment area.

**There are no epidemiological data and no information on the prevalence of exotic viral infections in fish farms in our country. In the screening studies conducted there are no data on the occurrence of herpes viral infection and spring viremia on carp on the territory of Bulgaria.**

### **Risk for Bulgaria**

The epidemiological observations carried out show that fish farms located on different water sources and even in different regions of the country have intensive technological connections that are not always subject to veterinary control. In the country, fertilized caviar and decorative fish species from a number of European countries as well as from third countries are being marketed annually, which poses risks of spreading viral infections (*BFS*A).

Once Koi herpesvirus is established in Romania, and once established in Israel, it is assumed that warmer water basins are also a good environment for its existence and for the maintenance of the infection. Virus persistence can be aided by the presence of live vectors (e.g., other fish species, parasitic invertebrates, fish-eating birds and mammals), and the detection of DNA is not always indicative of the presence of an infectious virus.

That is why the competent border authorities should monitor for unregulated imports of ornamental fish, a fertile fish material so that the agent does not fall into our ponds. The epizootic situation in 2017 and 2018 shows that there is a risk of this infection being introduced in Bulgaria.

# RISK ASSESSMENT CENTER ON FOOD CHAIN

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